Exploring the suitability of rating scales for measuring bullying among Grade 4 learners

by

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"It always seems impossible until it's done."

(Mandela, 2013)

DECLARATION OF ORIGINALITY

I declare that the mini – dissertation titled **"Exploring the suitability of rating scales for measuring bullying among Grade 4 learners"** which I hereby submit for the degree Magister Educationis Educational Psychology at the University of Pretoria, is my own work and has not previously been submitted by me for a degree at this or any other tertiary institution.

Katlego Elaine Nchoe

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- No significant changes,
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Exploring the Suitability of Rating Scales for Measuring Bullying among Grade Four Learners

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ABSTRACT

The purpose of this quantitative study was to investigate which bullying rating scale, between the Likert Scale (LS) and the Visual Analogue Scale (VAS), is more appropriate for Grade 4 learners. Although literature verifies the reliability of these two rating scales used to measure bullying in young children, the validity and the suitability of these instruments for young learners has not been extensively explored in the South African context. The concern with bullying in this study has to do with the need for the accurate assessment/measurement of bullying, since a proper understanding of bullying depends on the accuracy of the instrument used. Against this backdrop, this study employed a survey design, rooted in a post-positivist conceptualisation of bullying, using a bullying questionnaire. The study's questionnaire consisted of both LS and VAS response options, and was used to measure both the bully and the victims' response option preferences (LS versus VAS), in addition to assessing the reliability and validity of both response options. A class of Grade 4 learners from one Model C school formed part of the survey and those who were willing to participate completed the Learner Bullying Questionnaire (LBQ). The school was selected using a purposive, non-probability sampling method based on the geographical area, the in addition to the incidence of bullying and diversity of the school population. The quantitative data obtained from the survey design questionnaires were analysed statistically using descriptive statistics as well as the Spearman correlation coefficient to determine the correlation between the VAS and LS responses for each question presented. Using the Wilcoxon tes, the differences between the two response options were determined (i.e. the variances in the preference scores and difficulty scores of the Grade 4 learners for the two response options). The results of the LBQ show no significant difference of scale preference for the Grade 4 learners. However, the learners - in the six scale preference questions included near the end of the LBQ - indicated that they preferred the VAS over the LS.

Key Terms: Bullying Assessment; Likert Scale; Visual Analogue Scale

LIST OF ABBREVIATIONS

LS   Likert Scale

VAS   Visual Analogue Scale

LBS   Learner Bullying Questionnaire

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CHAPTER ONE: INTRODUCTION

1.1 CHAPTER OVERVIEW

This chapter provides a general summary of the current research study. This study addresses the issue of bullying and the importance of developing a reliable instrument suitable for measuring bullying in young learners in the South African context, where language barriers frequently exist (English is often the second language and not spoken at home) and the lack of English proficiency could make it more difficult for young learners to understand and accurately answer questions in English relating to bullying (Landsberg, Krüger & Nel, 2005; Van Laerhoven, Van der Zaag-Loonen & Derkx, 2004) in which case an alternative scale which uses visual depictions (e.g. Visual Analogue Scale), instead of written words, could assist with more accurate answering. Furthermore, the young learners' cognitive development is still at a concrete stage (Louw & Louw, 2014), the latter which thwarts understanding of abstract concepts such as 'bullying'. Since most Grade 4 learners are still at the concrete cognitive developmental stage, this could limit their interpretation and understanding of an abstract psychological concept such as bullying. It is therefore pertinent that the young learners are tested at their level of understanding. Apart from these factors, other challenges exist with the assessment of bullying in young children such as having different backgrounds and unique experiences (Guddemi & Case, 2004). In order to accommodate these contextual factors, this study will explore which scale, the Likert Scale (LS) or the Visual Analogue Scale (VAS), would be more appropriate to use in developing a questionnaire to explore bullying amongst Grade 4 learners.

This chapter is structured in the following manner: The background of the study is introduced (Section 1.2) as well as the key definitions (Section 1.3). The problem statement is specified (Section 1.4) and the rationale for conducting the study is addressed (Section 1.5). The aim/s and objectives for the study are also specified (Section 1.6). After that, the purpose of the study (Section 1.7) and research questions (primary and secondary) are formulated as well as the hypotheses (Section 1.8). This is followed by a discussion of the research approach/method (quantitative) and the design (survey) which was used to inform the methodology and answer the research questions (Section 1.9). After that, the data collection section is introduced (i.e. the sample, sampling strategies and tools) (Section 1.9.3), followed

by the data collection (Section 1.9.4), data analysis (Section 1.9.5) and data verification (e.g. validity and reliability) sections (Section 1.9.6). Finally, before the chapter concludes, the ethical issues about this study are addressed (Section 1.9.7) and the dissertation's layout is presented together with a brief overview of the dissertation chapters (Section 1.10).

1.2 INTRODUCTION AND BACKGROUND TO BULLYING

School bullying is a prevalent and increasingly pervasive psycho-social problem in schools (Atik, 2011). Macintyre (2009) found that internationally, 27% of primary-age children report that they have been the victim of systematic hostility from a group of peers who consistently made their lives very difficult. According to the Times live (2013), a survey conducted by Instant Grass International (Cultural Insights and Consumer Research) which included 2064 learners (aged 13 to 21years) and 1015 family members (18 to 34 years) stated that 57% of South African learners indicated that they were bullied at school during 2013. Another survey conducted in 2014 and consisting of 2000 South African learners, reported that 58% of the learners were bullied (Bullying in South Africa, 2017). It is undisputable that school bullying is a problem and even more so in the case of young learners who do not have the necessary 'psychological coping skills' to deal with peer victimisation.

Bullying is described as a distinct type of proactive aggression (Guerra, Williams & Sadek, 2011) in which behaviour towards others is intended to harm, repeatedly occurs over time and involves an imbalance of power in which the person with power attacks the less powerful victim (Flanagan et al., 2013). These definitions reinforce the interaction between the bully and the victim, and thus the systemic nature of bullying, whereby the bully has power over the victim, both physically and psychologically (Jolliffe & Farrington, 2011).

From a systemic perspective, bullies have learnt and adopted inappropriate methods for managing their social interactions (Goldsmid & Howie, 2013) and have a need to dominate others (Skrzypiec, Slee, Murray-Harvey & Pereira, 2011). In fact, a child who bullies others uses power and violence to control their victims, resulting in dysfunctional relationship patterns. This inappropriate mode of interaction is not conducive to healthy relationships and, in fact, contributes to a dysfunctional system – one which is perpetuated, not only by the perpetrator but also by the victim. The researcher has chosen a systemic conceptualisation of

bullying, based on the fact that a school system in which bullying occurs cannot operate without the dynamic (albeit dysfunctional) interaction between the bully and the victim.

Bullying has dire consequences for both victim and perpetrator, with school bullying impacting negatively on the victim's psychological well-being and social functioning (Atik, 2011) and even academic performance. The perpetrator, who also has a negative psychological 'profile', has learnt to manage his/her relationships by bullying, threatening and intimidation (Vaillancourt, Mcdougall, Hymel & Sunderani, 2009). These socially inappropriate methods for boosting self-esteem and enhancing relationship power also need to be addressed. The fact that so many children—whether bullies or victims—contribute to the systemic climate in which bullying grows (and is increasing), reiterates the need for effective interventions. However, effective interventions/solutions start with the accurate (valid) and reliable measurement of both bullies and victims.

In light thereof, this study hopes to intervene in this systemic "bullying" cycle, by researching which instrument and which scales (between the Likert and VAS) are best suited for measuring bullying in Grade 4 learners. Research on bullying started as early as the 1980's when Olweus, when a Norwegian researcher, investigated this behaviour (Beaty & Alexeyev, 2008). He did so, because of three teenage boys who committed suicide as a result of extreme bullying by their classmates (Olweus, 1993). Their deaths caused an outcry by the Norwegians, contributing to a national interest in the topic and the subsequent extensive research into bullying at schools (Olweus, 1991 as cited in Pepler & Rubin, Eds.).

Bullying, when it was first identified in the 1980's as a behaviour needing to be addressed, was measured using questionnaires aimed at assessing the type of bullying, how often it occurred, who was involved, where it occurred and how the victims responded (Bandyopadhyay, Cornell & Konold, 2009; Craig & Pepler, 1997). A classic example of such questionnaires is Olweus's bullying questionnaire for both bullies and victims (Solberg & Olweus, 2003). However, other assessment tools have also been used, acknowledged by Crothers and Levinson (2004) when they investigated bullying assessment methods and instruments and identified the following:

❖ Unstructured observations: the time and location are selected by the observer.

❖ Structured observations: the observer chooses a specific place such as the school playground where children's conduct is observed.

❖ Interviews: data collection tool for qualitative studies.

❖ Stoichiometric procedures, self-report and peer assessment measures: the learners either report on themselves or other learners.

❖ Surveys: yield more information and are effective for whole school interventions.

1.3 KEY DEFINITIONS

This section includes the key definitions about this study, viz, Bullying, Likert Scale (LS) and Visual Analogue Scale (VAS). Olweus (1994) defines school bullying as a type of aggression which repeatedly occurs over time by one or more learners on another learner. Bullying includes an imbalance of power between the bully and the less powerful victim (Guerraet al., 2011). According to Crothers and Levinson (2004), there are different forms of bullying such as physical (e.g. pushing, kicking, punching), verbal (e.g. teasing, name calling, threatening), and relational bullying (e.g. purposely excluding, gossiping).

The LS is mostly used to assess individual's emotions, attitudes, values and perceptions about behaviour (Foxcroft & Roodt, 2009). It has been used in research for both adults and children. The LS usually consists of five categories that participants may choose when responding to questions, viz. strongly disagree, disagree, neutral, agree and strongly agree (Allen & Seaman, 2007).

The VAS is described as a scale that is represented in the form of a visual display (Boonstra, Preuper, Reneman, Posthumus & Stewart, 2008) consisting of a 100-millimetre line on which the participants are requested to make a mark between two distinct options (Kaplan & Saccuzzo, 2009). Younger children may prefer the Visual Analogue scale due to their low or lack of reading abilities (Van Laerhoven et al., 2004).

1.4 PROBLEM STATEMENT

Bullying in schools in South Africa (as elsewhere in the world) is increasing thus the phenomenon needs to be fully understood to be addressed via assessment and interventions.

The challenge with young learners, such as those in Grade 4, is the accurate identification and assessment of psycho-social issues, such as bullying, because of their age-related lack of understanding and insight into psychological and socio-emotional issues (Berk, 2009).

Young learners are psychologically vulnerable and thus not well-defended (Hamachek, 1995) against destructive behaviours such as bullying. The lack of psychological strength in the face of bullying exacerbates problems with self-esteem, school performance and social interactions. It is therefore imperative that this social issue is accurately identified and efficiently dealt with at school before destructive cycles of behaviour become entrenched and before permanent psychological damage occurs in the young victims, the latter which sets the stage for future problems in later life (e.g. in the workplace and in the family).

An accurate assessment entails using a reliable measuring instrument which can correctly identify the issue being investigated. Moreover, the measuring instrument should consist of questions and scales that young learners -at their cognitive and emotional developmental level- can relate to and understand, thereby enabling the instrument to access/tap into their perceptions about bullying.

According to Atik (2011), internationally there has been an increase of studies relating to the concept of 'bullying', but studies regarding the accuracy of bullying assessment are often overlooked. Atik (2011) is of the opinion that most existing questionnaires do not have the ability to measure the core aspects of bullying and do not capture the dynamic process of bullying. It is, therefore, imperative that accurate identification of bullies and victims take place so that interventions can be planned (Nansel et al., 2001) and bullying behaviours addressed.

Despite an increase in international studies, Liang, Flisher and Lombard (2007) caution and remind us that not much research has been done in developing and emerging economies about school bullying, especially quantitative research. These authors made use of a self-report questionnaire to assess bullying in high school learners (sample size = 5074) in two provinces. They found that bullying is prevalent in South African schools and they predict the violent and antisocial behaviour of learners in the future if there is no intervention. Needless to say, successful interventions start with accurate assessments of both bullies and

victims and therefore require the use of reliable and valid instruments for measuring bullying quantitatively (Greif & Furlong, 2006).

In support of reliable assessments, Greif and Furlong (2006) specify that a proper understanding of bullying depends on the accuracy of the instrument. Therefore, it is of the utmost importance to measure bullying accurately so that more effective prevention and intervention strategies may be developed (Atik, 2011). As a result, this author admonishes that particular attention should be given to measurement while others, such as Greif and Furlong (2006), encourage the development of new assessment methods to get more meaningful results.

Although literature verifies the reliability of the two rating scales (LS and the VAS), which have been used to measure bullying in young children, the other psychometric properties such as validity (face and content) have not been specifically addressed, nor has the suitability of the instruments for young learners been extensively explored (Van Laerhoven et al., 2004) especially in the South African context. Consequently, while some work has been undertaken, more work needs to be done in this regard.

The disadvantage of the LS is that the words of the categories of response options affect the responses of the participants (the participants are forced to choose a response even though their response does not fit within the possible options), and the disadvantage of the VAS is that some participants (especially young children) do not find it easy to understand the scale, so the researcher has to spend much time explaining the instructions to the participants (Hasson & Arnetz, 2005). Also, these authors state that the VAS requires more work compared to the LS regarding scoring and interpretation.

Inaccurate measurement instruments which are not valid measure something other than the construct specified and could thus fail to identify victims and the bullies, and could also fail to identify characteristic patterns of bullying behaviour, inadvertently contributing to the perpetuation of the bully-victim systemic cycle of behaviour. Also, inconsistent/unreliable tools will also create problems with the identification of bullies and victims, with the reporting of findings, with the significance of results, and also with the replication of results. According to Furr, Dougherty, Marsh and Mathia (2007), the science of psychometrics aims at assessing three concepts, viz. validity, reliability as well as the type of data obtained.

Validity inferences are imperative in measuring tools as well as the results otherwise the data obtained will be inaccurate and will not be able to be utilised to answer the research question (Psucd8, 2011). On the other hand, reliability is concerned with the consistency and replicability of the results, which is important when the instrument is used over time/repeatedly (Clark et al., 2010).

Against this backdrop, this research study focused on the suitability of an adapted instrument used for measuring bullying in young Grade 4 learners. As such, this study was concerned with adapting an existing measure for bullying to facilitate the accurate and reliable measurement of bullying in young Grade 4 learners in a Model C school in Pretoria, Gauteng, and to ascertain which scale (either the LS or the VAS) these learners preferred.

1.5   RATIONALE

A gap in the knowledge base relating to the assessment and measurement of bullying in young learners was identified in the literature. Research on the topic has revealed the need for an improved (i.e. more suitable, valid and reliable) measuring instrument which can accurately identify the phenomenon being investigated (Atik, 2011), which in this study is bullying in Grade 4 learners, aged between 9 and 11 years. Such a tool would need to be cognitively compatible with the cognitive and emotional developmental stage for this age group so that it can tap into their perceptions and access their feelings about bullying. Van Laerhoven et al. (2004) confirm the need for a better and more efficient bullying assessment tool.

Although research has indicated that both the VAS and LS are comparable about reliability (Mellor & Moore, 2014) and can be both be used for questionnaires in young children, research into bigger and more varied samples is necessary (Van Laerhoven et al., 2004). Moreover, there is a need for further investigation into the psychometric properties (reliability & validity inferences) and suitability of the instruments used to measure bullying in young South African learners. The above justifies researching the adequacy of an adapted bullying measuring instrument, used in a sample of South African Grade 4 learners, to ascertain which scale is more appropriate and preferred by the learners.

1.6 AIMS AND OBJECTIVES

    i. To measure the core aspects of bullying accurately.

    ii. To explore the psychometric properties of the Learners Bullying Questionnaire (LBQ) instrument.

    iii. To explore the learners' response option preferences.

    iv. To compare the LS and the VAS, to see which the Grade 4 learners prefer.

1.7 PURPOSE OF STUDY

The research intends to explore which scale, namely the LS or the VAS, would be more appropriate to use in developing a questionnaire to explore bullying amongst Grade 4 learners in a Model C school in Pretoria, Gauteng.

1.8 RESEARCH QUESTIONS AND HYPOTHESES

1.8.1 Primary Research Question

"Which scale, between the Likert Scale (LS) and the Visual Analogue Scale (VAS), is more appropriate for measuring bullying among Grade 4 learners in a school environment?"

1.8.2 Secondary Research Questions/Sub-Questions

    i. To what extent do the LS and VAS measure the core aspects of bullying accurately?

    ii. What psychometric properties can be observed in an instrument that uses either the LS or VAS response options?

    iii. What is the correlation between the LS and the VAS?

    iv. What differences can be observed between the two scales?

1.8.3 Hypothesis Formulation

The formulation of the research/alternate hypothesis was guided by the primary research question *"Which scale, between the Likert Scale (LS) and the Visual Analogue Scale (VAS), is more appropriate for measuring bullying among Grade 4 learners in a school environment?"*

1.8.3.1 *The Research Hypothesis*

The research hypothesis for this study stated that "the VAS is more appropriate for measuring bullying among Grade 4 learners than the LS". In testing this hypothesis, the researcher was concerned about which scale the learners preferred or found easier to understand, enabling them to answer the bullying questions more accurately.

The null hypothesis (H_0) is the hypothesis of "no difference". In this study, the null hypothesis stated that "there is no significant difference in the Grade 4 learners' preference for VAS and the LS".

The alternative hypothesis (H_1) is stated as "there is a significant difference in the Grade 4 learners' preference for the VAS over the LS".

1.9 RESEARCH DESIGN AND METHODOLOGY

This section includes the meta-theoretical/philosophical paradigm, the quantitative approach, survey design, sampling, data collection and data analysis as well as data verification (e.g. validity and reliability). These issues will be discussed in more detail in Chapter 3 (methodology). The figure on the following page (Figure 1.1) presents a visual overview of the study.

TITLE	• Exploring the suitability of rating scales for measuring bullying among Grade 4 learners
RESEARCH PARADIGM AND APPROACH	• Paradigm: Post-Positivism • Approach: Quantitative
RESEARCH QUESTION	• Which scale between the Likert Scale and the Visual Analogue Scale, is more appropriate for measuring bullying among Grade 4 learners in a school environment"
RESEARCH DESIGN	• Survey Design
DATA COLLECTION	• Existing bullying questionnaire adapted to include both a Likert Scale and Visual Anologue Scale • The bullying questionnaires were distributed to the Grade 4 learners at a Model C school in Pretoria, Gauteng
DATA ANALYSIS	• Descriptive statistics • Inferential statistics
ETHICS	• Informed consent • Protection from harm • Confidentiality, privacy and anonymity • Voluntary participation • Ethical clearance
QUALITY CRITERIA	• Raw data and analysis • Professional review • Peer review

Figure 1.1: Overview of the study

1.9.1 Metatheoretical/Philosophical Paradigm: Post-Positivism

Post-positivism, which is an extension of positivism, was used as the philosophical lens informing this study. Post-positivists view knowledge differently to positivists, in that they adopt a pragmatic approach which does not fit perfectly into the traditional epistemological categories, and is thus sometimes criticised as being eclectic (Maree, 2007). Ponterotto (2005) situates post-positivism as an extension of positivism (as cited in McGregor & Murnane, 2010). This conceptualisation emphasises the positivist aspects of post-positivism, such as the logical-positivist search for truth, knowledge which can be objectively verified, and a law-like external reality, in addition to emphasising measurement in a material world. These are all criteria associated with the scientific methodology's way of conducting research (Beyer, du Preez & Eskell-Blokland, 2012). According to Seale (1999), post-positivism is the most appropriate paradigm for researchers who want to use some properties of positivism (e.g. quantification) as well as some aspects of the interpretivist stance (e.g. subjectivity).

The researcher conducted research from the post-positivist paradigmatic perspective as this stance accommodates the systemic conceptualisation of bullying, which the researcher has chosen as part of her conceptual framework. Furthermore, according to McGregor and Murnane (2010), within the post-positivistic paradigm, researchers strive to know why people behave in the way that they do and, in so doing, they seek to reveal/uncover power relationships and structures. The post-positivist research paradigm is thus more suitable than positivist research for investigating social and psychological issues (such as bullying) which arise in the context of social relationships (See Chapter 3 – Section 3.2 for a further discussions).

1.9.2 Quantitative Approach

In this study, the researcher has chosen to use the quantitative approach to research, the latter which utilises the scientific methodology's focus on observation, control and measurement in the collection of quantitative data (Slevitch, 2011), in addition to emphasising validity and reliability. On the other hand, the researcher has chosen to conduct quantitative research within the context of a post-positivist paradigm, as this allows for the inclusion of the participants' internally constructed realities, contexts and values, as well as allowing for multiple interpretations and different perspectives on individual behaviour (Mack, 2010).

Moreover, a post-positivist paradigm permits the use of non-positivist methods such as non-probability and purposive sampling in the collection of data and the sampling of participants.

1.9.2.1 *Survey Design*

The survey design was employed in this study as these type of designs are widely used for measuring attitudes, perceptions and preferences in a relatively large population (McMillan & Schumacher, 2014) where the participants are selected for a specific purpose (Edmonds & Kennedy, 2013). In this study, the researcher was interested in assessing the attitudes and experiences of bullying in a sample of Grade 4 learners selected from a Model C school where bullying is prevalent. Survey designs make use of questionnaires as data collection tools/instruments, the latter which provides the researcher with specific numerical/quantified data (Creswell, 2014) about the phenomena being investigated. In this study, data were obtained about the suitability and the preferences of Grade 4 learners for either the LS or the VAS (See a detailed discussion in Chapter 3 – Section 3.7.1).

1.9.3 Sample Selection, Sampling Strategy and Sampling Tool

Sampling refers to the process used to select a portion of the population for study (Maree, 2007), with the sampling procedure being either random (probability sampling) or non-random (non-probability) in nature. In this study, non-probability, purposive sampling was used to obtain the study's sample of 32 Grade 4 learners from a Model C school in Pretoria. The school was selected by geographical area, the incidence of bullying and the diversity of the school population. The participants were chosen based on the fact that they were able to provide the required information while representing the population of interest (Babbie, 2008), in this case, Grade 4 learners, who attended a school where bullying is prevalent (See Chapter 3 – Section 3.8.2 for more details).

1.9.3.1 *Sampling Strategy*

Although this was a quantitative study, the sampling strategy involved the non-random, non-probability selection of a purposive sample of 32 Grade 4 learners from a chosen Model C school in Pretoria, Gauteng.

