

3 METHODOLOGY

3.1 INTRODUCTION

The purpose of this study is to gain an insight into how school environments contribute to the resilience of Dutch urban middle-adolescents from a low SES background. The unexplained variance in the development of middle-adolescents within urban schools with high numbers of middle-adolescents with a low SES cannot be explained on the basis of research results within resilience theories that “merely” centralise the presence of external risk (low SES in combination with living in a city) and protective factors (all possible factors within the school context). In order to explain the variance, the perception of the presence and usability of specific protective factors should be explored by middle-adolescents themselves (See Chapter 1 and 2 for the rationale behind this proposal).

In particular, in the present study the relationship between the perception of resilient middle-adolescents of their school environment and the presence and usability of protective factors are explored in contrast to the perception of not-resilient middle-adolescents of the same school environment.

In Chapter 2 various findings from three research waves within resilience research were unified in a bio-ecological definition of resilience of middle-adolescents (section 2.4.2):

A resilient middle-adolescent has the disposition to identify and use resilience qualities in himself and/or identify and use resilience qualities in a specific context whenever he is confronted with difficult and challenging circumstances. The interaction between the middle-adolescent and the context generates a constructive outcome in the development of the middle-adolescent, such as continuous learning (growth and renewal of resilience characteristics) and an increasingly flexible approach to challenging circumstances.

This definition forms the basis in the research presented for identifying and researching resilience of middle-adolescents in the school environment.

In the following section paradigms and assumptions are discussed which form the context for a systematic, conscious and grounded research into the relationship between school context and resilience.

3.2 THEORETICAL APPROACHES AND ASSUMPTIONS

3.2.1 INTRODUCTION

The assumptions underlying the research question (section 1.4) are repeated here in order to describe the methodological considerations which have guided the design and conduct of this study:

1. Children do not necessarily succumb to hardship or risk factors.
2. Schools have a potentially positive influence on resilience-building in middle-adolescents.
3. The influence of the school on resilience-building is not objectively measurable.
4. The influence of the school on resilience-building can best be described as that perceived by the middle-adolescents themselves.
5. Middle-adolescents' perception of the influence will be different from adults' perception or from the results of effective school research.
6. The difference between successful and less successful development in resilient and not-resilient middle-adolescents is influenced by and/or reflected in their different perception, and/or utilisation of beneficial assets in their school and by a fit or misfit between the middle-adolescent's developmental needs and his/her access to the available assets.

These assumptions reflect presuppositions concerning the existence of reality (ontology) and the way in which reality can be known (epistemology) and investigated (methodology) (Tashakkori & Teddlie, 1998; Smit, 2001).

Guba and Lincoln (1994, p. 105) define paradigms as: “*The basic belief system or worldview that guides the investigation, not only in choices of method but in ontologically and epistemologically fundamental ways*”. In the following section

there will be a discussion and justification of how the fundamental view of reality shapes the present study.

3.2.2 THEORETICAL APPROACHES AND ASSUMPTIONS

The initial paradigmatic approach concerns assumption 1 (section 3.2.1) that middle-adolescents are not necessarily hampered in their (school) development by having an urban, low social economic background. The theoretical approach which may be linked to this assumption is that from salutogenic and positive psychology: researching factors and processes which lead to successful development. This paradigmatic approach was discussed in Chapter 2 in terms of resilience. Within resilience literature, a potential positive contribution of the school environment to resilience of middle-adolescents with a low SES background is recognized (assumption 2).

Based on the bio-ecological perspective presented in Chapter 1 and the literature overview presented in Chapter 2, the theoretical assumption was presented that differences in levels of successful development of middle-adolescents in the same school environment is an outcome of different interactions between these middle-adolescents and their school environment.

The theoretical assumptions 3 to 6 reflect the presuppositions that the same school environment may be experienced in different ways by different middle-adolescents. The significance middle-adolescents attach to their school environment may be both an expression of, as well as a contribution to resilience. The assumption here is that middle-adolescents' experience of their environment is at least a component of resilience. It was argued in Chapters 1 and 2 that it was exactly this component of experience that has remained underexplored in research into resilience. This experience therefore is central to the present research.

Summarising the above assumptions, the existence of a subjective reality is presupposed in the present study. In the first instance this concerns the subjective reality of the middle-adolescents who are central to this study. Selective patterns of attention ensure that one youngster may notice factors within the school context, whereas another does not. Whether certain factors in the school environment have a

resilience-promoting effect in youngsters is dependent on the interaction between the youngsters and their environment. Whether adolescents actually make use of factors in their school environment (provided these are identified by the adolescents) is, according to Richardson et al.'s (1990) Resiliency Model, dependent on a conscious or unconscious choice of certain types of re-integration. Secondly, a subjective reality is also presupposed for other “actors” in the adolescents’ school environment. Whether other actors in the school environment are able and willing to offer help and therefore act as resilience-promoting factors depends on their experiences of, for instance, the adolescents' requests for help, as well as the way in which adolescents express this request. In summary, it can be stated that the present study has at its basis an interpretative view of reality (Miles & Huberman, 1994; Smit, 2001).

The definition of resilience of middle-adolescents as presented in Paragraph 3.1 reflects a post-positivistic view on researching this reality (Tashakkori & Teddlie, 2003). The definition presupposes reasonably stable relationships between the perception of middle-adolescents of their school environment and the presence and usability of protective factors. Additionally, a contrast is presupposed between the content of these relationships between resilient and not-resilient middle-adolescents. The post-positivistic view maintains that there is an assumption that some scientific, reasonably stable relationships exist in social phenomena. Post-positivists acknowledge that these relationships can be partly discovered through non-perfect methods. They further acknowledge that the likelihood of causality of certain phenomena is not absolute and will change over time.

The following sections will discuss what the consequences are for the present study of these views on reality and on researching this reality.

3.3 RESEARCHING A SUBJECTIVE REALITY

3.3.1 RESEARCH AS AN INTER-SUBJECTIVE DEVELOPMENT OF KNOWLEDGE

In the present study it is argued that a subjective social reality may be explored in multiple ways and that all methods have inter-subjective knowledge development as their goal. Inter-subjective knowledge presupposes that study results are independent of the researcher and would therefore also have been achieved by other researchers following the same steps in the research process (Everaert & Van Peet, 2006). The

inter-subjective term according to the author of the present study acknowledges that knowledge about social reality is not objective. The inter-subjective knowledge that is developed on the basis of this study is distinct from opinions and ideas, in that it has been brought about in a systematic, analytical and insightful way.

3.3.2 REQUIREMENTS FOR THE DEVELOPMENT OF INTER-SUBJECTIVE KNOWLEDGE

Everaert and Van Peet (2006, p.11, 24-25) propose that *defeasibility* is the central requirement which (inter-subjective) knowledge has to satisfy. “*If somebody is not able to assess knowledge obtained for correctness, then we cannot arrive at (inter-subjective) knowledge*”. Defeasibility concerns knowledge that has come about through research. An existing theory could, for instance, be sharpened-up by exposing it to “negative cases”. An existing theory is not incorrect because somebody *believes* it to be incorrect. Invalidating a theory should be carried out in a systematic and analytical way. The task of researchers is – for each study - to create the opportunity to research further whether existing knowledge is still defensible or adapt it on the basis of new data from other or similar situations. In addition to defeasibility Everaert and Van Peet (2006) also draw a distinction between *precision* and *justification* as guidelines for research to arrive at inter-subjective knowledge. *Precision* concerns the results of research, which need to be precise both in reporting the domain of the phenomena the study focuses on, as well as the arguments proffered about these phenomena. *Justification* concerns the requirement that both the results and procedures followed are made public, to allow them to be assessed by others.

This thesis follows the guidelines for defeasibility, precision and justification of choices made in the research, of results derived from the research and of the way in which the results are interpreted. Precision has been striven for in providing the domain which the results relate to (the relationship between middle-adolescents from an urban and low SES background and their school environment) and justification has been sought through making explicit those assumptions which form the basis of the research. The theoretical assumptions described in the previous section determine in what way the relationship between the school environment and middle-adolescents is explored in this research. This means that for this study the interpretative view of reality prescribes how the chosen methods are to be developed and adapted and how

the data, which are delivered by the methods used, are to be interpreted (Tashakkori & Teddlie, 1998; Bogdan & Biklen, 2003). Further precision and justification of the procedures will be described in the following sections through the choices made in the present study for research methods. In subsequent sections “knowledge” should be taken to mean “inter-subjective knowledge”.

3.3.3 METHODS BY WHICH INTER-SUBJECTIVE KNOWLEDGE CAN BE OBTAINED

It is argued in this study that the choice of research method for certain aspects of subjective reality should be based on considerations of which methods are most appropriate for the research. Although some authors are of the opinion that certain views of reality prescribe certain methods, the majority of authors appear to agree that within social sciences there is definitely no evidence of an objective reality which is the same for everybody. All research within social sciences is directed at recognising and explaining patterns of human behaviour, and sometimes at making predictions based on these patterns (Bauer, Gaskell and Allum, 2000). Researchers themselves are part of the reality they are investigating, and investigate this reality with instruments (Everaert & Van Peet, 2006). Patterns in human behaviour in reality may be investigated through, for instance, questionnaires, interviews or experiments. When using questionnaires, for instance, the questionnaire is the instrument; when observing or conducting interviews the researcher is the instrument. When the researcher is the instrument, as is the case for most qualitative studies, it may be expected that different researchers could arrive at different research results. In the present study it is argued that even when the researcher is the research instrument there should be a *striving* towards a development of inter-subjective knowledge by making those steps the researcher has to take as explicit as possible.

There are two global ways in which knowledge can be developed: inductive and deductive knowledge development (McMillan & Schumacher, 2001; Everaert & Van Peet, 2006). Inductive knowledge is where a researcher attempts to explain his observations based on a suitable theory or model, which may be either developed or searched for based on these observations. In this way a theory is developed and/or searched for which is “grounded” in the data: Grounded Theory. Deductive knowledge development arises where a researcher makes predictions from an existing theory or model and investigates whether these are feasible and significant to reality

or where the researcher uses these theories to understand reality. The starting point for deductive knowledge development is the theory; for inductive theory the data are the starting point. It may appear to be paradoxical that both forms of knowledge development can be combined in a study: for instance, how could knowledge development within a study start with both theory and data? McMillan and Schumacher (2001) however believe that when both forms of knowledge development are combined in a study, that the study then becomes more effective.

