Mobile Bullying in South Africa - Exploring its Nature, Influencing Factors and Implications

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BY

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Abstract

Mobile bullying is a form of electronic bullying that is relatively new. It involves the use of mobile technology applications such as email, chat rooms, instant messaging and small text messages. This form of bullying often goes unnoticed. Victims, institutions and parents are unaware of how to deal with it and there is limited knowledge about its legal and social implications. Due to an increase in mobile web adoption as well as active mobile users in South Africa, mobile bullying is escalating and has become a major concern in schools and communities.

There is limited empirical research examining this type of aggression in schools. We lack knowledge of the nature and prevalence in schools and there are no effective models to predict or measure the level of this aggression. The present study aims to bridge this gap by examining the nature, prevalence and implications of this form of aggression in various South African high schools. The study will also identify the significant factors influencing this aggression and aims to create awareness of the problem.

In order to address the objectives, the researcher conducted extensive literature on bullying, mobile technology adoption, legislative frameworks on cybercrime and related theoretical works. Based on this review, a conceptual model to guide the present research was developed. Propositions to test this model empirically were presented which was then tested in a survey conducted in high schools in Cape Town. A total of 3621 high school learners from seven schools (ages 14 to 18) responded to the survey. Both quantitative and qualitative techniques were used.

Further, the degree to which mobile bullying occurs were examined in relation to anonymity, perception and attitude towards technology, technology competency and mobile bullying policy. The results confirm that participants are unable to identify who their mobile bullying

perpetrators are. Perpetrators are therefore using anonymity as a weapon to behave aggressively online because their identity is unknown to the victim. Furthermore, the perception and attitude of participants towards their mobile phones has an influence on their ability to conduct mobile bullying behaviour.

Additionally, the results suggest that individuals who spend more time online and use mobile applications more frequently are more likely to show online aggressive behaviour. Also, individuals who show a high level of confidence and comfort in using mobile phone technologies are more prone to conduct mobile bullying behaviour. Adolescents lack sufficient knowledge about mobile bullying and its implications and schools have not implemented appropriate measures to protect the learners. Urgent interventions by policy makers will be necessary.

The present study therefore confirms that the nature of mobile technology has an influence on the degree to which adolescents engage in mobile bullying activities.

Acknowledgement

When looking back on this year and the steps taken to make this research project a reality, my first thank you has to go to my supervisor, Professor Michael Kyobe. Your consistent support, professionalism and assistance through useful guidance and suggestions will never be forgotten. I will always cherish your words: "success is continuous hard work". You motivated me to rise to the challenge of this Masters year, as well as inspiring me to achieve high standards in my project work. It has been an absolute honour and privilege to learn from such a wise person.

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I wish to extend my sincere gratitude to MMI for funding my Masters and for all the support I have received from staff and management. This was truly amazing. I am blessed!

Dedication

I dedicate this dissertation to the Oosterwyk family, my mother, Mercia Oosterwyk, for her unconditional love and prayers. To my father, Richard Oosterwyk, who drove me personally and demandingly to the university to apply for my undergrad degree; my sister, well for being who she is, annoying; my grandmother for all her prayers; my friend and confidant, Ralmar Marsh, for her unlimited support and motivation. Thank you for showing me love and support.

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CHAPTER 1: INTRODUCTION

1.1 Background and Problem Definition

Technology is changing the way adolescents and people communicate. The use of mobile phones amongst adolescents has dramatically increased and is now commonplace (Downie & Glazebrook, 2007). Despite this trend there has been little research to date on the effects that this technology has on young people's lives. Some studies (e.g. Madell & Muncer, 2007) have highlighted the positive benefits that mobile phone use has on learners, such as building and maintaining social ties. Preliminary research, however, has found that new technology is also being used by some young people to bully their peers, in what has become known as mobile bullying.

Mobile bullying can be defined as a form of electronic online bullying through email, chat rooms, instant messaging and small text messages using mobile phones (Belsey, 2007; Kowalski, et al., 2008). From previous literature, it can be concluded that mobile bullying involves the use of mobile phones to perform the act of cyber-bullying.

The surfacing of electronic forms of communication such as mobile phones and PDA's has been embraced by learners and students. The advancement in communication and information technology has increased the potential for bullying via electronic communication devices (Li, 2007). Mobile bullying is increasingly becoming a common issue in schools and communities. Often it goes unnoticed and learners do not know how to deal with this new phenomenon. Most research on bullying has focused on physical bullying and specifically among the male sex. Indirect bullying and mobile bullying has not received much coverage. According to Badenhorst (2011:5) mobile bullying itself has not to our knowledge been examined in South Africa. Limited research focusing on mobile bullying consists of online articles and anecdotes.

The consequences such as depression, withdrawal from society, poor mental health and possible suicides are also severe in terms of their effect on the injured or bullied party. (Cross *et*

al., 2012:15). Cross argues that the danger in the online virtual world can be seen as a mere artefact of what could happen in the real world. The severity of this problem and lack of research in the field has driven the present study. The level of risk facing learners, and the harassment that takes place via electronic media has, to a large extent, been neglected (Tokunaga, 2010), and mobile bullying research is in its infancy (Smith, 2008). Although this is the case, studies are in agreement that the number of learners subjected to mobile bullying is on the rise and constitutes a significant minority. Research has primarily been conducted in the US and the UK, with only a handful of noteworthy findings and literature.

The following observation was made by Badenhorst (2011), in a research paper published by the Centre for Justice and Crime Prevention:

> *"There is limited research on cyberbullying and sexting in South Africa. As such, it is unclear how many children are involved in these practices. The number of children subjected to cyberbullying is also unknown" (p. 5).*

Mobile bullying research in South Africa is therefore in its formative stages, with little known about the prevalence of the problem, or the coping strategies employed by adolescents to combat the phenomenon.

In a media statement by the South African Minister of Communication (2010), it was reported:

> "*Recent reports of children who go missing as a result of being lured through cyberspace criminals posing as 'friends', often resulting in them being murdered, is very disturbing and requires a societal response. Police have a duty to lead this crusade in ensuring those perpetrators are brought to book*".

1.2 Problem Definition

According to Beger et al., (2011:21), even though bullying is a phenomenon that existed well before the creation of the mobile phone and the World Wide Web, the two mediums have magnified the problem by creating a new avenue through which bullying can be executed. It is important to understand the aspects of mobile technology and how it creates value but also how it can contribute to abuse, damage, and bad practice.

1.3 Objectives and Research Question

The principal research questions that the study seeks to answer are:
What is the nature and prevalence of mobile bullying in South African schools? Which factors significantly cause this aggression?

Sub questions are:

1. To what extent are learners and educators aware of this form of aggression and its implications (both legal and social)
2. What measures can be put in place to prevent mobile bullying in schools?
3. To what extent does the mobile phone as a technology enhance or escalate the extent of mobile bullying?
4. What coping and safety policies are authorities employing to combat mobile bullying behaviours?

Within this context, the specific objectives are:

a. To examine the nature and prevalence of mobile bullying in different schools in Cape Town (South Africa)
b. To identify potential causes of this aggression and also determine its implications for learners, schools and other stakeholders

1.4 Importance of the Research

Mobile bullying is a relatively new phenomenon which is detrimental to a learner's personal and academic life. Our understanding of its nature, prevalence and implication is still limited, not only in South Africa but also in the rest of the world. There is a dearth of information on electronic bullying among high school learners in general and on mobile bullying in particular. There is also general concern that researchers and institutions of learning have not played a key role in addressing this problem (Badenhorst, 2011).

Empirical evidence is needed to clarify several issues relating to mobile bullying. For instance Beger et al., (2011) argues that while there are reports to suggest that online recipients of cyber-bullying could also act as perpetrators, there is limited evidence to confirm this in South Africa. Badenhorst (2011) also asserts that it is difficult to establish whether cyber-bullying happens in school or outside school. Research conducted elsewhere suggests that it tends to happen outside of school (Ybarra & Mitchell, 2004), but this has not been well established in South Africa.

Popovac & Leoschut (2012) calls for more research in understanding how young people negotiate online risks and dangers and state further that youth voices and experiences are largely missing in the development of effective online safety strategies. With limited empirical evidence there will always be lack of appropriate information on which to base policy decisions.

The debate goes on in schools whether learners should be allowed to use mobile phones in schools. According to Prinsloo (2005) some people argue that mobile phones is the only social lifeline they have and means of security while others are concerned about the risks it carries. Prinsloo (2005) reported that learners' rights are neither promoted nor protected in certain schools. Many studies on mobile technology emphasise the paradoxical nature of users' experiences with technology and calls have been made to conduct further research in this area.

von Solms & de Lange (2011) argue that an e-safety culture does not exist among ordinary citizens and recommend effort to stimulate e-safety. Further research shows that schools do not know how to deal with this problem. Kruger (2011) found that teachers are faced with several challenges in trying to deal with bullying. While her study was not focusing on electronic bullying per se, the challenges likely to be experienced by teachers in such environments can only be more severe due to the anonymity of mobile bullying.

According to Burton & Mutongwizo (2009) existing legislative frameworks on cybercrime have been found to be misaligned which makes understanding and compliance with them difficult. Burton & Mutongwizo (2009) stated that no policy framework directly addressed cyber-bullying and called for a comprehensive policy that directly addresses the safety of young people online and in the realm of cellular technologies. Beger et al., (2011) also argues that with high access and use of mobile technology the need for awareness of global opportunities and risks is necessary. There is an urgent need for well-crafted legislation and programmes in ICT development and education. In addition Kyobe (2010) found that compliance with legislation is a major challenge for many organisation and institutions of learning in South Africa. People do not have knowledge of the legislation on electronic abuse. He recommended more training and awareness programmes. Beger et al., (2011) conclude that the challenge for the government is to foster the development of a young population fully educated and aware of the opportunities, rights and risks born of engagement with digital technology.

The issues identified above indicate that the present study is relevant and timely. It strongly addresses the critical security issues South Africa is grappling with. Since mobile bullying is a relatively new phenomenon, the study will identify gaps in current knowledge, educational policies, legislation and other areas that perhaps have inhibited the development of appropriate solutions to this problem. There are many theoretical works explaining bullying and its complexities in organisations and institutions of learning. For example, the social cognitive

theory, which argues that adolescents model their parents or friends' aggressive behaviours , the disinhibition theory which posits that the Internet can promote an abandonment of some inhibitions, leading to greater disclosure, less restraint, and greater expressiveness (Kowalski et al., 2008); the Moral Development Theory and Attitude (Mishna et al., 2009); the Bio-ecological Theory (Bronfenbrenner, 2005); the Theory of Planned Behaviour (TPB) Ajzen (1991) and many others.

Given the many theories explaining this phenomenon, the present study developed a conceptual model integrating many of these views. This allows for a much broader focus on this phenomenon, stronger contribution to the development of theory and subsequently the development of more comprehensive solutions to the problem.

Responding to the above concerns and requirements, this project has also very strong potential for high policy impact. It will assist policy-makers in education and security in identifying and substantiating specific strengths and weaknesses of existing policies and in formulating strategies to improve the implementation of better policy.

1.5 Limitations of the Research

A major drawback was the lack of research of the nature of this aggression in South Africa. We do not know its prevalence in schools and there are no effective models to predict or measure the degree of this aggression and the significance of the influencing factors have not be determined.

A significant limitation of the paper-based questionnaire was identified where learners completing the survey gave contradicting responses to questions. Furthermore, it appeared as if the order of questions proved problematic where learners perceived some questions as not required (Q28, Q29, Q30 and Q31).

The research was constrained due to the time period during which the questionnaires was distributed as learners had exams. Thus, it restricted the researcher's ability to collect extensive qualitative data.

Due to the timeframe of the study a cross-sectional method was adopted which made it difficult to make comparisons of mobile bullying behaviour over time. A longitudinal study which is conducted over a longer period of time would provide more interesting results pertaining to the dynamic nature of mobile bullying.

1.6 Dissertation Overview

The rest of the dissertation is organised as follows:

Chapter 2: provides a review of literature on traditional bullying, cyber-bullying, mobile bullying, and nature of mobile bullying. It also provides four main features that facilitate mobile bullying. The literature review expands on the value of mobile phone technologies, mobile bullying in South Africa, theories of impact of mobile technology, theories captivated on mobile bullying, South African law on mobile bullying, and influential factors of mobile bullying. A conceptual model that illustrates the relationships between concepts of interest summarises the chapter. Lastly, research propositions that assisted in answering the research question will be presented.

Chapter 3: outlines the research design which encompasses philosophical assumptions, research methodology consisting of research purpose, paradigm, time frame, instrument, target sample and population, strategy and data collection and analysis techniques. Finally, research confidentiality and ethics will be presented.

Chapter 4: presents results of the data analysis and discussion of findings.

Chapter 5: presents a conclusion of the dissertation which consists of recommendations, theoretical and practical implications including suggestions for future research.

CHAPTER 2: LITERATURE REVIEW

The internet is playing an ever increasing role in the daily lives of our learners. It has opened up a wealth of opportunities for learning, exploration, and social and public engagement (Burton & Mutongwizo, 2009). It encourages learners to be creative and imaginative through a socially interactive and cooperative style of learning and communication (Li, 2005 & 2007). Many families attribute the necessity of a broadband connection in the home to its value as an educational resource.

Such benefits, however, are not without their dangers and they carry with them inherent risk, from exposure to inappropriate content, to undesirable contact with strangers, to inappropriate conduct perpetrated by learners, which includes the new phenomenon of mobile bullying (Ybarra & Mitchell, 2004). In the past, there have been efforts to limit exposure by using parental controls and monitoring software, along with social networks intended for adolescents, as well as ring-fenced online environments. However, despite this effort, research shows that, given time, these measures will be circumvented (Ybarra & Mitchell, 2004). Part of the problem is that the majority of learners learn to use the internet from their peers or on their own, which makes it unlikely that they will adhere to or adopt safe browsing habits.

This chapter provides literature on mobile bullying amongst learners in South Africa. It is organised as follows: *Section 2.1* distinguishes between different bullying methods and also clarifies the concepts of the core method, *mobile bullying*. *Section 2.2* provides insight on mobile bullying in the South African context. *Section 2.3* discusses theoretical works on the phenomenon. Section *2.4* outlines a detailed discussion on the influential factors of mobile bullying. *Section 2.5* provides a summary that shows the key elements and relationships that emerged from the literature review. *Section 2.6* provides a conceptual model detailing all of the influential factors identified in the literature review. The model acts as a framework for

investigating the current research problem. *Section 2.7* presents the research hypotheses to be evaluated in response to the research question.

2.1 Traditional Bullying, Cyber-bullying and Mobile Bullying

2.1.1 Bullying: An Overview

The most universal definition of bullying articulates that "*a person is being bullied when they are exposed, repeatedly and over time, to negative actions on the part of one or more other persons*" (Olweus, 1987). These actions are purposefully inflicted to cause injury or discomfort to another person (Olweus, 1991). More specifically, bullying is at the foundation of a hierarchy of violent acts and is thus embedded in the broader picture of the increasing violence in South Africa (Horwath & Morrison, 2007). Furthermore, bullying is argued to be "abusive and is based on an imbalance of power" (Sullivan *et al.,* 2004).