1.9.3.2 Sampling Instrument

The instrument used in this study was an adapted version of existing bullying measures. This instrument, a survey questionnaire, was adjusted to include both Likert and Visual Analogue Scales to ascertain which scale the sample of Grade 4 learners preferred. This measuring tool/instrument is discussed in detail in the methodology chapter (See Chapter 3 – Section 3.8.3).

1.9.4 Data Collection

The survey questionnaire was distributed to the Grade 4 learners, who signed assent forms, agreeing to participate in the study. Permission was obtained from their parents, who signed consent forms. The questionnaires were administered during school time and were handed out and filled in once the procedure was explained to the learners and they had practised a few examples. Once the learners had completed the questionnaires, they were collected by the teacher and returned to the researcher.

Table 1.1: A tabular summary of the data collection procedure

Action	Discussion
Research question	"Which scale, between the Likert Scale (LS) and the Visual Anologue Scale (VAS), is more appropriate for measuring bullying among Grade 4 learners in a school environment?"
Research design	A survey design which is compatible with the quantitative approach (nomothetic; etic).
Reason for data collection	To gain insight into which scale—either the LS or the VAS—was the preferred scale for measuring bullying among Grade 4 learners.
The data collection instrument used	A survey questionnaire with closed-ended questions. Some of the questions required a response using the 4 point LS and other questions made use of VAS responses.

Who the sources of data were and how the participants were selected/ chosen	A purposively selected sample participants (Grade 4 learners) who were aware of peer victimisation, some of whom had experienced bullying, either directly (victims) or indirectly (observed it) provided the relevant data about bullying. Moreover, these learners were made aware of what the research was about and agreed to participate (parents signed consent forms; pupils signed assent forms).
The sampling procedures used	The school was non-randomly, purposively sampled based on geographical area, the incidence of bullying and the diversity of the school population. Similarly, non-probability, purposive sampling was used to select the participants. The lack of random selection affected the generalisability of the study but provided the specific bullying information/data needed.
How many data sources were accessed	32 Grade 4 learners from a former Model C school situated in a suburban area provided the data. The whole Grade 4 group, who was available on the day of testing, participated.
Where and when the data was collected	The questionnaires were handed out to the Grade 4 learners at school by the relevant teacher in 2015. The data was collected on one occasion only.
How the data was collected	The questionnaires (with closed-ended questions) were handed out to the Grade 4 learners who agreed to participate in the study. All the learners gathered in the school hall on the specified date, and the questionnaires were handed out and were completed once the teacher had explained the procedure and the participants had practised using examples.

Justification for the data collection plan-why this was the best way for collecting data for this research question	The questionnaires provided insight as to which scale the participants preferred—i.e. either the LS or VAS—and thus indicated which scale is the most appropriate for measuring bullying amongst Grade 4 learners.

1.9.5 Data Analysis

Data analysis assists the researcher to interpret the information that has been collected. Based on the interpretation, the researcher can make conclusions and recommendations. Table 1.2 illustrates how the research questions were addressed in this current study. Non-parametric statistics were deemed appropriate because it does not require the data to fit a normal distribution.

Table 1.2: Data analysis table

Data analysis table	
Primary Research Question	How does the LS influence the response pattern of Grade 4 learners?
Secondary Research Questions	i. To what extent do the LS and VAS measure the core aspects of bullying accurately? ii. What psychometric properties can be observed in an instrument that uses either the LS or VAS response options? iii. What is the correlation between the LS and the VAS? iv. What differences can be observed between the two scales?
Data analysis techniques	Descriptive statistics ❖ Median ❖ Mode ❖ Standard Deviation ❖ Inferential Statistics ❖ Wilcoxon ❖ Spearman correlation

The techniques that are typically used to analyse survey data include correlations, factor analysis and regression analysis (Mouton, 2001), the latter which falls into the category of inferential statistics. Survey data can also be represented using the descriptive statistical methods of bar charts, plots, pie charts and tabulations (Mouton, 2001). In this study, the researcher will make use of both descriptive and inferential statistics because this will allow the summarising and interpretation of the data collected (Fisher & Marshall, 2008). Descriptive statistics is a way of organising data so that the data can be easily understood (Bless & Kathuria, 1993). It is also a summary of quantitative information presented in a numeric form with the aim of defining what happened in the sample (Thompson, 2009). Maree (2007) reiterates that descriptive statistics are summaries of data which include the location of the data (central tendency), the dispersion (variance) as well as the standard deviation.

On the other hand, inferential statistics provide data about the whole population from which the representative sample was taken (Vergura, Acciani, Amoruso, Patrono & Vacca, 2009) and allows for generalisations if the criteria for normal distributions are met. In the case of non-normal sample distributions, non-parametric tests are used to analyse the data collected (Maree, 2007).

In this study, the researcher investigated which scale (between the LS and the VAS) was more appropriate to measure bullying in Grade 4 learners. An adapted version of an existing bullying questionnaire, in which both VAS response options as well as LS response options, was used.

For each question, the correlation between the LS and VAS responses was determined using the Spearman rank-order correlation. The Spearman correlation coefficient is the non-parametric alternative to the Pearson correlation coefficient (Pietersen & Maree, 2007). It makes no assumption about the distribution of the two variables, it uses ranks instead of the actual values, and it can be based on any scale that is at least ordinal (Pietersen & Maree, 2007).

Also, the researcher tested the learners' preference for and the difference between the two response options using the Wilcoxon test (Van Laerhoven et al., 2004) – the non-parametric version of the t-test for dependent samples. Thus, in evaluating the learners' response

preferences, the researcher used the non-parametric Wilcoxon statistic for paired ordinal variables to compare the variances in the preference scores and difficulty scores of the Grade 4 learners for the two response options.

1.9.6   Methodological Norms

Verification of the data involves ensuring suitable levels of validity and reliability in the research design and data collection instrument/s. The validity and reliability of surveys are found in the construction of the survey items (Abbott & McKinney, 2013).

Validity is the defined as the degree to which a tool measures the concepts it claims to measure (Kaplan & Saccuzzo, 2009) and is categorised as face validity, content validity, construct validity and also criterion validity (Gravetter & Forzano, 2015). In this study, the researcher focused on face validity and content validity. About face validity of this survey design, from the appearance of the questionnaire, the next person should be able to tell that it is a questionnaire and what its purpose is (Foxcroft & Roodt, 2009). The participants are most likely to respond to questions that are relevant to them and not respond to questions that they do not understand or feel are inappropriate (Ary, Jacobs, Razavieh & Sorensen, 2006). Content validity is discussed hereafter.

Content validity refers to the degree to which the instrument covers the whole content of the construct that it claims to measure (Kaplan & Saccuzzo, 2009). Content validity may be achieved by getting experts to critique the items on the questionnaire and say whether or not they are appropriate to measure what they intend to measure and if there are sufficient items for the domain in question (Ary et al., 2006). In this study experts were invited to critique the items of the questionnaire, to look at the questionnaire's blueprint, as well as confirming/disconfirming whether the items are consistent with the domain.

1.9.6.1 Reliability

About reliability, survey data that is not reliable is not useful information (Abbott & McKinney, 2013). Reliability refers to the degree to which a tool produces similar results when used at different times to the same participants or administered to various participants from the same population (Kimberlin & Winterstein, 2008). In other words, reliability is the extent to which a measuring instrument is repeatable and consistent (Maree, 2007). As such,

reliability has to do with the replicability of the results. There are several different types of reliability. However, this study will focus on internal consistency reliability.

Internal reliability or internal consistency, which is a pre-requisite for construct validity, depicts the degree of similarity among the constructs in measuring the central/common construct with which the study is concerned (Foxcroft & Roodt, 2009)—in this case, bullying. The higher the internal reliability/consistency, the greater the similarity between the constructs, the latter which is calculated using the Cronbach's alpha coefficient. A high internal consistency means that the quality of the items which measure the concept all measure the same thing (Sekaran & Bougie, 2010).

1.9.7   Ethical Considerations

1.9.7.1 Informed Consent/Assent

This ethical principle speaks about the fact that people have the right to know about the research before they agree to participate in any project (Oliver, 2010). In this study, the researcher worked with minors (below the age of 18 years) therefore consent needed to be obtained from the parents as well as from the learners, the latter who were given assent forms to sign (Alderson & Morrow, 2010). Two letters were thus drafted, one for the parents and one for the learners, in order to explain what the study is all about, what was expected of the participants, and the potential benefits and risks of being part of the study, as well as what will be done with the information obtained from the participants (King, 2010).

1.9.7.2 Protection from Harm

The researcher was sensitive to the potential psychological harm of the study to the participants (Leedy & Ormrod, 2013). The participants were informed about what the study is all about and the potential risks of being part of the study. Therefore every participant made an informed decision as to whether or not they wanted to participate in the study. Contact details of the researcher were provided to the participants in case they are in need of counselling services after taking part in the research study.

1.9.7.3 *Confidentiality, Privacy and Anonymity*

Confidentiality refers to protecting the identity of the participants as well as the information obtained from them (King, 2010). In this study, the personal names of the participants will be replaced with a code number to ensure the confidentiality, privacy and anonymity of the participants. All information collected will be treated with confidentiality, privacy and anonymity. Also, data collected will be stored safely in the archives of the University of Pretoria according to the University's data storage policies.

1.9.7.4 *Voluntary Participation*

Involvement in this study was entirely voluntary. Thus participants were not forced or manipulated to take part in this study. This ethical principle was included in both the consent and assent letters in which the researcher stated that participation was voluntary and that the participants may choose to withdraw from the study at any time without an explanation and subsequent consequences (Oliver, 2010). Participants were also informed that they have the right to withhold the information obtained from them in the study (King, 2010).

1.9.7.5 *Ethical Clearance*

It is important to obtain ethical clearance from the ethics committee before engaging in any research which involves human beings (Maree, 2007). The researcher obtained an ethical clearance from the ethics committee of the Faculty of Education of the University of Pretoria which she applied for after the proposal had been approved. Obtaining an ethical clearance ensures that this study will be carried out ethically to protect the participants from harm.

1.10 DISSERTATION CHAPTER LAYOUT

Chapter 1: Introduction

The first chapter serves as an introductory chapter for the current study. It offers an overview of this study by defining the key concepts (Section 1.3), stating the problem statement (Section 1.4), rationale (Section 1.5), the aims and objectives of the study (Section 1.6) the purpose of the study (Section 1.7) and research questions (Section 1.8). The choice of research paradigm (Section 1.9.1), research approach (Section 1.9.2) and the design are discussed and justified (Section 1.9.2.1). The chapter ends with ethical considerations that

were employed in the study undertaken (Section 1.9.7). The ethical considerations include informed consent/assent, protection from harm, confidentiality, privacy and anonymity and voluntary participation, as well as an ethical clearance.

Chapter 2: Literature Review

Chapter 2 offers a literature review of this study which is concerned about bullying and the assessment of bullying. This chapter includes a discussion of the main aspects which are relevant to the current study, such as: the definition/s and description of bullying (Section 2.3), the consequences of bullying (Section 2.4), the role of school climate (Section 2.5) in bullying and the measurement of bullying (Section 2.6). This chapter also includes a theoretical framework for the study, based on System's Theory (Section 2.7), which is relevant to the dynamic, interactive relationship between bully and victim, which forms the foundation for the conceptual framework in this study.

Chapter 3: Research Design and Methodology

This chapter provides a detailed explanation of the methodological processes followed in this study, as well as the philosophical (met-theoretical) foundation supporting the methods chosen to answer the research question (Section 3.6). It describes the research design (Section 3.7.1), how the participants were selected (the sample); the sampling strategy used (non-probability, purposive sampling) (Section 3.8.2) and also the sampling tool (Section 3.8.3), in this case the adapted bullying questionnaire. The methodology section includes a description of how the data the researcher collected (Section 3.8.1) and analysed (Section 3.8.6) and verified the data (Section 3.10) in order to explore the research questions which were formulated in Chapter 1.

Chapter 4: Results of the Study

In Chapter 4, the results and findings of this study—which aimed at investigating which of the two scales (LS or VAS), used in the adapted bullying questionnaire, the sample of Grade 4 learners preferred—are presented and discussed in an integrated manner. In addition, the data analysis and data interpretation processes are described (Sections 4.2 & 4.3). The results are presented using figures and tables (Sections 4.3.1, 4.3.2, 4.4 & 4.5). The chapter concludes with an interpretation of the results (Section 4.6). Finally the results are discussed in light of the research questions (Section 4.6).

Chapter 5: Conclusions and Recommendations

The fifth chapter includes a discussion of the conclusions of this study in terms of the primary question and purpose as stated in Chapter 1 (Section 5.2). The possible contributions as well as the limitations of the current study are considered (Sections 5.4 & 5.5). The chapter concludes by formulating recommendations for future studies involving the measurement of bullying in young learners (Section 5.6).

1.11   CONCLUSION

This chapter provides an overview of the entire research study undertaken by the writer. This chapter overview includes an introduction to bullying, the rationale/justification for conducting this study as well as an explanation of the research problem, aim and objectives, the research questions and the purpose of this study. Also, key concepts were defined and clarified, and the conceptual framework was explained, setting the stage for the research paradigm and approach. Furthermore, a brief outline of the research design and methods chosen for collecting, analysing and verifying the data, were provided. Finally, the quality criteria and the ethical standards adhered to in this study were explained.

In the next chapter (Chapter 2), several aspects related to bullying and measuring instruments are discussed. In particular, those issues, as identified in the literature (Section 2.2), which pertain to this study viz. the contextualisation of bullying, definition and description of bullying (Section 2.3), the characteristics of bullies and victims (Sections 2.3.4 & 2.3.5), the a comparison of the characteristics of bullies/perpetrators and victims are described (2.3.7) as well as consequences of bullying (Section 2.4). Previous research on the topic is investigated in order to provide a foundation for the current study and to identify the origin of bullying assessment and the initial tools used to measure and investigate bullying in schools, as well as the progress made over time, and recent and relevant findings pertaining to the reliable and valid assessment of bullying (Section 2.6). Finally, the conceptual framework of bullying is related to this current study (Section 2.7).

"Fighting means you could lose. Bullying means you can't. A bully wants to beat somebody;
he doesn't want to fight somebody."
(Vachss, 2016)

CHAPTER TWO: LITERATURE REVIEW

2.1   INTRODUCTION TO THE CHAPTER

This chapter aims to identify and clarify the main concepts about this research study which addresses the phenomenon of bullying and how it is measured in a sample of Grade 4 learners in the South African context. This chapter begins with an exploration of bullying and the definition of aspects related to bullying (Section 2.3) which is followed by a discussion about the consequences of bullying (Section 2.4) and the contributing role of the school climate (context) (Section 2.5). Finally, the measurement of bullying is discussed (Section 2.6).

2.2   INTRODUCTION TO THE LITERATURE STUDY

Bullying is a destructive behaviour that has adverse consequences for both the bullies and the victims (Fretwell, 2015). According to Hensley (2015), bullying is a prevalent crisis in schools and has been ongoing for many years. The concept of bullying has been researched continuously since the 1830's to date because of its high rates of occurrence and the consequences it has on both the victims and perpetrators (Koo, 2007).

Bullying is a challenge in schools affecting learners worldwide. In the United States of America, over 25% of young learners miss school for approximately 160 days of school every year (Hensley, 2015). A South African survey conducted in 2014 on more than 2000 learners showed that 58% of learners are bullied in South African schools (Bullying in South Africa, 2017). Another report in South Africa indicated that 57% of the learners had experienced bullying at school (Times live, 2013).

About studies investigating 'bullying,' Laas and Boezaart (2014) reiterate that the investigation of bullying in South African schools is few (in 2002, 2008 and 2012). The South African Department of Health conducted the "South African National Youth Risk Behavioural Survey" in 2002 which revealed that 49.3% of learners in the Free State schools experience bullying. In 2008 the Centre for Justice and Crime Prevention (CJCP) conducted a survey—"National Schools Violence Study (NSVS)". The results were as follows: individuals exposed to threats with violence in the past (10.8%), individuals who experienced

assault (7.5%), robbed individuals (3.19%), victims of sexual violence (1.4%), and individuals made to feel inferior (12%). The University of South Africa conducted a survey in 2012 and concluded that 34% of the student participants were victims of bullying (Laas & Boezaart, 2014).

In describing the core defining features of bullying, researchers have a mutual agreement concerning main features that constitute bullying behaviour. These include proactive behaviour with the intention to harm others, recurrence of the bullying behaviour over time, and dominance of the bully over the helpless victim (Cowie & Jennifer, 2008; Analitis et al., 2009). Similarly, there are common characteristics that bullies share, just as there are common features between victims (Cowie & Jennifer, 2008). These will be dealt with in the following paragraphs.

According to Hensley (2015), different types of bullying have different kinds of impact on the victims and also have differing short-term and long-term consequences, depending on the vulnerability of the victim. Bullying behaviours such as rumour spreading and racial bullying still needs to be investigated to ascertain whether they are as harmful to the victims of the other types of bullying (Sampson, 2002). Bullying is a challenge in schools that need to be addressed and one of the aspects of addressing it is to measure it accurately for appropriate intervention. This study is concerned with the measurement of bullying.

2.3   DEFINITION AND DESCRIPTION OF BULLYING

It is important to define bullying to avoid the misuse of the term (Fretwell, 2015). Bullying is defined as behaviour with the intention to harm others and is identified as a specific type of proactive aggression (Guerra et al., 2011). Bullying occurs recurrently as well as includes an inequality of power among the bully and the victim (Cook, Williams, Guerra, Kim & Sadek, 2010).

The bully targets certain vulnerable individuals who are less powerful than the perpetrator (Cook et al., 2010), contributing to the dynamic interaction among the victim and bully/perpetrator. As such, bullying occurs systematically and frequently over a period as opposed to being a one-off interaction between the bully and the victim (Catone et al., 2015).

There are different forms of bullying that have been identified such as physical (pushing, kicking, punching), verbal (teasing, name-calling, threats), as well as social (intentional exclusion, gossiping, spreading rumours) (Crothers & Levinson, 2004). As such, bullying may consist of both direct actions (e.g. threatening, pushing, theft, and teasing) and indirect strategies (e.g. spreading rumours and social isolation) which occur systematically, repeatedly and deliberately or proactively (Cowie & Jennifer, 2008). The bully targets certain vulnerable individuals who are less powerful than the perpetrator (Cook et al., 2010). Consequently, bullying tends to be exclusive because it can capture the dynamic interaction among the victim and perpetrator, bullying displays a power imbalance between the victim and perpetrator which differentiates it from a disagreement (Juvonen & Graham, 2014). A clear definition of bullying is imperative for identifying bullying effectively (Aalsma & Brown, 2008).

Table 2.1 illustrates the definitions of different terms that may be used interchangeably with the word "bullying". These concepts need to be defined for the researcher to fully understand the definition of bullying.

Table 2.1: Definitions of terms related to bullying

Term	Definition
Aggression	Violent behaviour that stems from feelings of anger (Roland & Idsoe, 2001).
Violence	The behaviour includes physical force with the aim to damage, harm or kill (Violence, 2017).
Conflict	When individuals disagree or they have differences (Conflict, 2017).
Fights	Fights are defined as a form of aggression which involves either a physical engagement or the use of weapons (Craig & Edge, 2008).
Teasing	There is no harm intended; the aim of teasing is to be funny (Centre for Justice and Crime Prevention, 2012).
Bullying	Bullying consists of certain aspects which include the following: power imbalance

between the bully and victim, repeatedly occurs, an intention to harm, a desire to harm another and, generally, a sense of being oppressed on the part of the victim (Aalsma & Brown, 2008).

School bullying is a type of aggressive behaviour with specific aspects which, amongst others, involves the victim being repeatedly exposed over a period to harmful actions from others (Olweus, 1994). Slee (1993) asserts that there seems to be a general concurrence among researchers that there is an overlap between the words 'bullying' and 'violence' and that bullying is a form of aggression (as cited in Cowie & Jennifer, 2008). However, bullying differs from aggression because it involves the systematic abuse of power which is repeated over a period (Koo, 2007). Also, bullying has a proactive/pre-planned nature in that bullies tend to look for opportunities to bully others (Jolliffe & Farrington, 2011), whereas aggression and violence tend to be more spontaneous. Also, according to Berger (2007), another significant distinction between aggression, violence and bullying is the prominent inequality of power concerning the bully and victim, with the more psychologically or physically dominant student harassing, the less dominant one. Finally, Olweus (1999) is of the opinion that although there is an overlap between bullying and aggression, bullying may occur without violence (such as verbal abuse and social isolation) and violence which is not classified as bullying (such as a fight during break time) may occur. Furthermore, literature has revealed that what contributes to bullying behaviour is often the personality of both the bully and victim, physical strength and reactions to such behaviour (Olweus, 2003).

2.3.1   Forms of Bullying

Types of bullying include physical, verbal abuse, and provoking while less obvious kinds of bullying include social exclusion, manipulation of friendship, and negative text messages or internet posts about someone (Lamb, Pepler & Craig, 2009). Needless to say, the most frequently occurring type of bullying is verbal bullying (i.e. abuse which takes place verbally and includes mocking and insults). Social exclusion is also near the top of the list as is harassment and belittling remarks about appearance (Hensley, 2015). Milsom and Gallo (2006) have defined four types of bullying which include physical, verbal, relational, and reactive bullying (See Table 2.2).

Table 2.2: Four types of bullying defined by Milsom and Gallo (2006)

Type of bullying	Definition
Physical bullying	Hitting, pushing, kicking, pinching, as well as damaging property, or tripping.
Verbal bullying	Teasing, swearing, name-calling, insulting, intimidation or making racist comments.
Relational bullying	Lying, spreading rumours, social exclusion, negative facial and physical gestures or humiliation.
Reactive bullying	Characterised as bully-victims, they act out due to the bullying they have experienced first-hand.

2.3.2   Gender Differences about Bullying

According to Rigby (2007) research reveals a gender distinction in bullying and bullying behaviours despite general similarities (e.g. both boys and girls can be victims and can be bullies). About the gender differences, boys bully more often than girls and they use physical types of bullying more than girls do (Hensley, 2015). Girl bullies make more use of verbal and "indirect" types of bullying (e.g. teasing, rumour spreading) and subtle social behaviours (e.g. exclusion/ social isolation). Bullying is making use of physical methods, although a form of "direct bullying", it occurs the least (Wang, Iannotti & Nansel, 2009). Research suggests that boys have reported being bullied more than girls (Underwood & Rosen, 2011). Moreover, Andreou and Bonoti (2010), as well as Cornell and Bandyopadhyay (2009), found that boys (physically stronger or bigger) tend to experience physical bullying whereas girls (with popularity or status) tend to experience verbal bullying.