3.3.4 COMBINING INDUCTIVE AND DEDUCTIVE LOGIC

Tashakkori en Teddlie (2003, p. 24-25) locate the use of both inductive and deductive logic to develop knowledge within a “Research Cycle”. Figure 3.1 presents a schematic of the ‘Research Cycle’.

Figure 3.1 The Research Cycle, Tashakkori & Teddlie, 2003, p. 25

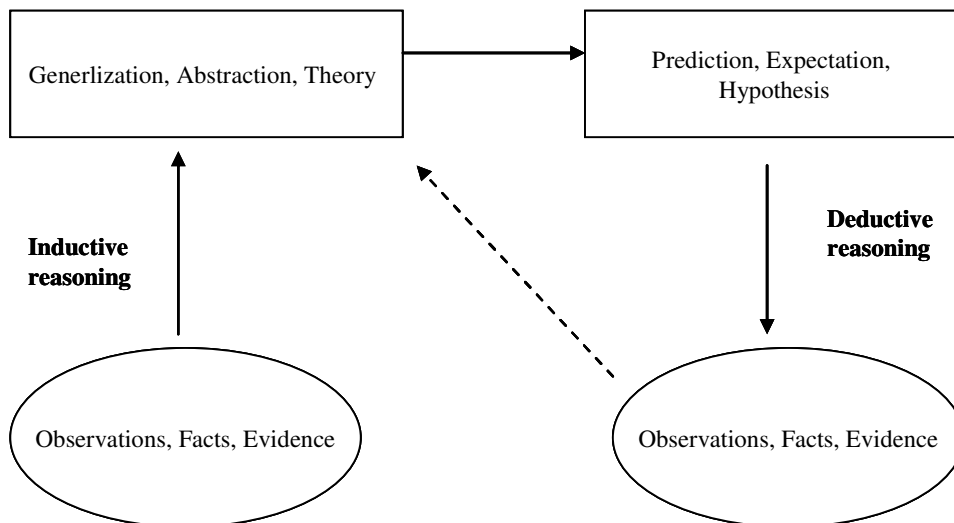


Figure 3.1 describes how a research cycle moves from “grounded” results (such as facts and observations) via inductive logic to general inferences (abstract generalisations, or theory), then from those general inferences (or theory) through deductive logic to tentative hypotheses or predictions of particular events/outcomes (Tashakkori & Teddlie, 2003). Research may commence at any point in the cycle. Tashakkori and Teddlie (2003) refer to those researchers who accept that they have a choice between inductive and deductive logic to arrive at knowledge development

during the course of a study as “pragmatists”. Pragmatists are resistant to the imposed choice between (post)positivism and interpretivism and appreciate both views. Following Tashakkori and Teddlie’s (2003) argument the research view at the basis of the present study may be described as a pragmatic view. This view maintains that the starting points for the present study are: that there are scientific relationships between social phenomena within a subjective external reality; that the causality of these relationships cannot be explained fully; that values play a role in the interpretation of the results of research and that these need to be made explicit within a theoretical framework. The goal of the present research is generating inter-subjective knowledge. Therefore, use is made of both inductive as well as deductive logic.

3.4 METHODS BY WHICH INTER-SUBJECTIVE KNOWLEDGE IS OBTAINED IN THE PRESENT STUDY

3.4.1 A COMBINATION OF INDUCTIVE AND DEDUCTIVE LOGIC

This study employs both inductive as well as deductive methods for knowledge development. In summary, in the present study the concept of “resilience” was defined firstly. Following the inventory of the resilience literature it became apparent which factors (internal and external) were central to the contribution to resilience and how the factors interact. Furthermore, the effect of these factors appeared to depend on individual and contextual factors. The transactional nature of resilience was identified in the literature. The identified role of middle-adolescents’ disposition and experiencing of situations in the occurrence of resilience led to the decision to follow the inductive “Grounded Theory” method in order to develop a theory of the relationship between the school environment and resilience.

Various authors are of the opinion that a literature review should not precede a Grounded Theory study (Cutcliffe, 2000). They believe that the less a researcher knows about a given topic, the more the theory will develop from the data (grounded) instead of from the literature. The present study follows Cutcliffe’s (2000) view that a literature review should precede data collection in order to develop and clarify concepts and to discover where there are “knowledge gaps” in literature. Grounded Theory can be used without a literature review when concepts are clear and when the knowledge gaps in literature are already identified.

Several considerations led to the choice for the use of deductive logic in this study:

- The acknowledgement of the results of previous resilience research (such as personality characteristics which are associated with resilient behaviour and the various models relating to resilience);
- The desire to contribute to existing knowledge about resilience;
- The importance that is attached in this study to providing an insight into the way participants were selected;
- The desire to contribute to the development of instruments for identifying resilience from a bio-ecological perspective.

In terms of Tashakkori and Teddlie's (2003) Research Cycle the present study starts with deductive logic: Generalization, abstraction and theory lead to predictions, hypotheses and expectations (Chapter 2). These predictions, hypotheses and expectations are investigated (Chapter 4). Then, following Maso's (1987) proposal, the deductively developed knowledge is 'set aside'. Then, through inductive logic, an inductive theory is developed (Chapter 5). Eventually, the deductive and inductive theories are combined in order to create inter-subjective knowledge (Chapter 6).

The next paragraph discusses the use of both qualitative and quantitative methods in the present study and the implications for validity and reliability of the study.

3.4.2 CHARACTERISTICS OF QUANTITATIVE AND QUALITATIVE METHODS

Quantitative research is largely directed at the extent to which social phenomena have certain properties, states and characteristics and the extent to which agreements, differences and causal relationships can be found amongst these features. Using these objectives, the starting point for quantitative research are then mostly theoretically or empirically based criteria, which are used to identify the phenomena under consideration. The emphasis for quantitative research is on reinforcing existing theories, whereas for qualitative research the emphasis is more on generating new theories. Therefore quantitative methods are much more suitable for deductive knowledge development, whereas qualitative methods are highly suitable for inductive knowledge development (Maso, 1987; Bogdan & Biklen, 2003; Everaert & Van Peet, 2006).

For quantitative research the goals include testing, predicting, assessing and generalising. Therefore sample sizes are often large for quantitative research and chosen at random. Often control groups are used. In order to demonstrate effects and associations, as many variables as possible outside the experimental variable are held constant in quantitative research (Bogdan & Biklen, 2003). Sample sizes are often small for qualitative research, and representativeness is not the primary consideration. Analysis methods within qualitative research are often inductive and comparative. One is looking for characteristic patterns and interesting features in the data (e.g. transcribed interviews). In comparative methods these patterns and features become visible by comparing data drawn from various sources (e.g. interview participants) (Bogdan & Biklen, 2003; Everaert & Van Peet, 2006).

Examples of quantitative methods include experiments, questionnaires, structured interviews, quasi-experiments and structured observations (Bogdan & Biklen, 2003, Everaert & Van Peet, 2006). Examples of qualitative methods include observations, participative observations, document analysis and open interviews (Bogdan & Biklen, 2003; Everaert & Van Peet, 2006).

In accordance with Bogdan and Biklen (2003) the view is represented in this study that qualitative methods are neither better nor worse forms of research than quantitative methods. The most appropriate methods are determined for the research question. Quantitative methods are highly appropriate in order to develop an instrument to identify resilience and subsequently be able to distinguish between resilient and not-resilient groups of middle-adolescents at various schools. Similarly, qualitative methods are the most appropriate for understanding and studying the mechanisms which contribute to resilience from the perspective of the level of significance attached by resilient and not-resilient middle-adolescents themselves.

3.4.3 THE USE OF QUANTITATIVE AND QUALITATIVE METHODS IN THE PRESENT STUDY

A questionnaire was developed on the basis of existing theoretical assumptions which were explored in an empirical, analytical manner. The exploration of the structure and validity of the questionnaire investigated the theoretical assumptions regarding

defeasibility. The relationship between the school environment and resilience was studied through open-ended interviews. The development and investigation of the questionnaire forms Part A of the study. The qualitative research forms part B of the study. The use of both qualitative and quantitative methods to answer the research question locates this study within the tradition of mixed-method research designs (Tashakkori and Teddlie, 1998)

Using a quantitative scale correlated with outcome measures specific to successful development of middle-adolescents combined with a qualitative process to address the individualised dynamics of resilience is identified by Tusaie and Dyer (2004, p. 6) as “*The clearest descriptions and measurements of resilience*”. In the next paragraph the implications of using quantitative and qualitative measures are discussed.

3.4.4 IMPLICATIONS OF USING QUANTITATIVE AND QUALITATIVE METHODS FOR THE QUALITY OF THE STUDY

3.4.4.1 Orientation

The present study adopts the view that quantitative and qualitative methods equally share the objective posed for the development of inter-subjective knowledge and the requirements of defeasibility, precision and justification which are imposed on this knowledge. There are similar, as well as differing measures for judging the quality of research and the manner in which defeasibility, precision and justification can be achieved for quantitative and qualitative methods. The terms referring to defeasibility, precision and justification have already been explained. How quantitative and qualitative research fulfils the requirements for reliability, validity and external validity will be discussed below.

3.4.4.2 Reliability

Reliability refers to the influence of coincidental factors on results: the smaller the influence of coincidental factors, the more reliable the results (Everaert & Van Peet, 2006). In quantitative research the extent to which coincidental factors determine the results is investigated using statistical analyses. In qualitative research, the researcher as a research instrument is part of the reliability of the results. In qualitative methods, such as interviews, reliability has an impact on the question whether the information the researcher has gathered in interviews is acceptable (given what is already known

about a given individual or event) and whether the data that the researcher has collated from interviews have also been heard by others present (Everaert & Van Peet, 2006).