As all bullying is not predominantly physically violent in nature, it is important to distinguish between forms of bullying that is not always evident. Researchers propose that cyber-bullying constitutes a quarter to a third of traditional bullying. An article titled "New Bottle but old wine" written by Li (2005), states that there exists a digital divide between traditional bullying and mobile bullying. Thus the wide adoption of mobile phones amongst the youth is of great concern. While there are many benefits in using this technology, research also associates this usage to addiction, depression, lack of sleep, and cyber-bullying (Zulkefly *et al.,* 2009). The following section will introduce and distinguish between the forms of bullying.

2.1.2 Traditional Bullying

Traditional bullying has been defined as the misuse of a power acted on behalf of the aggressor to the target (Orpinas & Horne, 2006). Furthermore, the aggressor is perceived as physically, socially, or psychologically more powerful than the target. Olweus (1993) argues this power

imbalance exploited by the aggressor to control, inflict pain, and commit repetitious attacks over time, makes up the core of what constitutes bullying behaviour. Three forms of traditional bullying exist: social, verbal and physical (Crick et al., 2002). Based on literature these three forms of traditional bullying can be summarized as follows:

Table 1: Forms of Traditional Bullying

Social Bullying	An aggressive behaviour targeting an individual's mental state. This type of bullying also known as indirect bullying provides the ability of the perpetrator to be anonymous. This can include the spreading of false information, gossiping and the social segregation of groups (Rivers & Smith 1994). A major consequence of social bullying is falsely influencing the way in which other people see an individual's social status.
Verbal Bullying	Behaviours such as teasing, insulting or harassing someone face to face are a few examples of verbal bullying (Cole et al. 2006). Verbal bullying requires an individual to use cruel and foul language when communicating.
Physical Bullying	This form of bullying is conducted by physically attacking another person or group which could inflict physical pain. Victims can identify exactly who the perpetrator is with physical bullying, unlike with cyber-bullying.

2.1.3 Cyber-Bullying

Many definitions exist on cyber-bullying as shown in Table 2, however for this study we have adopted a definition by author Bill Belsey (2007), where he defines cyber-bullying as the "*use of information communication technology, known as ICT, to support deliberate, repeated, and hostile behaviour by an individual or group, with an intension to harm others"*.

Table 2: Definitions of Cyber-bullying

Study	Conceptual definition of cyber-bullying
Finkelhor et al. (2000)	*Online harassment: Threats or other offensive behaviour (not sexual solicitation) sent online to the youth or posted online about the youth for others to see*
Patchin and Hinduja (2006)	*Wilful and repeated harm inflicted through the medium of electronic text (p. 152)*
Willard (2007)	*Sending or posting harmful or cruel texts or images using the internet or other digital communication devices (p. 1)*
Li (2007)	*Bullying via electronic communication tools such as e-mail, cell phone, personal digital assistant (PDA), instant messaging, at the World Wide Web (p. 224)*
Smith (2008)	*An aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly or over time against a victim who cannot easily defend him or herself (p. 376)*
Belsey (2007) (as cited by Tokunaga, 2010)	*The use of information and communication technologies to support deliberate, repeated, and hostile behaviour by an individual or group, that is intended to harm others*
Price & Dalgleish (2010)	*Cyber-bullying is the collective label used to define forms of bullying that use electronic means such as the internet and mobile phones to aggressively and intentionally harm someone. Like "traditional" bullying, cyber-bullying typically involves repeated behaviour and a power imbalance between aggressor and victim. (p. 51)*

Forms of technologies used to cyber-bully include: text messages, emails, instant messaging, online social networking posts, blogs and mobile phones. According to Hines (2011:19), there are two major similarities between traditional and cyber-bullying. The first similarity is that it is an act of aggression with an intention to harm or hurt an individual. Secondly, both forms of bullying can often be repeated and this could turn into havoc amongst different parties, such as parents, teachers, school counsellors and even police (Kowalski *et al.* 2008). Despite the similarities, anonymity is a huge exception as it allows the perpetrator to further torment their victim than they normally would if it had been face to face.

According to Willard (2007), different online platforms can be used to cyber-bully, but it is important to note that cyber-bullying can also be grouped in different forms such as flaming, harassment, denigration, impersonation, exclusion and ostracism as seen in Table 3.

Table 3: Forms of Cyber-bullying

Flaming	This method of cyber-bullying usually happens when two or more individuals exchange harmful emails (Friedman & Curral 2003). It also entails the sending of messages containing aggressive and unfriendly dialogues.
Denigration	According to Kowalski (2007), denigration occurs when an individual posts mean and hurtful things about someone online in the attempt to hurt the person or spread lies. The victim might not be able to report or delete the post due to the limit of rights to access accounts or the website which is not locally hosted.
Impersonation	This kind of bullying relates to the ability of being anonymous. The perpetrator can post false information online as if he or she was actually the legitimate user.
Exclusion and Ostracism	This occurs when an individual or group of people blocks someone from entering a specific group of friends online. Kowalski (2007) refers to it as “the buddy list”.

A further conceptual point of clarity is the distinction between direct cyber-bullying and indirect cyber-bullying (or cyber-bullying by proxy). Cyber-bullying by proxy represents a situation where the instigator manipulates a third party into doing their *dirty* work (Šléglová & Černá, 2011). Very often they find themselves unwitting accomplices, and, when their role in the incident has been discovered, they too can be emotionally and psychologically affected. Cyber-

bullying by proxy presents a potentially risky situation, as this is often where adults are involved in the harassment.

2.1.4 Mobile Bullying

Mobile bullying can be defined as a form of electronic online bullying through email, chat rooms, instant messaging and small text messages using mobile phones (Kowalski *et al.* 2007). From previous literature, it can be concluded that mobile bullying is using a mobile phone to perform the act of cyber-bullying.

2.1.4.1 Mobile bullying via Electronic Mail (Email)

Email messages contain various types of content such as typewritten content or files of text, images, audio, or video. Email can be used in various ways to inflict harm on an individual: sending harassing or threatening messages; attaching viruses to emails; or including personal information about a victim and sending it to many people.

2.1.4.2 Mobile bullying via Chat rooms

Mobile chat rooms are web sites which allow for real-time communication between two or more users. Users enter a chat room under a "username", a name which they display to represent themselves, and can converse about any topic. Chat rooms can be especially dangerous for learners and adolescents due to the added anonymity of usernames and mobile roaming capability. Bullies and sexual predators can therefore pose as a trustworthy friend and confidant. Within a chat room, it is possible to "move" to a private chat that is essentially an instant messaging (IM) conversation (Willard, 2007). This is how social exclusion can be implemented. Someone in the chat room invites some, but excludes others, from a private chat.

2.1.4.3 Mobile bullying via Instant Messaging

Instant messaging is a type of communication service that enables people to create a private chat room with another individual to communicate in real time over the Internet. This is

analogous to a telephone conversation but uses text-based communication instead. In a survey of Canadian youth, 14% of users reported being threatened while using instant messaging. Smith (2008) found that bullying on cell phones and through instant messaging to be the more prevalent. Similar to these findings are the results from Juvonen and Gross (2008) who found most online instances of cyber-bullying took place through instant messaging.

In addition, Hinduja and Patchin (2006) suggest that for young people social networking sites may be preferred to email and instant messaging as a means of communicating. According to Hinduja and Patchin (2006) state that the functionality of messaging integrated into web sites has supplemented or even replaced traditional methods of communicating such as email or SMS.

2.1.4.4 Mobile bullying via Small Text Messages (SMS, EMS and MMS)

Commonly called “text messages”, this service is generally provided by mobile phone distributors and can take the form of Short Message Service (SMS), Enhanced Messaging Service (EMS), and Multimedia Messaging Service (MMS). Text bullying has been considered the most common form of mobile bullying (Smith, 2008). Text Messages are particularly popular in Australia, where texting is the preferred communication method for youth aged between 14 and 17 (Brown et al., 2007). More sophisticated users can send messages to mobile phones from Internet sites in an effort to be anonymous.

2.2 In Context: Mobile Bullying in SA

It must be noted that, although the vast majority of South Africans do not have access to running water and electricity, they do have access to cell phone technology. According to Peyper (2013), more than 75% of people who fall into the low-income category (R432 per month per household member) and who are 15 years and older, own a mobile phone. This combined with more affordable broadband prices, lends weight to the argument that although

we lag behind the rest of world in terms of technological infrastructure, the risk is similar to that evident in the US and Europe. Finn (2004) extends this thinking, by hypothesizing that South Africa, despite limitations to penetration, has experienced a rapid uptake of electronic media. This, coupled with the convergence of voice and data services, and the shift to Web 2.0 technologies, has created a fertile breeding ground for cyber violence, multiplying the risk exponentially. In addition, intended as a top-end communication device, the smart phone is now a standard offering with most pre-paid contracts in South Africa. All new smart phones typically include functionality that enable the user to access the internet, capture and display images and video, and can identify their GPS (Global Positioning System) location. Learners are now able to communicate in ways that are completely foreign to both parents and educators.

South Africa's technological infrastructure is improving - especially mobile networks and internet service providers (ISP). Consequently, Burton argues that with the rise of newer technologies, new forms of violence emerge especially amongst those who are prone to get absorbed by it – our youth. A study conducted by the Centre for Justice and Crime Prevention indicate that nearly one half of adolescents has been victims of mobile bullying. The study reveals that 31% of the participants that has been interviewed experience some sort of mobile bullying whilst on schools premises, whereas 42.9% experienced it outside of school.

Mobile bullying is an unfortunately by-product of the union of ubiquitous access to electronic media and teenage aggression (Hinduja and Patchin, 2006). In particular concerns have been raised because of the apparent psychological and health impacts resulting from online victimisation (Tokunaga, 2010).

The following is a list of South African research found during the writing of this literature review:

- The first research published in South Africa, was conducted by Burton and Mutongwizo (2009) on behalf of the Centre for Justice and Crime Prevention (CJCP), among 1726 youngsters between the ages of 12 to 24. The research paper set out to define cyber-bullying, to document its prevalence within South Africa and to suggest ways forward. It was not intended to be an extensive national study, but was rather to serve as a pilot to test the extent and need for a more comprehensive study. What the findings established is that the penetration of electronic media into the lives of South African adolescents is evident (Figure 1). They indicate that the majority of electronic harassment occurs via voice calls (18.3%) and SMSs (16.9%).

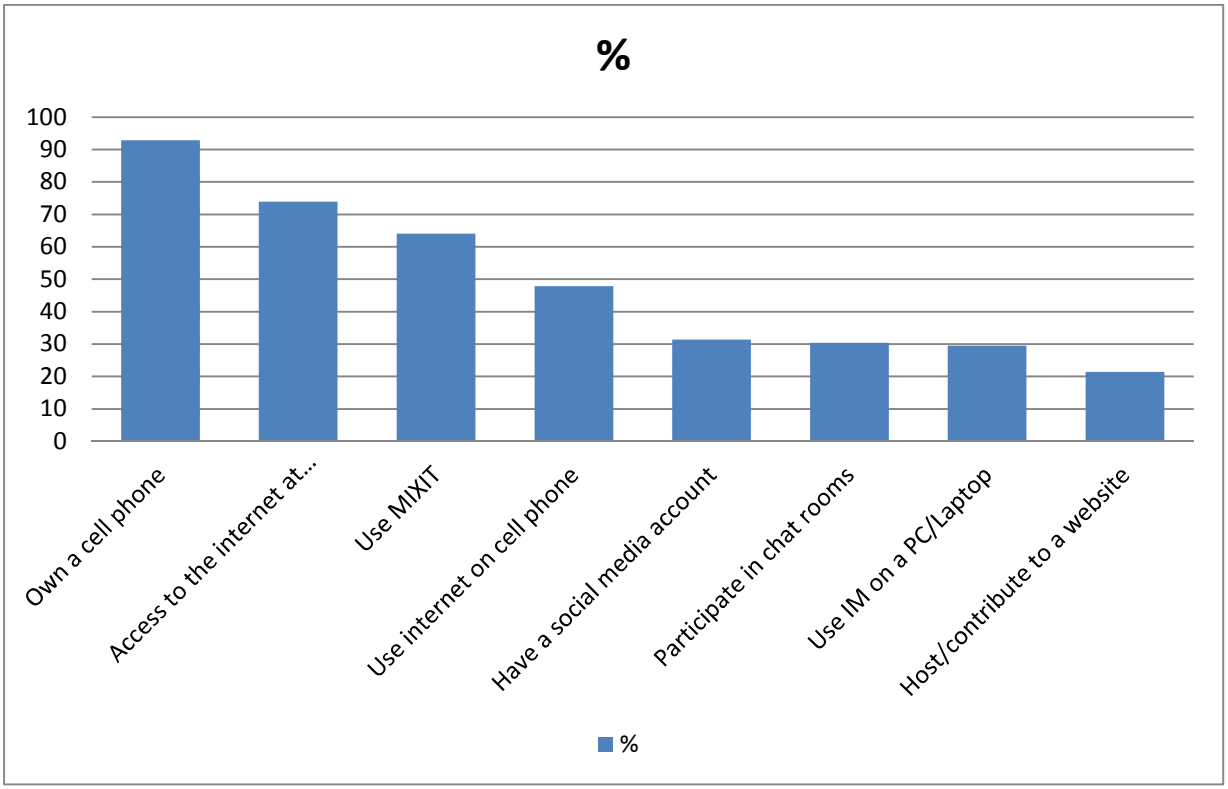

Figure 1: Access and usage of electronic media among young South Africans

- A second study was conducted by von Solms and de Lange (2011), in the Eastern Cape. This research was exploratory in nature and took the form of a quantitative survey of 6

schools and 1594 learners. The purpose of this study was to investigate the general internet usage of South African adolescents and their preferred online activities. A comparison between this research and that of Burton & Mutongwizo (2009) has proven difficult due to the varying objectives of the studies. von Solms and de Lange (2011) focus more on the access to online resources, while combining the question on MXIT (mobile instant messaging service) and social media sites into a single question. This proves problematic and it hampers the tracking of trends in online behaviour.

- The objective of a third study conducted by Oosterwyk & Parker (2011), in two Cape Town schools, was to determine the impacts and raise awareness to cyber-bullying as a phenomenon. A further primary objective was to determine the most prevalent applications used to conduct the offense. Their study found that most learners had their own cell phones (93%) and that 1 in 3 learners (36%) were subjected to electronic bullying at school.

Finally, Badenhorst (2011) made reference to a study conducted by the Youth Research Unit of the Bureau of Market Research at the University of South Africa (p. 5). A formal request has been made for this paper. Badenhorst (2011) highlights that research indicates that male adolescents are more likely to engage in dangerous online activities than females and are therefore at greater risk for online victimisation.

2.3 Theoretical Framework

Since mobile bullying is a relatively new phenomenon, the study will identify theoretical works explaining bullying and its complexities in organisations and institutions of learning. This study will focus on the following theories: Mobile Added Value (MAV) theory, Moral Development theory and Attitude (Mishna et al., 2009); the Bio-ecological Theory (Bronfenbrenner, 2005);

the Theory of Planned Behaviour (TPB) (Ajzen, 1991); Space Transition Theory and Self-control theory.

2.3.1 Mobile Technologies Values and Limitations

The value creation role of mobile technologies has been presented very well in Pousttchi et al. (2003:414) concept of mobile added values (MAV) theory. These authors claim that added value in the use of mobile phone technologies can be obtained through its ubiquity; context-sensitivity; identifying function and command and control functions. *Ubiquity* is the ability to send and receive data anytime and anywhere and thus, eliminate any restrictions whatsoever. *Context-sensitivity:* this attribute refers to the delivery of customized products or services, such as GPS, weather reports or local shops (Pousttchi et al., 2003). The attribute, *Identifying Function*, refers to the ability of an individual to authenticate with the specific mobile device. Further security measures can also be enabled on the actual device for better or further means of authentication. *Command and control functions* mean that mobile devices have the ability to make use of remote control applications that allows certain commands to control and manipulate network peripherals and devices.