2.3.3   Spaces where Bullying takes Place

It is to be expected that in some places/ areas would be more "suitable" places for bullying to happen. One of the situations conducive to bullying is when there is little or no monitoring of behaviour by adults. The spaces where it is minimal or no adult observation/regulation are places such as bathrooms, playgrounds, cafeterias, and bus stops (Shellard, 2002). Most of the time, bullies choose to bully people whom they feel or who seem to be different from

them physically, emotionally or intellectually (Craig & Edge, 2008). Bullying usually occurs as a way for the bully to deal or cope with the problems with which he/she may be challenged (Milsom & Gallo, 2006). Bullies may also need to feel more superior than their peers or think bullying will gain them acceptance by their peers and make them feel more popular or influential (Aleude, Adeleke, Omoike & Afen-Akpaida, 2008).

2.3.4   Characteristics of Bullies

Bullies have certain features in common and can be identified by the psychological attributes they display. One of the most obvious characteristics a bully displays is the desire to dominate/control another individual (Cowie, 2014). To dominate and control another person, the bully uses tactics such as threatening, teasing, physical force or social exclusion (Beale & Scott, 2001). According to Milsom and Gallo (2006), bullies share common characteristics in that they display aggressive attitudes in their social interactions and also demonstrate a positive outlook about violence. Moreover, they are manipulative, have a need to dominate others and also lack empathy towards others (Hensley, 2015). Furthermore, bullies are impulsive and lack self-control (Aleude et al., 2008; Carter, 2012). Additionally, bullies tend to have a higher self-esteem compared to the victims who are often labelled as fearful (Cowie, 2014).

Children who bully others often come from families where aggression is outwardly displayed (Fitzpatrick et al., 2011). The researchers, Viding, Simmonds, Petrides, and Frederickson (2009), in a study involving 704 learners (aged 11 to 13 years), found that 'high levels of direct bullying links with high conduct disorders' Barboza et al. (2009) researched the 'threat aspects' related to bullying behaviour by conducting a national health behaviour survey in 1997-1998 using 9816 adolescents (aged 11 to 14 years). These authors concluded that bullying increases among children who watch television frequently. They further reported that learners who felt unsupported by their teachers, attended a school with hostile environment, and also had disinterested/disengaged parents (and teachers) who failed to motivate by valuing and placing "high expectations" on academic achievement, were more likely to bully others.

Furthermore, research indicates that at some level bullies are seen as popular and the more emotional support they receive regarding bullying, the more the bullying is likely to occur

(Skrzypiec et al., 2011). Children who bully others use aggression and dominance to control others and, therefore, socially unacceptable/deviant behaviour defines their interactions. While bullies may be perceived as powerful and strong, recent research confirms that bullies, like their victims, are also at risk psychologically. Corvo and deLara (2010) suggest that children who bully go on to become the perpetrators of domestic violence. In the School Health Promotion study (1995) involving over 8000 school participants, it was concluded that bullying could predispose bullies to develop psychological/mental disorders in adolescence (Kaltiala-Heino, Rimpelä, Rantanen & Rimpelä, 2000, as cited in Cowie & Jennifer, 2008). Moreover, research has documented that bullies have difficulty with adjusting at school, the latter which is linked to low school performance and school bunking. Furthermore, bullies tend to be disruptive in such a way that they are self-destructive; they carry weapons, steal from others, vandalise property and get into fights (Goldsmid & Howie, 2013).

These findings support the perception that bullies are the 'bad boys' (or girls). However, bullying has consequences for both the bully and the victim including physical, emotional, and social consequences (Berger, 2007). These findings reiterate the need for accurate assessment of bullies as solving the social ill of bullying starts with identifying it accurately. However, to effectively assess for bullying, one needs to be cognisant of not only the common characteristics of bullies but also the common feature of those who are victims of bullying (Skrzypiec et al., 2011).

2.3.5 Characteristics of Victims

The children who are bullied (i.e. the victims) often seem to be weak, reserved, shy, and cannot fight back and so reinforce the bullying (Skrzypiec et al., 2011). In support hereof, Cowie and Jennifer (2008) indicate that victims exhibit behaviours/characteristics that identify them as vulnerable and elicit aggression from their peers, enabling bullies to target them. According to these authors, victims show adjustment difficulties, have pre-existing problems, and are unhappy compared to the learners who are not victims. Hawker and Boulton (2000) found in their study that victims of bullying often experience isolation and tend to present with depression more so than non-victims. They also present with anxiety (displaying signs of both generalised and social anxiety), and when compared to those who were not bullied, their self-esteem is significantly lower. Similarly, Olweus (2003) found that

victims of bullying are often lonely, lack friends at school, tend to be left out or excluded by others and may be socially isolated. They appear to be different to others; they do not fit into the "norm". In general, victims of bullying are more anxious, depressed, insecure, and have low self-esteem when compared with their peers, in addition to not fitting in well with their peers (Craig & Edge, 2008). These learners may perform low scholastically, be overweight or unattractive (Sweeting & West, 2001).

In identifying the features and behaviours associated with victims, Shields and Cicchetti (2001) surveyed 267 children who were between the ages of 8 and 12, and they found that children who were maltreated by their caregiver were predisposed to be bullied. Similarly, Perren and Alsaker (2006) interviewed 345 children aged 5 to 7 years, as well as their teachers, regarding bullying, victimisation and the children's social behaviour in general. These authors reported that victims display behaviour such as being withdrawn, a lack of leadership skills, submissiveness, no friends and isolation (ibid). Also, it was found that victims have a tendency to have overprotective parents, be emotionally immature, have low self-confidence and a lack of independence. According to Skrzypiec et al. (2011), children with these attributes and relational patterns, fail to develop personalised coping skills and are thus vulnerable to being bullied. In addition to the aforementioned, research confirms that children who are at risk for becoming bullies and victims tend to come from environments where the families live in poverty, where children suffer child abuse, and where the parents are divorced or separated (Skrzypiec et al., 2011).

2.3.6 Characteristics of Bully-Victims

According to Cowie and Jennifer (2008), besides bullies and victims, some children fall into the category of bully-victims (i.e. bullies who are also victimised) and present with problems such as headaches, stomach-aches, bed-wetting, sleeping difficulties, low schoolh performance, and fatigue. Also, these authors assert that bully-victims may also suffer from feelings of sadness, rejection, isolation, fear, low self-esteem and suicidal ideation. According to Olweus (2003), there are two types of victims, namely, the submissive or passive victim and the bully-victims or aggressive bullies. Learners may find it difficult to admit their aggression towards other learners because they will be known as bullies (Cornell & Brockenbrough, 2004). In a research study conducted by Cornell and Brockenbrough

(2004), 4% of the learners of a sample of 416 indicated that they were frequently bullied and 19% were reported by other learners as bullies.

2.3.7 A Comparison of the Characteristics of Bullies and Victims

To effectively assess bullying, one needs to be cognisant of not only the common features of bullies but also the common feature of those who are victims of bullying (Skrzypiec et al., 2011). The following table (Table 2.3) differentiates between the features of the typical bully and those of the victim:

Table 2.3: Characteristics of bullies and victims
(Hensley, 2015; Cowie, 2014; Carter, 2012; Aleude et al, 2008; Milsom & Gallo, 2006; Olweus, 2003; Beale & Scott, 2001)

Bully	Victim
• Easily provoked	• Negative attitude towards school
• Leadership qualities	• Social anxiety
• Lack of self-control	• Vulnerable
• Manipulative	• Social isolation
• Assertive	• Avoidance
• Impulsive	• Insecure
• Low self-esteem	• Socially withdrawn
• Often seek out other bullies to form a group which supports aggressive behaviour	• Overprotective parents
	• Submissive

2.4 THE CONSEQUENCES OF BULLYING

Bullying consequences affect both the bully and the victim; the manifestation is immediate and also carries on into adulthood (Fretwell, 2015). Victims often struggle to interact with others, become depressed, and abuse substances such as drugs and alcohol (Centre for Justice and Crime Prevention, 2012).

2.4.1 Short and Long-Term Consequences of Bullying

It is standard child behaviour to occasionally play-fight, disagree, and tease each other as peers, however, bullying is a far more serious behaviour which has short-term as well as long-term consequences/effects. The consequences, which can affect both bully and victim, manifest not only physically, but also emotionally and academically (Hensley, 2015). In support hereof, Rigby (2007) confirmed that bullying consists of both adverse/harmful short- and long-term consequences and that these consequences affect the individual's physical health as well as their psychological well-being/mental status, in addition to impacting on their academic performance (Milsom & Gallo, 2006). Olweus (2003) reiterates the importance of being aware of the consequences of bullying for learners to be supported appropriately. Knowledge about bullying and its implications enables better assessment of bullying, which in turn assists with suitable interventions being made available to those in need. These may include sadness, low self-esteem, few friends, school absenteeism, regression (i.e. bedwetting), apprehension, stomach cramps as well as headaches (Olweus, 2003). These findings are supported by Lohre, Lyderson, Paulsen, Maehle and Vatten (2011), who engaged in a study including 419 learners (Grades 1 – 10), as well as research by Farrow and Fox (2011) in adolescents, where 376 reported suffering both emotional and health problems as well as school avoidance, all as a result of being bullied. Emotional support is necessary for learners who experience severe and prolonged bullying as they are at risk of academic failure (Milsom & Gallo, 2006). These learners suffer from problems such as loneliness, learning difficulties, loss of friends, and absenteeism (Roberts & Coursol, 1996). There is a concern in schools about learners who are not performing well academically due to bullying, thus the belief that bullying interventions within the school environment are imperative (Milsom & Gallo, 2006).

The problems that the individuals involved in the dynamics of bullying (i.e. the victims, bullies, and bully-victims) present with can persist into adulthood. Long-term consequences are evident well into a person's adult years of life (Milsom & Gallo, 2006). These problems include self-destructive behaviour, vandalism, depression, domestic violence, drug abuse, gang membership, low self-esteem, and suicidal ideation (Gladstone, Parker & Malhi, 2006; Cowie & Jennifer, 2008; Olweus, 1994). These findings emphasise the need for accurate assessment and effective interventions for a social problem that has the potential to spiral out of control. There is, therefore, a need to get a clear picture of how learners perceive bullying

as a clear picture will assist with the accurate measurement of bullying and the identification of bullies and victims (Brown, Birch, & Kancherla, 2005). Consequently, being informed about what characteristics the bullies and the victims may possess, enables teachers and health care professionals to identify children at risk of bullying and those at risk of being victimised, thereby providing interventions that could reduce bullying and the consequences thereof (Skrzypiec et al., 2011). The findings in the literature thus reiterate the importance of using accurate assessment tools which are high in validity and reliability. The matter of measurement and assessment tools will be dealt with after the table of bullies and victims, which follows hereafter. Victims tend to experience long-term effects of bullying in the area of psychological and emotional well-being as opposed to the bullies (Copeland et al., 2014).

Numerous studies have shown childhood bullying was associated with later violence, including criminal acts, alcohol and substance abuse, aggression, and antisocial behaviour (Milsom & Gallo, 2006). Ragatz, Anderson, Fremouw & Schwartz (2011) conducted a survey that studied students in their penultimate and final year of school. These students reported that they either bullied other students or were victims of bullying, or were bully/victims. The students were asked about the psychological attributes/characteristics they currently display, and they were also questioned about their history about their participation in unlawful behaviours. These researchers concluded that the individuals who engaged in bullying others and those identified as bully/victims scored markedly higher than victims on the attributes of 'criminal thinking, psychopathy, and criminal behaviours.' Furthermore, it was concluded that most bully/victims were males; they were high in criminal thinking and scored high with proactive aggression (Milsom & Gallo, 2006).

In another study by Kim, Catalano, Haggerty & Abbott (2011), 957 participants were surveyed yearly from first or second Grade to the age of twenty-one. Kim et al. (2011) found that substance abuse and aggressive behaviour at age twenty-one is closely linked with childhood bullying. Niemelä et al. (2011) found similar results in a study of 2946 children who were followed from the age of eight to eighteen years. These researchers found that bullying others frequently predicted illicit drug use. Furthermore, many researchers (Bender & Lösel, 2011; Falb et al., 2011; Farrington & Ttofi, 2009; Jiang, Walsh, & Augimeri, 2011; Olweus, 2011) all concur that inmate partner violence and criminal offending in adulthood strongly correlates with childhood bullying. Olweus (2011) reported that before the age of

twenty-four, young adults who bullied others in their childhood often develop criminal tendencies and approximately half of them are convicted of crimes.

Furthermore, research has shown that the long-term negative consequences of individuals who have been bullied, and which persist into adulthood, include the following: include anxiety, post-traumatic stress, social isolation/loneliness, in addition to being vulnerable to depression, and also experiencing interpersonal problems (Berger, 2007). In the study conducted by Niemelä et al. (2011), the researchers found a strong correlation between victims and drug use, in addition to a risk of smoking during childhood. Olweus (1994) reported that individuals who were bullied during childhood were more likely to display a poor self-esteem and be depressed at the age of twenty-three than adults who were not bullied as children. Additionally, researchers report that adults who were bullied as children tend to isolate themselves and display high levels of stress when compared to adults who were not bullied (Newman, Holden, & Delville, 2005). Consequently, bullying seems to be an indicator of possible mental health for children who are being bullied which may continue to manifest until adulthood (Milsom & Gallo, 2006).

Researchers have established the consequences of bullying (Hase, Goldberg, Smith, Stuck, & Campain, 2015) which include feelings of sadness, feelings of loneliness, and heightened anxiety. It has been reported that children who are bullied are often absent from school, has poor scholastic ability and often gets sick (Nakamoto & Schwartz, 2010; Fekkes, Pijpers, Fredriks, Vogels & Verloove-Vanhorick, 2006). Bullying is one of the biggest causes of distress (Malecki et al., 2015). Researchers have found a correlation between learners who are being bullied and suicidal ideation and suicidal attempts (Davis & Nixon, 2014).

Both victims and bullies may be at risk for consequences resulting from bullying behaviours (Milsom & Gallo, 2006). In reality, adolescent bullies are more likely to experience severe/extreme psychological and behavioural problems - (e.g. delinquency, school dropout, even alcohol and drug abuse) (Shetgiri, 2013).

2.5 THE ROLE OF SCHOOL CLIMATE IN BULLYING

It is imperative to consider school climate when investigating bullying because as the learners go up with the Grades, from pre-school to high school, adult supervision decreases

(Swearer, Espelage, Vaillancourt & Hymel, 2010). In turn, whenever there is less supervision or structure, learners tend to display bullying behaviour especially in areas such as the toilet, passages, playground, and tuck shop (Craig & Pepler, 1997; Marais & Meier, 2010). According to Astor, Meyer and Pitner (2001), learners have reported that they experience feelings of fear at school in areas that are not supervised by adults. Kasen, Berenson, Cohen & Johnson (2004) have researched the effect of the school climate on children for almost twenty years. These authors reported that learners between the ages of six and sixteen exposed to school environments with violence present with conduct problems and oppositional behaviour when compared to learners who are in schools with less violence. Also, a follow-up study for six years indicated learners who were exposed to violence at their school were at risk of criminality and alcohol abuse (Kasen et al., 2004). The behaviour that the learners from violent schools display include vandalism, fighting, and aggression (verbal and physical) whereas in other schools that focused on learning, low violence was displayed (Ncontsa & Shumba, 2013).

The studies above revealed that schools with high violence also display other problems which are related to the school environment caused by violence, thus when the violence is addressed, it will also alleviate the other problems linked to the violence. A positive school environment contributes to alleviating negativity within the school, a negativity which is related to vandalism, fighting, substance abuse, delinquency, and absenteeism (Bandyopadhyay, Cornell & Konold, 2009) even when the community and home environment are not positive. According to Espelage and Swearerr (2003), victimisation and bullying are associated with low positive peer and parental relationships, found in a study of a sample size of 7,376 learners. Also, positive school climates act as a buffer towards any possible negative experiences within the community or family environment as well as high levels of bullying.

2.6   THE MEASUREMENT OF BULLYING

Atik (2011) asserts that the most important aspect of bullying has been ignored, which is the accuracy of the bullying assessment. An accurate measure of bullying will elicit a clearer understanding of bullying which has a direct effect on the development of effective prevention and intervention strategies in schools (Crothers & Levinson, 2004). In considering the conceptual nature of bullying and the methods used to assess school bullying, Greif and

Furlong (2006) identified the core components of bullying behaviour as power differential, intentionality, and repetition and reiterated the need for instruments to promote consistency in research and the improvement of the accuracy of intervention capacity. These researchers established that a way of improving bullying assessment is by including all the core behaviours systematically, and by investigating the basis of the 'differences of power' between the bully and victim and also looking into the dynamic process that occurs during bullying. Likewise, Shaw, Dooley, Cross, Zubrick & Waters (2013) suggest that advances in 'bullying assessment' should be made, and that new assessment method shoulds be developed to get more meaningful results. Vivolo-Kantor, Martell, Holland & Westby, 2014) are of the opinion that there is an inconsistency regarding the measurement of bullying, therefore, it is challenging to compare prevalence rates of bullying in addition to comparing the measures used.

2.6.1 Bullying assessments

This section includes a discussion concerning the assessment of bullying. Table 2.4 illustrates examples of bullying assessments that are in existence and have been developed by various people.

Table 2.4: Examples of bullying assessments

Designers	Name of tool	Country	Target Grades
Solberg & Olweus, 2003	Olweus Bully/Victim Questionnaire	Scandinavia	Grades 5 to 11
Bond, Wolfe, Tollit, Butler & Patton, 2007	Gatehouse Bullying	Australia	Grades 4 to 9
Austin & Joseph, 1996	Bullying Behaviour Scale	United Kingdom	Grades 1 to 7
Bosworth, Espelage & Simon (1999)	Modified Aggression Scale	Tucson	Grades 6 to 8
Tarshis & Huffman, 2007	Peer Interactions in Primary School Questionnaire	Egypt, Saudi Arabia, and the United States of America	Grades 1 to 7

Swearer & Cary, 2003; Swearerr, Turner, Givens, & Pollack, 2008	Bully Survey	The United States of America	Grades 4 to 12
Orpinas & Frankowski, 2001; Orpinas, Horne, & Staniszewski, 2003	Aggression Scale	United Kingdom	Grades 4 to 9
Bosworth et al., 1999	Modified Aggression Scale	The United States of America	Grades 4 to 9
Arora & Thompson, 1987	"My Life in School" Checklist	United Kingdom	Grades 2 to 11
Orpinas, 1993	Victimization Scale	United Kingdom	Grades 4 to 9

It has been reported that bullying assessments do not correlate with the definition of bullying (Olweus, 1994). Bullying data is only useful when the types of bullying behaviours are stated (Malecki et al., 2015). When assessing bullying, it is imperative to consider how frequently the learners experience bullying (Crothers & Levenson, 2004). Malecki et al. (2015) are of the opinion that this is the first step to assessing how prevalent bullying is in schools. It is imperative to assess the whole school to develop appropriate prevention programs on a school-wide level (Vreeman & Carroll, 2007). When learners are assessed, it is easier to identify learners who may be at risk of experiencing negative emotions due to being bullied (Bandyopadhyay et al.*,* 2009). Felix, Sharkey, Green, Furlong & Tanigawa, (2011) are of the opinion that when assessing bullying, the definition should be considered as a whole so that effective preventative measures can be put in place.

According to Bond, Carlin, Thomas, Rubin, and Patton (2001), in a wide range, the context of social research measurement is a significant concern of which to take cognisance. De Vellis (2013) asserts that measurement is one of the essential activities in the sciences. Knowledge of objects, processes, people, and events is obtained through observations which are made by researchers (Kimberlin & Winterstein, 2008). According to De Vellis (2013), often, observations need to be quantified for the researcher to make meaning of them.

One important aspect of psychological measurement, which researchers need to consider, especially in the development of a measuring instrument/tool- is reliability (Bryman & Bell, 2015). Reliability of a measurement tool is defined as the ability of the instrument/ measuring tool to be consistent in its measurement over time, as this allows for the prediction of results (De Vellis, 2013). In other words, according to Kimberlin and Winterstein (2008), when a measuring tool/ assessment instrument is reliable, it will yield the same scores in repeated measurements (i.e. the same scores for the concept/variable being measured over time). The implication hereof is that the measuring tool should consistently produce the same results - unless the variable being investigated is one which is expected to change (Cornell & Bandyopadhyay, 2009). In fact, a measurement scale which is 'completely reliable' will produce the exact score each time the variable/attribute is measured (De Vellis, 2013). As such, De Vellis (2013) reiterates that since 'perfect scores' are rare and difficult to obtain, it is acceptable to ascertain the 'approximate best score'.

While reliability is concerned with the extent to which variable influences the items on a measurement tool, on the one hand, validity is concerned with the cause of the variation which could be the variable (De Vellis, 2013). Depending on the reliability of a measuring tool, the discrepancy in the results can be ascribed to the perfect score (De Vellis, 2013). Validity is about the extent to which a measurement tool is sufficiently able to measure a variable it claims to measure (Csikszentmihalyi & Larson, 2014).

While many questionnaires have been developed in the past, the researcher will mention three examples of questionnaires that have been developed. Firstly, the Olweus Bullying Questionnaire, secondly, the Bullying Behaviour Scale, and, lastly, the Gatehouse Bullying Scale. The Olweus Bullying Questionnaire, which is one of the most popular questionnaires, is a generic 40 item paper-pencil questionnaire, for learners who are in Grade 3 to Grade 12. This instrument, which has its response options in an LS format, has been shown to be a psychometrically appropriate instrument, with suitable construct validity and reliability. The Bullying Behaviour Scale is another example of a bullying questionnaire. This questionnaire was designed to measure bullying behaviour at school using six items in a dichotomous format. It is specifically designed for bullies between the ages of eight and eleven years, and has a Cronbach's alpha of 0.82 and is thus a reliable instrument. Lastly, the Gatehouse Bullying Scale is a "victims only" questionnaire which consists of twelve items measuring overt and covert victimisation. The response options are in an LS (test-retest reliability

ranged from 0.36 to 0.63) format, and it was designed for learners between the ages of ten and fifteen years.

Zych, Ortega-Ruiz & Del Rey (2015) assert that there is a need for improving the approach to assessing bullying. About the type of scales used in bullying instruments, Van Laerhoven et al. (2004) concluded that the LS is appropriate to employ in instruments for learners, while research with more varied and larger samples is required. Furthermore, research has indicated that a five-item Likert construct item can be substituted by a 100-millilitre line of a VAS (Hasson & Arnetz, 2005). According to Hasson and Arnetz (2005), more research is needed to establish the validity and reliability of the LS and the VAS within different contexts and events. In particular, more research is needed to determine which response options (between the LS and VAS) learners prefer (Mellor & Moore, 2014). By the necessity of further research, the aim of the researcher's study is to establish which of the two scales (LS and VAS) is the easiest to use by the Grade 4 learners.