3.4.4.3 Validity

The extent of validity refers to the level to which an instrument measures what it is intended to measure (Everaert & Van Peet, 2006). In quantitative research, particularly in research involving questionnaires, various forms of validity can be distinguished, including “content validity”, “criterion validity” and “construct validity” (DeVellis, 1991). Content validity refers to the extent to which a specific collection of items in a questionnaire are representative of a certain domain. In theory a scale within a questionnaire has content validity if the items of the scale contain a random sample of items which are representative of a specific domain (DeVellis, 1991). Criterion validity refers to the correlation between an instrument and an external variable (DeVellis, 1991; Everaert & Van Peet, 2006). Construct validity refers to the extent of agreement between a construct which is believed to be measured and the construct that is actually being measured (DeVellis, 1991; Everaert & Van Peet, 2006). In qualitative research validity is defined as the extent to which the data accurately describe the social world. The implication of the fact that in inductive, qualitative research the researcher is the research instrument means that the researcher is able to undertake multiple “validity checks” in an interview by providing brief summaries of his interpretation of what the participant has said.

3.4.4.4 External validity

External validity refers to generalisability. In quantitative research generalisability refers to the applicability of results from a sample to a different population than that from which the sample was drawn. In qualitative research there are few attempts at generalisability (Everaert & Van Peet, 2006). Generalisability of results determined in qualitative research may however be extended through a multi-site research design. Miles and Huberman (1984, p. 37) believe that: *“Multiple-site studies are especially appealing because they can purposively sample, and thereby make claims about, a larger universe of people, settings and events, or processes than can single-site studies”*. Purposeful sampling is described by Cresswell (2002) as “maximal variation sampling”: a way of sampling where the researcher selects cases which agree on

specific points and differ on other aspects. The following sections describe how the research was undertaken and the results obtained. Thereby it is discussed how reliability and validity can be achieved in quantitative and qualitative research and how the design of the present study aims at reliability and validity.

3.5 DEDUCTIVE LOGIC: PART A OF THE STUDY

3.5.1 INTRODUCTION

It was decided to develop a new questionnaire based on the finding that no existing instrument could identify resilient and not-resilient middle-adolescents in accordance with the proposed definition of resilience of middle-adolescents in the present study (Chapter 2, Paragraph 2.4.2). There are, in general, five steps to test construction (Van Peet, 2003):

- i) A systematic description of the domains which the test relates to (this step is important for achieving precision and content validity as discussed previously);
- ii) The development of items for each domain;
- iii) Testing of items with a reasonably large sample which is as representative as possible of the population for which the test is intended;
- iv) The analysis of the results and potential re-writing and improvement of items;
- v) Testing the revised version with a large, new representative sample under standardised conditions.

The present study covers the first four steps of test construction. The deductive, quantitative part of the study may be viewed as the initial building blocks in instrument development. In the present study the inductive, qualitative research has a supplementary role in providing insights which may be used to improve items and thereby improve the instrument's validity and reliability.

3.5.2 PROCEDURE OF TEST CONSTRUCTION

3.5.2.1 The domains which the test relates to

The Veerkracht Vragenlijst (VVL, Resilience Questionnaire) relates to resilience (as defined from a bio-ecological perspective) of middle-adolescents who attend schools in The Netherlands.

3.5.2.2 Item development per domain

The most important disadvantages for using the quantitative methods, such as a structured questionnaire as in part A of the present study, are that selection of participants in this way is entirely dependent on the middle-adolescent understanding of the items and on the middle-adolescents responding in a non-judgmental (unbiased) way to the questions in the questionnaire. These disadvantages of structured questionnaires can be limited as much as possible by presenting the questions in recognisable situations (preventing a lack of understanding of the questions), by posing questions both positively as well as negatively (preventing acquiescence bias) and by preventing as much as possible giving an impression of social desirability for the answers (preventing social desirability bias) (Anderson, 1997; Bogdan & Biklen, 2003).

Based on the bio-ecological definition of resilience of middle-adolescents who attend schools in The Netherlands⁵, in the present study it is argued that the focus of the instrument should be on interaction between middle-adolescents and their environment when confronted with difficult and challenging circumstances. Resilient interaction should be described in terms of various forms of constructive behavior of the middle-adolescent in dealing with various difficult and challenging circumstances. Not-resilient interaction should be described in various forms of not-constructive

⁵ *A resilient middle-adolescent has the disposition to identify and use resilience qualities in himself and/or identify and use resilience qualities in a specific context whenever he is confronted with difficult and challenging circumstances. The interaction between the middle-adolescent and the context generates a constructive outcome in the development of the middle-adolescent, such as continuous learning (growth and renewal of resilience characteristics) and an increasingly flexible approach to challenging circumstances.*

behavior in dealing with the same circumstances. Resilient and not-resilient behavior and difficult and challenging circumstances should be recognisably described within the context of the intra-personal level, family level, school level and peer level. Based on the considerations about limiting various forms of bias and about the focus on behaviour in the face of challenging circumstances, the VVL was developed (Translated in English, Appendix 3).

The 33 items of the VVL are formulated as combined statements along a Likert-scale with 5 response categories. The statements consist of:

- i. A challenging circumstance on the intra-personal level, the family level, the school level or the peer level.
- ii. Behavior that represents either resilience (*eliciting sustained constructive outcomes that include continuous growth and renewal and flexibly negotiating the situation*) or not-resilience (*a lack of resilience associated with a lack of sustained constructive outcomes or contributing to destructive outcomes*).

Five examples of these items are:

- i. A challenging circumstance on the school-level ↔ resilient behavior:
(16) If a teacher is angry with me then I will try to concentrate more on my schoolwork.
- ii. A challenging circumstance on the intra-personal level ↔ not-resilient behavior:
(13) If I have to make a difficult decision then I tend to wait too long so that the opportunity to make the decision is lost.
- iii. A challenging circumstance on the family level ↔ resilient behavior:
(6) If I feel bad about problems at home then I go and talk to someone about it.
- iv. A challenging circumstance on the peer level ↔ not-resilient behavior:
(21) If my friends want me to do something that I would rather not do, I will go along with their plan anyway.
- v. A challenging circumstance on the school-level ↔ not-resilient behaviour:
(28) If a teacher gets angry with me at school, then I also get angry and the situation worsens.

3.5.2.3 Selecting the sample: School Sites and Respondents

School Sites

The school sites in this study were recruited through opportunity sampling. A selection of five Educational Opportunity Schools were chosen as part of the collaborative partnerships between schools in *Voorbereidend Middelbaar Beroepsonderwijs* (Preparatory Secondary Vocational Education Schools - VMBO Schools) in and around the province Utrecht in the Netherlands. Collaborative partnerships are regional partnerships of schools distributed across various areas in the Netherlands. The Collaborative partnership in Utrecht consists of 25 VMBO schools. Between 2000 and 2006 eight schools from the 25 VMBO schools from the Utrecht region participated in the Educational Opportunities Policy. As described in Chapter 1, the Educational Opportunities Policy attempts to support schools with high levels of struggling students through additional financial means based on the high population of pupils with a low SES background within the school. As stated in section 1.2.1 the emphasis within the national Educational Opportunities plan is on disadvantaged students from immigrant backgrounds who are not performing well at school. Utrecht has decided to expand this group and to involve schools with many disadvantaged “Dutch” students who are performing poorly within the Educational Opportunities plan as well (*Utrechts plan van aanpak Onderwijskansen PO en VO / The Utrecht Approach to Educational Opportunities in Primary and Secondary Education, 2003*).

Respondents

All middle-adolescents in the third year of the five selected Educational Opportunity Schools were selected to participate in the study (Approximately 500 students).

3.5.2.4 Analysis

The analysis of results of the instrument research in this study took place through Principal Component Analysis, Reliability Analysis, Validity Analysis and Descriptive analysis.

Item analysis using Principal Component Analysis

The VVL was validated as an instrument to identify resilience as defined in this study by exploring the component structure through Principal Component Analysis (Marradi, 1981). When the component structure is in agreement with the theoretical

presuppositions about resilience, then there is evidence for construct validity (DeVellis, 1991; De Heus, Van der Leeden & Gazendam, 2003; Van Peet, 2003; Everaert & Van Peet, 2006);

Reliability Analysis

Internal consistency (Cronbach's alpha) was used to analyse the extent to which the items correlate with each other. The greater the internal consistency, the stronger the items are correlated in a component.

Validity Analysis

The VVL was further validated through studying the association between the components in the VVL and other variables which are related to the construct of resilience based on theory. These associations were explored for their positive, negative or neutral association with resilience. The extent to which empirical correlations agree with the theoretically based predicted patterns of correlation provided evidence to some extent of how well the VVL "behaves" in respect of resilience. This "evidence" is referred to as construct validity (McIver & Carmines, 1981; Bryman & Cramer, 1990; DeVellis, 1991; De Heus et al., 2003; Everaert & Van Peet, 2006). For this construct validation, the *Nederlandse Persoonlijkheidsvragenlijst voor Jongeren* (Dutch Young Person's Personality Questionnaire, NPV-J, Luteijn, Van Dijk & Van der Ploeg, 1989) was chosen. The reasons for this choice will now be discussed.

The NPV-J

As the phenomenological wave in resilience research has shown, personality factors are a significant influence on an individual's resilience. Studies have shown perseverance, sociability, humour and creativity to be a few of the many personality traits that correlate with resilience (see Appendix 2). Therefore, in this study personality traits functioned as construct validity of the VVL in measuring resilient interaction. Assessment of personality traits took place through five variables in the Dutch Young Person's Personality Questionnaire (NPV-J, Luteijn et al., 1989) measuring affect: inadequacy, perseverance, social inadequacy, recalcitrance and dominance. The NPV-J consists of 105 items rated along a 3-point Likert-scale. Data

gathered through the NPV-J and VVL were combined and analysed and the results were used to study the internal structure of the VVL questionnaire.

The NPV-J was validated with 1256 Dutch children with mean age of 13.5 and a standard deviation of 1.8. All scales of the NPV-J are reliable with α varying from 0.70 (dominance) to 0.87 (inadequacy). Internal consistency of the Inadequacy Scale and the Perseverance Scale are good; the Social Inadequacy and Recalcitrance Scales have reasonable internal consistency and the internal consistency of the Dominance Scale is moderate. Construct validity of the scales is good (Evers, 2002). The following description of the NPV-J scales is based on the revised guide to the questionnaire by Luteijn, Van Dijk & Van der Ploeg (2005).