Following Prensky (2004) the following services/applications of the mobile technology to be useful in supporting improvements in work practices: voice, radio, internet access, GPS, SMS and WIFI. For instance, voice technologies can enable the sharing of knowledge, interactions and storage of contacts. WIFI allows one to work from a nearby hotspot rather than having to travel back to the office. The short messaging service (SMS) and the multimedia messaging service (MMS) provide simple and cheap ways to communicate. Multimedia messaging (MMS) allows text, colourful images, video and voice clips, and animations to be sent with a text message.

These value creating attributes of mobile technology have however also facilitated its negative aspects.

2.3.2 Moral Development Theory and Attitude

Thornberg (2007) cites Kohlberg's theory of moral development, as well as the importance of emotions, attitude and social context on the development of morality among adolescents. Kohlberg (1983) identified three distinct levels of moral development each with two sub stages. People can only go through each of these levels in a systematic manner as listed and each new level replaces the reasoning in a previous level (McLeod, 2011).

Level 1: Pre-conventional morality

The individual's reason is based on the physical consequences of an action and has no authority.

- **Stage 1. Obedience and Punishment Orientation.** If the individual has done something wrong they should be punished.
- **Stage 2. Individualism and Exchange.** The individual realises that different individuals have different opinions and the view of the authority is not necessarily the right view.

Level 2: Conventional morality

- **Stage 3. Good Interpersonal Relationships.** The individual is good so that others can see them as being a good person. Reasoning is therefore related to the approval of others.
- **Stage 4. Maintaining Social Order.** The individual is aware of the rules of society so judgement is based on obeying the rules in order to uphold the law.

Level 3: Post-conventional morality

- **Stage 5. Social Contract and Individual Rights.** The individual recognises that even though laws exist to protect the majority of individuals, sometimes these laws will work against the greater good of certain individuals.

- **Stage 6. Universal Principles.** The individual has developed his or her own set of moral guidelines which may or may not suit the law. The individual is prepared to defend these principles even if they have to go against the norms of society and have to pay the consequences of disapproval.

The moral development of adolescents may affect the way the youth perceive certain socio-economic factors, such as social networking, crime and education, according to Thornberg (2007). A qualitative study was conducted on mobile bullying in 2009 targeting the youth and analysing the prevalence of mobile bullying and eagerness of the youth to inform their parents about this topic (Mishna et al., 2009). The general consensus amongst the youth was that they would not approach their parents, due to the fear of losing their rights to their mobile phones. Mishna et al. (2009) suggests that many bullying studies fail to address the moral reasoning which provoke adolescents to act the way they do. Thornberg (2007) has studied the moral reasoning and the "bystander effect" offline amongst secondary school learners. The "bystander effect" is a phenomenon which refers to individuals being less likely to help someone in distress if there are a large number of people present (Darley & Latane, 1969). Evidence of specific thinking processes like trivialization and dissociation that can lead to "bystanding" behaviour was found. Trivialization refers to people who are making the impact of mobile bullying seem insignificant. Dissociation refers to the act of bystanders not wanting to get involved and prefer being separated.

2.3.3 Bio-ecological Theory

The bio-ecological approach, by Bronfenbrenner (2005), provides an understanding of the development of individual relationships and how they are integrated in a social context. His model consists of four key concepts, namely, **person factors**, **process factors**, **contexts** and **time**. Lerner (2005) states that this model is used to design research and conceptualise the development of integration. **Person** factors involve the characteristics of how an individual

would behave, for example the personality of the bully or victim. Secondly, **Process factors** refer to the interaction between individuals, thus between the adolescent and the **context**, which refers to families, peers, teachers, schools and communities. Furthermore, Lerner (2005) continues stating that the aspect of **time** is relevant to the concept of the theory because the maturation of the adolescent changes over time. The bio-ecological theory therefore helps to understand how adolescents relate to their social environments (Kruger, 2011: 18).

2.3.4 The Theory of Planned Behaviour

Rendering to Ajzen (1991), the theory of planned behaviour (TPB) is an empirically validated theoretical framework which can be used to investigate the variation in mobile phone usage. Furthermore, this theoretical framework verifies that behaviour results from a rational, systematic evaluation of salient information (Ajzen, 1991). Ajzen continues by stating that the cause of behaviour depends on the motivation behind it and whether it was intentional. However, it is believed that the behaviour is influenced by three constructs: ***attitudes*** (based on the individual's overall evaluations of the behaviour), ***subjective norms*** (peer pressure) and perceived behavioural control (the level of control an individual believes they have over behavioural performance) (Ajzen, 1991). By using the TPB framework, one major advantage is the capability to link differences between high and low level behavioural performers allowing for a rich understanding of fundamental behavioural influences to be gained.

2.3.5 Space Transition Theory

According to Jaishankar (2007), "Space Transition Theory" is defined by the nature of the behaviour of individuals who reveal their "conforming and non-conforming" behaviour in the physical space and cyberspace. Moreover, space transition involves the movement of persons from one space to another (e.g., from physical space to cyberspace and vice versa). Space transition theory argues that, people behave differently when they move from one space to another.

Jaishankar proclaims the following hypotheses of the theory:

a) "Persons, with repressed criminal behaviour (in the physical space) have a propensity to commit crime in cyberspace, which, otherwise they would not commit in physical space, due to their status and position.
b) Identity Flexibility, Dissociative Anonymity and lack of deterrence factor in the cyberspace provides the offenders the choice to commit cyber crime
c) Criminal behaviour of offenders in cyberspace is likely to be imported to physical space which, in physical space may be exported to cyberspace as well.
d) Intermittent ventures of offenders in to the cyberspace and the dynamic spatiotemporal nature of cyberspace provide the chance to escape.
e) Strangers are likely to unite together in cyberspace to commit crime in the physical space. Associates of physical space are likely to unite to commit crime in cyberspace.
f) Persons from closed society are more likely to commit crimes in cyberspace than persons from open society.
g) The conflict of Norms and Values of Physical Space with the Norms and Values of cyberspace may lead to cybercrimes."

2.3.6 Self-control theory

Gottfredson and Hirsch (1990) in their General theory of crime show that victimisation results from low levels of self-control. A lack of self-control (defined here as the inability to control oneself or one's emotions), is reflected in behaviours like short-sightedness, being insensitive or being impatient. Individuals with low self-control are believed to make decisions exclusive of those situations that increase their vulnerability and fail to change or mitigate their risk factors after the first victimisation (Forde and Kennedy, 1997). Adolescents are generally more prone to display a lack of self-control as they tend to be rebellious and this could possibly result in acts of mobile bullying.

2.4 The Influential Factors of Mobile bullying

While technology can fuel bullying, there are many other factors also contributing to mobile bullying which relate to behaviour, attitude, as well as the social environment of the adolescent. The following section will discuss the influential factors on the phenomenon.

2.4.1 Technology usage competency

Mobile communication has experienced unprecedented growth in users and technological advances over the last decade. With the rapid diffusion of mobile communication technology, more than 4 billion mobile phone subscribers in 2010 worldwide have now increased to 6.8 billion subscribers, have an opportunity to interpersonally interact beyond the time and space limitations of traditional media by instantly sharing pictures of memorable events or shifting the concept of time as people are ‘‘softening their schedules’’ (Bakke, 2010). Users enjoy mobile devices for their converged quality, entertainment (e.g., music player, instant messaging, and video), and for other gratifications such as fashion (Bakke, 2010).

The growth of mobile communication has prompted scholars to research mobile uses, technical affordances, and how it modifies the concept of public and private space. For example, the quality and strength of interpersonal relationships are affirmed by the length of a mobile communication conversation or the frequency of text messaging (Licoppe, 2003). Research also suggests that constant connectivity has created tension between mobile communication users and their environment by having intimate conversations in public places (Bakke, 2010).

2.4.1.1 Confidence and Comfortability in Technology Usage

Ybarra & Mitchell (2004) state that an individual’s ability to efficiently use technology empowers them to potentially become a mobile bully. According to Ybarra & Mitchell (2004), people who claim that they are experts in Internet knowledge environments, were found to be more aggressive than those who claim that they are not experts. Furthermore, based on a study done by Mackie et al. (2010), with a

focus on the relentless integration and growth of ICT in schools, the authors states that this presents a challenge to users and adolescents confidence and competence. Mackie et al. found that although more than 50% of learners had a positive outlook, only 16% were very confident, with 36% showing apprehension about using ICT in their studies. This could be due to their lack of experience with technology but could also be explained by their increasing awareness.

The author's findings also suggest that the relationship between technology experience, confidence and competence is complex (Mackie et al., 2010). High expectations coupled with high levels of confidence were evident. The survey indicated that some ICT applications are used more regularly and confidently than others with e-mail, the Internet and word-processing being the most frequently cited examples. An explanation for this finding could be the increased recent use of these applications by learners both at home and at school.

2.4.1.2 Frequency of Technology Usage

Ybarra & Mitchell (2004) stated that there is a possibility that online aggressive behaviour by adolescents could be as a result of spending an extensive amount of time on the internet. Additionally, people who spend more time online on a weekly basis were 73% more likely to tend towards mobile bullying behaviours. According to a study conducted by Li (2007), since mobile-bullying occurs in cyberspace, it is reasonable to assume that if learners have limited opportunities to access to technology, they should have fewer opportunities to be involved in cyber harassments. The frequency of technology use by learners, therefore, should predict mobile bullying and mobile victimisation. Li (2007) found that the frequency of technology usage was a significant predictor to mobile bullying and mobile victimisation.

2.4.2 Anytime Information Distribution

According to Li (2007), a difference between traditional and mobile bullying is that traditional bullying occurs at a specific time and place, while cyber victims may continue to receive SMSs,

emails or see comments posted online. Raskauskas et al. (2007) and Smith (2008) agree that the size of the potential audience also differs between the bullying methods.

The increasing access to new technology can increase learners' social interaction and enhance collaborative learning experiences. Consequently, the nature of online communication tools gives way for messages and images to spread quickly and easily and to reach a far larger audience than traditional bullying, whereby the location, time and victim is set. However, according to Zhang (2010:4), there is limited empirical research that shows whether the global nature of the internet has an influence on individuals to engage in mobile bullying activities.

2.4.3 Communication Misinterpretation

Finn (2004) states that electronic communication tools decrease the likelihood for cyber-bullies to show any remorse towards the victim. Additionally, communication or messages in the virtual world can be misinterpreted and this can also promote a false sense of intimacy, which may lead to greater risk-taking and possible incidents of mobile bullying (Finn, 2004). While Finn (2004) specifically looked at cyber-bullying, these factors apply to mobile bullying as well.

Many participants pointed out the prevalence of unintentional harm, which occurs when a receiver is hurt by a message or posting even though the sender did not have a malicious intent. In some cases, learners saw this simply as a matter of miscommunication: "then there's also the confusion thing where we don't mean to be mean sometimes but the person might take it that way" (Bauman, 2011). That doesn't really make it cyber-bullying that makes it "cyber confusion". Participants frequently mentioned the lack of nonverbal signals, tone, and inflection as contributors to misunderstandings in the text of communications (Bernard, 2008). One method for reducing the misinterpretation is the use of emoticons (e.g. ☺) or acronyms (e.g., LOL) or group-specific norms (Salmon & Bryant, 2002). One learner described the process that led to clearer communication on a discussion board:

> *"we actually had a while of where we were talking about sarcasm somebody got really mad and we were like, 'we were just being sarcastic.' We invented this thing called the sarcasm hand, and so if we were being sarcastic we would be like 'yes my sarcasm hand is raised,' and it became a thing" (Baldasare et al., 2012: 136).*

Sarcasm and joking, in particular, are subject to misunderstanding without these clarifying cues. Learners also gave many examples of the blurring of public and private information on social networking sites as a cause of unintentional harm. For instance, they talked about a tendency among their peers to use Facebook.com almost as an online diary, posting their every thought and activity in this semi-public realm. These impulsive postings can be misunderstood, viewed by the subject of the comment, or viewed by someone who feels excluded.

2.4.4 Anonymity

According to Felson and Clarke's (1998) Routine Activity Theory (RAT), a reasonable explanation for victimisation could be provided. RAT states that offenders use anonymity as a weapon to behave rebelliously because the victim will not know who the perpetrator is. Christopherson (2006:3040) studied the social impact of the internet on groups and individuals, with a focus point on the ability of being anonymous. The participants were aged between 13 and 19, using a mobile chat room. It was found that mobile chat rooms made it easier for the participants to be anonymous. Adolescents responded that being anonymous gave them the confidence to express themselves when chatting to another person and saying things they would not say in person.

In the case of face-to-face bullying, the power differential lies in the bully's greater physical strength or social standing. However, in the case of mobile bullying, researchers are in agreement that the power of the online bully lies in their anonymity (Badenhorst, 2011; Burton & Mutongwizo, 2009; Hinduja & Patchin, 2008; Li, 2008; Smith 2008). Learners who would not

normally engage in traditional school-yard bullying, may be tempted to do so in response to the anonymity associated to an online environment (Campbell, 2005; Li, 2008; Tokunaga, 2010). Mobile bullying is essentially an opportunistic offence that requires minimal planning and the anonymity minimises the bully's accountability, as there is little chance of being caught (Hinduja & Patchin, 2008).

Social media and, in particular, Facebook have been plagued by issues with incidents of cyber-bullying and at a recent conference, Randi Zuckerberg, marketing director for Facebook, made the following statement, "I think anonymity on the internet has to go away". She suggested that if users were forced to use their real names, they would "behave a lot better", and that this would curb harassment and trolling. Eric Schmidt, Google CEO, is in agreement with this sentiment and has labelled anonymity as the real danger, and stated that in time governments may require one's identity to be known if we wish to use the internet.

2.4.5 Lack of Knowledge

In South African schools, a code of conduct is drawn up by the school governing body, after consulting educators, learners and parents. Any form of bullying or victimisation appears to be in conflict with this structure, which is implemented to enforce a disciplined school environment which aids quality learning. The phenomenon of mobile bullying is becoming an increasing problem which can present many problems for South African schools and educators. Many studies in education have been conducted in South Africa around traditional bullying and how to protect learners from it. However, with the new mobile bullying sensation, many researchers fail to study whether educators are adequately informed about it and how they will deal with it should any potential legal consequences arise (Moodley, 2011). Furthermore, Moodley argues that the many cultural, social and educational benefits that mobile technology offers adolescents and any proposed solutions, should work together to ensure that access and

information rights are highly preserved whilst balancing appropriate concerns. Learners have a right to be protected, but they also have a right to be empowered.

Eliminating all online risks is an impossible task. In the past, there have been efforts to limit exposure by using parental controls and monitoring software. A contributing factor is that adults and adolescents relate differently to technology. Adults are either not *au fait* with the latest technology, or they tend to use computers and the internet as a practical tool, while learners see it as a lifeline to communicating with their peers (Keith & Martin, 2005). The result is that adults have little understanding or knowledge of adolescents online activities. Research completed in the UK and the US highlights that most adolescents are ill-equipped to deal with the many risks that they encounter online (Li, 2007).