2.7 CONCEPTUAL FRAMEWORK

For the purpose of this research, bullying is described as a distinct type of proactive aggression (Guerra et al., 2011) which involves behaviour with an intent to harm, happens 'repeatedly over time' and also includes a 'power imbalance' between the individual who does the bullying and the person who is bullied (i.e. the victim). In this unequal relationship, the most powerful person (i.e. the bully) attacks the less powerful person, identified as the victim (Flanagan et al., 2013). These definitions reiterate the interaction between the bully and the victim whereby the bully has power over the victim, both physically and psychologically (Jolliffe & Farrington, 2011). Furthermore, bullying entails more than aggression; it captures a dynamic interaction between the perpetrator and the victim (see Figure 1). These definitions reinforce the systemic nature of bullying, which by definition cannot take place without the dynamic relational interaction between both bully and victim. Consequently, the researcher has chosen a systemic conceptualisation of bullying.

In this systemic conceptualisation, the researcher makes use of Von Bertalanffy's (1968) principles which state that all parts of the system are related and, moreover, that a dynamic interaction exists between the components of the systems, such that a change in one part of the system will produce a change in the other parts. As such, the relationships and

relationship patterns between the individuals in the system are mutually influencing and cannot be effectively explained in isolation (Visser, 2012). Instead, from a system's perspective, the impact of the individual players in the system can only be understood by the other players, as all relationship patterns are recursive and thus mutually influencing (Visser, 2012). This systems perspective suggests that the behaviour of bullies can only be described in the context of the victim. Therefore this study, of necessity, includes characteristics of both victims and perpetrators, as both these parties contribute to the dynamic cycle of bullying behaviour. Moreover, since the aim of the study is to develop an efficient measuring tool for identifying both bullies and bully-victims (i.e. both perpetrator and victim), the individual characteristics of both perpetrator and victim need to be known and clarified before they can be identified.

Bullies are often perceived as powerful and strong, recent research confirms that they are also at risk psychologically (Corvo & deLara, 2010). In addition, bullies tend to struggle to adjust well into the school environment; they to perform poorly at school and they are predisposed to bunking (Corvo & deLara, 2010). Furthermore, and most importantly from a systemic perspective, bullies have learnt and adopted inappropriate methods for managing their social interactions (Goldsmid & Howie, 2013). Moreover, they display aggressive attitudes in their social encounters and have a need to dominate others (Skrzypiec et al., 2011). Consequently, a child who bullies another individual (i.e. the victim) uses power and violence to control their victims. It is this factor that contributes to dysfunctional relationship patterns and interactions, both at school and in the future. This inappropriate mode of interaction is not conducive to healthy relationships, and in fact contributes to a dysfunctional system—one which is perpetuated, not only by the perpetrator but also by the victim.

This conceptualisation is based on the fact that a school system in which bullying occurs cannot operate without the dynamic (albeit dysfunctional) interaction between the bully perpetrator and the victim. Even though victims should not be blamed for being bullied, in some way they are reinforcing the cycle of bullying. Thus, from a system's perspective, the victim, who appears to be the more helpless character in the systemic "bullying" drama/story, is also a direct contributor to the perpetuation of the dysfunctional system and thus contributes to the inappropriate systemic bullying behaviour (just as the bully is a direct contributor).

About understanding the role and psychological attributes of victims, research has shown that children who are bullied seem defenceless, reserved, compliant, or fearful, and typically react by fighting back in response, in hopeless ways (i.e. being upset and crying) (Skrzypiec et al., 2011). This response tends to strengthen/reinforce the bullying behaviour (Skrzypiec et al., 2011). In support hereof, Cowie and Jennifer (2008) indicate that victims display behaviours/characteristics that categorises them as defenceless and which stimulates aggression from people around them, empowering bullies to perceive them as targets. In so doing, victims contribute to the cycle of bullying being perpetuated.

The fact that so many children—whether bullies or victims—contribute to the climate in which bullying grows (and is increasing), reiterates the need for effective interventions. However, effective interventions/solutions start with accurate (reliable and valid) assessment of both bullies and victims. Consequently, this study hopes to intervene in this systemic "bullying" cycle, by researching which instrument and which scales (between the Likert and VAS) are best suited for measuring bullying in Grade 4 learners.

2.8   CONCLUSION

This chapter provided the literature review concerning bullying and the measurement of bullying. The concept of bullying was defined and described in this chapter. In addition, this chapter included the consequences of bullying as well as the role of the school climate in bullying. Furthermore, the researcher discussed the measurement of bullying as well as the conceptual framework employed for this study.

In Chapter 3 the researcher will explain in detail the methodological processes (Section 3.8) used in the current study as well as the paradigm the researcher has chosen (Section 3.2). The research approach (Section 3.3) and research design (Section 3.7.1) are also discussed. The hypothesis is stated in this chapter in alignment with the research questions (Section 3.6). Finally, this chapter includes an explanation about the participants (Section 3.8.2), how data was collected (Section 3.8.1) and how the data was be analysed (Section 3.8.6). Furthermore, the ethical considerations that were employed in this study are included (Section 3.8.10.5).

CHAPTER THREE: METHODOLOGY

3.1 INTRODUCTION

The method that used to conduct this study is discussed in this chapter. The research questions addressed in this study are a discussion of the paradigm (Section 3.2) influencing this research as well as the approach (Section 3.3) chosen. After that the selected research design (Section 3.7.1) is discussed, followed by the data collection methods (Section 3.8.1), including a discussion of the sample and the sampling procedures (Section 3.8.2). The data analysis (Section 3.8.6) and methodological norms/methods used to verify the data (Section 3.8.7) are also discussed. This chapter concludes with a discussion of the ethical procedures that were applied in this study (Section 3.8.10). Table 3.1 is a summary of the methodological process of this study.

Table 3.1: Methodolgical process

Methodological process	
Research questions	**Primary research question:**
	Which scale, between the LS and the VAS, is more appropriate for measuring bullying among Grade 4 learners in a school environment?
	Secondary research questions:
	i. To what extent do the LS and VAS measure the core aspects of bullying accurately?
	ii. What psychometric properties can be observed in an instrument that uses either the LS or VAS response options?
	iii. What is the correlation between the LS and the VAS?
	iv. What differences can be observed between the two scales?

Research approach	Quantitative
Research paradigm	Post-positivism
Research design	Survey
Selection of participants	Purposive sampling
Data collection	Distribution of questionnaires
Source of data	Grade 4 learners
Data analysis	Descriptive and inferential statistics
Ethics	Informed consent, protection from harm, confidentiality, privacy and anonymity, voluntary participation as well as ethical clearance

3.2   POST-POSITIVISM PARADIGM

Post-positivism, which is an extension of positivism, was used in this study. Post-positivists view knowledge differently to positivists, in that they adopt a pragmatic approach which does not fit perfectly into the traditional epistemological categories, and is thus sometimes criticised as being eclectic (Maree, 2007). Zammito (2004) defines post-positivism as a paradigm that denies positivism, and as such he dissociates positivism and post-positivism. On the other hand, McGregor & Murnane (2010) positions/situates post-positivism as an extension of positivism.

Post-positivism is conceptualised as a branch of positivism, as this emphasises the positivist aspects of post-positivism, such as the logical-positivist search for truth, knowledge which can be objectively verified and a law-like external reality (Ponterotto, 2005). Beyer, du Preez & Eskell-Blokland (2012) concur with Ponterotto (2005) regarding the criteria associated with the scientific methodology's way of conducting research. Therefore post-positivism is the most appropriate paradigm for a researcher who intends to use some properties of positivism (e.g. quantification) together with some aspects of the interpretivist stance (e.g. subjectivity) (Henderson, 2011). As such, post-positivist research accommodates those who are interested in the "pragmatic combination of qualitative and quantitative methods" (Maree, 2007, p.65).

With regard to the philosophical assumptions associated with post-positivist approaches, in general, they accept that truth is multiple, relative and internally constructed by the participants (Morrow, 2005). Moreover, the reality is not a fixed entity and can be constructed by the individuals involved in the research process. However, post-positivists emphasise that this constructed reality is influenced by the context of the participants (e.g. culture, gender and family background) and, as such, context plays an important part in research (Nawrin & Mongkolsirikiet, 2012). Consequently, post-positivist research focuses on context and, in the case of bullying, the contextual behaviour of both the bully and the victim.

With regard to reality and the phenomena being explored, post-positivist researchers search for evidence that is trustworthy and credible (Morrow, 2005) because from this paradigm, objective reality cannot be known in full (Henderson, 2011) as it is only a part of the reality. The truth is thus not verified via generalisation (external validity) but is rather that which accurately and credibly reflects the phenomena being investigated and the participant's experience of the phenomena.

The researcher conducted research from the post-positivist paradigmatic perspective, as this allowed for the positivist 'deconstruction' of the concept of bullying (Visser, 2012) while simultaneously incorporating the participants' internally constructed reality, values and context into the research. Moreover, the post-positivist stance is compatible with the systemic conceptualisation of bullying which the researcher has chosen as part of her conceptual framework. Furthermore, according to McGregor and Murnane (2010), within the post-positivistic paradigm, researchers strive to know why people behave in the way that they do, and in so doing, they seek to reveal/uncover power relationships and structures. Thus post-positivist research is more suitable than positivist research for investigating social and psychological issues (such as bullying) which arise in the context of social relationships.

In the presented study the researcher strove to understand the bullying behaviour among Grade 4 learners by ensuring the correct scaling methods were used; methods which take into account the context and the relational nature of bullying. The researcher's account of context and realation nature of bullying is compatible with a post-positivist conceptualisation of bullying which incorporates the interactive, systemic and dynamic nature of bullying (which by definition involves both a bully and a victim and their relationship patterns). Consequently, the post-positivist paradigm is justified in this study.

3.3   QUANTITATIVE RESEARCH APPROACH

In this study the researcher chose to use the quantitative approach to research, the latter which utilises the scientific methodology's focus on observation, control and measurement (Gravetter & Forzano, 2015) in the collection of quantitative data. The quantitative methodological approach supports the view that the world and the laws that govern it are relatively stable and predictable, and can be discovered and verified using scientific research and investigation (Gay & Airasian, 2003). As such, quantitative positivist research investigates an objective world where physical and social phenomena can be measured externally by a neutral observer (Fetters, Curry & Creswell, 2013). From a logical-positivist perspective, human life is best understood and described by observing and objectively measuring external behaviours/phenomena, in a process where the researcher adopts an outsider (etic) "observer" role (Maree, 2007, p.31) with little personal interaction with the participants they are studying. The writer's research incorporated these positivist aspects in that the researcher adopted an etic or outsider perspective. Moreover, this study adhered to the positivist criteria about reliability and validity and even generalizability.

On the other hand, the researcher chose to conduct quantitative research within the context of a post-positivist paradigm, as the latter allows for the inclusion of the participants' internally constructed realities, contexts and values, as well as allowing for multiple interpretations and different perspectives on individual behaviour (Mack, 2010). Moreover, a post-positivist paradigm permits the use of non-positivist methods such as non-probability and purposive sampling, in the collection of data and the sampling of participants. In this study, the researcher thus conducted research from a post-positivist paradigm as this allowed for the capturing of the systemic dynamics of bullying as well as the use of non-probability, purposive sampling (while conducting survey research). In this study, the survey was aimed at obtaining and measuring both the bully and the victims' different experiences about bullying.

3.4   AIMS AND OBJECTIVES

i. To measure the core aspects of bullying accurately.
ii. To explore the psychometric properties of the Learners Bullying Questionnaire (LBQ) instrument.

iii. To explore the learners' response option preferences.

iv. To compare the LS and the VAS in order to see which the Grade 4 learners prefer.

3.5 PURPOSE OF THIS STUDY

The research intends to explore which scale, namely the LS or the Visual Analogue Scale, would be more appropriate to use in developing a questionnaire to explore bullying amongst Grade 4 learners in a Model C school in Pretoria, Gauteng.

3.6 RESEARCH QUESTIONS AND HYPOTHESES

3.6.1 Primary Research Question

"Which scale, between the Likert Scale (LS) and the Visual Analogue Scale (VAS), is more appropriate for measuring bullying among Grade 4 learners in a school environment?"

3.6.2 Secondary Research Questions/Sub-Questions

i. To what exetent do the LS and VAS measure the core aspects of bullying accurately?

ii. What psychometric properties can be observed in an instrument that uses either the LS or VAS response options?

iii. What is the correlation between the LS and the VAS?

iv. What differences can be observed between the two scales?

3.6.3 Hypothesis Formulation

The formulation of the research/alternate hypothesis was guided by the primary research question *"Which scale, between the Likert Scale (LS) and the Visual Analogue Scale (VAS), is more appropriate for measuring bullying among Grade 4 learners in a school environment?"* The research and null hypotheses are as follows: The Grade 4 learners prefer the VAS over the LS.

In testing this hypothesis, the researcher was concerned about which scale the learners preferred or found easier to understand, enabling them to answer the bullying questions more accurately.

The null hypothesis (H_0) is the hypothesis of "no difference". In this study, the null hypothesis stated that "there is no significant difference in the Grade 4 learners' preference for VAS and the LS".

The alternative hypothesis (H_1) stated that "there is a significant difference in the Grade 4 learners' preference for VAS and the LS".

3.7 RESEARCH DESIGN AND METHODOLOGY

3.7.1 Survey Research Design

According to De Vaus (2013), the research design determines how well a research plan can accomplish the research purpose and study questions. It provides an explicit strategy for developing an enquiry framework, intended to address the research question. Creswell (2014) lists different strategies aimed at different research designs based on research approaches. Gravetter & Forzano (2015) suggests that the function of research design is to make sure that evidence obtained from the study allows the researcher to answer research questions as unambiguously as possible.

The research design employed in this study is the survey design, as this enabled the collection of primary data from a population too large to observe directly (Babbie, 2008). Survey designs are widely used for measuring attitudes, perceptions and preferences in a large population (McMillan & Schumacher, 2014) where the participants are selected for a specific purpose (Edmonds & Kennedy, 2013) as is the case in this study. Moreover, survey designs are suitable for social inquiry into psychological attributes, such as bullying, because they provide a clear understanding of the participants in the study. In this study, the researcher was interested in assessing the attitudes, perceptions and experiences of bullying in a sample (32 Grade 4 learners), selected from a Model C school where bullying is prevalent. Furthermore, survey designs make use of questionnaires as data collection tools/instruments, the latter which provided the researcher with specific numerical/quantified data about the phenomena being investigated. In this case, data about the suitability of the scales being compared (LS and VAS) will be obtained which makes the survey design suitable for and compatible with the aim and purpose of this study.

3.7.2 Advantages of Survey Designs

The three top advantages of survey designs are the high response rate, which typically reaches up to 100%, and the costs tend to be lower, and because the researcher is present during the assessment, he or she can help the participants and answer any questions they may have (Gravetter & Forzano, 2015). Other advantages include the short period for testing and thus the low attrition rate, which means that the dropout of participants is minimised (Ary et al., 2006).

According to Gravetter & Forzano (2015), another advantage of a survey design is its flexibility in that the questions can be developed by the researcher to obtain specific information about variables such as attitudes, opinions, preferences and behaviours (Ary et al., 2006). Therefore the researcher is able to adapt existing questions and include questions specifically suitable for his/her study, as opposed to using pre-existing questionnaires which have not been adapted for the unique purpose of the study. Consequently, the data collected via a questionnaire in a survey design provides useful information about the respondents and their attitudes. Another advantage of survey designs is that if a researcher wants to understand a certain behaviour, he/ she does not have to wait for the behaviour to occur before getting the necessary insight into the perceptions and attitudes associated with the behaviour (Gravetter & Forzano, 2015) but can ask the participants questions related to the behaviour.

3.7.3 Challenges Faced When Using a Survey Design

The disadvantage of a survey design is with regards to the restriction of when and where the survey may be conducted (Babbie, 2008). Furthermore, when a population is limited, the results of the survey will also be limited regarding generalizability. In other words, a survey design is not flexible with respect to time and place (Ary et al., 2006). Also, the low response bias and nonresponse bias could be a disadvantage as could be the data analysis when the questionnaire includes open-ended questions (Gravetter & Forzano, 2015). Finally, the quality of the accuracy and truthfulness of the responses depends on the respondents because the information they provide is self-reported (Gravetter & Forzano, 2015).

3.7.4   How to Overcome the Survey Design Challenges

In overcoming the "place and suitability of time" challenges, the venue and date/time arrangements will be made with the headmaster/mistress of the chosen Model C school. With regard to the population being limited, this limitation as the participants—the purposively selected sample of the Grade 4 learners from a suitable Model C School—will be able to provide the specific "bullying" information needed in this study. Thus making the sample more useful than a larger sample with learners who are not aware of the dynamics and consequences of bullying. With regard to the accuracy and truthfulness of the self-reported responses, the researcher will reiterate the importance of honesty for the success of the study, in addition to pointing out the consequences of incorrect responses. With regard to the truthfulness, anonymity will help, as the researcher will assure the respondents that their identities are protected. According to Ary et al. (2006), when the participants are aware that their identities will be protected, they are most likely to respond truthfully. The researcher will also inform the participants that the study is an independent one conducted by the University for research. As such, the school did not request the study, which is not about punishing perpetrators or exposing vulnerable victims but is aimed at assisting in identifying the problem, the latter which is a prerequisite for ultimately dealing with the problem. Finally, the researcher, with the help of some assistants, will herself be present in the field to administer the questionnaires and to ensure that the respondents know how to answer all the questions on the questionnaire (See section 3.7.2.3 Data collection instrument).

3.8   METHODOLOGY

3.8.1 Data Collection

The questionnaires were distributed to the Grade 4 learners who agreed to participate in the study and signed assent forms (their parents signed consent forms). The questionnaires were administered during school thereby ensuring that all participants present at school that day participated. The questionnaires were handed out and filled in once the teacher had explained the procedure and the participants had practised a few examples.

3.8.2 The Sample and Sampling Strategy

Sampling refers to the process used to select a portion of the population for study (Maree, 2007). There are several ways of sampling a population. Two basic sampling methods which include probability (participants have an equivalent chance to be selected) and non-probability (involves non-random selection of participants).

The quantitative sampling process typically uses the following: cluster sampling, stratified sampling and simple random sampling, whereas purposive, quota and snowball sampling are typically associated with qualitative studies. Although the researcher conducted a quantitative study, non-probability, non-random, purposive sampling was used to obtain the most useful results (see later paragraph for details of this study).

In the broader mixed study (i.e. the study under which the researcher's study falls) 30 primary schools were purposively selected to participate. The schools were sampled for maximum variation, drawing from Quintile 1, 3 and 5. Out of the 30 selected primary schools, 15 were chosen to be the intervention group, and the other 15 acted as the control group. The intervention and control groups were matched according to quintile and location of the school.

In the researcher's study, some of the Grade 4 learners from one Model C school formed part of the study as they provided the required information, enabling the researcher to answer the research question. The school was selected using a purposive, non-probability sampling method based on the geographical area, the incidence of bullying and the diversity of the school population.

The participants were also selected using non-probability, purposive sampling based on the fact that they could provide the required information while representing the population of interest (Babbie, 2008). On the day of testing, 32 learners were present, and all 32 participated in the study by completing the questionnaires. This study thus consisted of 32 learners from a single Grade 4 class (in a Model C school) who completed the LBQ.

3.8.3 Data Collection Instrument

In this study, the researcher collected the data by using a close-ended survey questionnaire, the Bullying LBQ, the latter which is the data-collection instrument. Some of the questions required a response using the 4 point LS and other questions made use of visual analogue responses (VAS). The questionnaire provided the researcher with the necessary information about the suitability of the two scales (Likert and VAS) as instruments for assessing bullying in young learners, and also provided the researcher with information as to which scale the learners prefer. The questionnaire was thus used to collect information that was useful in answering the research question (Ary et al., 2006) which is as follows: "*Which scale, the Likert Scale (LS) or the Visual Anologue Scale (VAS), is more appropriate for measuring bullying among Grade 4 learners in a school environment?*".

The instrument used by the researcher was constructed using a compilation of questions based on the Olweus Bullying Questionnaire and the KiVa Questionnaire. The researcher's questionnaire consisted of both LS and VAS response options to determine the learners' preferences about the LS and VAS response options. The validity and reliability of the questionnaire are discussed hereafter. Further details of the questionnaire are discussed in Chapter 4 (Section 4.6).

3.8.3.1   *Validity and Reliability of the Data Collection Instrument*

In general, validity and reliability of surveys are found in the construction of the survey items (Abbott & McKinney, 2013). The specific strategies used to ascertain the validity and reliability of the instrument are discussed hereafter.

3.8.4 Validity of the Instrument

Validity is defined as the degree to which a tool measures the concepts it claims to measure (Kaplan & Saccuzzo, 2009). Validity is further conceptualised as face, content, construct and criterion validity (Maree, 2007). In this study, the researcher focussed on face validity and content validity. With regard to face validity of this survey design, from the appearance of the questionnaire, the next person should be able to tell that it is a questionnaire and what its purpose is (Foxcroft & Roodt, 2009). The participants are most likely to respond to questions

that are relevant to them and not respond to questions that they do not understand or feel are inappropriate (Ary et al., 2006).

Content validity refers to the degree to which the instrument covers the whole content of the construct that it claims to measure (Kaplan & Saccuzzo, 2009). Content validity may be achieved by getting experts to critique the items on the questionnaire and say whether or not they are appropriate to measure what they intend to measure, and also if there are sufficient items for the domain in question (Ary et al., 2006) to measure the domain accurately.

Face and content validity were dealt with in this study. These two aspects were evaluated by peers who reviewed the questionnaire and were invited to critique the items. They looked at the questionnaire's blueprint to verify whether the questions/items were consistent with the domain/subject of bullying. The peers who reviewed the questionnaire agreed that the questionnaire had face validity and that its content validity was acceptable.

3.8.5 Reliability

With regard to reliability, survey data that is not reliable is not useful information (Abbott & McKinney, 2013). Reliability refers to the degree to which a tool produces similar results when used at different times by the same participants or administered to various participants from the same population (Foxcroft & Roodt, 2009). According to Maree (2007), reliability is concerned about the degree to which a questionnaire is consistent. As such, reliability has to do with the replicability of the results. There are several different types of reliability. However, this study will focus on internal consistency reliability.