Inadequacy is assessed using a subset of 28 items of the NPV-J. In terms of content these items describe vague sensations of anxiety, depressed mood, non-specific physical symptoms and a sense of inferiority. Examples of these items are: “I am often scared of the dark”, “Very often I am sad”, “I quickly get a headache, when I feel worried” and “I often think that I am worthless”. Children who score relatively high on the Inadequacy scale are often characterised by the following characteristics: pre-occupied, hypersensitive, prickly and inclined to sulk. They often feel negative towards themselves and others, express performance and test anxiety, are able to work less well independently and have poor concentration for work, feel less at ease at school and with their fellow pupils and have more symptoms of childhood neuroses, such as nail-biting and bed-wetting. The desire to continue to further and higher education is also lower for these high-scorers in comparison with low-scorers.

The perseverance scale consists of 25 items. These items refer, in terms of content, to a positive task summary, being well-adjusted to the demands of (school) work, wanting to meet high expectations and wanting to keep to agreements. Examples of these items are: “I always do my best”, “I want to finish my work before I enjoy myself”, “I really believe everybody needs to do their best”, “I think you should always be home at the agreed time”. Children who score high on the Perseverance scale are often characterised by the following characteristics: conscientious, calm, obedient, at ease, less easily distractable and focused on performance. They often have positive attitudes to (school) work and have a positive approach to work.

The Social Inadequacy scale consists of 13 items. These items refer to avoiding social contacts or feeling socially inadequate in these environments. Examples of these items are: “It bothers me visiting people I do not know”, “I only feel good around people I know”, “I get shy when people look at me”, “I become nervous if I have to visit places where there are large numbers of people”. Children who score relatively high on Social Inadequacy are often inhibited in social contacts, do not say very much, are shy and clumsy and associate with others who have a tendency towards isolation. They often struggle a lot with performance and test anxiety and are less socially competent. The desire to continue to further and higher education is also lower for these high-scorers in comparison with low-scorers.

The Recalcitrance Scale consists of 24 items. In terms of content these items refer to being resistant to others, distrust of others and wanting to solve issues alone. Examples of these items are “I believe everybody should look after themselves”, “I can solve my own problems”, “I believe that a lot of people try to mislead you”, “When you really need your friends, they often leave you in the lurch”. High-scorers on the Recalcitrance scale are often lazy, egotistical, greedy and hostile. They are often less satisfied about school, go to school reluctantly, have a less than optimal relationship with teachers and do not feel at ease at school and with fellow pupils. They have a lower work tempo and poorer concentration for work at school.

The Dominance scale consists of 15 items. These items refer to wanting “to be the boss” and having faith in oneself. Examples of these items are: “I like telling others what they need to do”, “I am easily able to make people laugh”, “I often make decisions when in groups”, “There are many things that I do better than others”. The authors of the guide comment that dominance in children (and young people) is probably more sensitive to context than for adults. Children scoring relatively high on the Dominance scale are often characterised by the following properties: not shy, self-assured, decisive, not easily influenced and honest. The authors of the guide have not discovered any results in respect of dominance relating to school (work).

Considerations concerning the anticipated relationship between scales of the VVL and NPV-J

The NPV-J was chosen for studying the construct validity of the VVL, as the NPV-J contains both a “perseverance” scale, which is frequently described as a resilient personality characteristic, as well as scales representing personality characteristics which contrast theoretically with resilient personality characteristics, such as “having a negative attitude towards asking for and providing help” (described as recalcitrance in the NPV-J) or “inability to enter into and maintain relationships with others” (social inadequacy). Five hypotheses were formulated as to how the NPV-J personality scores and the VVL scales would relate to one another:

- i. There will be a positive correlation between behavior that represents resilience as measured by the VVL and Perseverance as measured by the NPV-J
- ii. There will be a positive correlation between behavior that represents not-resilience as measured by the VVL and Inadequacy as measured by the NPV-J.
- iii. There will be a positive correlation between behavior that represents not-resilience as measured by the VVL and Social Inadequacy as measured by the NPV-J.
- iv. There will be a positive correlation between behavior that represents not-resilience as measured by the VVL and Recalcitrance as measured by the NPV-J.
- v. There will be no or negative correlations between behavior that represents resilience and Inadequacy, Social Inadequacy, Recalcitrance and Dominance.

The results of analysis are discussed in Chapter 4.

3.6 INDUCTIVE LOGIC: PART B OF THE STUDY

3.6.1 INTRODUCTION

It was decided to develop a new Grounded Theory based on the findings that middle-adolescents’ disposition and experiencing of situations is central to the occurrence of resilience. The basis of the Grounded Theory method is continuous comparisons using examples and counter-examples within an inductive theory. Glaser and Strauss (1967) define Grounded Theory as theory that is “discovered” in the data. This definition may be viewed as a reaction to the “too great an emphasis” within deductive methods for verifying existing theories and “the too little emphasis” at discovering which

concepts and hypotheses are relevant to the field being researched. Glaser and Strauss (1967) propose continuous comparison as a method for “discovering” a Grounded Theory.

The method of continuous comparison maintains that coding and analysing interview data co-occur in a systematic cyclical way. Incidents are coded in the interview data, and categorised as much as possible. New incidents and categories from new interviews are continuously compared to existing categories. Through connecting categories on a more abstract level, a theory is developed. This theory is refined further by comparing the theory to new cases from new interviews. In the end, the theory becomes less susceptible to change whenever new data are compared with the theory. Then the developed theory can be written down.

In the next paragraphs, the way in which Grounded Theory is used in this study is discussed. Various authors, such as Bryman (2004), believe that the non-standardised procedures in inductive qualitative research afford the researcher the opportunity to adapt the research plan when new, unexpected findings arise. According to Bryman this opportunity allows the research to be fluid and flexible. Bryman believes that the researcher’s openness allows new and unexpected findings to be uncovered in behaviour and in the context of symbolic systems. This is also referred to as serendipity: finding something you were not looking for.

In relation to the fluid and flexible character of (inductive) qualitative research, the initially developed ideas about the way in which Ground Theory would be used in the present study are discussed in the next paragraphs. The actual process, choices in the process and results of the process of Grounded Theory are discussed and explained in Chapter 5.

3.6.2 PROCEDURE OF GROUNDED THEORY

3.6.2.1 Purposeful sampling of schools

A selection of three of the five schools was made in order to realise the open, in-depth interviews for qualitative research. For this study, the three School Sites were selected on the basis of their agreement of percentage of urban middle-adolescents with low

SES and maximum variation of cultural diversity of pupils. The level of applicability of the results of the qualitative research in Part B of the study was extended as much as possible by using this form of “purposeful sampling”. In order to achieve a culturally diverse group of respondents from a low social economic background the following schools were selected: one educational opportunity school with more than 60% immigrant pupils (School 3); one educational opportunity school with more than 60% native Dutch pupils (School 2); and one “mixed” educational opportunity school (School 5). By choosing three schools for the in-depth interviews the remaining two of the five schools were excluded from participating in the in-depth interviews.

3.6.2.2 Purposeful sampling of participants

Participants in Part B of the study were purposefully selected for in-depth interviews on the basis of their VVL scores and volunteering to participate. The initial plan was to select three resilient and three not-resilient middle-adolescents per school. This would imply a total sum of 18 participants for Part B of the study. Middle-adolescents were identified as Resilient by their high scores on the “Resilience” scale from the VVL. Middle-adolescents were identified as Not-Resilient by their low scores on the “Resilience” scale from the VVL. In choosing a purposeful sampling method to inform the selection of participants, the present study distinguishes itself from studies that use theoretical sampling instead of purposeful sampling (Glaser en Strauss; 1967; Cutcliffe, 2000).

Theoretical sampling in Grounded Theory refers to participants being selected prior to the research on a theoretical basis arising during interviews with participants (Glaser and Strauss, 1967). Therefore selecting participants according to theoretical sampling is an integral part of the Grounded Theory process. Prior to the first interview the researcher has no theory as yet leading to theoretical selection of participants. In the first phase of theoretical sampling the researcher only has a general idea about the topic and study (Cutcliffe, 2000). Other researchers do not distinguish between theoretical and purposeful sampling but are, for instance, of the opinion that if the researcher is able to describe the method of sampling in sufficient detail, the risk of confusion regarding the sampling is minimalised. Additionally, "significant individuals" should be selected, and a good informant is one who has the knowledge and experience required by the researcher, and has the opportunity to reflect and

express himself. The participant should have enough time to be interviewed and should want to participate in the study. Furthermore, researchers should select participants who have the most experience of the topic to be studied (Cutcliffe, 2000).

In this study purposeful sampling was used to select participants for the research who were identified as resilient or not-resilient. Resilience is a concept that does not enjoy a unidimensional definition, as discussed in the introduction of the study in section 1.1, as it consists of circumstances, assumptions, norms, expectations and psychological theories within a specific context. In this study, due to the complexity, normativity and context dependence of the resilience concept and the psychological theories which are fundamental to the definition of resilience employed here, more significance was attached to clarifying the selection criteria for participants than to the advantages of theoretical sampling, such as developing a theory arising entirely from the interview data.

3.6.2.3 Research Cycles: Interviews and Analysis

Interviews

Open interviews were chosen in the present study to investigate the participants' perceptions of the contribution of their school environment to their resilience. There are various limitations to using interviews as a data collection method. The method can be considered as being intellectualised: it demands the capacity of reflection, as well as verbal ability from participants. In addition, the method is also cognitive: thoughts and experiences are central and actual behaviour remains out of consideration (Kvale, 1996). Recognition of these limitations has led to choices discussed in Chapter 1. For instance, the age of participants was chosen between 14-15 years as according to psychological theories the capacity to reflect has mainly developed at this age. The emphasis within this study on the significance of the school environment to middle-adolescents is another consideration that led to the choice of interviews as a data-collection method. One of the assumptions described in the study is that it is exactly the significance, as expressed in thoughts and descriptions of experiences and perceptions that is of influence on the contribution of the school environment to their resilience. As perception is central to the present study the cognitive nature of the interviews was not seen as a particular problem.