Although many people are aware of the act of mobile bullying through media reports, the lack of educational policies in schools however, is a great concern (Kowalski et al., 2008). Kowalski and Limber (2008) recommends that parents and educators should be educated about mobile bullying in order to comprehend the extent of mobile bullying. A further recommendation is to incorporate mobile bullying in the schools syllabus to focus on the impact as well as prevention methods of this type of bullying.

2.4.6 Mobile bullying and the South African Law

Existing legislative frameworks on cybercrime have been found to be misaligned which makes understanding and compliance with them difficult. Burton and Mutongwizo (2009) stated that no policy framework directly addressed mobile bullying and called for a comprehensive policy that directly addresses the safety of young people online and in the realm of cellular technologies. Beger et al., (2011) argues that with high access and use of mobile technologies, the need for awareness of global opportunities and risks rises. There is an urgent need for well-crafted legislation and programmes in ICT development and education. In addition Kyobe

(2008) found that compliance with legislation is a major challenge for many organisation and institutions of learning in South Africa. People do not have knowledge of the legislation on electronic abuse. He recommended more training and awareness programmes. Beger et al., (2011) concludes that the challenge for the government is to foster the development of a young population fully educated and aware of the opportunities, rights and risks born of engagement with digital technology.

In an effort to create awareness of the law and their implications, Beger et al., (2011) has identified and developed a guide to assist researchers, educators and learners to understand good control practices recommended by codes of practice. Furthermore, the aim of the guide is to inform authorities about existing legislation which can be used to draw up policies that specifically govern mobile bullying in the school context. Schools and supporting organisations, such as law enforcement and government need to ensure accountability, transparency and measurability if they are to implement mobile bullying policies effectively.

As mentioned before, there may not be a concrete law that regulates mobile bullying, but responses to civil law may accommodate for this. According to Prinsloo (2005:8), with reference to the South African Schools Act on Human Dignity of 1996, the existing stringent legislations governing the use of electronic devices and new school rules strongly prohibit all forms of bullying. Badenhorst (2011) provides a number of recommendations that outlined the need to review the legislation to adjust the impact the laws have on learners in cases. She recommended that state parties should ensure that relevant legislation provides adequate protection of adolescents in relation to ICTs. Badenhorst (2011) further recommended the provisioning of accurate, accessible and age-appropriate information and empowerment on life skills, self-protection and specific risks – including those relating to ICTs and how to develop positive peer relationships and combat bullying – through the school curriculum and in other

ways. Table 4 gives an outline of the existing regulations and laws in South Africa that can partially be adopted to address the issue of mobile bullying.

Table 4: A guide to create awareness of mobile bullying legislations and implications

Regulations	**Consequences**
Higher Education Act	The South African Schools Act 84(1996) upholds the rights of learners, teachers and parents and shows that these parties accept their responsibility towards the school as well as the governance thereof. Any form of bullying, is not tolerated (Gov. Gazette 1997).
Electronic Communications & Transactions (ECT)	Chapter 8 of this act governs legal criminal offenses relating to unauthorized access to data (e.g., through hacking), interception of data (e.g., tapping into data flows or denial of service attacks), interference with data (e.g., viruses) and computer related extortions, fraud and forgery. Perpetrators can be fined and/or imprisoned (Michalson & Hughes 2005).

Common Law	The common law provides principles such as the rule of natural justice as well as in loco parentis which play an important role in dealing with mobile bullying in schools. The rule of natural justice aims to ensure fairness and justice in all disciplinary actions. With the principle in loco parentis, it is the educators' duty to accept the role of the parent and see to it that the adolescent is protected from harm (Sizwe 2009).
Children's Act 38 of 2005	The Children's Act encourages all role players in a school environment to respect, promote and fulfil the rights of children as set out in the Bill of Rights. It is the responsibility of the school to ensure the child's best interest is considered (Government Gazette 2006).
Protection of Personal Information Bill	In the Promotion of Access to Information Act 2 (2000), the procedure that should be adopted to request access to the personal information or records of any individual, is detailed. In order for an individual to gain access to this information a written permission should be obtained from the consumer for the collection, collation, processing or disclosure of any personal information of the consumer (Michalson 2009).
Civil Law	In terms of Section 384 of the Criminal Procedure Act, the civil law can follow two distinct courses of action that can be employed. Firstly, an interdict can be brought before the High Court, restraining the perpetrator from continuing with the behaviour, and subsequently the applicant can sue for damages and defamation of character. Secondly, it may be the case that a perpetrator has provoked a breach of peace, by threatening a victim with injury to their person or property. The perpetrator may be sued (Badenhorst 2011).

Criminal Law Act 2007	Section 19 of the Criminal Law (Sexual Offences and Related Matters) Amendment Act 2007, provides that any person exposing or displaying, or causing exposure of child pornography to a child violates this act. A conviction will also result in the child's name being registered as a sex offender (Badenhorst 2011).

2.5 Summary of the Literature Review

Research into this phenomenon remains in its infancy, and further studies are warranted considering the potential risk that it possess. For these studies to be cohesive an integrated definition is critical, otherwise researchers will be oblivious to the discoveries made across the field. Both internationally and locally, empirical research indicates that the number of learners who have been subjected to mobile bullying constitutes a significant minority and is on the rise. Research also indicates that, when compared to traditional bullying, online harassment can cause greater harm. The impacts range from mild frustration and distress to more serious long term psychosocial and affective disorders. Most serious are the links established between the feelings of depression and low self-esteem, associated with repetitive long term harassment, and suicidal ideation.

Tokunaga (2010) argues that what is needed is a theoretical framework, enabling us to not only understand, but to predict mobile bullying behaviours and victimisation. Although many incidents occur outside the physical boundaries of the property, schools can no longer be oblivious to the very real issue of mobile bullying. Many parents find it difficult to keep abreast with the developments in the technology sector and they rely on schools to keep them informed about the potential risks. Schools need to heighten awareness and guide parents, ensuring that adolescents and parents do not fall prey to its pitfalls.

2.6 Conceptual Model

In making sense of relationships, a conceptual framework provides concrete foundation to undertake research and identify the relationships among variables in a given phenomenon (Cavana et al., 2001:78). The framework assists in testing relationships among variables to improve and understand the dynamics of a particular situation. The variables that describe a conceptual framework are dependent, independent, moderating and intervening (Cavana et al., 2001).

The dependent variable influences the research and is a key element for researchers in finding a solution to a problem. In this research, the dependent variable is (degree of mobile bullying). The researcher intended to discover if the chosen influential factors impacts the degree of mobile bullying. The independent variable has a positive or negative influence on the dependent variable. Then, the moderating variable has a dominant impact on the relationship of both the independent and dependent variable. In this research, it is the mobile phone. The intervening variable surfaces between the time independent variables begin to operate influencing the dependent variable and the time period their impact is felt on it. However, in this research, the intervening variable was not further examined because it was not applicable. Hence, much emphasis was given on the two variables (dependent, independent).

Figure 2 below represents the proposed conceptual model for examining factors influencing mobile bullying in South Africa. The model presents the constructs identified in literature which the authors consider to be key influences on the degree of mobile bullying. The theoretical work on which this model is premised are summarized as well.

In the conceptual model, the dependent variable (degree of mobile bullying) consists of all the constructs measuring mobile bullying. The independent variable for this conceptual model consists of all the influential factors of mobile bullying. Firstly, anonymity influences the extent

to which mobile bullying occurs because it empowers the perpetrator to inflict more harm than they would in a real life situation and this makes it difficult to trace the perpetrator (Kruger 2011). There is a lack of awareness regarding the risks and implications around mobile bullying in South Africa and this influences the way in which mobile bullying is perceived and understood. Furthermore, the existence of the law regulating mobile bullying and the knowledge of this law and the liabilities for non-compliance with it, will influence the extent to which mobile bullying occurs.

According to Thornberg (2010) the attitude and thinking processes of adolescents may affect the way adolescents perceive certain socio-economic factors, such as social networking, crime and education and influence their mobile bullying behaviour. An individual's ability to effectively use technology may impact their mobile bullying behaviour because individual's who spend more time online tend to be more aggressive. In the virtual world, messages can easily be misinterpreted and this leads to greater risk-taking, affecting the degree of mobile bullying. Lastly, the accessibility of mobile applications allows for anytime and easy access for potential mobile bullies and this influences the extent to which mobile bullying can occur.

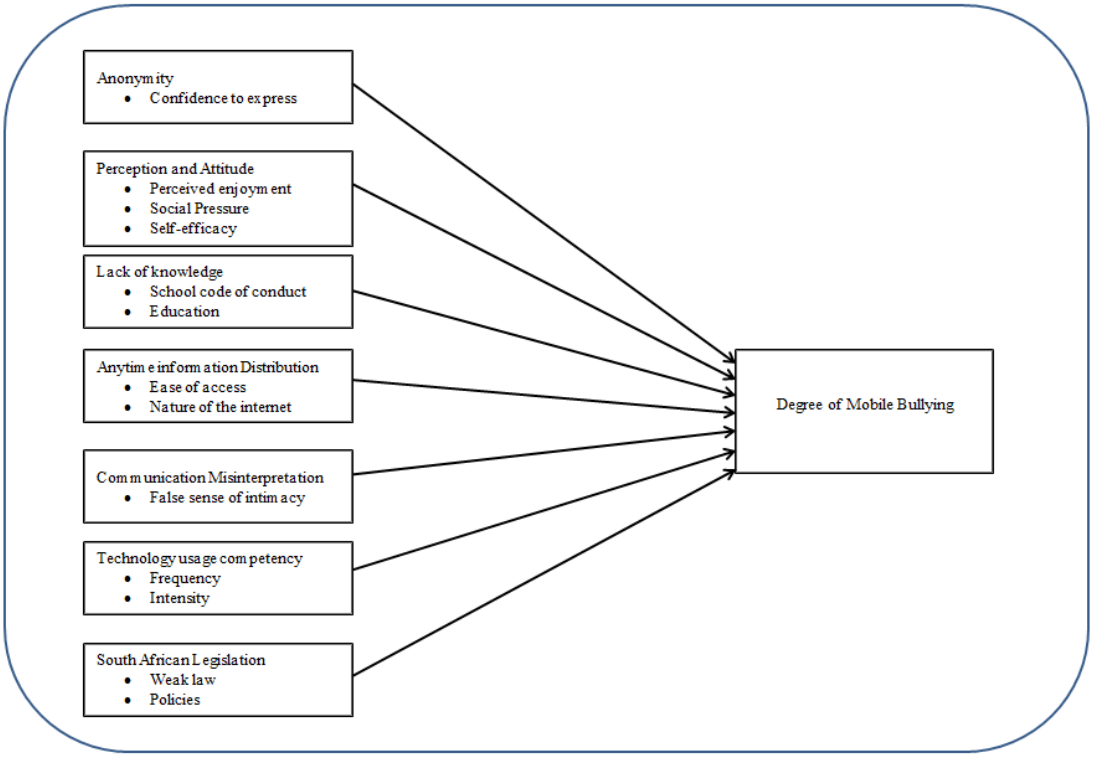

Figure 2: Conceptual Model

Chapter 1 specified the objectives of this research as to investigate the extent of mobile bullying in South Africa. The relationships between the elements deliver output; therefore choosing appropriate relationships enables favourable outcomes. The conceptual model was tested empirically as explained in Chapter 3.

2.7 Research Hypotheses

The proposed conceptual model, Figure 1 classifies the following hypotheses that have been formulated to test this model empirically. Applying deductive thinking, a set of hypotheses is developed from the proposed theoretical model.

Hypothesis 1: ***An individual's technology usage competence affects their mobile bullying behaviour (Zhang et al., 2010).***

Existing literature supports the view that the higher the magnitude of expertise in using online communication tools the higher the likelihood of mobile bullying taking place (Zhang et al., 2010). Firstly, *'Intensity of use*' measures the amount of time an individual spends using an electronic communication device. The second indicator is *'Frequency of use'* which entails measuring the number of times an electronic communication device is used by an individual.

Hypothesis 2: ***An individual's perception and attitude towards the internet affects their mobile bullying behaviour (Cheung and Huang, 2005).***

The first indicator *'Perceived enjoyment/fun'*, is represented by measuring the perception of how much an individual enjoys using electronic communication devices. Secondly, *'social pressure'* is a representation of an individual's perception of peer pressure on themselves to conduct the act of mobile bullying (Cheung & Huang, 2005). Lastly, *'Technology self-efficacy'* is derived from the '*Internet self-efficacy'* indicator which is defined by Zhang et al., (2010) as "an individual's beliefs about his/her ability to competently use the technology".

Hypothesis 3: ***The lack of current legislation in South Africa and weak law covering mobile bullying may trigger adolescents and people to engage in acts of mobile bullying (Badenhorst, 2011).***

At present South Africa does not possess legislation that is specifically targeted to deal with extreme cases of mobile bullying (Badenhorst, 2011). Badenhorst (2011) provides a concise review of current legislation, and offers several remedies in criminal and civil law that can be relied upon to address issues.

Extreme cases of mobile generally contravene current legislation, and the suggestions are available to all victims irrespective of age.

Hypothesis 4: ***The greater the leverage of online anonymity, the higher the likelihood of an individual expressing themselves in an aggressive manner by becoming a mobile bully.***

Researchers are in agreement that the power of the online bully lies in their anonymity (Badenhorst, 2011; Burton & Mutongwizo, 2009; Hinduja & Patchin, 2008). Adolescents who would not normally engage in traditional (school-yard) bullying, may be tempted to do so in response to the anonymity associated to an online environment (Campbell, 2005; Li, 2008). Mobile bullying is essentially an opportunistic offence that requires minimal planning and the anonymity minimises the bully's accountability, as there is little chance of being caught.

Hypothesis 5: ***The greater the failure of knowledge distribution and awareness around mobile bullying in schools, the higher the risk of mobile bullying occurrences.***

Although many people are aware of the act of mobile bullying through media reports, the lack of educational policies in schools however, is a great concern (Kowalski et al., 2008). Kowalski and Limber (2008) recommends that parents and educators should be educated about mobile bullying in order to comprehend the extent of mobile bullying.

Hypothesis 6: ***The global nature (anytime information distribution) of the internet has an influence on individuals to engage in mobile bullying activities***

The nature of online communication tools gives way for messages and images to spread quickly and easily and to reach a far larger audience than traditional bullying, whereby the location, time and victim is set (Li, 2007).

Hypothesis 7: ***Communication or messages in the virtual world can be misinterpreted and this can promote a false sense of intimacy, which may lead to greater risk-taking and possible incidents of mobile bullying.***

Damage to a learner's reputation could occur due to misinterpretation of a text or an online post. That is, even if the intention of the message being send was not to pose as a threat (e.g., the intent was to be funny), the impact of the message could be hurtful and the sender may be seen as a perpetrator. Because of the potential for misinterpretation of messages, anyone can be a (perhaps unintentional) mobile bully (Finn, 2004).

CHAPTER 3: RESEARCH DESIGN

3.1 Introduction

This chapter provides the design employed in this research. A research design describes a sequence of appropriate choices and decisions conducted during the research process (Cavana et al., 2001). It gives an overview of the road map, plans, guidelines, procedures to be followed in the research (Myers, 2009). There are two schools that explain how to investigate a phenomenon. In the first school of thought, researchers argue that one should start by proposing a method followed by the epistemology (Crotty, 1998), while the second school of thought recommends that, epistemology should be explained first followed by the method (Gadamar, 1976a).