Internal reliability or internal consistency, which is a pre-requisite for construct validity, depicts the degree of similarity among the constructs in measuring the central/common construct with which the study is concerned (Foxcroft & Roodt, 2009). A higher internal reliability/consistency is an indication of the similarity between the constructs, the latter which is calculated using the Cronbach's alpha coefficient. A high internal consistency means that the items have a high quality of measuring the same thing (Sekaran & Bougie, 2010). Furthermore, the internal consistency of an instrument may be ensured by including repetitive instrument items in the questionnaire and one of the useful ways of indicating test reliability is through a standard error of measurement. (Kaplan & Saccuzzo, 2009)

The internal consistency of the survey questionnaire was measured using the Cronbach's alpha for this study. In this regard, the split-half reliability coefficient, as well as the standard error of measurement, were determined. The results of these measurements are discussed in Chapter 4 (Section 4.4). Table 3.2 illustrates an example of an item in the LBQ (Sectiion B – question 5) (See full LBQ in Annexure C).

Table 3.2: Illustrating an example of an item using LS and VAS

Example item: This school is a friendly place

LS	VAS
Agree a lot	😀
Agree a little	🙂
Disagree a little	🙁
Disagree a lot	😞

3.8.6 Data Analysis

Data analysis, which involves deconstructing/analysing the whole into parts, is the process of learning about the different parts of the gathered information and how these different parts relate to each other (Webster & Eren, 2014). The aim of analysing data is to obtain information which allows the researcher to draw conclusions and answer the primary research question (Creswell, 2014) and, in the case of a quantitative study, either confirm or reject the hypothesis. In a quantitative study, the researcher formulates hypotheses at the beginning of the research study and then draws logical conclusions from the statistically analysed data to verify/disconfirm the hypotheses (Leedy & Ormrod, 2013). As such, quantitative data analysis tends to be deductive in nature, whereas qualitative data utilises inductive reasoning and allows for the building of theory (Fetters et al, 2013). Data analysis can be carried out either statistically or non-statistically, depending on the type of data. Quantitative numerical data is usually analysed statistically and summarised using descriptive statistics; whereas qualitative textual data is typically analysed thematically, without the use of numbers.

In statistics there are two main branches are namely, descriptive statistics and inferential statistics. Descriptive statistics involve summarising and organising (grouping) the data (see next paragraph for details), whereas inferential statistics involve the use of procedures that allow researchers to generalise and make inferences about the larger population from which the sample/s were selected (Bian, 2012).

Descriptive statistics is a way of organising data so that the data can be easily understood (Bless & Kathuria, 1993). It is also a summary of quantitative information presented in a numeric form with the aim of defining what happened in the sample and also cautions the researcher about aspects of the sample that may affect his/her findings (Thompson, 2009). The purpose of descriptive statistics is to describe the average of scores, in other words, the measures of central tendency (mean, median, mode) as well as the spread of the scores, i.e. the variance or dispersion as reflected in the standard deviation and variance (Fisher & Marshall, 2008). In this study, the researcher used the median and mode as measures of central tendency. The mean could not be used as the data was categorical and not continuous or ratio data.

Inferential statistics provides information about the whole population from which the representative sample was taken (Vergura et al., 2009) allowing one to make predictions about the population using the data from the sample (Vergura et al., 2009). As such, inferential statistics allows for generalisations if the criteria for normal distributions are met. In the case of non-normal sample distributions, non-parametric tests are used to analyse the data collected (Maree, 2007).

The inferential statistical techniques that are typically used to analyse survey data include correlations, factor analysis, and regression analysis (Mouton, 2001). Survey data can also be represented using the descriptive statistical methods of bar charts, plots, pie charts and tabulations (Maree, 2007).

The researcher employed of both descriptive and inferential statistics because this allowed for the summarising and interpretation of the data collected (Fisher & Marshall, 2008). The numerical data were analysed statistically using the SPSS (Statistical Programme for Social Sciences) and organised and summarised using descriptive statistics (see Chapter 4 for details). Since this sample did not meet the criteria of normality, the non-parametric Wilcoxon and the Spearman non-parametric statistical tests were used.

In this study, the researcher explored which scale (between the LS and the VAS) is more appropriate to measure bullying in Grade 4 learners. To determine which scale is more suitable, the researcher will use an adapted version of an existing bullying questionnaire.

This questionnaire had both VAS response options as well as LS response options for all the questions presented to the learners. For each question, the correlation between the VAS and LS responses was determined using the Spearman rank order correlation coefficient. The Spearman correlation coefficient is the non-parametric alternative to the Pearson correlation coefficient (Pietersen & Maree, 2007). It makes no assumption about the distribution of the two variables, it uses ranks instead of the actual values, and it can be based on any scale that is at least ordinal (Pietersen & Maree, 2007). Therefore, in this study, the Spearman rank order correlation was used to measure the relative reliability among the two response options (Van Laerhoven, et al., 2004), namely the LS and VAS response options (See Chapter 4 for the results).

In this study, at the end of the questionnaire, the researcher asked the Grade 4 learners to rate each response option, how much they liked it and how difficult it was for them to answer by selecting a number from 1 to 5 (1= didn't like it; 5 = liked it a lot) . In quantifying these responses, a mark allocation of 1 would mean that the learner does not prefer or finds that particular response option difficult, whereas a mark allocation of 5 would mean that the learner prefers or finds that particular response option easy. Response options that the learners gave a mark to were handled as ordinal data. Using ordinal data and descriptive statistics, the researcher calculated the central tendency, in this case, the median (middle) scores as well as the mode (most frequently occurring).

The researcher also tested the learners' preference for and the difference between the two response options using the Wilcoxon test (Van Laerhoven et al., 2004), as a single sample was tested on both response options—considered a dependent sample. The Wilcoxon test is the nonparametric test version of the t-test and is similar to the Mann-Whitney U-test, which is used for comparing independent samples (Wilcoxon, 1945; Pietersen & Maree, 2007).
A researcher typically uses the Wilcoxon test when he/she wants to know whether two dependent groups are drawn from the same population, where the normality conditions or other parametric conditions are not satisfied (Bless & Kathuria, 1993). The Wilcoxon procedure also consists of finding the differences between pairs of scores in a dependent

sample (Bless & Kathuria, 1993). As such, the Wilcoxon test refers to dependent groups, where the scores of two groups may be related (Pietersen & Maree, 2007). In this case, since a single sample is used to measure the learners' preference for either VAS or LSs, the group is considered a dependent group, as the learners are perfectly matched with themselves.

The assumptions of the Wilcoxon test include the standard assumptions for nonparametric tests; in particular, an ordinal scale of measurement can be used (Bless & Kathuria, 1993). Further assumptions are that the two groups are related; and that the pairs of data are independently and randomly selected (Bless & Kathuria, 1993). In addition, to the aforementioned, the Wilcoxon will be used to compare the differences in the median of the two response options (Van Laerhoven et al., 2004). In other words, the median of the VAS and the median of the LS will be compared using the Wilcoxon, non-parametric test for dependent samples.

Thus, in evaluating the learners' response preferences, the researcher used the non-parametric Wilcoxon statistic for paired ordinal variables to compare the variances in the preference scores and difficulty scores of the Grade 4 learners for the two response options. The researcher also used the Wilcoxon's rank statistic to assess if the total number of learners scoring in each group was constant throughout all the response options (Van Laerhoven et al., 2004).

Finally, in this study the researcher compared the total number of learners scoring in each group of the LS with the percentage of the learners scoring in the VAS due to a potential challenge of systematic biases (Van Laerhoven et al., 2004).

3.8.7 Methodological Norms

This section includes a discussion of the strategies used to verify the data and enhance the validity and reliability of this study.

3.8.8 The Validity and Reliability of this Study

Quantitative validity is grounded in the realist assumption that an objective reality exists and is thus measurable, independent of and external to our perceptions (Frank-Schultz, Naidoo, Cloete & Seedat, 2012). Validity involves the accuracy of the measurements and the

measurement tool and is also defined as the strength of the study's conclusions, inferences or propositions. Thus, the inferences based on the results of the study are valid (Joppe, 2000).

With respect to enhancing a study's validity, Maree (2007) proposes the following strategies: The first strategy is triangulation, which uses multiple sources of data to make claims about the phenomena being investigated. The second strategy relates to member checks or expert appraisal for enhancing validity claims. Member checking entails asking peers and colleagues familiar with the research in the field to examine the questionnaires and the interpretation of the findings. In this study, expert appraisal was used to support claims regarding face and content validity.

On the other hand, reliability reflects the consistency of a study's measurement and the replicability of the study's results, and thus involves the degree to which an instrument measures the same way on different occasions. Joppe (2000) defined reliability as how consistent the results are when the experiment is repeated a number of times under the same methodological conditions. Kirk and Miller (1986) identified three types of reliability referred to in quantitative research which relate to (1) producing the same results under the same measurement conditions (2) the stability of a measurement with respect to time and (3) the similarity of measurements in a given period of time.

3.8.9 Internal Validity and External Validity (Generalisability)

Morse, Barrett, Mayan, Olson, & Spiers (2002) describe internal validity as the accurate presentation of a particular context or event as outlined by the researcher. It refers to the credibility that the researcher's conclusion stems from the data inDurrheim and Wassenaar(2002). . In this study, the researcher established credibility by applying triangulation to the methods of data collection and data analysis, as well as member checking, by asking fellow researchers to discern whether there were any discrepancies in the findings.

External validity refers to our ability to generalise the results of our study to other settings. While generalisability was not the aim of this research, it is important to demonstrate an understanding thereof for future research purposes. With regard to generalizability, quantitative research is concerned with the results being generalizable to the larger population based on the fact that in quantitative research, the samples are randomly selected

from a large population, thereby guaranteeing high external validity and generalizability. In this study, the sample was not randomly selected, and neither was it big enough to ensure a high level of external validity and thus generalisability.

3.8.10   Ethical Considerations

3.8.10.1   *Informed Consent/Assent*

Before agreeing to partake in a study, the participants have a right to be well informed about the details of the research project (Oliver, 2010). The participants of this study were minors (below the age of 18 years), therefore initial consent from the parents was obtained, in addition to obtaining assent from the learners (Alderson & Morrow, 2010). The researcher drafted two letters, for both the parents and the learners, with the aim of explaining what the study entails, the expectations of the researcher for the participants, as well as the potential benefits and risks of being part of the study, in addition to explaining how the information received from the participants is to be handled (King, 2010).

3.8.10.2   *Protection from Harm*

In this study, especially due to the fact that the participants were learners, the researcher was very aware of the possibility that some of the participants could be being harmed psychologically (Leedy & Ormrod, 2013), as a result of asking sensitive questions (e.g. in the LBQ). Therefore, the researcher informed the participants about the study's focus on bullying, in addition to informing them about and the potential risks of being part of the study. Thus all the participants made informed decisions regarding their participation in this study.

3.8.10.3   *Confidentiality, Privacy and Anonymity*

Confidentiality implies protection of personal information about the participants, such as their identities and the information the researcher collects from them (Burns, 2009). In this study, to guarantee the participants' confidentiality, privacy and anonymity regarding their names and personal information, the researcher replaced the names of the participants with codes. Furthermore, the collected data will be stored in the University of Pretoria archives, according to the data storage policy of the University.

3.8.10.4 *Voluntary Participation*

Ethically, voluntary participation is a key principle to be adhered to in research. In this study, this principle was included in both the consent and assent letters. In these letters, the researcher confirmed that the participants should choose whether they wanted to partake in this study. Besides voluntary participation, it was also made clear to the participants that they could withdraw from the study at any time, without explaining their reasons, and moreover, it was communicated to them that their withdrawal would not result in them being punished or discriminated against in any way (Oliver, 2010). The participants were also informed that they did not have to disclose any information which made them feel uncomfortable or frightened (King, 2010). In accordance with the ethical principles pertaining to research, the participants in this study were not in any way pressurized or forced to participate in this study. As such, their involvement in this study was completely voluntary.

3.8.10.5 *Ethical Clearance*

In accordance the requirements of the research committee of the Faculty of Education of the University of Pretoria- the researcher applied for ethical clearance and approval for this study. This was done by submitting the research proposal to the aforementioned department. This was an important process, as it further ensured that the participants would be protected from harm, and that the research would be carried out in an ethical manner.

3.9 CONCLUSION

In this chapter, the research process of emplyed in this stududy was described. The chapter started with a discussion of the research paradigm and approach used and after that revisited the purpose of this particular study, the aims and objectives and also the research questions and hypotheses. This was followed by the research design and methodology used to answer the research questions. The methodology section included a discussion of the data collection, the sample and sampling strategy used as well as the instrument/data collection tool. It also included the data analysis, the latter which included details of the techniques used to analyse the numerical data. After that, a justification of the methodological norms was provided. The chapter concluded by addressing the ethical criteria adhered to in this study.

In the following chapter, a detailed description of the data collected as well as the specific techniques used to analyse the data (Sections 4.2, 4.3, 4.4 & 4.5). The chapter ends by interpreting the findings in light of the research questions and aims/objectives (Section 4.6).

CHAPTER FOUR: RESULTS OF THE STUDY

4.1 INTRODUCTION TO THE CHAPTER

Chapter 4 comprises the analysis of data as well as a discussion of the research findings. The results of the study will be linked to the primary research question that states, *"Which scale, between the Likert scale (LS) and the Visual Analogue Scale (VAS), is more appropriate for measuring bullying among Grade 4 learners in a school environment?"* The data collected was analysed to explore which scale, between the LS and VAS is more suitable to measure bullying in Grade 4 learners. The results displayed in chapter 4 were analysed with SPSS version 24. Data were obtained from the Learner Bullying Questionnaire which was completed by 32 learners from a Grade 4 class in a Model C School.

In this chapter, firstly, the data analysis is contextualised(Section 4.2) followed by the process of data analysis (Section 4.3). Secondly, the data analysis and statistical procedures the study utilised are discussed (Section 4.3). After that, the leaner scale preference questions are analysed (Section 4.4). The reliability and validity of the Learner questionnaire are discussed (Section 4.5) and then Chapter 4 concludes with a discussion of the findings and their relevance in answering the research question (Section 4.6).

4.2 CONTEXTUALISING THE DATA ANALYSIS

Data analysis involves analysing the whole into parts and identifying how the parts relate to each other (Webster & Eren, 2014). Moreover, data analysis allows the researcher to draw conclusions and answer the primary research question (Creswell, 2014) and, in the case of a quantitative study, either confirm or reject the hypothesis. The analysis of the data takes place primarily in two ways, (i) descriptively and (i) statistically (see Section 4.3).   The data in this study were analysed with the intention of answering the following 'research questions' and testing the below-mentioned hypotheses.

Primary Research Question: *"Which scale, the Likert Scale (LS) and the Visual Analogue Scale (VAS), is more appropriate for measuring bullying among Grade 4 learners in a school environment?"*

Secondary/Sub Research Questions:

   i. To what extent do the LS and VAS measure the core aspects of bullying accurately?

  ii. What psychometric properties can be observed in an instrument that uses either the LS or VAS response options?

 iii. What is the correlation between the LS and the VAS?

 iv. What differences can be observed between the two scales?

Research Hypothesis: The VAS is more appropriate for measuring bullying among Grade 4 learners than the LS.

Null Hypothesis: There is no significant difference in the learners' preference for the Visual Analogue Scale over the Likert Scale.

Alternate Hypothesis: There is a significant difference in the Grade 4 learners' preference for VAS and the LS.

The following instruments/tools were used to collect the data for statistical and descriptive analysis (i) Biographical questions (ii) Learner Bullying Questionnaire (iii) Response preferences questions (six questions):

(i) Biographical questions: The information regarding the learners' race and gender was obtained from the admin office from Vhalliespark Primary School.

(ii) Learner Bullying Questionnaire: the questionnaire included questions that are related to bullying, for example, how often bullying took place, where it occurred and whether or not the learners reported their bullying experiences. The questionnaire is a combination of the Olweus bully questionnaire and the KiVa questionnaire. The items were also verified by undertaking a literature review of bullying instruments which speaks to the content-related validity of the questionnaire (See Annexure C where the complete Learner Bullying Questionnaire can be found). The question responses were both in the Visual Analogue and Likert Scales. An example of one questionnaire item is are found below:

I was called mean names or teased in a hurtful way.

LS

Agree a lot	Agree a little	Disagree a little	Disagree a lot

VAS

(iii) Response preferences questions (six questions): six items were included towards the end of the questionnaire regarding the scale preference of the learners (See Section E of LBQ). Learners were asked to indicate which scale between the LS and the VAS they preferred. The learners rated their scale preference by answering the six questions using a rating scale between 1 and 5 (one (1) *meaning less preferred or most difficult and five (5) meaning most preferred or easiest).* Table 4.1 has the six questions that the learners had to respond to, for the researcher to understand the learner's preference of the between the LS and the VAS.

Table 4.1: Scale preference questions from the LBQ

Questions	
Question (a) [LS]	I found it easy to answer the questions when using words as answer options.
Question (b) [VAS]	I found it easy to answer the questions when using pictures as answer options.
Question (c) [LS]	I found it difficult to answer the questions when using words as answer options.
Question (d) [VAS]	I found it difficult to answer the questions using pictures as answer options.
Question (e) [LS]	I like or prefer to answer questions when using words as answer options.
Question (f) [VAS]	I like or prefer to answer the questions when using pictures as answer options.

Response options: *Please rate the response options on a scale of one (1) (means less preferred or most difficult) to five (5) (means most preferred or easiest).*

The following is an example of the response options:

a) I found it easy to answer the questions when using words as answer options.

1	2	3	4	5

(1= Most difficult)

b) I found it easy to answer the questions when using pictures as answer options.

1	2	3	4	5

(5=Easiest)

4.3 THE PROCESS OF DATA ANALYSIS

Data analysis starts off with preparing the data, which according to Trochim (2006), is the researcher's first step in the statistical procedure process. The researcher started the statistical process by capturing the raw data from the questionnaires onto Excel sheets which was followed by importing the data and coding the captured raw data of the questionnaires using IBM SPSS Version 24. The raw data captured on SPSS was analysed statistically by selecting the appropriate statistical test and running the programme. Furthermore, some of the captured raw data was analysed descriptively (e.g. to obtain the mode and the median) and this data was presented graphically using tables, pie and bar charts (See Section 4.3 & 4.4).

In this study, descriptive statistics were used to organise, summarise and represent (Bless & Kathuria, 1993) the raw data numerically (i.e. quantitatively) in the form of tables and graphs. The raw data obtained from the biographical information was represented graphically using pie charts (See Section 4.3.1.1), while the information from the six questions about the learners' response preferences was presented in the tabular format (Table 4.3).

In this study, inferential statistics were used test the research hypothesis and to statistically analyse the data from the Learner Bullying Questionnaire (LBQ) as well as the six response questions, to ascertain whether the findings were significant. The two inferential statistical

tests used in this study, were the two non-parametric tests, the Wilcoxon signed rank test and the Spearman rank order test (Further details of these tests and their application in this study can be found in Section 4.4).

4.3.1 Descriptive Analysis of Data

4.3.1.1 Descriptive Analysis of the Biographical Data

This study consisted of 32 learners from a Model C School. With regard to the demographics of the biographical data, the participants were all in the same Grade and were thus in the same age range, with an average age of 10 years. However, they differed with regard to gender and population group (ethnicity). Regarding gender there were 14 boys (44%) and 18 girls (56%). In respect of the population group, there were 28 Black learners (91%), 2 Coloured (6%) and 1 Indian learner (3%). All of the 32 learners completed the Learner Bullying Questionnaire, under the supervision of a teacher during their Life Orientation period. Table 9 represents the biographical data of the participants of this study:

Table 4.1: Summary table of the biological profile of the participants

Participants	Gender	Race
32 participants in total.	14 Males (44%)	1 Indian (3%)
	18 Females (56%)	2 Coloureds (6%)
		29 Blacks (91%)

Figure 4.1, shows that the sample group included 14 males (44%) and 18 females (56%). The majority of the participants were therefore females.
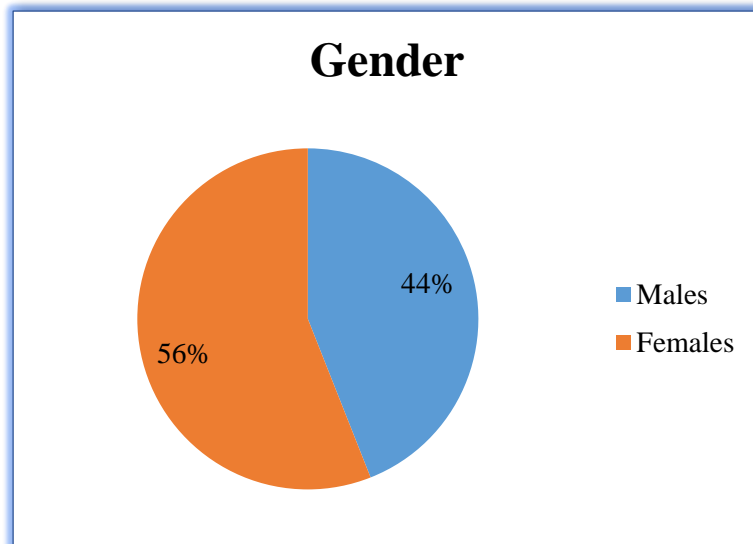
Figure 4.1: Illustrating the gender variation

Figure 4.2, provides the distribution according to the population group/race. The vast majority who took part in the study were Black learners (91%), followed by Coloured (6%) learners, with the Indian learners (3%) being in the minority.
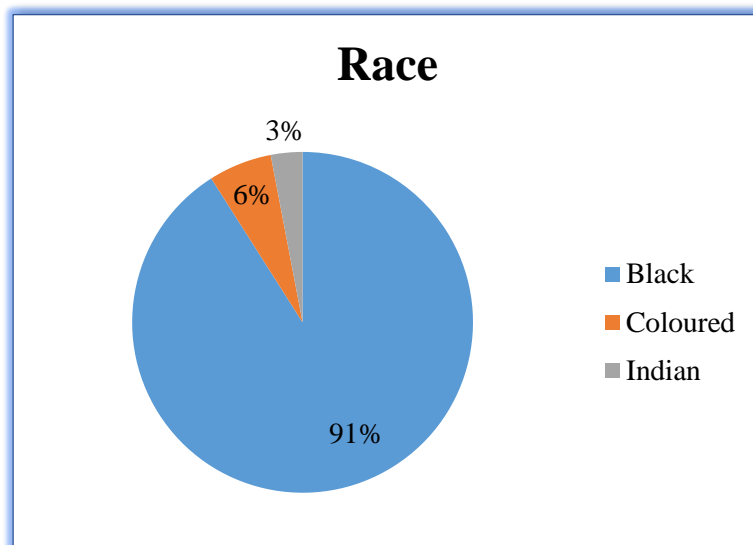
Figure 4.2: Illustrating the race of the participants

4.3.1.2 Descriptive Analysis of the Six Preference Questions

This section includes presenting the learner's responses regarding frequencies and percentages (Table 4.3) and also recording the measures of central tendency (mean, median,

mode) and variation (i.e. the standard deviation), as well as depicting the standard error of the mean in Table 4.4.