In the present study it is assumed that the researcher and the researched had a subject-subject relationship in the inductive part of the research (Miles & Huberman, 1994). The reality of the participants was interpreted by the researcher. The researcher and “researched” together explored the significance that the participants attributed to the environment which is central to the study. The traditional concept of cause and effect is replaced in the social interaction between researcher and participants by the concept of “mutual shaping” (Lincoln & Guba, 1985). Therefore, in respect of the subject-subject relationship in this study, the term participants is used instead of respondents whenever the middle-adolescents are intended.

The researcher undertook a two-day course in “qualitative interviewing” in order to strengthen the researcher’s reliability as a research instrument. The central themes in this course were listening, openness in summarising, follow-up questions, non-verbal behaviour, use of voice and concluding discussions. The course offered many opportunities to practise attendees’ own themes.

For reasons of reliability, such as richness, comprehensiveness and authenticity of the data and creating a relationship of trust, the choice was made to not impose any restrictions on the duration of the interview. Furthermore, for reasons of reliability, the opportunity to hold interviews outside the school context was preferred. The expectation was that participants would be able to answer more authentically in the absence of fellow pupils or others in the school environment. It was also expected that talking about the school environment outside of the school environment would create a greater distance between the participant and school environment, which could lead to an increase in the participant's reflexivity. When a participant is seated within the environment about which he has been asked to talk it may be more difficult for him to view this environment “at a distance”. Consequently the locations outside the school environment were more controllable for the researcher than rooms within the school. This offered the opportunity for putting participants at ease and to take time for the interview without the pressure of a strict school timetable and pressures within the school corridors.

Attention was paid to the participants understanding the neutral role of the researcher due to her independence from the school for the reliability of the data. The interviews were recorded with the participants' approval in order to improve reliability of the qualitative research. In addition, extensive field notes and a reflective logbook were maintained.

During and after each interview the researcher presented her interpretations of the data from the interview to the participant in order to improve validity. In respect of the precise definition of the domain relating to the results from the qualitative interviews, each interview was commenced by demarcation the meaning of the term "school" by the participant. Justification was achieved by maintaining logbooks and completely transcribing the interviews. Generalisability was achieved by comparing the insights obtained within a given school context to insights obtained from the two other schools.

Although the intention was to conduct the interviews in an open manner a topic list was drawn-up as a secondary plan. This topic list is included in Appendix 4, translated in English. Various themes were explored during the interview, e.g. difficult circumstances, dealing with setbacks, support for middle-adolescents within different contexts and the role of the school in the middle-adolescent's life. The decision to include a topic list was made as the group of participants was small in relation to the level of work intensity. With a small sample size a high quality of content is required in each interview in order to answer the research question. The sample consisted of 14-16 year old middle-adolescents. Middle-adolescence is a developmental phase in which children form their own identity and are sometimes truculent or simply embarrassed. The topic list served to direct the interview, but only in the event that the participant said nothing or too little.

Analysis

The initial plan was to distribute 18 interviews over four research cycles. The data from the various research cycles would not be distinguished during the analysis. The various cycles would be able to enrich each other through the use of "sensitising concepts" which would be used in the analysis of all data. For instance, the insights obtained during the third cycle could lead to a new coding of the data and the data

from the first cycle could enrich the “sensitising concepts” obtained in the third cycle. The central question at the end of each cycle of data collection and analysis would be: “What do I need to know more about after these interview rounds?” This could lead to a *confirmation or negation* of certain aspects, following further *exploration* of certain aspects or following clarification of certain aspects. The “sensitising concepts” would have no directing effect on subsequent interviews. The function of “sensitising concepts” would be expressed in the themes which led the researcher to ask follow-up questions. The follow-up would only consist of the question “Could you tell me more about that?”.

Initially, the patterns and mechanisms which lead to resilience and not-resilience of middle-adolescents would be explored at the same school (3 case studies). Secondly, the patterns and mechanisms which contribute to resilience and not-resilience of middle-adolescents would be explored at the different schools (Multiple site study: Miles & Huberman, 1984). This allowed a theory to be developed that was of more general application to the contribution of *school environment* to *the resilience* of urban middle-adolescents from a low SES background.

3.6.2.4 Literature controls during various research cycles

There are differences of opinion between authors within Grounded Theory about the use of “literature controls” during various research cycles. The question is: “At what stage does a researcher start shaping and allowing his ideas to be expanded through the existing literature?”

Cutcliffe (2000) compares various points in her article: Stern (1980), Stern and Allen (1984) and Strauss and Corbin (1994) are of the opinion that (new) literature should be consulted at the stage of concept development. The theory arising will then be continually refined, as it becomes less and less subject to changes as new incidents in the data are compared with the theory. Glaser (1978) proposes that researchers should not use any (new) literature until the theory has arisen from the data, in other words, after the event.

Maso (1987) is of a differing opinion to Glaser (1978, cited in Cutcliffe, 2000). He states that during the data collection and analysis phase the results should be linked to

the existing literature (such as theoretical insights), provided this exists. According to Maso, where there is a theory regarding the topic it is rarely possible to link results to theory *retrospectively*, as concepts and relationships in results and theory do not often agree, and since the depth and extent of analyses differ. For these reasons Maso proposes that it is preferable for there to be a continuous interchange of data collection, analysis and relating this to potential theoretical insights.

As previously stated in this study the combination of inductive and deductive knowledge development is valued. Comparisons of theory developed inductively and existing theories were therefore planned prior to a complete theory being developed and all data collected. Prior to the first two research cycles, that knowledge that had been garnered during the deductive Part A of the study would be “put to one side” (Maso, 1987). After the first two research cycles the researcher could make comparisons between the developing theory and relevant literature. The contents and results of the four research cycles are discussed in Chapter 5.

3.7 ETHICAL CONSIDERATIONS

Ethics is an important consideration in any field work. In social research ethics starts with respect for the social context and the processes and individuals in the social context. In the first instance this means an awareness of and adopting a critical attitude towards the researcher’s own assumptions concerning the context. Secondly, it implies that the researcher is allowed access to a certain context where individuals give their trust to the researcher. In this study the participating schools granted the researcher access to research their daily events and routines. These events and routines could contain both positive and negative aspects. Therefore nothing in what the researcher observed and experienced in the different school contexts and discussions with participants was related to anybody other than supervisor and co-supervisor of the study.

As participants were minors their parents were asked to provide consent to allow their child to participate in the study (Letter of Consent translated in English, Appendix 5). Prior to and during the completion of questionnaires the participants were free to refuse participation and not hand in their questionnaire or hand this in anonymously.

Participants were also free to state that they did not want to participate in the interviews once they handed in their questionnaires. The questionnaires which had been completed anonymously were used for investigating the VVL. Participants who had completed the questionnaires anonymously were obviously excluded from participation in the interviews.

The identity of the participants and schools was protected by using codes to refer to them in the quantitative and qualitative analyses in the thesis. In the quantitative database participants' names were not linked to questionnaire scores and instead each respondent was provided with a number. Each participant had a code in the qualitative database. These codes consisted of a school number, position of the participant in the series of interviews, code for Resilient or Not-Resilient, participants' gender and the research cycle the participant was interviewed in.

The participants were protected further by not allowing anybody in or outside of the school to inspect the questionnaires or interviews. A participant would be able to indicate at any point during the interviews whether they wanted to stop talking. When a given topic would be experienced as taxing or difficult, then as much time as possible would be made available to concentrate on those difficult experiences. The participants were provided with the researcher's contact details and were able to get in touch at any time if necessary.

3.8 LOOKING AHEAD

The results of the quantitative study are presented in the following chapter and information is provided about how the participants were identified for the qualitative study.

4 DEDUCTIVE LOGIC: RESEARCH PART A

4.1 PROCEDURE

4.1.1 RECRUITING THE SCHOOLS

Five schools were required for part A of the study (investigating the VVL and identifying resilient and not-resilient middle-adolescents as reliably as possible). The schools were informed about this study in person during a meeting of the collaborative partnerships between VMBO-schools in and around the province Utrecht in the Netherlands in May 2004. The value of the research in relation to obtaining insights and information about the opportunities for increasing resilience of middle-adolescents in the school environment was emphasised during the meeting in order to motivate schools to participate in the study. Five of the 25 schools present (20%) expressed an interest in participating. All five schools were participating in the Educational Opportunities Policy. As at the time of the meeting and recruitment of schools there were six schools from the Collaborative partnership participating in the Educational Opportunities Policy, there was also an attempt to recruit the sixth school to participate in the study. However, the sixth school had no time for the research and refused participation in the study. The five schools which did eventually wish to participate in the study consisted of three poorly performing schools with 40% or more disadvantaged immigrant pupils within a large city, one poorly performing school with 40% or more disadvantaged “Dutch” pupils within a large city and one poorly performing school with both disadvantaged immigrant and “Dutch” pupils.

4.1.2 RECRUITING RESPONDENTS

An attempt was made to recruit as many middle-adolescents as possible for Part A of the study. Therefore in September 2004 all middle-adolescents from year three from the five schools were approached. Recruitment of participants took place through an information meeting organised by the researcher once the internal heads of the schools had been informed about the resilience theme through a brochure and personal contact. The researcher visited all third years at all five schools (N = approximately 500). The students received information about the study in class, including information about the questionnaires to be completed and the interviews with a select number of pupils. In accordance with Hunter & Chandler’s findings

(1999), who found that for adolescents resilience particularly referred to “being insular, disconnected, self-reliant, self-protective with no one to depend on or trust but themselves”, the “resilience” theme was explicitly not mentioned in the meeting with the pupils. The researcher emphasised that the study was interested in the pupils’ ideas about their school, the things they enjoyed/found pleasant, things they struggled with and how they approached those issues that they found difficult. The pupils received a letter to take home informing parents/carers about the study. An example of the letter translated in English is included in Appendix 5. The final letter sent to parents was signed by the student co-ordinators for each school. Parents were able to respond to the letter from the student co-ordinator (who was known to the parents) and object to their child participating in the study. No objections were raised by parents.