The chapter is presented as follows: *Section 3.2* discusses the philosophical assumptions adhered to when conducting research. *Section 3.3* outlines the research methodology comprising of the research purpose, paradigm, time frame and instrument, target and sample population, strategy, data collection and analysis techniques. *Section 3.4* describes how ethical and confidentiality issues were resolved by the researcher.

3.2 Philosophical Assumptions

Researchers base the design and conduct of their investigation on beliefs and assumptions about what is to be known (i.e., the research problem), what constitutes valid evidence, and how the evidence may be acquired in the context of practical constraints, e.g., legal, institutional and economic issues, and the researcher's own skills and interests (Orlikowski & Baroudi, 1991). For example, the philosophies to which a researcher subscribes may determine the nature of research questions to investigate. Similarly, the nature of research questions to be answered may shape the beliefs and assumptions underlying the investigation. Figure 3

shows the relationship between research problems, practical constraints and research philosophies.

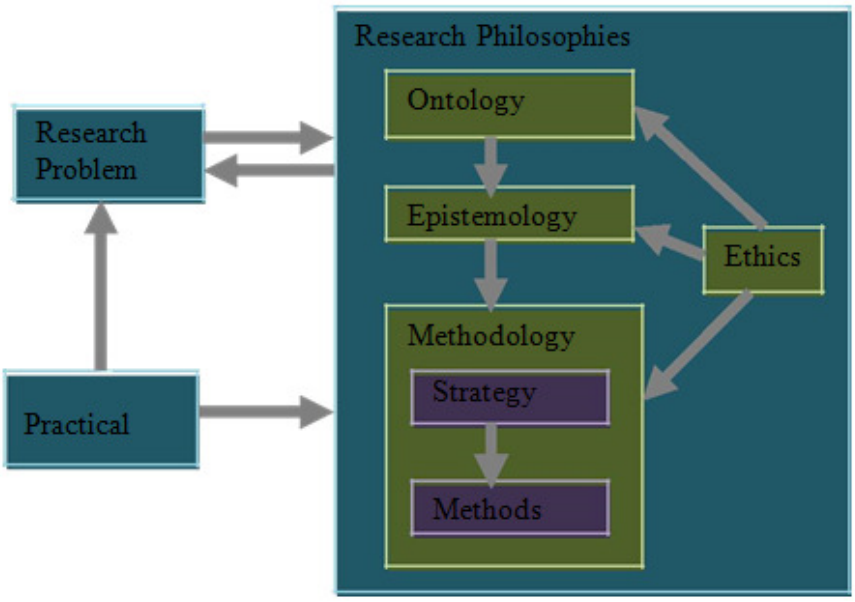

Figure 3: Philosophical Assumptions in Research Design (Adapted from Ghauri & Grønhaug, 2002)

Mingers (2001) and Woleński (2004) discuss the elements of research philosophy, namely: ontology, epistemology, methodology and ethics. Various scholars have established the relationship between the first three elements (Oates, 2006). Niiniluoto (1999) points out the need to supplement methodology with an investigation into the legitimate or permissible (i.e., what is ethical). Ontology, epistemology and methodology are discussed in sections 3.2.1 to 3.2.3, and research ethics in section 3.4.

3.2.1 Ontology

Ontology is the study of the nature of being, i.e., existence or reality (Stahl, 2008). Ontological beliefs are based on the structure of the phenomenon and its relationship with other phenomena and with the researcher. It may be broadly divided into two: *Realism* and

antirealism (Bunge, 2006; Stahl, 2008). *Realism* assumes the independent existence of the world under investigation, while *antirealism* holds an antithetical view (Stahl 2008). Realism is therefore based on the assumption that aspects of the world can be isolated and investigated objectively, independent of the researcher's experiences and values (Stahl, 2008). Ontological antirealism, in contrast, assumes the world is dynamic and subjective, and knowledge is produced through, and not independent of, human interaction and comprehension (Oates, 2006; Orlikowski & Baroudi, 1991).

3.2.2 Epistemology

Epistemology is the theory of gaining knowledge (Oates, 2006). It specifies the nature of the relationship between the researcher and the phenomenon under investigation and answers the questions: what constitutes valid knowledge and how can knowledge be acquired? An ontological viewpoint has implications for epistemology: what exists determines what, and how, knowledge can be acquired (Bunge, 2006). Two overarching typologies, namely, epistemological realism and antirealism, may be identified as epistemological viewpoints (Bunge, 2006).

By acknowledging that researchers bring their values, principles and experiences to bear on the comprehension and interpretation of phenomena, antirealism recognises the construction of different forms of knowledge by different people in different contexts (Oates, 2006). In contrast, realism assumes that what can be discovered or known is singular or universal, independent of the researcher, and applies across time and context (Oates, 2006).

3.2.3 Methodology

Methodology specifies how the researcher may go about practically investigating a phenomenon to gain knowledge. It consists of strategy (i.e., the overall approach to answering the question) and methods for collecting and analysing data as shown in Figure 3 (Oates, 2006).

According to Ghauri & Grønhaug (2002), it is through methodology that the researcher provides justification or proof of validity to the research audience.

Oates (2006) discusses research strategies and methods that are commonly used in IS research. The strategies include experiment, survey, design and creation, ethnography, case study and action research; the data collection methods include interview, observation, questionnaire and documents; and the data analysis methods include statistical techniques and qualitative analysis.

3.3 Research Methodology

Research methodology consists of techniques or procedures applied in the gathering and analysis of the data (Crotty, 1998). The process is done in response to the research question and hypotheses. The subsequent sections consist of an in-depth discussion of the research purpose, paradigm, time frame, strategy, data collection and analysis techniques, instrument, target and sample population.

3.3.1 Research Purpose

This research will combine an exploratory and descriptive approach by combining both qualitative and quantitative measures. Descriptive research will be used to document and report on the individuals or groups of individuals in this study for qualitative measures (i.e. observation and interaction). Whereas exploratory research will be used to describe the phenomenon and to explore and measure the factors that influence and interact with it using quantitative measures (i.e. surveys). Exploratory research is typically employed to study a new topic or issue or when the subject of research is in itself relatively new and unstudied (Neuman, 2006:33). Furthermore, the primary purpose is to examine an understood issue or phenomenon to develop preliminary ideas toward refined research questions by focusing on the “what” question (Neuman, 2006:33). Even though exploratory research may not result in specific

answers, it is considered to be an essential step in research as it creates the foundation for further enquiry (Neuman, 2006:33). Another aim of exploratory research is to improve insight into and gain an understanding of the problem at hand (Neuman, 2006:33). The research will therefore be descriptive research. According to Neuman (2006:35), descriptive research primary purpose is to "paint a picture" using words or numbers to outline steps in order to answer the research questions, such as who, when, where and how.

3.3.2 Research Paradigms

In IS, researches are guided by specific research philosophical assumptions or paradigms. Three most recommended categories of paradigms for research are positivist, interpretive and critical (Orlikowski & Baroundi, 1991; Myers, 2009). Oates (2006) identifies three overarching paradigms in IS research. These are summarised in Table 5. It may be observed that some paradigms are naturally underpinned by specific research philosophies.

Table 5: Research Paradigms (Cavana et al., 2001; Terre Blanche & Durrheim, 2004)

Paradigm	Ontology	Epistemology	Methodology
Positivist	The phenomenon under investigation is independent and objective	Knowledge exists independent of the researcher and can be acquired objectively	Quantitative data collection and analysis methods; deductive, hypothesis testing; generalisation; associated with sample survey
Interpretive	The phenomenon under investigation is not independent but exists in conjunction with others, and is subject to human perception	Knowledge is constructed through human perception; the researcher is not a passive observer	Researcher interacts with the research context and is part of the research process; analytical data collection and analysis methods to "induce" data and generate theory
Critical	Similar to interpretive; in addition, it assumes the phenomenon dominates and exploits subjects	Similar to interpretive; in addition, the researcher is critical and aims to change the status quo	Similar to interpretive; in addition, the processes are critical

3.3.2.1 Positivist Research Paradigm

The positivist paradigm derives from the natural sciences, and is premised on ontological and epistemological realism. Its key characteristics include quantifiable measurement, models (e.g., formal propositions and hypothesis) and universal laws, i.e., generalisation (Myers, 1997; Oates, 2006). Validity and reliability of findings, therefore, depend on precise measurements, accurate models and representative samples. Quantitative methods (i.e., experiments and surveys strategies with observation and questionnaire as data collection methods, and statistical techniques for data analysis) are generally employed (Oates, 2006). This paradigm is

well-suited to research which involves large samples and testing (Oates, 2006).

3.3.2.2 Interpretive Research Paradigm

The interpretive paradigm is based on ontological and epistemological antirealism. It seeks to describe, interpret, analyse and understand phenomena (Orlikowski & Baroudi, 1991). Thus, the appropriate research methods are ethnography, case study and action research, which recognise researcher's interaction and the unique context of the world under investigation (Oates, 2006). Qualitative methods are widely used to gather, construct and present multiple perspectives of knowledge (Oates, 2006).

Critics argue that the interpretive paradigm is unscientific and susceptible to researcher bias. It is also criticised for focusing on understanding, and not questioning the *status quo*. However, it is effective in cases where the research involves smaller samples and the purpose is to gain in-depth knowledge (Oates, 2006).

3.3.2.3 Critical Research Paradigm

The main purpose of the critical paradigm is social critique (Myers, 1997). According to Orlikowski and Baroudi (1991:15), "critical researchers attempt to critically evaluate and transform the social reality under investigation". Although there are clear similarities between the interpretive and critical paradigm (i.e., similar ontological and epistemological assumptions), the latter emphasises changes to the *status quo* and seeks to empower people by helping to eliminate causes of alienation and domination (Myers, 1997). It is however criticised for, among other things, the lack of criteria for judging research (Oates 2006).

This dissertation adopted a positivist research paradigm approach in order to test the hypotheses and theories available. It should be underscored that the qualitative information were used to supplement the large amount of quantitative data, rather than the reverse. The surveys became more meaningful when interpreted in light of critical qualitative information

just as other statistics was most useful when compared to supporting literature.

This paradigm is well-suited to research large samples and testing (Oates, 2006). The present research falls in the social science field. Thus, it examined school learner's behaviour and how they use mobile phones to bully in a social environment e.g. high school. Because of the exploratory nature of the study, the aim was to reach a heterogeneous audience of adolescents to obtain a wide range of opinions about and experiences of mobile bullying. Learners from different ages, sexes, class groups in secondary schools, social backgrounds and who resided in different geographical areas, were asked for their participation.

Conceptually, the global item measurement assumes that respondents fully understand the broad concept of bullying including hostile intent, repetition, power imbalance and its various forms when answering. Research however showed that this might not be the case for learners of all age groups (Vaillancourt *et al*., 2008) and cultures (Strohmeier & Toda, 2008).

3.3.3 Research Timeframe

There are two research time horizons namely cross-sectional and longitudinal time horizons (Chambliss & Schutt, 2010). Cross-sectional designs involve the collection of data at a certain point in time (Saunders et al., 2003). For example, a researcher collects data once, in weeks or months to provide an answer to a research question (Sekaran, 2003). The data collected however, fails to measure the impact of time. Contrastingly, longitudinal studies include the study of a phenomenon more than once to provide a solution to a research question involving the collection of data over a long time period (Sekaran, 2003). This research adopted the cross sectional time horizon since; it was supposed to be completed within a confined time period allowed for the programme under study. The researcher conducted a survey which is appropriate for cross-sectional studies (Sekaran, 2003). A longitudinal study is not suitable for this research since, it requires a longer time scale than the one required for this research.

3.3.4 Research Instrument

A quantitative research instrument was used with the help of a questionnaire which was developed from the work of (Walsh & White, 2010).

The questionnaire assessed demographic information, frequency of mobile phone use, mobile phone involvement, self-identity, in-group norm, need to belong, and self-esteem. Reversed items were included throughout the questionnaire to overcome the potential for response bias. Participants selected their age, gender, and frequency of mobile phone use. Participants indicated the average number of calls made, calls received, text messages read, and text messages received each day in four closed-ended questions. These items were then summed to create a scale reflecting the average frequency of use per day.

The questionnaire consists of a brief definition of mobile bullying and six sections (as outlined in Appendices A to F):

1. Section A consists of general information about learners;
2. Section B contains information Mobile Phone Internet Accessibility and Usage;
3. Section C deals with the feelings about learners towards their Mobile Phone
4. Section D focuses on mobile bullying with indirect questions relating to mobile bullying involvement;
5. Section E is unique in the sense that, the questions presented on traditional bullying can have somewhat an impact on the probability that traditional bullies might end up being mobile bullies;
6. Section F deals with mobile bullying victimisation;
7. The closing section provided a child line free number for support.

Learners were asked to indicate their agreement or disagreement with statements concerning their mobile bullying involvement and knowledge. A rating scale was used to obtain opinion

data from learners (Saunders et al., 2003). There are several rating scales like dichotomous, category consensus, Likert scales, only to mention a few. The researcher adopted two five-point Likert scales as illustrated in Table 6 (a) and (b) for the quantitative study; it allowed learners to select a range of options including the possibility of "uncertainty" in Table 6 (a) (Cavana et al., 2001; Saunders et al., 2003).

Table 6: Five-point Likert Scale (Cavana et al., 2001, p. 205)

Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
1	2	3	4	5

(a)

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

(b)

3.3.5 Target and Sample Population

Target population consists of groups of people, events or elements of interest to be investigated (Cavana et al., 2001). The target population was learners from 7 different schools in Cape Town, South Africa. For the purpose of this study, the target sample (n = 3621) was adolescents between the ages of 14 and 18. Seven high schools were identified with significant parameters, such as diversity, historical background, heritage and demographics.

A sample is defined by Cavana et al. (2001, p.253) as a "subgroup or subset of the population". Sampling involves the selection of a certain number of elements in a population to study its characteristics for generalization purposes to the population as a whole (Sekaran, 2003, p.266). Generalization involves applying research findings to different organizational settings (Cavana et al., 2001, p.31). In view of that, the sample should be representative of the population so as

to generalize the results. To reduce generalization errors, the sample size should be large enough (Saunders et al., 2003, p.155). The sampling frame consists of all elements of the population from which the sample is taken (Saunders et al., 2003).

Sampling is appropriate when it is impractical to collect data from several hundreds of elements since it reduces the time taken collecting data, minimize costs incurred and results can be obtained instantly (Sekaran, 2003). There are two types of sampling techniques, probability and non-probability sampling outlined as follows:

With non-probability sampling, the chance of an element being selected from the total population is not known. Case study research is widely used with non-probability sampling. However, it does not take into account statistical inferences (Saunders et al., 2003). Non-probability sampling is common in convenience, purposive, snowball and quota sampling techniques (Saunders et al., 2003). Convenience sampling is a technique where subjects are chosen based on the convenient accessibility and proximity of the researcher. Purposive sampling, also known as judgement sampling, is a sample that is based on the knowledge of a population and the purpose of the study. Snowball sampling is used when the potential subjects in a study is difficult to locate. Quota sampling employs the method of gathering representative data from a sample group (Saunders et al., 2003). For the aim of this research, purposive sampling will be used to get specific categories of participants who can give representative data either because they possess the information or meet certain criteria (i.e. they fall under specific income categories, areas with various safety risks and types of ownership of the school) formulated by the researcher.