Table 4.3 illustrates the frequencies of the learners' responses regarding their scale preference. In quantifying these responses, a mark allocation of 1 indicated that the learner did not prefer or finds that particular response option difficult; whereas a mark allocation of 5 meant that the learner preferred/found that particular response option easy. The learners' scale preference was thus rated on a scale between 1 and 5.

Table 4.2: Summary of frequencies of the learners' scale preference responses

Rating (1-5)	Question (a) (LS)	Question (b) (VAS)	Question (c) (LS)	Question (d) (VAS)	Question (e) (LS)	Question (f) (VAS)
1	1 (3%)	0 (0%)	8 (25%)	4 (13%)	13 (43%)	4 (13%)
2	2 (6%)	2 (6%)	4 (13%)	1 (3%)	2 (7%)	0 (0%)
3	11 (34%)	2 (6%)	10 (31%)	2 (6%)	5 (17%)	2 (6%)
4	9 (28%)	9 (28%)	5 (16%)	5 (16%)	4 (13%)	3 (9%)
5	9 (28%)	19 (59%)	5 (16%)	20 (63%)	8 (20%)	23 (72%)
Sum	32 (100%)	32 (100%)	32 (100%)	32 (100%)	32 (100%)	32 (100%)

The interpretation of the findings in Table 4.3 is as follows: for Question 1 (LS), the most frequent response was 3 (34% of the learners). For Question 2 (VAS) most of the learners selected number 5 (59% of the learners). For Question 3 (LS), the most common response by the learners was 3 (31% of the learners). For Question 4 (VAS), the most frequent response was 5 (63% of the learners). For Question 5 (LS), the most common response was 1 (43% of the learners), and finally, for Question 6 (VAS), the most frequent response was 5 (72% of the learners).

According to these responses, it appears that the learners prefer the VAS over the LS. As such, subjectively, the Grade 4 learners preferred the VAS over the LS, meaning that according to the learners, they preferred/liked to answer the questions using pictures/visual images. Additional response patterns observed include the fact that most learners answered

with a level of 5 on the VAS questions suggesting that they preferred to answer the Learner Bullying Questionnaire using the VAS even though the result was not statically significant. Table 4.4, which follows hereafter, provides the Mean, Standard Error of the Mean, the Median, Mode and Standard Deviation for the six questions asked of the learners about their scale preferences in terms of the LS and the VAS.

Table 4.3: Measures of central tendency and varience of the six response questions

Measurement	Question (a) LS	Question (b) VAS	Question (c) LS	Question (d) VAS	Question (e) LS	Question (f) VAS
Mean	3.72	4.41	2.84	4.13	2.60	4.28
Std. Error of Mean	0.186	0.155	0.246	0.249	0.298	0.243
Median	4.00	5.00	3.00	5.00	2.50	5.00
Mode	3	5	3	5	1	5
Std. Deviation	1.054	0.875	1.394	1.408	1.632	1.373

Based on the information in Table 4.4, the values of the median (middle score) and the mode (most frequent) scores for the VAS questions, were both = 5. This means that the learners chose five (5) as their most frequent score when answering the questions about the VAS. These scores, based on observation alone, indicate the learners' preference for VAS over LS, the latter (LS) which had the median score ranging between 2.5 and 4.0 and the modes ranging between 1 and 3 (for the three LS type questions).

4.3.2   Inferential Statistical Analysis

The next section deals with the statistical analysis of (i) the Learner Bullying Questionnaire (LBQ) and (ii) the statistical analysis of six preference questions (the SPSS outputs can be found the cd).

4.3.2.1   *The Statistical Analysis of the LBQ*

The statistical analysis of the overall LBQ was carried out firstly, using the Wilcoxon signed rank test to determine the median difference between VAS and the LS, and secondly, using

the Spearman rank order test to measure the correlation between LS and VAS scores. Table 4.5 presents the summary of the results:

Table 4.4: Summary of the statistical results for the LBQ

Test	Description	Results	Interpretation
Wilcoxon Signed-Ranks Test	The Wilcoxon Signed-Ranks Test is a non-parametric test used to compare the scores of two different sets completed by the same participants. In this study, the difference between the responses of the participants for the LS and VAS were compared.	Here the results indicated an insignificant difference between the learners' VAS and LS responses. In other words, the difference in the mean ranks of the VAS and LS was not significant (See Table 4.6).	Here no significant difference between the LS and VAS scores. Thus the alternate hypothesis stating that the Grade 4 learners prefer the VAS over the LS, was disconfirmed. This resulted in the null hypothesis of no difference between LS and VAS, being retained.
Spearman -Rank Order Test	The Spearman Rank Order Test is a non-parametric test that measures the correlation between two variables. It uses ranks and can be used with ordinal and nominal scales.	The Spearman rho correlation coefficient (value = 1, which is a perfect correlation). Thus the relationship between the VAS and LS responses was = 1.	Here the correlation between the VAS and LS was very high indicative of the suitable relative reliability of these two scales (LS and VAS).

4.3.2.2   The Wilcoxon Signed Rank Test

In the Grade 4 learners' (who formed the sample in this study), the difference in the scores for the Likert or VAS response options were analysed using the Wilcoxon signed-rank test statistic. In other words, the this Wilcoxon test was used to measure the size of the differences in mean rank scores for the two response options (i.e. the Likert Scale and VAS) found in the LBQ. The following hypotheses were investigated using the aforementioned Wilcoxon test:

i. the null hypothesis (H_0: the median difference in the preference scores is zero), which states that no significant difference exists, and,

ii. the research/alternate hypothesis which states that a significant difference does exist in the preference scores (H_1: The median difference is positive and significant at the alpha/ $\alpha = 0.05$ level).

The results of the Wilcoxon signed-rank test are found in Table 4.6. Only five items from the LBQ are included as examples of the outputs from the SPSS results. These were selected as representative examples as all of the results were similar and were not significant. The rest of the results can be found in the 'Study Result's CD'.

Table 4.5: Wilcoxon results and p-values table for the LBQ

Question	Z Score	P value (Sig.)	Decision $\alpha = .05$	Outcome of test
I really like school	Z = .000	$p = 1.000$	p > .05	Not significant
This school is a friendly place	Z = -1.342	$p = 0.180$	p > .05	Not significant
I was called mean names, or teased in a hurtful way	Z = 0.000	$p = 1.000$	p > .05	Not significant
I have been bullied but have not told anyone	Z = 0.000	$p = 1.000$	p > .05	Not significant
I was called mean names, or teased in a hurtful way	Z = 0.000	$p = 1.000$	p > .05	Not significant

4.3.2.3 The Interpretation of the Results in Table 4.6

There is no statistical difference between the LS and the VAS scores when compared using the Wilcoxon Signed-Ranks Test. In other words, the results indicated an insignificant difference between the learners' VAS and the LS responses. As such, the difference in the mean ranks of the VAS and LS was not significant. Due to the fact that no significant

difference between the LS and VAS scores was found, the research/alternate hypothesis stating that the Grade 4 learners prefer the VAS over the LS was disconfirmed, resulting in the null hypothesis of no difference between LS and VAS being retained.

4.3.2.4 The Spearman Rank Order Test

This non-parametric statistical test was used to calculate the correlation between the LS and VAS learner responses for the questions on the LBQ. This correlation also provides an indication of the strength of the relative reliability between the two scales/response options (LS and VAS) for the LBQ. Table 4.7 presents three items from the LBQ as representative examples of the results. The rest of the results can be found in the Study's Result's CD.

Table 4.6: Spearma's rho results and p-values table for the LBQ

Questions types	'r'	LS	VAS	Significance at level alpha = 0.1
I really like school (**LS**)	Correlation Coefficient = 'r'	'r' = 1.000	'r' = 1.000[**]	Perfect correlation
		Sig. (2-tailed)		
I really like school (**VAS**)	Correlation Coefficient = 'r'	'r' = 1.000[**]	'r' = 1.000	Perfect correlation
		Sig. (2-tailed)		
I was called mean names, or teased in a hurtful way (**LS**)	Correlation Coefficient = 'r'	'r' = 1.000	'r' = 1.000[**]	Perfect correlation
		Sig. (2-tailed)		
I was called mean names, or teased in a hurtful way (**VAS**)	Correlation Coefficient = 'r'	'r' = 1.000[**]	'r' = 1.000	Strong correlation
		Sig. (2-tailed)		
I was hit and kicked (**LS**)	Correlation Coefficient = 'r'	'r' = 1.000	'r' = 0.889[**]	Strong correlation
		Sig. (2-tailed)		

I was hit and kicked **(VAS)**	Correlation Coefficient = 'r'	'r' = 0.889[**]	Strong correlation
		Sig. (2-tailed)	

Correlation is significant at the 0.01 level (2-tailed)

4.3.2.5   *The interpretation of the results Table 4.7*

Therefore, with regard to investigating the strength of the correlation between the LS and the VAS response options, the results from Table 4.7 indicate that a strong correlation exists between the LS and VAS scores, and thus a high relative reliability exists between these two response options. The results in Table 4.7 confirm that both these scales possess relative reliability and are comparable and can probably be used interchangeably in questionnaires assessing young Grade 4 learners.

4.4   THE STATISTICAL ANALYSIS OF THE SIX PREFERENCE QUESTIONS

For the purpose of statistical analysis of the data, the six preference questions were grouped into three categories, namely (i) easy (ease with which learner answered the questionnaire), (ii) difficulty and (iii) preference (See Table 15). This statistical analysis was carried out using two non-parametric tests, the Wilcoxon Signed-Ranks test and the Spearman rank order test.

4.4.1   The Wilcoxon Signed-Rank Test

In this study, the Wilcoxon Signed-Ranks test was used to find the differences between the pairs of dependent scores in the single sample of Grade 4 learners. In the six questions pertaining to the learners' scale preferences, each pair of scores consisted of an LS preference score and a VAS preference score. For each of the three pairs of scores, a Z-score and a p-value was obtained, and a decision about the significance of the scores was made using a critical value of 0.05 ($\alpha = .05$). In each of these three groups of questions (easy, difficult, preference), a significant difference between the LS and VAS scores was found. In other words, the p-values all fell in the rejection region, indicating that the obtained p-value did not happen by chance but instead is as a result of actual differences in the learners' preference scores. As a result of the p-values falling in the rejection region, the null hypothesis was rejected and the alternate hypothesis was retained, the latter which states that

the median difference (i.e. the "median preference and difficulty scores") for the two response options (i.e. the LS and VAS) is significant at the 0.05 level of significance. This is interpreted as meaning that the learners preferred one scale over the other. The results are shown in Table 4.8, which follows hereafter.

Table 4.7: Wilcoxon test results and p-values for the six preference questions

Question Number and category	Median	Mean ranks	Z Score	P value (Sig.)	Decision α = .05	Outcome of test
Questions a and b *Category: Easy* **a)** **LS and** **b)** **VAS**	4.0 5.0	16.8 16.4	Z= -2.163	p = .031	p < .05	Significant at the α = .05 level (critical value)
Questions c and d *Category: Difficult* **c) LS and** **d) VAS**	3.0 5.0	15.8 16.1	Z= -3.055	p = .002	p < .05	Significant at the α = .05 level
Questions e and f *Category: Preference* **e) LS and** **f) VAS**	2.5 5.0	10.5 16.5	Z=-3.187	p =.001	p < .05	Significant at the α = .05 level

The results from Table 4.8 are reported hereafter in tabular format and colour coded to match the in Table 4.8.

Question: a and b:

The Wilcoxon Signed-Ranks test indicated that the "VAS" (mean rank = 16.4) was rated more favourably than the "LS" (mean rank = 16.8), Z = -2.2, p = 0.031. Similarly, the Wilcoxon Signed-Ranks Test indicated that the median VAS, Mdn = 5.0, was statistically higher than the median LS, Mdn = 4.0, Z = -2.2, p = 0.031.

Question: c and d: The Wilcoxon Signed-Ranks test indicated that the "VAS" (mean rank = 16.1) was rated more favourably than the "LS" (mean rank = 15.8), Z = -3.1, p = 0.002. Similarly, the Wilcoxon Signed-Ranks Test indicated that the median VAS, Mdn= 5.0, was statistically higher than the median LS, Mdn = 3.0, Z = -3.1, p = 0.002.

Question: e and f: The Wilcoxon Signed-Ranks test indicated that the "VAS" (mean rank = 16.5) was rated more favourably than the "LS" (mean rank = 10.5), Z = -3.2, p = 0.001. Similarly, the Wilcoxon Signed-Ranks Test indicated that the median VAS, Mdn = 5.0, was statically higher than the median LS, Mdn = 2.5, Z = -3.2, p = 0.001.

Therefore, with regard to investigating which response options between the LS and the VAS the Grade 4 learners prefer and find easiest to use, the results from Table 4.8 indicate that the median variance in the "preference and difficulty scores" for the LS and VAS is significant. As such, based on these six questions alone, the Grade 4 learners prefer the VAS and find it easier to use. This result, however, was not verified in the LBQ.

4.4.2 The Spearman Rank Order Test

In addition to the Wilcoxon test, for each of these six questions, the correlation between the VAS and LS responses was determined by calculating the Spearman rank order coefficient (Spearman rho), which is the non-parametric alternative to the Pearson's correlation coefficient (Pallent & Tennant, 2007). The Spearman rank order correlation coefficient, besides indicating the strength of the relationship between the LS and VAS, also provides a measure the relative reliability among these two response options (Van Laerhoven et al, 2004). This implies that replacing the one response option with the other, will not affect the reliability of the instrument.

Table 4.9 below indicates the correlation coefficients (r) among the LS or VAS response options for the six questions investigating the learners' scale preference. These results show that a significant correlation exists (at the 0.01 level) between the LS and the VAS in four of the six "preference and difficulty" questions -i.e. questions a) and b) as well as questions e)

and f). In these four questions, the VAS and the Likert scale are significantly correlated and demonstrate relative reliability.

Table 4.8: Spearman's rho correlations for the six preference questions

QUESTION Number and Type		LIKERT SCALE	VAS	SIGNIFICANCE (at alpha = 0.01)
Questions 1 & 2 a) LS	Correlation Coefficient = 'r'	'r' = 1.000	'r'= -.541**	Strong correlation
	p-value Sig. (2-tailed)		$p = .001$	Significant at p=.01 and p=.05
b) VAS	Correlation Coefficient = 'r'	'r'= -.541**	r = 1.000	Strong correlation
	p-value Sig. (2-tailed)	$p = .001$		Significant at p=.01 and p=.05
Questions 3 & 4 c) LS	Correlation Coefficient = 'r'	'r'= 1.000	'r'= -.180	Weak correlation
	p-value Sig. (2-tailed)		$p =.325$	Not Significant
d) VAS	Correlation Coefficient = 'r'	'r'= -.180	'r'= 1.000	Weak correlation
	p-value Sig. (2-tailed)	$p =.325$		Not Significant
Questions 5 & 6 e) LS	Correlation Coefficient = 'r'	'r'= 1.000	'r'= -.613**	Strong correlation thus high relative reliability between LS and VAS
	p-value Sig. (2-tailed)		$p = .000$	Significant at p=.01 and p=.05
f) VAS	Correlation Coefficient = 'r'	'r'= -.613**	'r'= 1.000	Strong correlation thus high relative reliability between LS and VAS
	p-value Sig. (2-tailed)	$p = .000$		Significant at p=.01 and p=.05

*** Correlation is significant at the 0.01 level (2-tailed)*

With regard to the relative reliability of the LS and VAS, in this study, in both the Learner Bullying Questionnaire as well as in the six "preference" questions, it was found that the LS and the VAS correlate strongly and are thus comparable in terms of reliability in young Grade 4 learners. Finally, the reliability and validity of the LBQ is discussed, as these are important criteria for measurement tools, to ensure that the data which is collected, is reliable and valid.

4.5   RELIABILITY AND VALIDITY OF THE LBQ

4.5.1   Reliability of the LBQ

The reliability of the questionnaire in this study was measured using two reliability coefficients, namely the Cronbach alpha coefficient and the split-half reliability coefficient. The Cronbach alpha coefficient provides an indication of the internal consistency of measurement of a given score (Kimberlin & Winterstein, 2008). In this study, the Cronbach alpha value was 0.885 which confirmed that the LBQ bullying questionnaire has a high internal consistency and that the items on the questionnaire consistently measure "bullying". This means the majority of the items on the questionnaire are most likely to give similar results. Likewise, the split-half reliability coefficient is also indicative of internal consistency in that it verifies the consistency of the two halves of the questionnaire in measuring "bullying." In this study, the result for the split-half coefficient was 0.846, further indicative that the questionnaire has high internal consistency. Therefore, the results of the reliability studies indicate that most items in the LBQ have adequate to high internal consistency or stability.

4.5.2 Validity of the LBQ

Regarding the validity of the questionnaire, only two types were considered for this study, namely: Face Validity and Content Validity. For Face Validity, on the face of the Learner Bullying Questionnaire, gives the impression that it measures what it claims to measure. Regarding the content validity, which implies that the questionnaire "does the questionnaire include all the right items and does it have a suitable range of questions?" Content Validity in this study was evaluated based literature concerning the concept of bullying as well as other instruments that measure bullying (Olweus and the KiVa Questionnaires). Furthermore, as

described in Chapter 3, specialists in the field also evaluated the questionnaire. Therefore, the Learner Bullying Questionnaire has a suitable content validity.

Table 4.10 provides a summary of the reliability and the validity of the Learner Bullying Questionnaire.

Table 4.9: Reliability and validity table

Psychometric properties	Description	Results	Interpretation
Internal consistency reliability	Measures the correlation among the items on the questionnaire.	Internal consistency was measured using SPSS yielding the following result: **0.885**	This verifies the questionnaire's high internal consistency. Thus most of the items on the questionnaire are likely to give similar results.
Split-half reliability	The split-half measures the consistency of a test.	The split-half reliability was measured using SPSS yielding the following result**: 0.846**	These results show that the questionnaire has a very high internal consistency.
Face validity	This type of validity is concerned about whether the questionnaire on the surface looks like it tests what it claims to be testing.	The LBQ does look like it tests what it claims to test. This was verified through expert appraisal.	This means that the inferences based on the questionnaire is valid on the basis of its appearance.
Content validity	regarding the aspect of content validity, the concern is about whether the items on the questionnaire are related to the concept the questionnaire claims to be assessing.	In this study, the questionnaire was compiled based on questionnaires that are standardised (Olweus & the KiVa Questionnaire), and it was verified through a literature review and expert appraisal.	The content/ items of the Learner Bullying questionnaire are related to the concept of bullying.

4.6 CONCLUSION

Chapter 4 introduced data analysis as a procedure and described the analysis of this study's data using both the descriptive and inferential statistical procedures. The data which was analysed in this chapter was obtained from the Learner Bullying Questionnaire, which was completed by 32 learners from a Grade 4 class.

The data were analysed to answer the Primary Research Question *"Which scale, the Likert Scale (LS) and the Visual Analogue Scale (VAS), is more appropriate for measuring bullying among Grade 4 learners in a school environment?" The* Secondary Research Questions pertaining to the response patterns of the Grade 4 learners were also explored, in addition to the correlation between the LS and VAS and also the differences between the two scales.

Likewise, the Research Hypothesis states that the Grade 4 learners prefer the VAS over the LS, and the Null Hypothesis states that there is no significant difference in the learners' preference for the VAS over the LS. In answering the primary research question and the research hypothesis, it was found that there is no statistical difference between the LS and the VAS scores in the LBQ when compared using the Wilcoxon Signed-Ranks Test. In other words, the results indicated an insignificant difference between the learners' VAS and the LS responses. As such, the difference in the mean ranks of the VAS and LS was not significant when exploring the items included in the questionnaire. Consequently, the research/alternate hypothesis stating that the Grade 4 learners prefer the VAS over the LS was disconfirmed, resulting in the null hypothesis of no difference between LS and VAS being retained.

With regard to the correlation between the LS and VAS learner responses for the questions on the LBQ, this was calculated using the Spearman rank order correlation coefficient, which revealed a perfect correlation between the LS and VAS response options. It also provided an indication of the strength of the relative reliability of the two scales/response options, which in this case was high. This confirms that both these scales possess relative reliability and are comparable and can probably be used interchangeably in questionnaires assessing young Grade 4 learners, without altering the reliability of the questionnaire.

With regard to the six preference questions, the *Wilcoxon signed rank test was used to* Grade 4 learners' preference and the LS and the VAS. Therefore, with regard to investigating which

response options between the LS and the VAS the Grade 4 learners prefer and find easiest to use, the results indicate that the median variance in the "preference and difficulty scores" for the LS and VAS is significant. As such, based on these six questions alone, the Grade 4 learners prefer the VAS and found it easy use it to answer questions. This result, however, was not verified in the analysis of the LBQ items.

Therefore, with regard to investigating which response options between the LS and the VAS the Grade 4 learners prefer and find easiest to use, the results indicate that the median difference in the "preference and difficulty scores" for the LS and VAS is significant. The Wilcoxon Signed-Ranks test indicated that the "VAS" (mean rank = 16.1) was rated more favourably than the "LS" (mean rank = 15.8), Z = -3.1, p = 0.002.

Chapter 5 presents with the discussion of the current study. The discussions of implications of the findinds (Section 5.4), unexpected results (Section 5.5), limitaions of the study (Section 5.6) as well as future recommendations for future research (Section 5.7) are as also included in this chapter.

CHAPTER FIVE: DISCUSSION AND RECOMMENDATIONS

5.1 INTRODUCTION

In Chapter 4, the central findings of the data analyses were presented, thus addressing the research problem of the study and evaluating the results in the context of the research questions as well as the aim/objectives of this study. In Chapter 5, an overview of the study is presented followed by a brief review of the results from Chapter 4; the emphasis being on the implications of the results and how these findings contribute to and enhance the existing body of knowledge (Section 5.2), the latter providing justification for having conducted the study (Section 5.2). To discuss the implications of this study, the researcher started with the context and background to the study (which includes the purpose of the study as well as the methodology) and included the demographics of the sample (Section 5.2). A brief discussion about the methodological norms (Section 5.3) is included and after that a detailed discussion of the findings pertaining to the analysis of the six questions and the LBQ as well as the findings relating to the instruments' reliability and validity (Section 5.3 & 5.4). A discussion regarding unexpected results is also included (Section 5.5). Lastly, the limitations (Section 5.6) of this study are discussed, and the chapter ends with the recommendations (Section 5.7).