4.1.3 DATA COLLECTION

The VVL items were presented at the same time as the *Nederlandse Persoonlijkheidsvragenlijst voor Jongeren* (Dutch Young Person’s Personality Questionnaire, NPV-J, Luteijn, et al., 1989). The data collection for investigating the questionnaire took place in October 2004. Experienced psychologists, pedagogues and teachers distributed the self-developed Resilience Questionnaire (VVL) and the Dutch Young Persons’ Questionnaire (NPV-J used to validate the VVL) during school time in October 2004. A mentor or other known teacher was present during the testing. The questionnaires were distributed to all third years at the same time in order to prevent mutual discussion between pupils about the questionnaire.

The results of the VVL were subjected to Principal Component Analysis, Reliability Analysis, Validity Analysis and Descriptive analysis.

4.1.4 DESCRIPTION OF THE SAMPLE

Participants in this study are characterised by coming from a low Social Economic Status background. On completion of the VVL and NPV-J there were no questions concerning parents’ origins or the participant’s country of origin. However, the composition of the population of pupils per school leads to an estimate that approximately 60% of participants had immigrant parents and approximately 40% “Dutch” parents. The total group can be considered as representative of other middle-

adolescents with a low Social Economic Status background living in the suburbs of large cities in the Netherlands.

Table 4.1 demonstrates the number of boys and girls returning the questionnaires (N=399) per school and the number who recorded their gender (N=391).

Table 4.1 Sample distribution: Participants, School Site and Gender

		School Sites					Total
		School Site 1	School Site 2	School Site 3	School Site 4	School Site 5	
Gender	Boys	60	24	20	45	34	183
	Girls	39	29	49	61	30	208
Valid Total		99	53	69	106	64	391
Missing (unidentified School Site and/or Gender)							8
Total							399

In total 399 pupils returned the questionnaires, 183 boys and 208 girls. Eight pupils did not record their gender.

Table 4.2 demonstrates the average age of the participants per school at the time of completing the questionnaires (October 2004).

Table 4.2 Mean ages of Participants per School Site

	N	Mean	SD
School Site 1	97	14.9	0.8
School Site 2	53	14.7	0.7
School Site 3	63	14.9	0.7
School Site 4	103	14.9	0.7
School Site 5	58	14.9	0.8

Valid Total	374		
Missing	25		
Total	399		

There were no significant differences in average age per individual or school. The 25 questionnaires where the name or date of birth had been omitted were usable for the research into the internal structure of the questionnaire and reliability and validity of the scales. However, participants whose names had been omitted from the questionnaires were excluded from the interviews in Part B of the study.

4.2 RESULTS AND FINDINGS: QUALITY OF THE VVL

4.2.1 INTERNAL STRUCTURE, RELIABILITY AND CONTENT VALIDITY OF THE VVL

4.2.1.1 Internal Structure

Principal Components Analysis (PCA) with varimax rotation of the 33 items of the VVL resulted in three components of which two are readily interpretable. Table 4.3 shows the results of the PCA. The distribution of items across the various components is based on a factor loading criterion greater than 0.40 on one of the components in conjunction with loadings less than 0.30 on other components (De Heus et al., 2003). These criteria led to seven VVL items dropping out of the analysis (3, 4, 12, 14, 19, 22, 27) and a critical appraisal of item 29, which is discussed in section 4.2.1.2.

Table 4.3 Factor Loadings, Eigenvalues of Components, Number of Items per Component and Cronbach's Alpha.

Component	I	II	III
Item no.	Loading	Loading	Loading
1	<u>0.52</u>	-0.04	0.03
5	<u>0.48</u>	-0.17	0.17
6	<u>0.55</u>	0.20	0.12
8	<u>0.44</u>	0.15	-0.01
10	<u>0.42</u>	-0.04	0.13
16	<u>0.55</u>	0.01	-0.24

20	<u>0.66</u>	-0.03	0.19
23	<u>0.52</u>	-0.09	0.06
26	<u>0.64</u>	-0.12	-0.07
29	<u>0.38</u>	0.19	0.10
30	<u>0.55</u>	-0.12	-0.02
32	<u>0.55</u>	-0.16	0.05
2	0.07	<u>0.55</u>	0.10
9	-0.02	<u>0.63</u>	-0.11
11	0.20	<u>0.59</u>	0.03
13	-0.20	<u>0.43</u>	0.25
15	-0.24	<u>0.42</u>	0.13
17	-0.17	<u>0.44</u>	-0.08
18	-0.02	<u>0.51</u>	0.17
21	-0.03	<u>0.41</u>	-0.01
24	-0.19	<u>0.60</u>	0.08
31	-0.18	<u>0.45</u>	0.34
7	0.16	-0.10	<u>0.70</u>
25	0.19	0.19	<u>0.41</u>
28	-0.33	0.27	<u>0.49</u>
33	0.18	0.04	<u>0.50</u>
Eigenvalues	4.85	3.53	1.80
% variance explained	14.7%	10.7%	5.5%
Total % variance explained			30.8%
Number of items	12	10	4
Reliability α	0.77	0.72	0.40

Factor loadings smaller than 0.40, except item 29, have been deleted from the matrix (items 3, 4, 12, 14, 19, 22, 27).

In Table 4.3 factor loadings greater or equal to 0.40 in combination with loadings less than or equal to 0.30 have been underlined and printed in bold. Other loadings just

below 0.40 which are of some interest to the component in terms of content have been underlined (De Heus et al., 2003). For clarity those items loading on multiple or no single component with loadings equivalent or greater than 0.40 have not been included in Table 4.3.

4.2.1.2 Reliability and content validity

The three components together explain 30.8% of the variance in the test scores from participants in the study. The question of whether this is a lot, sufficient or not enough depends on the internal meaning of the components. More variance can be accounted for by deriving more components, however, that is only explicitly meaningful if these components have internal meaning (De Heus et al, 2003).

Component 1

Component 1 (see Table 4.4) explained 14.7% of the variance in the VVL test scores from participants in the study. The reliability of Component 1 (based on inter-items correlation, Cronbach's alpha) was 0.77 with the items represented in Table 4.4. According to De Heus et al. (2003) this level of alpha is reasonable to compare groups (the objective for part A of the study). Reliability of Component 1 was not increased by removing one or more items. Item 29 was retained in Component 1.

Table 4.4 Items in Component 1 and their factor loadings

Items	Factor loadings on component 1
1. If I have to make a difficult decision then I talk to someone at home who can give me advice.	.52
5. If someone tells me something I do not understand then I ask them what they mean.	.48
6. If I feel bad about problems at home then I go and talk to someone about it.	.55
8. If I really want something and my parents won't pay for it then I work really hard until I have enough money for it.	.44
10. If I feel unhappy about problems at school then there is always someone at school who will help me.	.42
16) If a teacher is angry with me then I will try to	.55

concentrate more on my schoolwork.	
20. If I have to make a difficult decision than I will consider all the options and choose the best one.	.66
23. I try to help make the best of things when there are problems at home.	.52
26. I apologise when my parents are angry with me and they are right.	.64
29. If I have an argument with my friend then I will try any way I can to sort things out.	.38
30. If I get a lot of poor marks for a particular subject I will find someone who can help me with my homework for that subject.	.55
32. If my friends want to do something I know will cause problems then I won't participate.	.55

The 12 items in Component 1 describe three forms of interaction between middle-adolescents and their environment:

- 1) Interaction that is characterised by *identifying and using* help in their environment when circumstances are experienced as being difficult: item 1, 5, 6 en 30;
- 2) Interaction that is characterised by *identifying help* in their environment when circumstances are experienced as being difficult: item 10;
- 3) Interaction that is not characterised by searching for help in their environment, but by a *pro-active or constructive reaction* when circumstances are experienced as being difficult: item 8, 16, 20, 23, 26, 29 and 32.

When compared, there is strong association between the content of Component 1 and the definition of resilience based on resilience theory⁶. The identification and use of help from the environment is described in items 1, 5, 6, 10 and 30 in Component 1 as

⁶ A resilient middle-adolescent has the disposition to identify and use resilience qualities (assets) in himself and/or identify and use resilience qualities in a specific context whenever he/she is confronted with difficult and challenging circumstances. The interaction between the middle-adolescent and the context generates a constructive outcome in the development of the middle-adolescent, such as continuous learning (growth and renewal of resilience characteristics), and an increasingly flexible approach to challenging circumstances.

in the definition of resilience of middle-adolescents. The self-identification of resilient characteristics inside oneself is not explicitly described by the items, however, items 8, 16, 20, 23, 29 and 32 do describe interaction that leads to growth. Although not all elements of the definition are represented in Component 1, such as an increasingly flexible approach to challenging circumstances, there is sufficient agreement between the contents of Component 1 with the definition of resilient middle-adolescents in order to speak of content validity for Component 1, and to interpret Component 1 as “Resilient behaviour”.

Component 2

Component 2 (see Table 4.5) explained 10.7% of the variance in the VVL test scores from participants in the study. The reliability of Component 2 (based on inter-items correlation, Cronbach’s alpha) was 0.72 with the items represented in Table 4.5. According to De Heus et al. (2003) this level of alpha is reasonable to compare groups (the objective for part A of the study). Reliability of Component 2 was not increased by removing one or more items.

Table 4.5 Items in Component 2 and their factor loadings

Items	Factor loadings on component 2
2. If I have had an argument at home, I don’t do anything for the rest of the day.	.55
9. I am really unpleasant to my family, if I have had an argument with my friend.	.63
11. If I’m feeling melancholy, I continue to feel like this for days.	.59
13. If I have to make a difficult decision then I tend to wait too long so that the opportunity to make the decision is lost.	.43
15. If I get a lot of bad marks for a subject then I stop learning that subject.	.42
17. I stop going to school if there are problems at home.	.44
18. If I really want something and my parents won’t pay then I’ll argue with my parents.	.51

21. If my friends want me to do something that I would rather not do, I will go along with their plan anyway	.41
24. If I'm feeling anxious about problems at school then I won't go the next day.	.60
31. If I'm feeling anxious about problems at school then I'm really unpleasant to the teachers.	.45

The 11 items in Component 2 describe three forms of interaction between middle-adolescents and their environment:

- 1) Interaction that is characterised by actively stopping and giving-up when circumstances are experienced as being difficult: item 2, 15, 17 and 24;
- 2) Interaction that is characterised by inactivity and a lack of constructive action when circumstances are experienced as being difficult: item 11, 13, and 21;
- 3) Interaction that is characterised by aggressive responses when circumstances are experienced as being difficult: item 9, 18, and 31.