With probability sampling, elements have a chance of being selected from the total population (Saunders et al., 2003; Sekaran, 2003). This sampling technique is commonly used in survey research. It allows statistical estimates to be conducted on sample characteristics of the

population to fulfil the research question and objectives of the research. There are several kinds of probability sampling techniques - for example, simple random, systematic, cluster, multi-stage and stratified random.

3.3.6 Research Strategy

There are two kinds of research methods i.e. quantitative and qualitative. The methods are explained as follows:

3.3.6.1 Quantitative Research

Quantitative methods are typically used in research based on ontological and epistemological realism. The key characteristics are objective observation, quantitative measurements and statistical analysis (Cavana *et al*., 2001). Quantitative data collection methods allow the researchers to identify specific characteristics of the phenomenon under investigation, and to objectively and systematically measure and collect data, usually coded in numeric form. Statistical techniques are subsequently used for data analysis and reporting findings. Quantitative methods are generally deductive and use experiment and survey strategies with observation, questionnaire, documents and interview as data collection methods.

There are several types of questionnaires in existence. For example, self-administered questionnaires (e.g. on-line, postal and delivery and collection) and interviewer administered (e.g. telephone and structured interview) (Saunders et al., 2003). Self-administered questionnaires are completed by respondents via the Internet as online questionnaires or could be posted and returned by post to respondents as postal questionnaires. Delivery and collection questionnaire involves delivering the questionnaire to the respondent by hand and collecting it at a later stage. Lastly, structured interviews involve face-to-face interaction with respondents asking them questions.

A survey research strategy was proper for this research since it is connected with deductive approach (Saunders et al., 2003). It gives the researcher control of the research process, involves the collection of large quantities of data that can be easily compared since it is standardised (Saunders et al., 2003). This research applied a personally administered questionnaire approach to obtain immediate responses in a short time period (Sekaran, 2003). It allowed the researcher to motivate the respondents to answer the questionnaire by providing the definition of mobile bullying and the purpose of the study. The survey research method enabled the researcher to analyse the research model, patterns of variables, test hypotheses, describe the characteristics and collect information concerning mobile phone usage among learners. However, self-administered questionnaires are quite expensive to administer in geographically distributed areas (Cavana et al., 2001).

3.3.6.2 Questionnaire Design

Questionnaires are designed to test hypotheses and provide answers to a research question (Cavana et al., 2001). Additionally, the questionnaire should be designed in a manner that flows and reduces bias (Cavana et al., 2001). They require a good appearance (i.e. they should be both positively and negatively worded, short, attractive, neat) and an effective principal of measurement (validity and reliability) (Cavana et al., 2001; Saunders et al., 2003; Sekaran, 2003). The questionnaire should have a proper introduction, well-organized questions, a strong conclusion and lastly, pre-tests are a pre-requisite to assess its validity (Cavana et al., 2001).

3.3.6.3 Validity and Reliability Assessment

Validity and reliability tests are used to measure the goodness of data. Validity assesses the ability of an instrument to measure a concept (Sekaran, 2003, p.244). It is tested in the following ways:

Face validity determines the sensibility of a questionnaire (Saunders et al., 2003, p. 309), ensuring that respondents understand the wording and the questionnaire as a whole (Cavana et al., 2001, p.238). Few respondents are appropriate to verify if the questionnaire makes sense. In contrast, content validity measures the representativeness and adequacy of the questionnaire (Sekaran, 2003, p.206). Saunders et al. (2003) suggests that questionnaires can be verified by a group of experts to assess its representativeness and appropriateness. On the contrary, reliability specifies how the responses are consistent to the questions (Saunders et al., 2003, p.309). Reliability tests are explained by Cavana et al., (2001) as follows:

1. Tests re-test: measurements of reliability coefficient are conducted twice. A questionnaire could be handed out to respondents to measure a certain concept and is re-handed out later to the same respondents.
2. Internal consistency- ensures uniformity in of concepts to be measured to attach meaning to the concepts.
3. An alternative form of the questionnaire is conducted during the questionnaire design. The researcher can remove certain questions which decrease the reliability of the test.

3.3.6.4 Qualitative Research

In contrast, qualitative methods are well-suited to research strategies underpinned by ontological and epistemological antirealism. The key characteristic is “inducing‟ valid data, and not objective and systematic measurements. The researchers immerse themselves in the data collection and analysis processes, continuously making rational decisions about what may constitute valid data to answer research questions (Myers, 1997). Unlike quantitative methods, the data collection and analysis methods may not be distinct. Often, ethnography, case study and action research strategies are employed to collect non-numeric data through interviews, observation and documents (Myers, 1997; Oates, 2006). Although there are many different

qualitative analysis methods, they are similar in approach: organising the raw data, perusal, classification, and synthesis (Creswell, 1998).

Case study research studies in-depth information of an entity through a variety of data collection methods (Cavana et al., 2001). Case study research considers use of hypotheses. Most organisations do not use case study research to solve problems since; organizations in the same settings face problems at different times. It however, requires a careful selection of cases for correct interpretation of situations to solve the problems. Case study research supports qualitative data analysis, instead of quantitative.

Action research is mainly concerned with change strategies (Cavana et al., 2001) or change intervention (Saunders et al., 2003). The process involves the identification of a problem, data collection and implementation of the solution. A continuous evaluation, definition and diagnosing of effects is applied up to the period the problem is solved. Action research requires effective problem definition and creative ways of collecting data.

In grounded theory research, inductive and deductive research approaches explain theory development from data collected through observations (Saunders et al., 2003). The initial stage of data collection excludes a theoretical framework. Theory is developed at a later stage from data collected through observations. The data is then tested to confirm predictions.

Strauss and Corbin (1990) mention that, qualitative research does not depend on quantification and use of statistical processes to obtain findings. However, qualitative data can be acquired from interviews, field notes or any other written sources of data (Myers, 1997). Interviews enable the collection of rich information from people in various roles and situations (Myers, 2009). Interviews offer participants the freedom to express themselves (Saunders, et al., 2003). There are three types of interviews namely structured, semi-structured and unstructured.

Structured interviews comprise of pre-determined questions asked in order within a defined time period (Saunders, et al., 2003). It promotes social interaction with the respondents and there is clarity of questions. However, structure interviews averts the emergence of new ideas since, there is no improvisation while, unstructured interviews are totally the opposite (Myers, 2009).

Semi-structured interviews consist of a list of themes and questions to be asked in the interview (Saunders, et al., 2003). Questions are flexible and offer room for improvisation. That is, some questions can be excluded in an interview depending upon the context and the order of questions is not strictly adhered to according to question flow (Saunders, et al., 2003).

Unstructured interviews in contrast, are not formal (Saunders, et al., 2003) and contain pre-formulated questions if they exist (Myers, 2009). Interviewees have a chance to bring out their opinions and the interviewer should improvise in case of breaks when the interviewee stops talking. Respondents have a chance to talk freely about certain behavioural aspects or beliefs concerning the area of study under discussion (Saunders, et al., 2003). Nevertheless, unstructured interviews depend upon the interviewee's perceptions which can be misleading. Myers (2009) stated that qualitative research is often difficult to generalize to a large population. Researchers argue that qualitative research is not as accurate as statistical results obtained from the quantitative approach (Myers, 1997, 2009).

3.3.6.5 Distinctions of Qualitative and Quantitative Data

The differences between the two approaches is that the quantitative approach mainly focuses on hard issues e.g. numerical data analysis while, qualitative approach deals with soft issues e.g. data collection and analysis in the form of words or pictures (Chan, 2005). There are additional differences between the two types of data as postulated by Neuman (2006). Three

features distinguish between the measurement of quantitative and qualitative data as shown in Table 7.

Table 7: Summary of Qualitative and Quantitative Measurement (Neuman, 2000)

Feature	Qualitative Measurement	Quantitative Measurement
Timing	Measurement occurs during data collection process	A priori determination of variables
Data Form	Multi-format-text or pictorial. May include some numerical data	Numerical
Logic	Partial conceptualisation of ideas with full development during actual data collection	Full conceptualisation of ideas and data collection

3.3.7 Data Collection

Data collection was conducted after the research questions and research hypotheses were formulated. In this research, the collection of data consisted of quantitative collection through questionnaires.

3.3.7.1 Quantitative Data Collection

The survey included closed-ended questions. In exploratory research, closed questions allow respondents to make choices from options defined by the researcher and are restrictive (Cavana et al., 2001; Sekaran, 2003). In the present study, the collection of quantitative data was conducted as follows:

Researchers on bullying say that respondents need to understand the terms used in the study - in fact they recommend that these be defined in the questionnaire. The definition of mobile bullying was therefore defined at the beginning of the questionnaire in this study. The researcher obtained permission from the principals and teachers to hand out questionnaires to the learners on a scheduled timeframe. Scheduled times was arranged with school counsellors and principals in order to deliver the questionnaires.

Learners completed the questionnaires during class times administered by the relevant class teachers. The questionnaires were then collected on request of the teachers. On one occasion the researcher was able to administer and hand out questions to the relevant classes and participants. Initially, 4638 questionnaires were distributed. 3621 responses were received with a response rate of 78%.

3.3.7.2 Qualitative Data Collection

There are, however, certain elements of the research that were conducted using a qualitative approach. Furthermore, according to Saunders et al. (2009) it is understood that an interpretivist paradigm assumes the point of view that the mobile bullying culture needs to be understood by studying stakeholders ideas, thoughts and meanings, and that rich insights would be lost if a purely positivistic paradigm was to be used.

Moreover, in a bid to establish relationships and interaction, initial school contact was made by giving a presentation to two of the participating schools in order to explain the meaning of mobile bullying and the purpose of the study. This proved to be productive as one of the schools was running with a Cyber-bullying campaign at the time. Formal interviews was not arranged with the two schools, however the result of interaction and conversation with school principals and counsellors revealed that mobile-bullying is a huge concern for the learners and educators. This was supported by mobile bullying incidents that occurred at the school. Other schools was not willing to participate in meetings or presentations but accepted the initial invite to participate in the survey.

3.3.8 Data Analysis

Data analysis was conducted to confirm if research questions and hypotheses were supported (Sekaran, 2003). Quantitative analyses assisted in determining if the research objectives were

fulfilled. In this research, the objectives were to establish the extent of mobile bullying in schools. The analysis is presented in the sections that follow.

3.3.8.1 Quantitative Data Analysis

The analysis of quantitative data involves getting data ready for analysis, testing goodness of data and finally the hypothesis (Cavana et al., 2001). Further, data requires editing and cleaning up, screening for anomalies and effective handling of blank points. The analysis of the quantitative data was done using a Statistical Analysis Software (Statistica 10) and Microsoft Excel 2010. This involved summarising the data, conducting reliability checks and establishment of variable relationships. Cronbach Alpha was used to measure reliability of variables. For internal consistency measures, a reliability co-efficient of close to 1.0 is acceptable and those close to less than 0.60 are regarded as poor (Cavana et al., 2001). Validity tests include factorial validity (factor analysis), criterion related validity (measure for differentiating individuals) and discriminant validity (concepts not correlated). In this research, correlation tests include the one-way analysis of variance (ANOVA), which was used to determine whether there are any significant differences between the means of independent (unrelated) groups; the Spearman measures the strength of correlation between two ranked variables; Chi Square is used to investigate whether distributions of categorical variables differ from one another.

The following measures were used to measure the research constructs as shown in the conceptual model:

Construct 1: Anonymity

Existing literatures had demonstrated anonymity associated with electronic communication tools promotes mobile bullying behaviour (Campbell 2005, Li 2008, Raskauskas et al., 2007). In the questionnaire, two items were used to determine the level of anonymity. The first item measured whether or not the victim could identify the mobile bully as a “peer from school”, “a

peer not from school" or "I don't know who it was." The second item directly asked what the gender of the mobile bully was. Three options were given as follows: "Female", "Male" and "Unknown".

Construct 2: Lack of Knowledge

In the questionnaire, one item was used to determine whether learners knew if their schools had a cyber or mobile bullying policy. This was done by stating an indirect question: "Your school has an anti-mobile policy." Furthermore, in order to justify this specific construct, literature was used to determine whether the lack of policy implementation in schools was related to the level of crime and poverty within the geographical location of the school. Also, a lack of policy in schools could also substantiate the degree of mobile bullying learners experience at that particular school.

Construct 3: Perception and Attitude

The eight-item Mobile Phone Involvement Questionnaire developed by Walsh et al., (2010) assessed participants' cognitive and behavioural association with their mobile phone. Based on Brown's (1997) behavioural addiction components and qualitative descriptions of mobile phone behaviour (Walsh et al., 2008), the MPIQ includes items measuring withdrawal, cognitive and behavioural salience, euphoria, loss of control, relapse and reinstatement, conflict with other activities, and interpersonal conflict, specifically worded to relate to mobile phone behaviour. Example items are ''I often use my mobile phone for no particular reason", ''I feel connected with others when I use my mobile phone", and ''I lose track of how much I am using my mobile phone". Items were scored 1 strongly disagree to 5 strongly agree.

Construct 4: Anytime Information Distribution (Accessibility)

In the questionnaire, multiple items were identified to learn whether mobile phones and the use of it increase the probability of mobile bullying. This was done by stating indirect questions: "I have been unable to reduce my mobile phone use", "Arguments have arisen with others

because of my mobile phone use", "I often think about my mobile phone when I am not using it" and "I often use my mobile phone for no particular reason." This implies that there is a possibility of mobile phone addiction.

Construct 5: Communication Misinterpretation

Highlighted by social presence theory, text messages can easily be misinterpreted, and what is intended to be funny, can easily be hurtful, causing distress. The social presence theory, developed by John Short, Every Williams, and Bruce Christie in 1976, measures communication media based on the communicator's sense of awareness of the intended partner. In other words, functional and healthy relationships rely on the social and physical presence of other human beings and the ability to read their verbal and non-verbal cues (Mark & Ratliff, 2008). Which is also a variable measured in this study.

Construct 6: Technology Competency

Technology competency was assessed by two Likert-type items, which were adapted from the Computer Thoughts Survey Scale (CTS-C) (Korukonda & Finn, 2003). The 5-point scale ranged from "strongly disagree" to "strongly agree." The items in the CTS-C refer to thoughts the participants may have about using technology. The items include "I feel confident using technology" and "I am comfortable using technology."

Two indicators of technology usage were used to determine if it leads to mobile bullying behaviour. These indicators were adapted and modified from studies on internet usage (Cheung & Huang, 2005). 'Intensity of use' is the measure of an individual's amount of time spent using the electronic communication tool (Zhang et al., 2010). 'Frequency of use' is the measure of how often an individual would use the electronic communication tool. Participants indicated how often SMS's, MMS's and emails were sent, as well as how often chat room and social networking facilities were used each day in five closed-ended questions. These items

were then summed to create a scale reflecting the average frequency of use per day. Furthermore, participants indicated how much time they spent online each day.

Construct 7: South African Legislation

At present South Africa does not possess legislation that is specifically targeted to deal with extreme cases of mobile bullying. Badenhorst (2011) provides a concise review of current legislation, and offers several remedies in criminal and civil law that can be relied upon to address issues. Extreme cases of mobile bullying generally contravene current legislation, and the suggestions are available to all victims irrespective of age. Due to a lack of literature on this construct, this review is based solely on the work of Badenhorst (2011). Furthermore, the lack of policy in schools contributes to the low level of incident reporting of mobile bullying. With that said the measurement of this construct highly depends on the assumption that the lack of policies reflects the importance of a concrete law in South Africa governing mobile bullying.