5.2 CONTEXTUALISING THE STUDY AND SUMMARISING THE RESEARCH

South Africa has a high occurrence of bullying in schools—a problem which is currently not well-managed and which also affects young learners (Laas & Boezaart, 2014). Bullying has dire consequences for both victim and perpetrator, with school bullying impacting negatively on the victim's well-being, social functioning as well as their school work (Atik, 2011). Therefore, effective interventions are needed, but these require understanding and identification of bullies, victims, and bullying behaviour. It is imperative to use accurate measuring tools that yield reliable results in order to assist with identifying bullying behaviours and the dynamic relationship that exists between bullies and victims and, in so doing, provide a basis for intervention (Nansel et al., 2001). Since bullying in young learners is also prevalent, the assessment of bullying has to be easy enough for the Grade 4 learners (aged between nine and eleven years) to understand.

The challenge with young learners, such as those in Grade 4, is the accurate identification and assessment of psycho-social issues such as bullying because of their age-related lack of understanding and insight into psychological and socio-emotional issues (Berk, 2009). Another problem which could influence assessing young learners is the type of scale used in the assessment tool (e.g. the bullying questionnaire). An accurate assessment tool/measuring instrument is not only able to correctly identify the issue being investigated, but it should also consist of questions and scales that young learners—at their cognitive and emotional developmental level—can relate to and understand, thereby enabling the instrument to access/tap into these young learners' perceptions about bullying and their bullying experiences.

The problem, however, is that the suitability of measurement tools for young learners has not been extensively explored; neither has the appropriateness of the two rating scales VAS and LS, been specifically addressed (Van Laerhoven et al, 2004) especially in South Africa. A review of the literature reveals that although the LS and VAS are both frequently and successfully used in psychological and health measures (Davey, Barratt, Butow, & Deeks, 2007) for both adults and children, however, there is not much research done regarding which response options children prefer when answering questionnaires. In fact, notwithstanding insufficient supporting research, Van Laerhoven et al. (2004) indicate that the use the LS in children's questionnaires is recommended. Despite an apparent preference for LS questions, research has reported that a construct requiring a five-item Likert index could be replaced by a single (VAS) visual analogue scale (Hasson & Arnetz, 2005). Against this background, the purpose of this study was to investigate learner preferences between two types of scales—the VAS and LS—that Grade 4 learners would use when answering a bullying questionnaire.

A quantitative approach was used in the context of a post-positivist paradigm to accommodate the systemic conceptualisation of bullying, which the researcher has chosen as part of her conceptual framework. The post-positivist paradigm also allows for subjectivity and different interpretations and perspectives on behaviour (Mack, 2010). Moreover, a post-positivist paradigm allows for the use of non-positivist methods, such as non-probability and purposive sampling, in the collection of data and the sampling of participants.

A survey design was employed to plan and direct the quantitative process of testing of the research hypothesis and answer the research question/s (De Vaus, 2013). This study focused on the following primary research question: "*Which scale, between the LS and the Visual Analogue Scale, is more appropriate for measuring bullying among Grade 4 learners in a school environment?*" In addition, the following aims/objectives formed part of the study's focus: (i) to measure the core aspects of bullying accurately, (ii) to explore the psychometric properties of both the instruments, (iii) to explore the learners' response option preferences, and (iv) to compare the Visual Analogue and LS Scales, to see which scale the Grade 4 learners prefer (see discussion for more details). It was hypothesized in the research hypothesis that the Grade 4 learners would prefer the Visual Analogue Scale over the LS. In testing this hypothesis, the researcher was interested in finding out which scale the learners preferred or found easier to understand, enabling them to answer the questions on bullying better. In this study, the hypothesis was not confirmed (See discussion in section 5.3.6 and also Chapter 4 for details).

The sample of 32 learners (the only Grade 4 class in a Model C school) was selected using non-probability, purposive sampling. The Model C School was chosen by the researcher based on the prevalence of bullying at this school. All 32 learners completed the Learner Bullying Questionnaire under the supervision of a teacher. The participants were all in the same Grade and of similar age (between nine years and eleven years). However, they differed in gender and race. With regard to the demographics of this sample, in terms of gender there were 14 boys (44% of them were boys) and 18 girls (56% were girls) and, in terms of race, 3% were Indian (only I learner), 6 % Coloured (2 learners) with the majority being Blacks (28 learners) with 91 % (See Table 4.3 in Chapter 4).

The LBQ (a combination of questions from the Olweus bully questionnaire and the KiVa questionnaire) was used to collect the numerical data, which was analysed statistically using the Wilcoxon test for dependent samples. Thus the Wilcoxon test, which is the non-parametric test version of the t-test, allowed the researcher to verify the difference between the learners' two response options (Likert and VAS) and, in so doing, indicate which one they prefer (Van Laerhoven et al., 2004).

The Spearman's rank-order correlation test (which is also a non-parametric test) was used to measure the relative reliability among the two response options (Van Laerhoven et al., 2004),

namely the LS and VAS response options. For each question, the correlation between the VAS and LS responses was determined using the Spearman's rank correlation coefficient. The value of this coefficient was 1 (one) which is a high value (perfect correlation), indicative of the fact that the LS and VAS were strongly correlated. The strong correlation between the LS and VAS provides an indication of the reliability of the two response options (Van Laerhoven et al., 2004) and, in this study, confirmed that the there is a strong correlation between the LS and VAS, therefore, they are equivalent regarding reliability (See Chapter 4 for the detailed results – Section 4.4).

5.3 METHODOLOGICAL NORMS

Verification of the data entails making sure that the validity and reliability of the research design and data collection instrument/s are suitable and acceptable. For knowledge to be acceptable and accepted by the scientific community it has to adhere to certain standards, in other words, reliable knowledge must comply with methodological norms—otherwise known as scientific norms/mores/values. The goal of science is to expand the body of scientific knowledge and, to do so, the knowledge has to be empirically/experientially verified and should be valid and reliable. "Norms of science (methodological norms) are necessary if one wants to build a body of reliable knowledge about the world and how it works" (Stemwedel, 2008).

5.3.1 Validity

The notion of validity is concerned about the level that a tool measures the concepts it claims to measure (Kaplan & Saccuzzo, 2009) and is categorised as 'face validity, content validity, construct validity, and also criterion validity' (Gravetter & Forzano, 2015). In this study, the researcher will focus on face validity and content validity. With regard to the face validity of the survey questionnaire, from the appearance of the questionnaire, the next person should be able to tell that it is a questionnaire and what its purpose is (Foxcroft & Roodt, 2009). The participants are most likely to respond to questions that are relevant to them and not respond to questions that they do not understand or feel are inappropriate (Ary et al., 2006). Content validity is discussed hereafter.

Content validity speaks of the extent to which the questionnaire covers the whole 'content' of the construct that it claims to 'measure' (Kaplan & Saccuzzo, 2009). Content validity'may

be achieved by getting experts to critique the items on the questionnaire and say whether or not they are appropriate to measure what they intend to measure and if there are sufficient items for the domain in question (Ary et al., 2006). In this study experts were invited to critique the items of the questionnaire, to look at the questionnaire's blueprint, as well as confirm/disconfirm whether the items are consistent with the domain.

5.3.2 Reliability

With regard to reliability, survey data that is not reliable is not useful information (Abbott & McKinney, 2013). Reliability refers to the degree to which a tool produces similar results when used at different times with the same participants or administered to different participants from the same population (Kimberlin & Winterstein, 2008). In other words, reliability is the extent to which a measuring instrument is repeatable and consistent (Maree, 2007). As such, reliability has to do with the replicability of the results. There are several different types of reliability; this study will focus on internal consistency reliability.

Internal reliability or internal consistency, which is a pre-requisite for construct validity, depicts the degree of similarity among the constructs in measuring the central/common construct with which the study is concerned (Foxcroft & Roodt, 2009)—in this case, bullying. The higher the internal reliability/consistency, the greater the similarity between the constructs, the latter which is calculated using the Cronbach's alpha coefficient. A high internal consistency means that the quality of the items which measure the concept all measure the same thing (Sekaran & Bougie, 2010).

5.4 DISCUSSION AND IMPLICATIONS OF THE FINDINGS

5.4.1 Discussion regarding the Study's Research Questions

The purpose of analysing the results and interpreting them in the context of the research questions of this study was so that the researcher could, amongst other things, obtain an understanding of the learners' response preferences and also to identify which scale the Grade 4 learners preferred (between the LS and VAS). The results (see Chapter 4) from this study showed that when the learners were questioned directly (using the six questions) about their preferences, they indicated a preference for VAS (Section 4.5). However, this preference was not confirmed when the data from the items included learner "bullying"

questionnaire were analysed statistically (see discussion of findings from LBQ Section 5.4.3).

The question relating to preferences was addressed with six specific questions towards the end of the Learner Bullying Questionnaire. These six questions were used to find out about the learners' subjective preference for choosing between the LS and the VAS (the LS was a four-point scale and the VAS also included four options of emoticons).

The analysis of these six questions revealed that most of the learners preferred the VAS over the LS. This, however, did not correlate with the statistical analysis findings when the whole LBQ was analyzed and the relationship between the Likert responses and the VAS responses were compared (see below).

The LBQ, which was used to collect the data, consisted of a compilation of questions about bullying, similar in content to two widely used and universally accepted bullying questionnaires (i.e. the Olweus Bullying Questionnaire and the KiVa Questionnaire). In this study's Learner 'bullying' Questionnaire, two scales—the 'LS and Visual Analogue Scale (VAS)'—were used. They consisted of 41 LS questions and 41 VAS questions pertaining to six themes (e.g. school environment, learners' experiences at school and at home, etc.).

The statistical test used to analyze this data with regard to learners' preference was the Wilcoxon test for dependant samples, which is the non-parametric test version of the t-test. It allowed the researcher to test the difference in the middle scores (medians) between the learners' two response options (Likert and VAS) in order to identify which scale they preferred (Van Laerhoven et al., 2004).

The results of the Wilcoxon test were not statistically significant. As such, the results of the study disconfirmed the research hypothesis which stated that *'The Grade 4 learners prefer the Visual Analogue Scale over the LS'* meaning that the null hypothesis will be retained; this states that *'there is no significant difference between the learner's preference for VAS over the LS'.* The Wilcoxon thus showed that no learner preference exists for one scale over another, and thus the null hypothesis is not rejected.

5.4.2 Discussion on Relative Reliability of the LS and VAS Response Options

The Spearman rank order statistical test was used to measure the relative reliability among the two response options, namely the LS and VAS response options. For each question, the correlation between the VAS and LS responses was determined using the 'Spearman rank order correlation coefficient'. The 'Spearman rank order coefficient' had a value of 1, indicative of a perfect and very strong correlation. Therefore, the results of this study show that the 'LS and the VAS' have a strong correlation thus both may be noted as reliable scales for assessing children.

The internal consistency reliability of the bullying questionnaire was measured using the Cronbach alpha and the split-half reliability coefficient. These two coefficients provided a measure of the internal consistency of the survey questionnaire. The result for the split-half was 0.846 and for the Cronbach alpha was 0.885, indicating that the bullying questionnaire has a high internal consistency and is thus a reliable instrument for measuring bullying in young learners. As such, in terms of the psychometric property of reliability, this is a suitable instrument.

5.4.3 Discussion of the Results of the Questionnaire's Validity

With regard to the psychometric property of the instruments' validity, the following types of validity were addressed in this study: Face Validity and Content Validity. In terms of 'Face Validity', the Learner Bullying Questionnaire, on the face of it, seems to test what it claims to test. In terms of 'Content Validity', the question, "Does it include all the right items and does it have a suitable range of questions?" was measured. In this study, the content of the questionnaire was evaluated as being consistent with the domain of bullying and also with other instruments that measure bullying. Based on a review of literature and an examination of the Olweus and the KiVa Questionnaire, it appears that the content of the questionnaire as a whole and the individual questions in this study's LBQ are accurate representations of the "bullying" content as found in the two standardised and widely used (and accepted) questionnaires. The conclusion that inferences based on the content validity are valid was supported by experts in the field. As such, the LBQ nferences related to the inferences has a suitable content validity.

5.5 DISCUSSION OF UNEXPECTED RESULTS

One of the major unexpected findings in this study was the fact that it was expected that the responses from the six "preference" questions would correspond with actual choices made in the LBQ which assessed bullying. Although the learners indicated that they preferred the VAS, their actual choices/responses in the LBQ did not verify this. As such, they able to complete questions using both formats. However, the actual preferences for one scale or the other will need to explored further.

This data was analysed statistically using the Wilcoxon and the results failed to show statistical significance and thus failed to confirm the research hypothesis. In other words, the Wilcoxon statistical test shows that no learner preference exists for one scale above the other. Based on the afore-mentioned, the statistical analysis results of this study disconfirm the research hypothesis which states that the Grade 4 learners prefer the VAS over the LS. This means that the null hypothesis is retained, which states that there is no significant difference between the learners' preference for VAS over the LS. This disconfirmation finding—i.e. the failure to confirm the research hypothesis—is to be expected if one takes the following into account:

i. The questionnaire design; the matching LS and VAS scales followed on after each other resulting in a response bias predisposing the learners to make choices automatically without careful consideration of what the question was actually asking.
ii. The relatively small sample size, especially for a survey design.
iii. The lack of representativeness of the sample because the sample failed to represent the bullying population of Grade 4 learners in Model C schools. This happened because the sample of learners was not randomly selected, the latter which would have ensured that each learner had an equivalent chance of being picked. These may be considered limitations for this research.

5.6 LIMITATIONS OF THE STUDY

This study was based on 32 Grade 4 learners that the researcher purposefully selected from a Model C school. As the researcher made use of non-probability sampling, the sample could not be established as representative of the bigger population. Due to the small sample size of this study, the results, therefore, cannot be generalized as they do not represent the

population of schools in Gauteng or South Africa. The sample of this study is limited to participants who are similar to the ones in this study, predominantly black learners in Grade 4 and mainly females. This study is not able to predict the Learner's scale preference when all the questions in the LBQ are considered. This is a limitation that should be recommended for future research.

The LBQ consisted of a compilation of questions about bullying for the current study. The questionnaire consisted of six sections, sections A to F. A strength of the questionnaire is that it starts off with questions that are on a light note, for example, the first six questions are biographical questions and then questions seven to eight are about fun activities that children who are in Grade 4 tend to enjoy.

The researcher acknowledges that there is room for improvement regarding the factors in the questionnaire. With regard to the scale preference, according to the six questions aimed at the learner's scale preference, it was indicated that the learners prefer the VAS. This was not clearly indicated throughout the questionnaire because of the selection bias as the VAS and LS questions were directly after each other. Consequently, the correlation between the VAS and LS is a perfect correlation for most of the questions which then has a high possibility of an untrue reflection. It should also be noted that there is a possibility of the learners not being completely honest when answering the questionnaire as a result of the fear of getting into trouble with the bully. Furthermore, it should be noted that both face and content validity have been established in this study, however, more validation studies are needed to cover all facets of validity.

5.7 RECOMMENDATIONS FOR FUTURE RESEARCH

Based on the findings in Chapter 4 as well as the limitations of this study, recommendations are noted in order to conduct better studies in the future concerning scale preferences (for LS and VAS) of Grade 4 learners. A pilot study should form the foundation of future studies. This study can serve as a pilot study for future research studies related to the topic of this current study. The questionnaire needs to be improved so that in future studies, the results will be more accurate. For example, two separate questionnaires (one LS and one VAS) could be administered, instead of administering one questionnaire with both LS and VAS

questions grouped together, resulting in a response bias and thereby affecting the accuracy of the findings. The following should be considered:

i. Larger sample sizes are required to be able to represent the population and also produce results that can show if there is a significant difference among variables as well as a more accurate mean value. This can be done through including more schools.

ii. Diversity needs to be considered in the context of South Africa as it is a multicultural society, thus the sample and schools selected should reflect the diversity.

iii. The VAS and LSs should be formatted whereby they are asked separately and not directly after each other, as in the current study, in order to avoid selection bias. For example, the questions can be asked using the VAS on the first few pages and then the same questions asked with the LS format thereafter. Another option would be to administer two separate questionnaires at different times.

iv. Validation studies with regard to construct validity also needs to be to be cnsidered in future studies. There are two components discriminant and convergent validity. Discriminant validity (not considered in this study) indicates how the constructs in a questionnaire differ from constructs that measure something different. Convergent validity would need to be verified statistically using a comparable bullying questionnaire.

v. More studies focusing on primary schools at different Grade levels using VAS for the younger children and LS for the older children; this will need to be explored through research.

5.8   CONCLUSION

The aim of this study was to investigate which scale, between the VAS and LS, the learners would prefer to answer in a questionnaire. The data was collected using a LBQ and was analysed statistically in order to answer the research question and to either verify or disconfirm the research hypothesis. Six additional questions were asked in order to obtain the learners' subjective opinions as to their preferences for either the LS or the VAS scale. These questions were analysed using descriptive statistics and the results showed that most of the learners preferred the VAS over the LS. However, this finding does not correlate with the statistical analysis of the whole LBQ.

The analysis of the questionnaire using the Wilcoxon test showed that no learner preference exists for one scale over another, and thus this statistical test disconfirmed the research hypothesis which stated that the Grade 4 learners would prefer the VAS over the LS. Consequently, the null hypothesis of no significant difference between the learners' preference for VAS over the LS was retained. The Wilcoxon thus showed that no learner preference exists for one scale over another and as such this statistical test disconfirmed the research hypothesis.

The Spearman rank order statistical test was used to measure the relative reliability among the LS and VAS response options. This was found to be high, indicating that a strong correlation exists between the VAS and LS responses. The implication hereof is that Visual Analogue Scales can be reliably used in bullying questionnaires and that similar response patterns to that of the LS could be expected.

The Cronbach alpha (0.885) and the split-half (0.846) reliability coefficients provided a measure of the internal consistency of the survey questionnaire. The high values indicated that the bullying questionnaire has a high internal consistency and is thus a reliable instrument for measuring bullying in young learners. As such, in terms of the psychometric property of reliability, this is a suitable and reliable instrument.

With regard to the psychometric property of the instrument's validity it was shown that with regard to 'Face Validity', the LBQ, on the face of it, seems to assess what it claims to assess. In terms of 'Content Validity', based on a review of literature and an examination of the Olweus and the KiVa questionnaire, it appears that the content of the questionnaire as a whole and the individual questions in this study's LBQ are accurate representations of the 'bullying' content as found in the two standardised and widely used (and accepted) questionnaires. In conclusion, in terms of the questionnaire's psychometric properties, the LBQ has suitable Face Validity and Content Validity. The Construct Validity has not been measured.

Ultimately, the purpose of analysing the results and interpreting them in the context of the study's research questions and aims/objectives was so that the researcher could gain insight into which scale the Grade 4 learners preferred (between the LS and VAS) and, furthermore, whether the VAS scales could be used in bullying questionnaires without affecting the

reliability of the instrument. Although no conclusion has been reached about the learners' response options and their preference for either the Likert or VAS, this study has shown that the relative reliability between the VAS and LS is high. This has significance in terms of the practical application of this study's findings as it indicates that the VAS scales could be used in bullying questionnaires without affecting the reliability of the instrument. This would, however, need to be verified in further research with larger samples.

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ANNEXURES

ANNEXURE A: ASSENT FORM

What is a research study?

Research studies help us learn new things. We can test new ideas. First, we ask a question, then we try to find the answer.

This paper talks about our research. You can choose if you want to take part in it or not. We want you to ask us any questions that you have. You can ask questions at any time.

Important things to know…

You get to decide if you want to take part.

You can say 'No' or you can say 'Yes'.

No one will be upset if you say 'No'.

If you say 'Yes', you can always say 'No' later.

You can say 'No' at any time.

We would still take good care of you no matter what you decide.
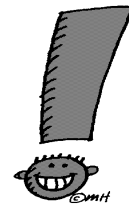
Why are we doing this research?

We are doing this research to find out more about bullying at your school.

What would happen if I join this research?

If you decide to be in the research, we would ask you to do the following:

Questions: We would ask you to complete a questionnaire.

Nominate: We will ask you to indicate on a class list 3 learners who you like and three learners who you do not like.

Could bad things happen if I join this research?

No, we would just like to know more about your experiences in the school.

You can say 'no' to what we ask you to do for the research at any time and we will stop.

Could the research help me?

We think being in this research may help you because the school will know more about your experiences so that if there are any problems they may be able to do something about them.

What else should I know about this research?

If you don't want to be in the study, you don't have to be.

It is also OK to say yes and change your mind later.

You can stop being part of the research at any time.

If you want to stop, please tell the researchers.

You can ask questions any time.

You can talk to Vanessa at 012 429 4623. Ask any questions you have.

Take the time you need to make your choice.

Is there anything else?

If you want to be in the research after we have talked, please write your name below. We will write our name too. This shows that we talked about the research and that you want to take part.

Name of Participant _____

(To be written by child/adolescent)

Printed Name of Researcher   Name of Supervisor

Katlego Nchoe   Prof Vanessa Scherman

Signature of Researcher   Signature of Supervisor

Date …………………………..   Time……………………………

ANNEXURE B: INFORMED CONSENT

Dear Parents/Guardians,

I am a student at the University of Pretoria with a keen interest in safe and orderly environments, of which the phenomenon of bullying is a key concern. Bullying is a reality in the daily lives of the many learners, the result of which has serious implications for both the victim and the bully in both the short and the long term. What is also essential is to understand the ambit of bullying and to come to grips with how various stakeholders define bullying. Furthermore, in order to prevent bullying it is essential to develop an effective assessment programme that will lead to better intervention programmes and hopefully a reduction in the prevalence of bullying behaviour. Thus it is crucial to have information on perceptions of bullying behaviour, the location of where bullying occurs, frequency of bullying but also what the response to bullying is. Without appropriate intervention, bullying behaviours tend to increase which negatively influences the school environment. The following research objectives have been identified:

i. To measure the core aspects of bullying accurately.
ii. To explore the psychometric properties of both the Likert Scale and Visual Analogue Scale in an instrument.
iii. To explore the learners' response option preferences.
iv. To compare the Likert scale and the Visual Analogue Scale, to see which the grade 4 learners prefer.

If you agree for your child to participate in this research project, he or she will be given a questionnaire to complete.

You do not have to agree for your child to participate in this research, your child will not be penalized in any way if you decide that your child should not take part. If you decide that your child should participate, but you change your mind later, your child may withdraw his or her participation at anytime.