Comparison of the contents of Component 2 with the definition of resilience of middle-adolescents⁷ shows that those items in Component 2 describe behaviour that is not covered by this definition. Items in Component 2 do not describe identification and making use of help in the environment. Furthermore, the items do not describe behaviour that could lead to growth and competent development. Although the items in Component 2 by definition do not describe the opposite of resilient behaviour it may be posited that these items describe not-resilient to an extent which supports the content validity of Component 2. Therefore, Component 2 will be interpreted as “Not-Resilient behaviour”.

⁷ A resilient middle-adolescent has the disposition to identify and use resilience qualities (assets) in himself and/or identify and use resilience qualities in a specific context whenever he/she is confronted with difficult and challenging circumstances. The interaction between the middle-adolescent and the context generates a constructive outcome in the development of the middle-adolescent, such as continuous learning (growth and renewal of resilience characteristics), and an increasingly flexible approach to challenging circumstances.

Component 3

Component 3 (see Table 4.6) accounted for 5.5% of the variance in the VVL test scores from participants in the study. The reliability of Component 3 (based on inter-items correlation, Cronbach's alpha) was 0.40 with the items represented in Table 4.6. According to De Heus et al. (2003) this level of alpha is poor to compare groups (the objective for part A of the study). The items in Component 3 are more easily interpretable once item 28 (see Table 4.6) has been removed. The reliability of Component 3 is slightly increased to 0.41 once item 28 was removed (*If a teacher gets angry with me at school, then I also get angry and the situation worsens*).

Table 4.6 Items in Component 3 and their factor loadings

Items	Loadings
7. If I've had a rotten day at school then I will go and do something I enjoy in the evening.	.70
25. I have had difficult experiences in the past which I have reacted well to.	.41
33. I still keep going even if things are against me.	.50
<u>Item to be removed: 28. If a teacher gets angry with me at school, then I also get angry and the situation worsens.</u>	<u>.49</u>

The remaining three items in Component 3 describe two forms of interaction between middle-adolescents and their environment and one type of self-evaluation:

- 1) Interaction that is characterised by flexibility and the ability to let negative feelings go: item 7.
- 2) Interaction that is characterised by the ability to endure negative emotions and a capacity to persist: item 33;
- 3) Self-evaluation by the middle-adolescents that is characterised by recognising qualities within themselves: item 25.

Comparison of the contents of Component 3 with the definition of resilience of middle-adolescents⁸ shows that those items in Component 3 describe behaviour that is

⁸ A resilient middle-adolescent has the disposition to identify and use resilience qualities (assets) in himself and/or identify and use resilience qualities in a specific context whenever he/she is confronted with difficult and challenging circumstances. The interaction between the middle-adolescent and the context generates a constructive outcome in the development of the middle-adolescent, such as

covered by this definition. For instance, items 25 and 33 describe the identification of resilience qualities within oneself. Item 7 describes a flexible approach by the middle-adolescent in dealing with challenging circumstances.

Component 3 will not be used in the validation of the VVL due to the poor reliability. Additionally, Component 3 will also not be used in identifying groups of resilient and not-resilient middle-adolescents. Part B of this study is partially concerned with the further development of the VVL and will therefore be able to provide an insight into the development of new items for Component 3. These insights will be discussed in Chapter 6. Component 3 will be ignored for the discussion of the validity of the items in the VVL that follows.

4.2.1.3 Construct validity of the VVL

Correlation between the NPV-J and VVL scales

The average scores on Components 1 and 2 were correlated with the average scores on the NPV-J scales in order to study the construct validity of various components of the VVL. The squared correlation is an indication of the proportion of variance that is explained in the linear association between two variables (Cohen, 1988). In order to demonstrate the relationship between resilience as described by the VVL and resilient and not-resilient personality characteristics as measured by the NPV-J, the correlations between the VVL components and NPV-J scales should be high, but not *too* high. The components and scales can be said to be measuring the same phenomenon where correlations are too high, whereas they should preferably be measuring different aspects of the same phenomenon. Cohen (1988) proposes the following norms for correlations between two variables:

- 0.10 = small;
- 0.30 = medium;
- 0.50 = large.

continuous learning (growth and renewal of resilience characteristics), and an increasingly flexible approach to challenging circumstances.

Table 4.7 shows the correlation matrix between the two reliable VVL components and the NPV-J scales. The correlations are referred to in terms of the VVL components comprising resilient and not-resilient behaviour.

Table 4.7 Correlation matrix of Components in the VVL and the Scales of the NPV-J.

	Resilient Behaviour	Not-resilient Behaviour
Inadequacy	-0.07	0.48**
Perseverance	0.53**	-0.28**
Social Inadequacy	0.07	0.19**
Recalcitrance	-0.10	0.14**
Dominance	-0.12*	0.16**

*Significant at $p = 0.05$ level

**Significant at $p = 0.01$ level

Resilient Behaviour

Resilient Behaviour and Perseverance

Table 4.7 shows a positive correlation (0.53) between “Resilient Behaviour” as measured by the VVL and “Perseverance” as measured by the NPV-J. This correlation may be defined as “large” according to Cohen (1988) and implies that “Resilient Behaviour” is associated with a positive approach to work, good adaptation to the demands of (school) work, willingness to respond to high expectations and keeping to agreements.

An additional literature study into the relationship between perseverance and resilience in the resilience literature demonstrates that within resilience research a trend can be identified for referring to personality characteristics such as “perseverance” as aspects of and contributions towards resilience (Kobasa, Maddi & Kahn, 1982; Farber, Schwartz, Schaper, Moonen & McDaniel, 2000; Rush, Schoel & Barnard, 1995; Florian, Mikulincer & Taubman, 1995; Beasley, Thompson & Davidson, 2002; Greef & Van Der Merwe, 2003; Maddi, 2005). Kobasa and colleagues (1982) define the perseverance construct as a collection of personality characteristics which function as a source of resistance when encountering stressful conditions. According to these researchers within this trend perseverance comprises characteristics such as involvement, challenge and control. Involvement refers to the

extent to which an individual has an awareness of his/her own significance, that of others, of activities and an awareness of the purpose of life. The control element refers to the level to which an individual is aware of his/her own autonomy and an awareness of the ability to direct his/her life course. The challenge element concerns the extent to which an individual realises that change is an inherent part of life, as well as being an opportunity for growth. Therefore, the challenge element is referred to as the individual's willingness to change things which appear to be a threat. According to these authors, individuals who persevere view change as a positive opportunity for development. The underlying causal mechanism that relates perseverance to mental and physical well-being in the presence of stressful conditions appears to be the fact that it reduces the level of threat assessed and increases the expectation of successful coping.

Therefore a significant correlation between "Resilient Behaviour" and "Perseverance" suggests that "Resilient Behaviour" as measured by the VVL is related to resilience in middle-adolescents. This reinforces the construct validity of the "Resilient Behaviour" component as an indicator of resilience.

Resilient Behaviour and Inadequacy, Social Inadequacy, Recalcitrance and Dominance

The correlations between "Resilient Behaviour" and Inadequacy (-0.07), Recalcitrance (-0.10) and Dominance (-0.12) characteristics, as measured by the NPV-J, are small and are all but one (Dominance) not significantly negative. The negative direction of the correlations, although not significant, does support the statement that the "Resilient Behaviour" component does measure something, albeit in the opposite direction to Inadequacy, Recalcitrance and Dominance. This means that the "Resilient Behaviour" component measures something that is opposite to generalised anxiety, low mood, generalised physical symptoms and feelings of inadequacy (Inadequacy), as well as opposite to being argumentative, distrusting others and solving problems alone (Recalcitrance), and "wanting to be the boss" and "trust in oneself" (Dominance).

The correlation between “Resilient Behaviour” and Social Inadequacy (0.07) is positive, but small. Therefore Resilient Behaviour does not appear to be associated with avoiding or feeling insecure in social interactions (Social Inadequacy).

The way in which the “Resilient Behaviour” component is negatively associated or not associated with Inadequacy, Social Inadequacy, Recalcitrance and Dominance is interpreted here as support for the construct validity of “Resilient Behaviour” as an indicator of resilience. A more extensive discussion of the characteristics which Resilient Behaviour is associated with or not associated with will follow in the discussion of the positive correlation between the “Not-Resilient Behaviour” component and these characteristics.

Not-Resilient Behaviour

Not-Resilient Behaviour and Perseverance

The significant negative correlation between “Not-Resilient behaviour” and “Perseverance” (-0.28) is small according to Cohen’s criteria. The negative correlation indicates that “Not-Resilient Behaviour”, as measured by the VVL, is measuring something that contrasts with the Perseverance characteristic. This means that “Resilient Behaviour” is measuring a characteristic which is opposite to having a positive approach to work, good adaptation to the demands of (school) work, responding to high expectations and keeping to agreements. This negative correlation is therefore indicative of a certain amount of construct validity of the “Not-Resilient Behaviour” component in measuring a construct opposite to “Resilient Behaviour”.

Not-Resilient Behaviour and Inadequacy

The significant correlation between “Not-Resilient Behaviour” and “Inadequacy” (0.46) is “medium” according to Cohen’s criteria. The positive correlation indicates that “Not-Resilient Behaviour”, as measured by the VVL, is related to generalised anxiety, low mood, generalised physical symptoms and feelings of inferiority. In the resilience literature characteristics such as self-confidence, optimism and positive temperament are referred to as resilience characteristics (Constantine et al., 1999, Wolin & Wolin, 1993; Doll & Lyon, 1998, Masten & Coatsworth, 1998, Olsson et al., 2003). These characteristics could be interpreted as being opposite to “Inadequacy” as measured by the NPV-J.

In some studies, young people have been identified as resilient because they did not display any anti-social behaviour despite the presence of risk factors. However, these young people did appear to display signs of depression and a strong sense of inadequacy (Rutter, 1993). It can be concluded from Rutter's discussion (1993) that externalised problem behaviour is not the sole indicator of (temporary) lack or insufficiency of resilience; internalised problem behaviour may also be an expression of this.

As Michael Rutter (1993, p. 627) states:

“We need to appreciate that people may suffer in a range of different ways and that it is important that our measures accommodate this diversity”.