3.4 Confidentiality and Ethics

Research ethics comprise of appropriateness of behaviour and research conduct expected from researchers (Saunders et al., 2003). Ethical concerns were taken care of by seeking permission from the University to conduct data collection, analysis and reporting. Principles and procedures for conducting research were obtained through the code of ethics. Before commencement of this research, an ethics form (as shown in Appendix A), and the research proposal were sent to the University's Research Ethics committee for approval. The approval initiated data collection. Participation of the learners was voluntary and all responses were kept anonymous. Respondents need assurance that responses would be kept strictly private and confidential (Cavana et al., 2001). Therefore, each participant was informed about the study and their right to withdraw participation at any time was assured. The research avoided sensitive and private information to be asked on the questionnaires. Also, data collected was

used for the purpose of this research only and for no other reasons and destroyed upon completion of the research.

Four ethical principles was adhered to and includes: truthfulness which ensures no elements of lying and deceiving; thoroughness that emphasises on following acceptable methodological approaches and refraining from taking shortcuts; objectivity which discourages putting in researcher's own values or biases and relevance which emphasises that anything being included should be of necessity to the research problem (Myers, 2009).

3.5 Summary of the Chapter

This chapter provided an overview of the philosophies conducted during a research process. Research processes follow epistemological, ontological and methodological philosophies that determine the selection, choice of methods, research approaches and paradigms including the data collection and analysis techniques adopted by a study. The objective of this research was to investigate the extent of mobile bullying in South African schools. Therefore, this research adopted a positivist stance, exploratory paradigm. Data collection was conducted through open and closed ended questions. The researcher collected 3621 questionnaires from learners in seven high schools disciplines across the Cape Town district in South Africa for data analysis. Table 8 outlines a summary of the research methodology for this research as follows:

Table 8: Research Methodology Summary

METHODOLOGY	APPROACH
Underlying philosophy	Positivist
Research purpose	Exploratory
Reasoning approach	Deductive
Research strategy	Quantitative - Survey
Data collection techniques	Quantitative • open and closed questions
Data Analysis	Quantitative • Statistical analysis software (Statistica 10) and Microsoft Excel 2010.
Time-frame	Cross-sectional

CHAPTER 4: FINDINGS AND ANALYSIS

4.1 Introduction

The objectives of this research were to investigate the extent to which learners experience mobile bullying using mobile phones. The researcher formulated a research proposal, questions and a design which was tailored to gather data from school learners on the use of their mobile phones to bully.

Quantitative analysis techniques were used. In quantitative analysis, statistical techniques were employed to summarise data, test for reliability and validity and establish the relationships among variables of the conceptual model (Saunders et al., 2003). The researcher identified and categorised the responses from the learners, including comments to support their claims.

In Section 4.2, the results of the reliability test are presented which is followed by a presentation of the findings, analysis and discussion of the results of the study. Section 4.3 summarises the demographic analysis which includes information regarding gender, age, school grade and how schools were selected to participate in this study. Section 4.4 presents findings, analysis and discussion on mobile bullying. Furthermore, Section 4.5 presents the results of the hypotheses testing.

4.2 Reliability Testing

The reliability of the variables used in this study were determined by measuring the Cronbach's alpha and standardized alpha. A threshold of 0.70 for Cronbach's alpha is normally used, although a minimum threshold of 0.60 is considered when exploratory research is conducted (Fornell & Larcker, 1981; Hair et al., 2006). The results in Table 9 show that the measuring constructs had an adequate internal consistency i.e. the survey results could be similar if done

in a different setting. Each item measuring the variable is also identified with their relative means and standard deviations. Perception and attitude towards mobile phones has a Cronbach alpha score of 0.797 and technology competency scored 0.759, suggesting that they are reliable. The Cronbach alpha value of 0.667 for mobile phone victimisation was however lower than the threshold (0.70) but is higher than the threshold of 0.60 for exploratory research. The lower alpha value could be explained by the fact that fewer questions were asked about this variable. Furthermore, an inconsistent pattern of responses could also lower the reliability. Mobile bullying had a Cronbach's alpha of 0.75 which was above the threshold. Therefore, all the scales adopted in this study are reliable. The overall reliability of the study scored a Cronbach alpha value of 0.81.

Table 9: Reliability Test Results

Variable	Items Measuring Variable	Mean	Standard Deviation (SD)	Reliability Cronbach's Alpha (α)
Perception and Attitude	Cognitive Salience	2.918	1.254	0.797203
	Behavioural Salience	2.870	1.268	
	Interpersonal Conflict	2.542	1.298	
	Conflict with Other Activities	2.897	1.287	
	Euphoria	3.634	1.198	
	Loss of Control	3.109	1.326	
	Withdrawal Symptoms	2.647	1.372	
	Relapse	2.547	1.177	
Technology Competency	Intensity of Use	2.611	1.721	0.758920
	Usage of SMS	2.596	1.151	
	Usage of MMS	1.485	0.832	
	Usage of MMS	2.020	1.235	
	Usage of MMS	2.665	1.563	
	Usage of MMS	3.704	1.390	
	Comfort	4.085	1.027	
	Confidence	3.888	1.099	
Mobile Phone Victimization	Received Insulting Messages	1.563	0.939	0.667376
	Received Threatening Calls	1.238	0.688	
	Received Frightening Messages	1.521	0.881	
Mobile Phone Bullying	Online Group Teasing	1.195	0.667	0.750524
	Threaten Others Online	1.278	0.822	
	Exclude Others Online	1.542	1.022	
	Spread Rumours Online	1.245	0.666	
	Influence Others Negatively Using Mobile Phones	1.203	0.598	
	Using Mobile Apps To Threaten Others	1.207	0.699	

4.3 Demographic Analysis

Participants completed general questions to specify their age, gender, grade, and where they live. A significant relationship between age and the rate of incidents has been established, and

it is widely accepted that age is a predictor to victimization. For the purposes of this study, the target sample for the quantitative questionnaire was learners who attended secondary schools and who were between the ages of 14 and 18. School principals were targeted, because they had the most influence on whether or not to allow the survey to be conducted at their schools.

Furthermore, the sampling also took into account economic factors and schools that were able to provide the most diverse population were approached. Economic diversity was achieved by including schools ranging from affluent to economically challenged communities to provide a balance. The schools were also chosen based on the risk of safety of the area according to the safety map shown in Figure 4. In section 4.3.1 below, the selection criteria is discussed.

4.3.1 Participants

The sample consists of 3621 (*n*=3621) participants all under the age of 18, with the distribution of responses across gender weighted as 49% male and 51% female. The questionnaire was completed by seven secondary schools in Cape Town. The ages of participants ranged from 14 to 18, with the majority falling between ages 14 and 16 (67%). In addition it was assumed that all participants either owned or borrowed a mobile phone.

Of the seven schools, 3 were independent and 4 were owned by the state as shown in Table 11. In an attempt to address the extent of the phenomenon as it affects participants from varying income families, schools were carefully selected based on their fee structure and the safety risk of the area (refer to Figure 4 and Table 10) where the school is located.

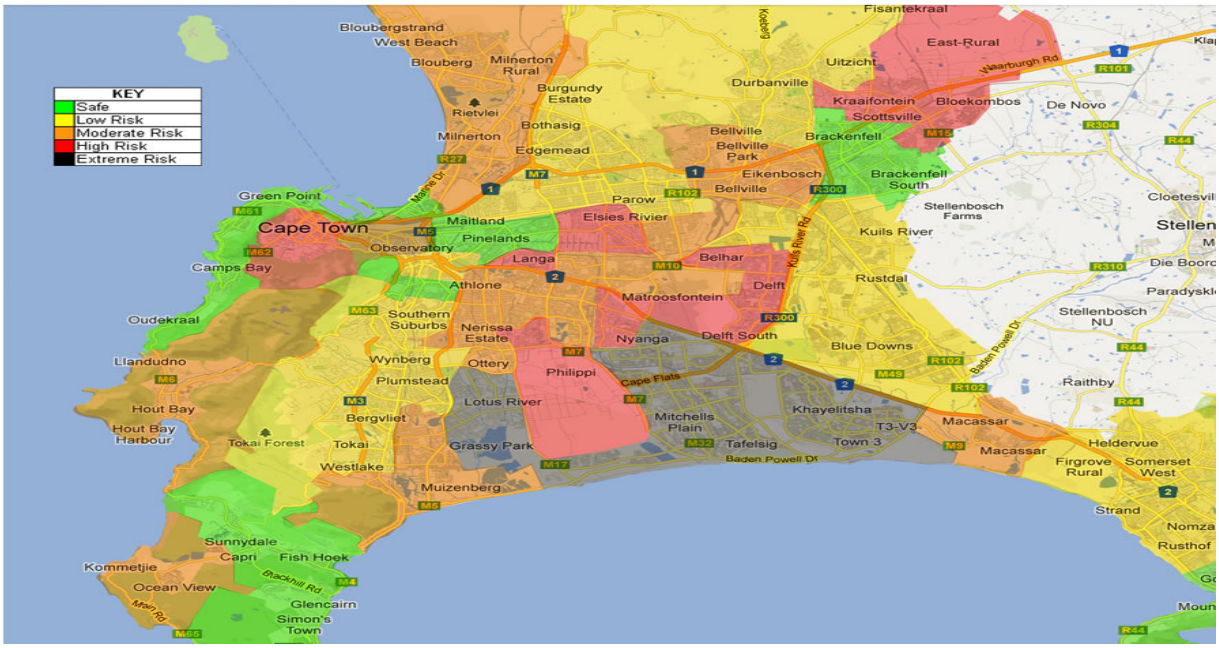

Figure 4: Safety Map of Cape Town

Table 10: Classification of schools based on selected criteria

Classification of Schools			
Variable	**Range**		
Safety Risk	Low	Moderate	Dangerous
School Fee	High (R20 000 +)	Medium (R10 000 - R19 999)	Low (R0 - R9 999)
Ownership	State	Independent	

Each school was classified according to three variables *Safety Risk, School Fee and Ownership;* as shown in Table 11. Furthermore, only one high income school (school 3) participated as many other schools with similar income categories were busy with exams. The aim of this classification was to obtain a sample that was diverse in terms of socio-economic factors relating to where the participant lived and which schools they attended. It allows the researcher to make some general assumptions with regards to the extent of the problem. This could include things such as finding a correlation between a locations crime rate and the number of mobile bullying incidents.

Table 11: Classification of each school

School	Safety Risk	Income Category	Ownership	% of participants
School 1	Dangerous	Low	State	12.86
School 2	Dangerous	Low	State	37.64
School 3	Moderate	High	Independent	8.75
School 4	Moderate	Medium	Independent	1.82
School 5	Moderate	Medium	Independent	7.67
School 6	Low	Low	State	18.53
School 7	Low	Medium	State	12.7

The distribution of participants is shown in Figure 5 below. The values are directly related to the size of the school i.e. larger schools will have more learners participating in the survey. The size of the school was based on the amount of learners who attended the school. Furthermore, both School 1 and School 2 are located in a high crime-ridden area. School 3, School 4 and School 5 are located in areas where crime is prevalent on a more moderate scale. On the other hand, School 6 and School 7 are situated in areas where the crime rate is relatively low as opposed to other schools.

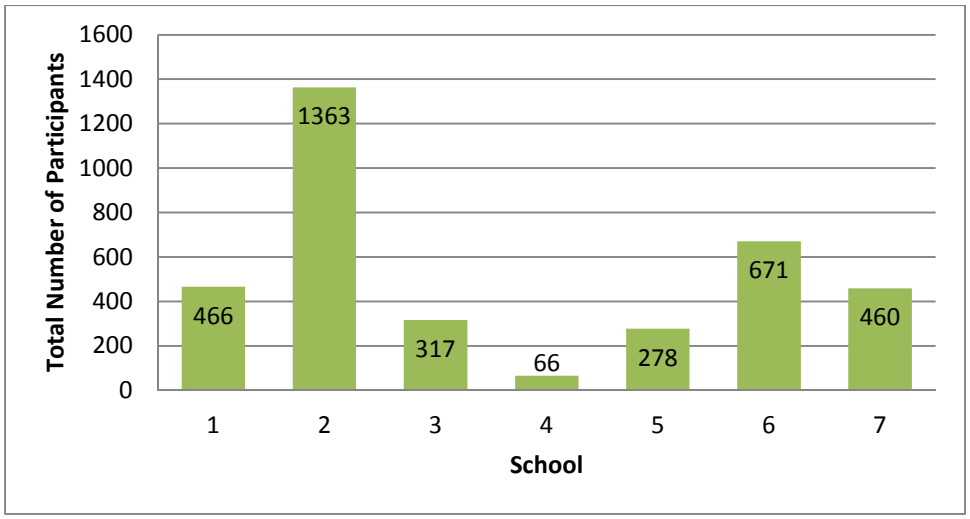

Figure 5: Distribution of participants at schools

4.3.2 Gender

The effect of gender on the rate of mobile bullying incidents remains unconfirmed within literature, with many studies contradicting each other (Walsh, White, & Young, 2010). Initially results pointed to gender as a predictor, but as of late studies indicate that neither males nor females are more likely to be effected by cyber victimisation and mobile bullying. Figure 6 below graphically illustrates how many females and males participated at each school. Females formed part of the majority of the participants at School 1 (56%), School 2 (56%), School 3 (54%) and School 6 (58%). On the other hand, the majority of participants attending School 4 (55%), School 5 (54%) and School 7 (79%) were males.

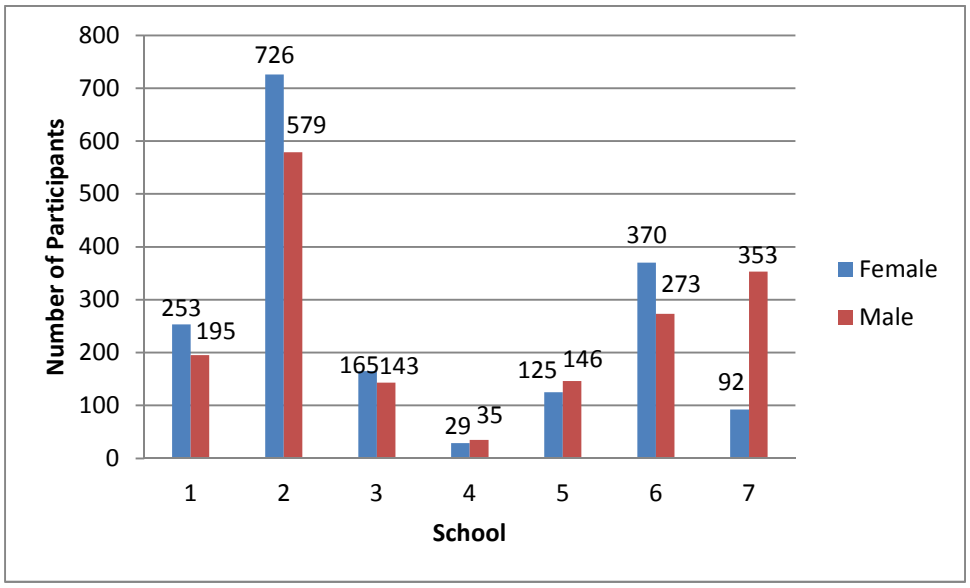

Figure 6: Distribution of participants per gender

4.3.3 Age

Participants in this study were aged between 14 and 18 years old. Most participants were 14 (24.4%) years old. Additionally, the lowest number of participants was 18 (13.1) years old.