Your name, your child's name and that of the school will remain confidential at all times. When reporting results pseudonyms will be used and no other identifying information will be given. All data collected will be stored in accordance to the University of Pretoria's rules and regulations.

The questionnaire should take about 20 minutes to complete. The learners will complete the questionnaire during the life skills class so that their normal school work should not be disrupted. All data collected in this research may be made available in an open repository for public and scientific use. Children who did

not participate in this research will be given the notes for the lesson that was supposed to be covered on that day.

If you agree for your child to take part in this research, please fill in the consent form attached to this letter. If you have any questions, please do not hesitate to contact me.

Kind regards,

Prof Vanessa Scherman (Supervisor)	Katlego Nchoe (Student)
Psychology of Education	Department of Educational Psychology
University of South Africa	University of Pretoria
Cell phone: (083) 652 2057	Cell phone: (083) 283 3299
scherv@unisa.ac.za	katlego.nchoe@yahoo.com

Consent Form

I,_____(your name), agree/ do not agree (please delete what is not applicable) for my child to take part in the research project titled: **Understanding safe and orderly environments in schools.** I understand that the project aims to explore bullying in schools, how bullying as part of the school environment influence achievement and to design an intervention which will form part of the Life Skills curriculum. I understand that my child will participate by filling in a questionnaire.

I understand that the researcher subscribes to the principles of:

i. *Voluntary participation* in research, thus I may withdraw from the research at anytime and without any penalty.

ii. *Informed consent,* that I will be fully informed about the research process and purposes, and must give consent to the participation in the research.

iii. *Safety in participation;* that I will not be placed at risk or harm of any kind.

iv. *Privacy,* meaning that the *confidentiality* and *anonymity* will be protected at all times.

v. *Trust,* there will be no acts of deception or betrayal in the research process or the published outcomes.

Signature:…………………… 	Date:………………………….

ANNEXURE C: LEARNER BULLYING QUESTIONNAIRE

Faculty of Education

Grade 4 - Learner Bullying Questionnaire

About this questionnaire:

What is it?

In this booklet, you will find questions about you and what you think. For each question, you should choose the answer you think is best.

Why should you fill it in?

It will help your school to know more about the learners in the school. The information may also be valuable for research. If there are any parts you do not wish to answer, please leave the question blank.

Is it confidential?

Yes. No one in the school will know what you have written. You should fill it in without anyone seeing what you write, and without talking to anyone. When the school gets the information back, they will not know what any individual said, only the overall results.

Is it a test?

No. There are no right or wrong answers, so you should not worry about it. Please just answer as honestly as you can.

1. Last Name: |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|
2. First Name: |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|
3. School: |__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|__|
4. Class: |__|__|__|__|
5. Your date of birth: Day |__:__| Month |__:__| Year |__:__|
6. Today's date: Day |__:__| Month |__:__| Year |__:__|

Let's take a moment to practice the kinds of questions you will answer in this booklet.

A. Example Questions:

1. Do you go to school?

a)

Yes	No

b)

🙂	🙁

2. What do you think? Tell how much you agree with these statements.

2.1. Watching movies is fun

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁

2.2. I like eating ice cream

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁

2.3. I do not like waking up early

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	☹️

Remember:

To read each question carefully, and pick the answer you think is best.

To fill in the circle next to your answer.

If you decide to change your answer, draw an **x** through your first answer and then fill in the circle next to or under your new answer.

To ask for help if you do not understand something or are not sure how to answer.

B. About your school:

Tell how much you agree with these statements.

Remember crossout only one block of the written option and one block for each of the faces.

1. I really like school

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	☹️

2. I feel that I belong in this school

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😀	🙂	🙁	☹️
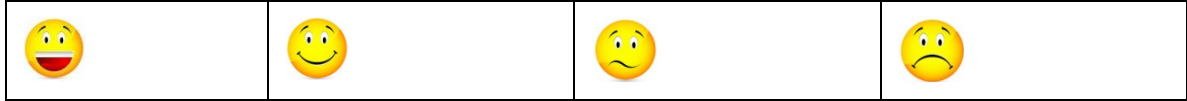
3. School is the best part of the week

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😀	🙂	🙁	☹️
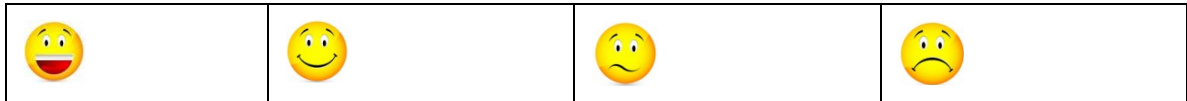
4. I am normally happy when I am in school

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😀	🙂	🙁	☹️
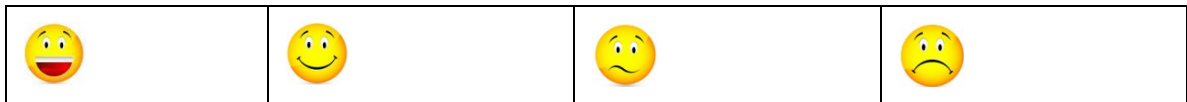
5. This school is a friendly place

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😀	🙂	🙁	☹️
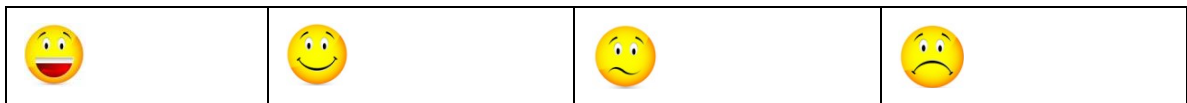
6. Most of the time I wish I wasn't in school at all

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	🙁	☹️

7. I would talk about this school to others

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	🙁	☹️
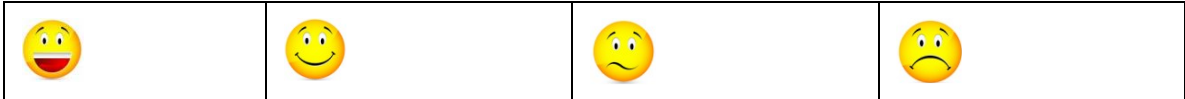
C. About your experiences at school:

Tell how often the following has happened to you in the past couple of months.

Remember cross out only one block of the written option and one block for each of the faces.

1. I was called mean names, or teased in a hurtful way.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	🙁	☹️
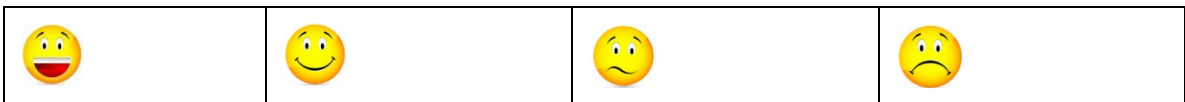
2. Other learners left me out of things on purpose, excluded me from their group of friends or ignored me.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	🙁	☹️
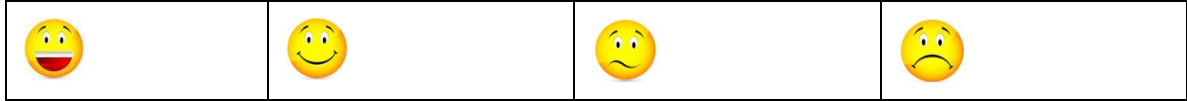
3. I was hit, kicked, pushed and shoved around.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	🙁	☹️
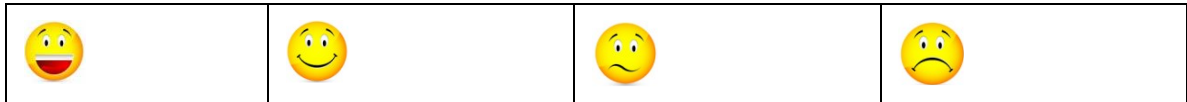
4. Other learners told lies about me or spread false rumours.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	🙁	☹️
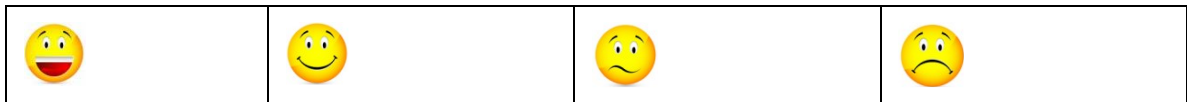
5. Other learners tried to make others dislike me.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	🙁	☹️
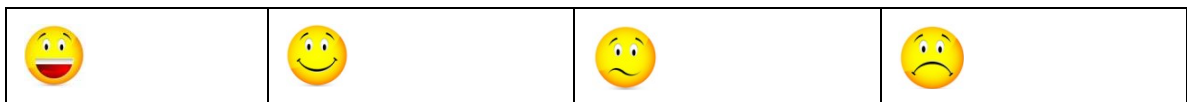
6. I had money and other things taken from me.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😄	🙂	😕	☹️
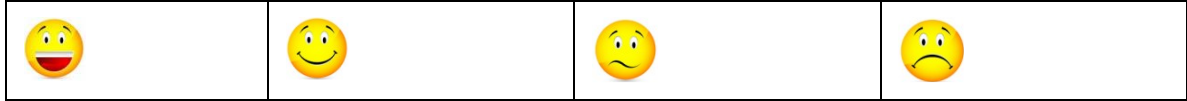
7. I was forced to do things I did not want to do.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😄	🙂	😕	☹️
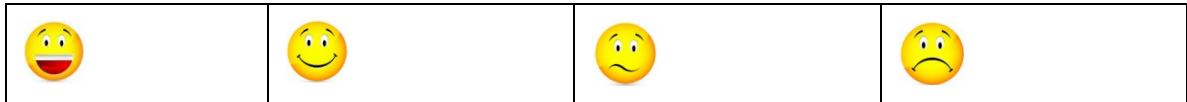
8. I was called mean names about my race or colour.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😄	🙂	😕	☹️
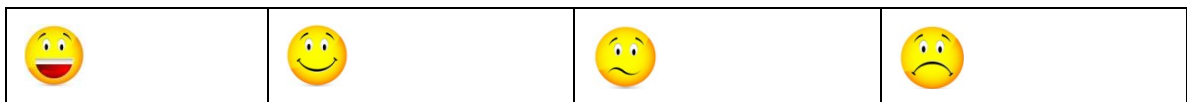
9. I was called mean names or gestures made with a sexual meaning.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😄	🙂	😕	☹️
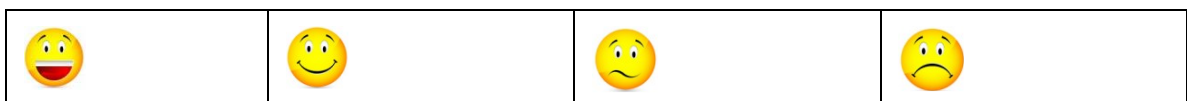
10. I have received mean or hurtful messages, calls or pictures on my computer.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	☹️
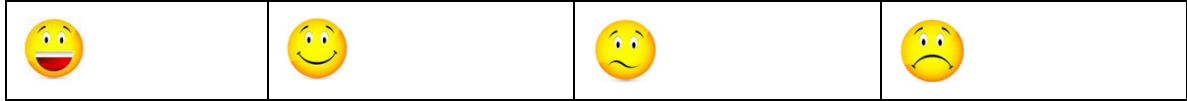
11. I have received mean or hurtful messages, calls or pictures on my computer.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	☹️
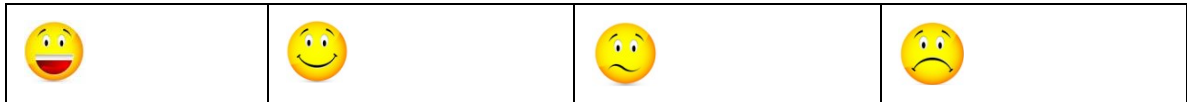
12. Have you been bullied by boys or girls?

12.1. I have not been bullied in the past couple of months.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	☹️
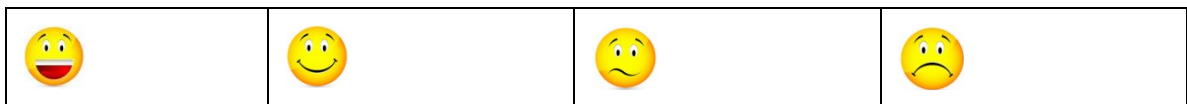
12.2. Mainly by 1 girl.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	☹️
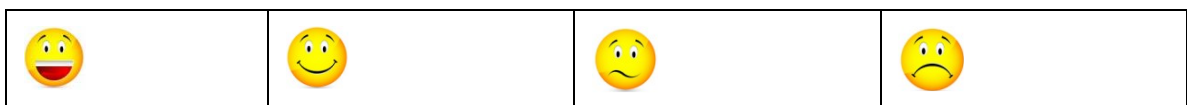
12.3. By several girls.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😐	🙁

12.4. Mainly by 1 boy.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😐	🙁

12.5. By several boys.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😐	🙁

12.6. By both boys and girls.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😐	🙁

13. By how many learners have you usually been bullied?

13.1. I have not been bullied in the past couple of months.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

13.2. Mainly by 1 learner.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

13.3. By a group of 2-3 learners.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

13.4. By a group of 4-9 learners.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

13.5. By a group of 10 or more learners.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)
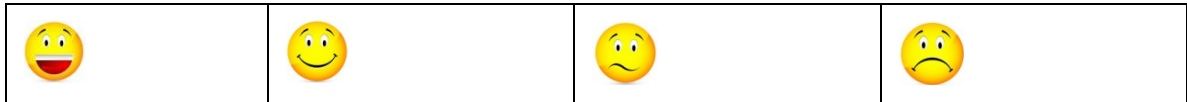
13.6. By several different learners or groups of learners.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

14. How long has the bullying lasted?

14.1. I have not been bullied in the past couple of months.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)
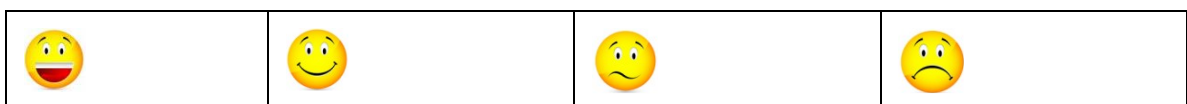
14.2. It lasted 1 or 2 weeks.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)
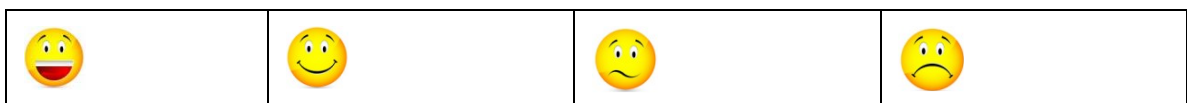
14.3. It lasted for a month.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁

14.4. It lasted for 6 months.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁

14.5. It lasted for a year.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁

14.6. It lasted several years.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁

15. Where have you been bullied? *(Please fill in all the places).*

15.1 On the playground.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)
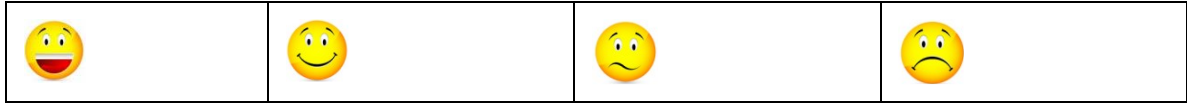
15.2. In the hallways/stairwells.

 a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)
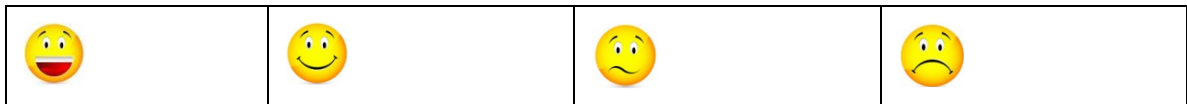
15.3. In the bathroom.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

 b)
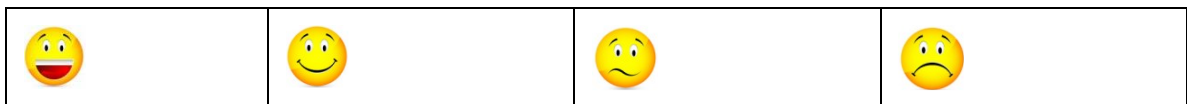
15.4. On the way to or from school.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)
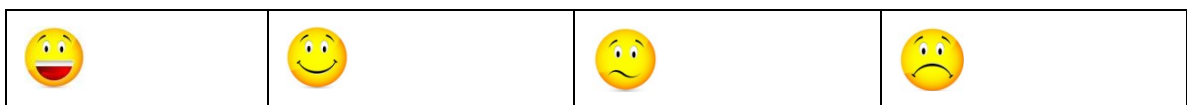
15.5. At the bus stop.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)
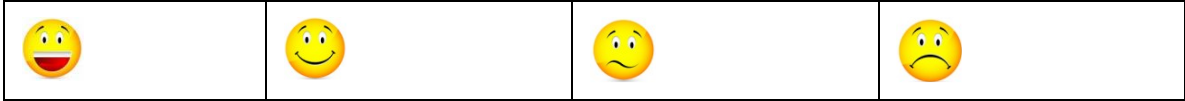
16. Have you told anyone that you have been bullied?

16.1. Have been bullied but have not told anyone.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)
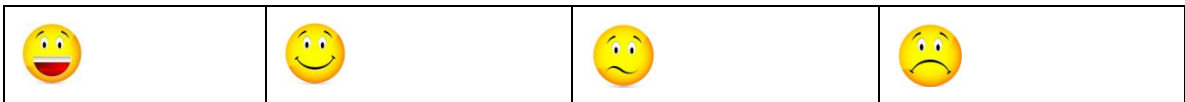
16.2. I have been bullied and have told someone (you can select more than one person):

16.2.1. My teacher.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)
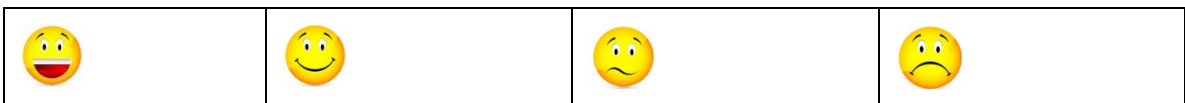
16.2.2. Another adult at school.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁

16.2.3. My parent(s)/guardian(s).

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁

16.2.4. My brother or sister.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁

16.2.5. My friends.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁

16.2.6. Somebody else.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😄	🙂	🙁	☹️

Tell how often the following has happened to you in the past couple of months.

Remember cross out only one block of the written options and one face for each of the questions.

17. Other learners cheer me up when I am sad or upset.

a)

Almost all the time	Sometimes	Never

b)

😄	🙁	☹️

18. Other learners help me when I need help.

a)

Almost all the time	Sometimes	Never

b)

😄	🙁	☹️

19. Other learners say nice things to me.

a)

Almost all the time	Sometimes	Never

b)

20. Other learners make me happy.

a)

Almost all the time	Sometimes	Never

b)

21. Other learners care about me.

a)

Agree a lot	Disagree a little	Disagree a lot

b)

D. About your life:

Tell how much you agree with these statements.

Remember cross out only one block of the written option and one block for each of the faces.

1. In most ways my life is close to my perfect life.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁
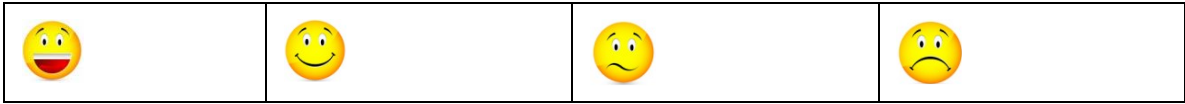
2. The conditions of my life are excellent.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁
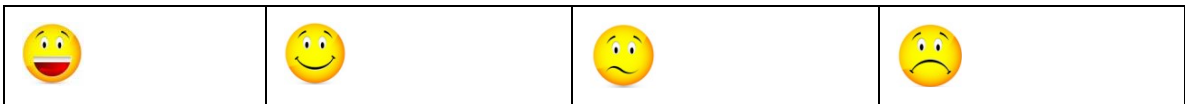
3. I am happy with my life.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁
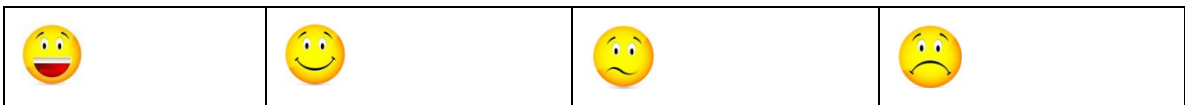
4. So far I have gotten the important things I want.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

😃	🙂	😕	🙁
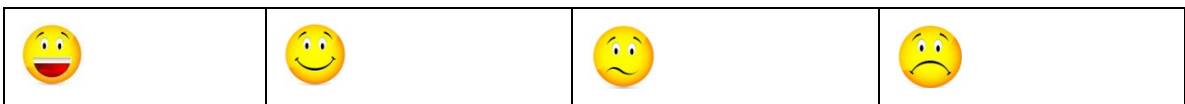
5. I would not change anything in my life.

a)

Agree a lot	Agree a little	Disagree a little	Disagree a lot

b)

E. Response options

Please rate the response options on a scale of 1(means less preferd or most difficult) to 5 (means most preferred or easist).

1. I found it easy to answer the questions when using words as answer options.

1	2	3	4	5

2. I found it easy to answer the questions when using pictures as answer options.

1	2	3	4	5

3. I found it difficult to answer the questions when using words as answer opitions.

1	2	3	4	5

4. I found it difficult to answer the questions when using pictures as answer options.

1	2	3	4	5

5. I like or prefer to answer the questions when using words as answer opitions.

1	2	3	4	5

6. I like or prefer to answer the questions using pictures as answer options.

1	2	3	4	5

F. Finally:

1. Do you have any other comments to make?

....
....
....
....

2. How did you feel about answering these questions?

a)

Completely happy	Fairly happy	Partly happy	Not at all happy

b)

😃	🙂	😕	🙁

3. How honest have you been in answering these questions?

a)

Completely happy	Fairly happy	Partly happy	Not at all happy

b)

😃	🙂	😕	🙁

THANK-YOU VERY MUCH FOR COMPLETING THIS QUESTIONNAIRE

Learner 7

Learner 8

Learner 9

Learner 10

Learner 11

Learner 12

Learner 13

Learner 14

Learner 15

Learner 16

Learner 17

Learner 18

Learner 19

Learner 20

Learner 21

Learner 22

Learner 23

Learner 24

Learner 25

Learner 26

Learner 27

Learner 28

Learner 29

Learner 30

Learner 31

Learner 32