The correlation between “Not-Resilient Behaviour” and Inadequacy indicates that the “Not-Resilient Behaviour” component of the VVL takes into consideration the expression of internalised problems as an indicator of (temporary) lack or insufficiency of resilience. However, additional information is required (for instance, through Part B of the study) to provide more insight into the relationship between resilient behaviour and feelings of adequacy or inadequacy.

Not-Resilient Behaviour and Social Inadequacy

The significant correlation between “Not-Resilient behaviour” and “Social Inadequacy” (0.19) is “small” according to Cohen's criteria. The positive correlation indicates that “Not-Resilient Behaviour” as measured by the VVL is related to the avoidance of or sense of inadequacy in social interactions. Social relationships are important for the development of resilience in Richardson et al.'s model (1990) and other resilience literature (refer to the list of resilience characteristics in Appendix 2). It may be argued that the ability to make use of help, which is of importance to resilience in Richardson et al.'s model (1990), is increased whenever an individual is able to enter into and maintain social relationships. It follows from this reasoning that the significant positive correlation between “Not-Resilient Behaviour” and “Social Inadequacy” is therefore indicative of a certain amount of construct validity of the “Not-Resilient Behaviour” component in measuring a “not-resilience” construct.

Not-Resilient Behaviour and Recalcitrance

The significant correlation between “Not-Resilient Behaviour” and “Recalcitrance” (0.14) as measured in the NPV-J indicates that “Not-Resilient Behaviour”, as measured by the VVL, is related to being argumentative with others, distrust of others and wanting to solve problems alone. This association is illustrated by Richardson et al.'s (1990) resilience model. It may be argued that a negative, distrustful approach to seeking and providing support may inhibit the development of resilience. If resilience characteristics are not in sufficient presence to manage difficult circumstances constructively, then the lack of ability to ask for support may inhibit the development of resilience characteristics, as the development of these characteristics is a result of a constructive approach to difficult experiences according to Richardson et al. (1990). It follows from this reasoning that the significant positive correlation between “Not-Resilient Behaviour” and “Recalcitrance” is therefore indicative of a certain amount of construct validity of the “Non-Resilient Behaviour” component in measuring a “not-resilience” construct.

Not-Resilient Behaviour and Dominance

The positive correlation between “Not-Resilient behaviour” and “Dominance” (0.16) is “small” according to Cohen’s criteria. The positive correlation indicates that “Not-Resilient behaviour”, as measured by the VVL, is related to “wanting to be the boss” and “trust in one’s own ability”. This relationship is currently difficult to illustrate using the resilience literature. Further research (Part B of the study) should provide additional information, which will be able to illustrate or falsify this relationship.

4.2.2 THE “RESILIENCE” SCALE

The data collated in part A of this study were used to identify resilient and not-resilient middle-adolescents as participants for part B. These data were used to calculate the participants’ scores on the “Resilient Behaviour” and “Not-Resilient Behaviour” components.

There is a possibility that middle-adolescents will score high on both “Resilient Behaviour” and “Not-Resilient Behaviour”. This combination would not be indicative of resilience. Rutter (1994) concluded on the basis of research that every good study

into resilience should assume the presence of positive, as well as the absence of negative characteristics when identifying resilience. Therefore, this means for the validation of the VVL as a practical tool for identifying resilient and not-resilient middle-adolescents (until the third component is developed further), that middle-adolescents with high scores on “Resilient Behaviour” in combination with low scores on “Not-Resilient Behaviour” may be identified as resilient middle-adolescents. Middle-adolescents with a low score on “Resilience Behaviour” and a high score on “Not-Resilient Behaviour” may be considered as being not-resilient. This balance of scores for components 1 and 2 should be revised and meaningfully combined with Component 3 once this has been developed further.

For the rest of the study the participants’ scores for “Not-Resilient Behaviour” were reverse-scored. The items from “Resilient Behaviour” and the reverse-scored items from “Not-Resilient Behaviour” together formed the “Resilience Scale”.

The reliability (Cronbach’s alpha) of the “Resilience Scale” was 0.77 with 23 items. This level of reliability is reasonable for comparable groups. The “Resilience Scale” may be used for comparing two groups, such as resilient and not-resilient middle-adolescents.

Once the data had been reverse-scored an average high score on the “Resilience Scale” would mean that the respondent had been identified as resilient, whereas a low score would mean that the respondent was not-resilient. The norms for high and low scores are discussed in section 4.4

Currently, the VVL is only usable as an instrument for identifying resilient and not-resilient participants for the qualitative part B of this study. Chapters 5 and 6 will explore how the school environment may contribute to middle-adolescent resilience. The qualitative study, which is intended to answer this question, may deliver information for studying the validity of the VVL further and for improving the VVL through formulating more items. The formulation of additional items for the VVL and in particular for the third component should improve the VVL as an instrument for identifying resilient and not-resilient middle-adolescents. Future studies could be directed at improving the reliability and validity of the VVL.

For practical reasons the VVL was not developed any further prior to selecting participants for this study. The selection of participants served as the first indication of resilience and not-resilience. The in-depth interviews were intended to obtain more insight into the resilience concept.

4.3 RESULTS AND FINDINGS: THE VVL SCORES

4.3.1 SCORES FOR “RESILIENT BEHAVIOUR”, “NOT-RESILIENT BEHAVIOUR” AND “RESILIENCE”

Table 4.8 demonstrates the results of the two-way ANOVA per row, where the independent variables were Gender and School, and the dependent variables the mean scores on “Resilient Behaviour”, mean scores for “Not-Resilient Behaviour” and the mean scores on “Resilience”.

4.3.2 RESILIENT BEHAVIOUR

In Table 4.8 it can be seen for “Resilient Behaviour” that there is a main effect for “Gender” for the “Resilient Behaviour” scores. Girls score significantly higher on Resilient Behaviour ($M=3.66 / SD = 0.63$) than boys ($M=3.32 / SD = 0.69$) at a significance level of $p = 0.001$.

In Table 4.8 it can also be seen that there is no main effect for “School Site” for the “Resilient Behaviour” scores. Therefore, no significant differences were found between the scores on these components between different schools.

In addition, the table indicates that there is no interaction between “Gender” and “School Site”. This finding means that the difference in scores between boys and girls on the “Resilient Behaviour” component is a general difference and is not influenced by the school environment.

Table 4.8 Mean Scores and differences on Resilient Behaviour, Not-Resilient Behaviour and Resilience (means and standard deviations) (M/SD) per Gender and School Site.

	Gender		Total	Schools					Total	F-Value		
	Boys	Girls		School Site 1	School Site 2	School Site 3	School Site 4	School Site 5		Gender	School	Gender * School
Resilient Behaviour	3.32 (0.69)	3.66 (0.63)	3.50 (0.68)	3.46 (0.61)	3.28 (0.74)	3.55 (0.66)	3.58 (0.74)	3.57 (0.62)	3.50 (0.68)	19.34***	1,88	0,55
Not-Resilient Behaviour	1.91 (0.61)	1.99 (0.59)	1.96 (0.60)	2.01 (0.62)	2.01 (0.51)	1.86 (0.56)	1.97 (0.66)	1.91 (0.56)	1.96 (0.60)	1.83	1,01	0,30
Resilience	3.65 (0.53)	3.80 (0.48)	3.73 (0.51)	3.69 (0.48)	3.61 (0.46)	3.78 (0.46)	3.76 (0.59)	3.80 (0.49)	3.73 (0.51)	6.41**	1,26	0,92

*Significant at p = 0.05

**Significant at p = 0.01

*** Significant at p = 0.001

4.3.3 NOT-RESILIENT BEHAVIOUR

In Table 4.8 it can be seen that there is no main effect for “Gender” for the “Not-Resilient Behaviour” scores and no main effect for “School Site” on the “Not-Resilient Behaviour” scores. The scores between boys and girls do not differ significantly, and neither do the scores between different school environments. Furthermore, there was no interaction between “Gender” and “School Site” and the “Not-Resilient Behaviour” scores.

4.3.4 RESILIENCE

In Table 4.8 it can be seen that there is a main effect for “Gender” for the “Resilience” scores. Girls score significantly higher on “Resilience” ($M=3.80 / SD = 0.48$) than boys ($M=3.65 / SD = 0.53$) at a significance level of $p = 0.01$.

In Table 4.8 it can also be seen that there is no main effect for “School Site” for the “Resilience” scores. Therefore, no significant differences were found between the scores on these components between different schools.

In addition, the table indicates that there is no interaction between “Gender” and “School Site”. This finding means that the difference in scores between boys and girls on the “Resilience” Scale is a general difference and is not influenced by the school environment.

4.3.5 INTERPRETATION OF DIFFERENCES

As demonstrated above girls score significantly higher on the “Resilient Behaviour” component and the “Resilience” scale. As described in section 4.2.1.2, the “Resilient Behaviour” component refers to *the identification and use of support in the environment and a pro-active, constructive response to difficult circumstances*. It may be argued from the higher scores by girls on this component that boys are perhaps somewhat less inclined to this type of behaviour than girls. This difference could also explain the higher scores by girls on the “Resilience” scale. However, it is not possible to speculate from the differences found between girls and boys between their mean scores on “Resilient Behaviour” and “Resilience” about the reasons for this difference. It is possible that Part B of the study will provide more insights into the

reasons for this or may produce insights into the behaviour of boys (and girls) that could be characterised as resilient, but which is not described as such by the VVL. In any case, an equal number of boys and girls will be identified as participants for Part B, irrespective of the level of their scores on “Resilience”. Theoretical sampling during Part B should lead to identifying more boys or girls, depending on the question at that stage in the research cycle.

4.4 CONCLUSION: IDENTIFICATION OF PARTICIPANTS FOR PART B

The scores on the “Resilience” scale were ordered from high to low *per school* and divided into quartiles in order to identify participants for Part B of this study. Participants with scores in the highest quartile were identified as resilient. Participants with scores in the lowest quartile were identified as not-resilient. Per school, three resilient participants were selected from the highest quartile and three not-resilient participants were selected from the lowest quartile. This selection process was based on voluntary participation, as well as an equal number of boys and girls across the entire sample, and the greatest diversity of school classes possible.