Table 12: Demographics of Age

Age	Count	All respondents (n = 3621)
14	883	24.4%
15	833	23.0%
16	648	17.9%
17	683	18.9%
18	474	13.1%

4.4 Further Analysis

4.4.1 Mobile Bullying and Gender

To test the difference in gender of mobile victimisation and mobile bullying, overall variables were grouped together to form one main variable. For example, receiving insulting messages, receiving threatening calls and receiving frightening messages were grouped as Mobile Victimisation which was justified by the reliability test ($\alpha = 0.667$). This variable consists of all the receiving end components the victim's experience. Whereas online group teasing, threatening other online, exclusion, spread rumours online, influence someone using mobile phone and using mobile applications to threaten where all grouped as Mobile Bullying which caters for possible perpetrators ($\alpha = 0.751$). Participants who scored 4 (often) or 5 (always) were considered and a chi-squared test was employed to examine relationships.

The test revealed that there was no significant effect of gender on Mobile Victimisation. However, there is significant difference in incidents of mobile bullying by females. Females were more likely to be involved in online teasing ($X^2 = 7.55$, df = 1, p = 0.005). In most cases for gender the p-value is more than .05 and it is for this reason that possible hypothesis will be rejected, and supports the statement that gender is not a significant predictor for incidents of mobile victimisation and mobile bullying.

4.4.2 Mobile Bullying and Age

A study of the relationship between the victim's age and the prevalence of mobile bullying was not the emphasis of the research. However, a definitive understanding of this relationship would ensure the most effective use of target resources and programmes. It is for this reason that most studies have been conducted on adolescents, in an attempt to explore if age is a predictor to victimisation. Tokunaga (2010) suggests that although the research is not clear, data does suggest that a curvilinear relationship exists, with the greatest frequency of victimisation occurring in Grades 7 (12-13 years of age) and 8 (13-14 years of age) (Burton & Mutongwizo, 2009; Hinduja & Patchin, 2008; Kowalski & Limber, 2007; von Solms & de Lange, 2011; Ybarra & Mitchell, 2008). However, based on this research, once again there was no significant effect of age on Mobile Victimisation ($X^2 = 5.07816$, df = 4, p = 0.279372) or Mobile bullying ($X^2 = 8.38652$, df = 4, p > 0.05).

4.4.3 Mobile Bullying and Anonymity

The responses to the two items which measured anonymity are presented in Table 13 and Table 14. The first item measured if victims of mobile bullying knew who their perpetrators were. This is represented in Table 13 below.

Table 13: Responses of Mobile Bullying Perpetrators

Mobile Bullying Perpetrators							
% of Respondents (n)	**School 1 (n = 224)**	**School 2 (n = 749)**	**School 3 (n = 134)**	**School 4 (n = 37)**	**School5 (n = 123)**	**School 6 (n = 346)**	**School7 (n = 140)**
Peer From School	17	18	49	19	27	21	20
Peer Not From School	20	18	16	11	16	19	21
Anonymous	63	64	35	70	57	60	59

Participants from School 4 indicated the highest number of perpetrators as anonymous. However, it is important to note that School 4 had the lowest number of participants in this

study. Furthermore, a high percentage of anonymity is also present at School 1 (63%) and School 2 (64%) in comparison to the other schools. Most of the participants agreed that they did not know who their mobile bullying perpetrator was. This confirms the high level of anonymity amongst mobile bullies.

Herring (2001) argues that anonymity lowers the social accountability for mobile phone bullies, which makes them feel less guilty when they engage in aggressive acts. Additionally, the ability to communicate anonymously on mobile phones could produce bullies, who would not generally participate in traditional bullying (Campbell, 2005). According to Mishna et al. (2009), the effects of anonymity include: the perpetrator's misperception about their power to harass another individual without any consequences; the heightened fear experienced by individuals who are harassed online by an individual whose identity is unknown, but who knows their identity; and victims of mobile bullying who are reluctant to tell adults about the victimisation.

Furthermore, the results of participants at School 3 indicated that mobile bullying perpetrators were more likely to be a peer from school as opposed to being anonymous. This is significantly different from the other schools in the study as shown in Figure 7. It is therefore evident that the majority of mobile bullying perpetrators at School 3 are individuals that are in physical contact with their victims on the school premises, as well as online.

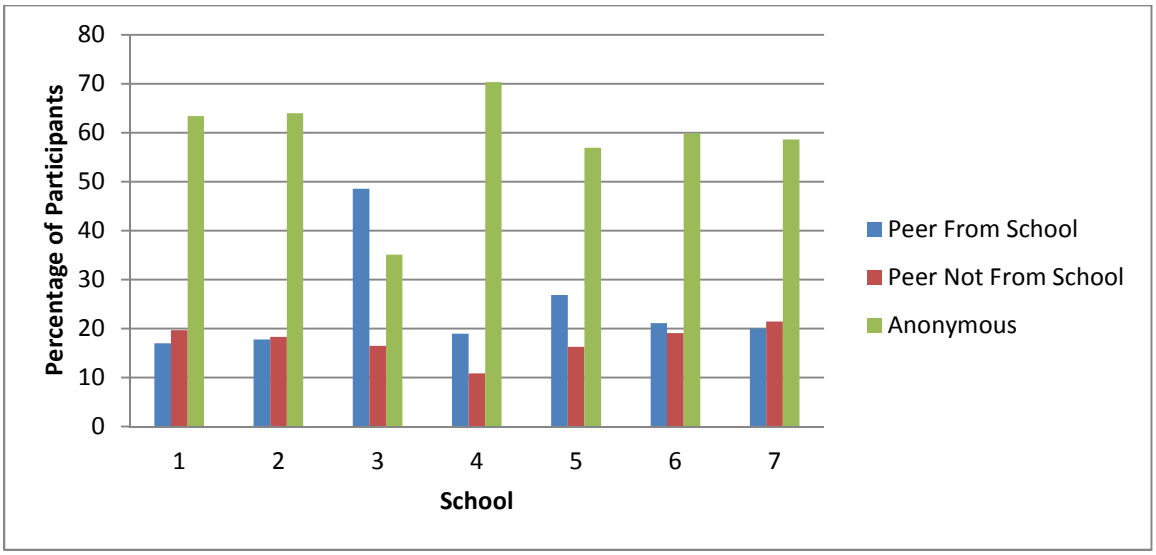

Figure 7: Graphical Illustration of Mobile Bullying Perpetrators

Furthermore, due to the continuation of mobile bullying behaviours from the school premises to outside the school premises and vice versa, Smith (2008) suggested that more individuals experienced cyber-bullying outside of school hours. In addition to this, Spears et al. (2008) described this as "cyclical bullying" whereby the location and type of bullying changes over time. The responses from participants in this study support the statement by Smith (2008) and Spears et al. (2008) as shown in Figure 8.

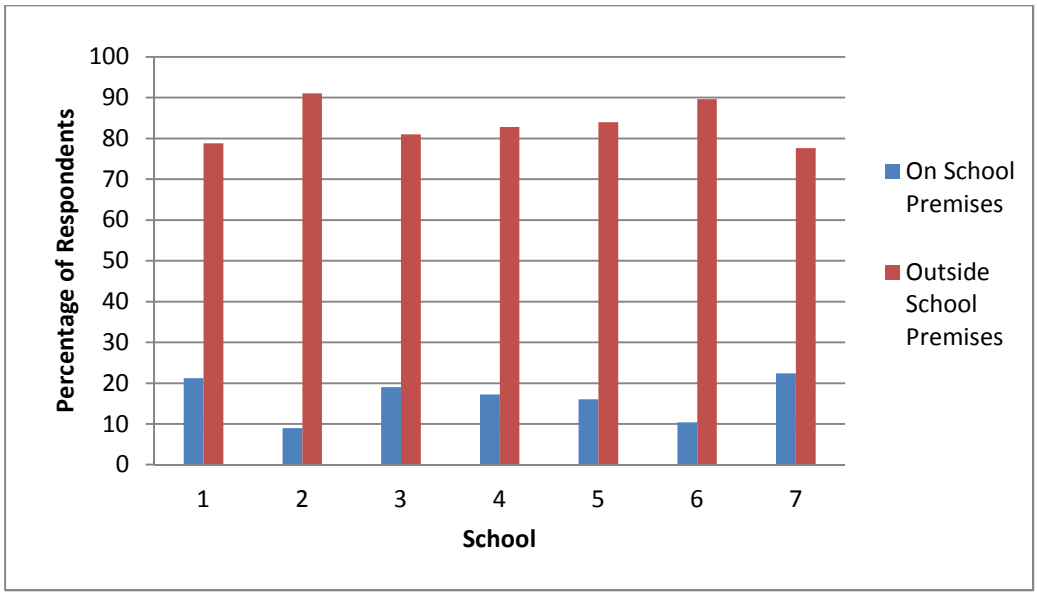

Figure 8: Location of Mobile Bullying

The majority of participants experienced cyber-bullying outside of the school premises as opposed to on the school premises as shown in Figure 8. Spears et al. (2008) suggests that the nature of this type of bullying emphasises the importance of involvement of parents, schools and other youth-based organisations to address and prevent mobile bullying.

According to Figure 9 below, participants strongly agreed that they did not know the gender of their mobile bully as indicated with a green bar. This verifies that anonymity is a factor that is unique to mobile bullying and could affect the degree of mobile bullying.

Further, the responses of participants who specified the gender of perpetrators indicated that males are more likely to conduct mobile bullying behaviour than females as shown in Figure 9 with red bars and Table 14. This was also supported by a study done by Li (2005), where she stated: "*Males were more likely to be bullies and cyberbullies than their female counterparts.*" Additionally, since participants at School 3 agreed that they knew who their mobile bullying perpetrators were, as shown in Figure 7, they were able to identify the gender of their mobile

bullies. According to Figure 9, the percentage of female and male mobile bullies at School 3 was therefore significantly higher than the percentages at other schools (females = 36%, males = 36%).

Table 14: Responses to Gender of Mobile Bully

Mobile Bullying Perpetrator Gender							
% of Respondents (n)	**School 1 (n = 244)**	**School 2 (n = 779)**	**School 3 (n = 146)**	**School 4 (n = 41)**	**School5 (n = 132)**	**School 6 (n = 372)**	**School7 (n = 165)**
Female	22	18	36	15	21	24	14
Male	20	20	36	22	24	31	35
Anonymous	58	62	28	63	55	45	52

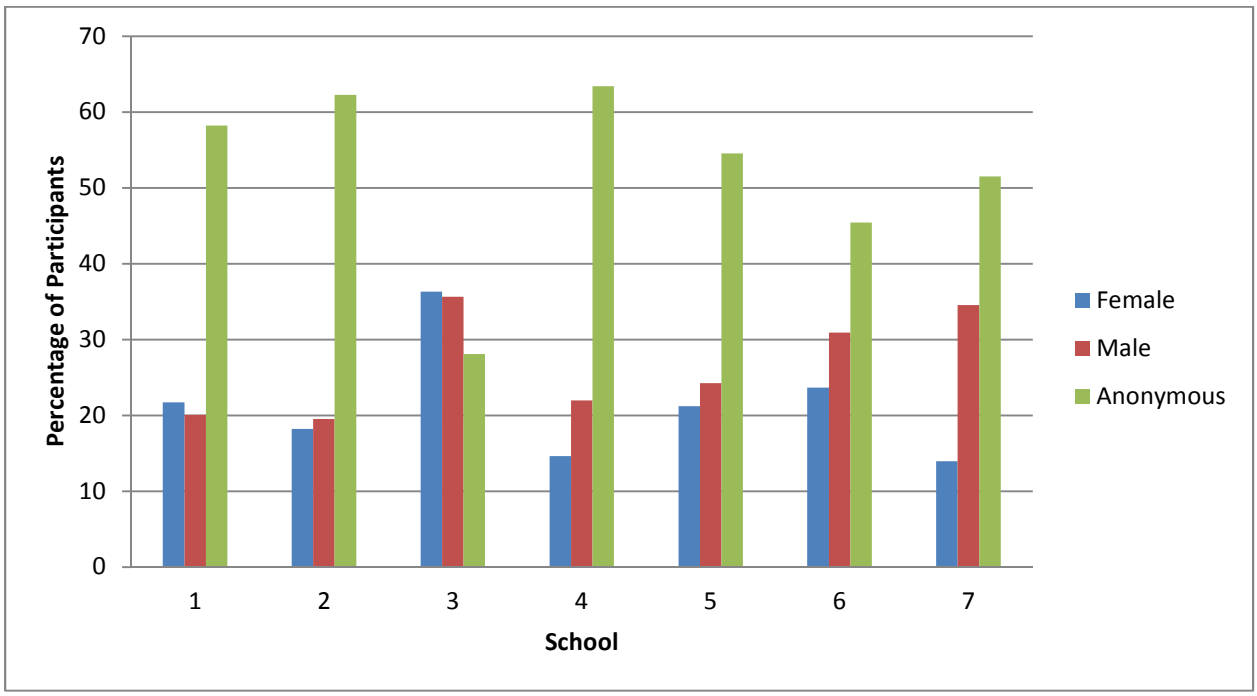

Figure 9: Graphical Representation of Gender of Mobile Bullying Perpetrators

4.4.4 Mobile Bullying and Perception & Attitude

The responses of the items used to measure the perception and attitude of adolescents towards their mobile phones is summarised in Table 16. The eight items measure the level of mobile phone involvement developed by Walsh et al., (2010) which is based on Brown's behavioural addiction components. The addiction components are classified as salience, tolerance, mood modification, withdrawal symptoms, conflict and relapse. The components are adjusted as shown in the table to specifically relate to mobile phones. The scale used for the items shown in Table 15 was the likert scale from 1 (never) to 5 (always). Participants who scored 3 (sometimes), 4 (often) and 5 were therefore considered as being involved with their mobile phones.

Table 15: Responses to Mobile Phone Involvement (MPI) Questions

Type	Variable	School 1 (n = 466) Mean (SD)	School 2 (n =1363) Mean (SD)	School 3 (n = 317) Mean (SD)	School 4 (n = 66) Mean (SD)	School 5 (n = 278) Mean (SD)	School 6 (n = 671) Mean (SD)	School 7 (n = 460) Mean (SD)
MPI-1	I often think about my mobile phone when I am not using it	2.74 (1.36)	2.96 (1.27)	2.70 (1.09)	3.22 (1.27)	2.84 (1.16)	3.07 (1.24)	2.90 (1.25)
MPI-2	I often use my mobile phone for no particular reason	2.58 (1.36)	2.92 (1.28)	3.08 (1.07)	3.03 (1.26)	2.95 (1.18)	2.86 (1.27)	2.82 (1.27)
MPI-3	Arguments have arisen with others because of my mobile phone use	2.41 (1.36)	2.61 (1.34)	2.46 (1.20)	2.69 (1.21)	2.57 (1.22)	2.61 (1.32)	2.38 (1.18)
MPI-4	I interrupt whatever else I am doing when I am contacted on my mobile phone	2.80 (1.43)	3.04 (1.32)	2.67 (1.09)	3.22 (1.23)	2.89 (1.13)	2.86 (1.29)	2.75 (1.23)
MPI-5	I feel connected to others when I use my mobile phone	3.39 (1.36)	3.80 (1.16)	3.30 (1.07)	3.68 (1.26)	3.50 (1.14)	3.74 (1.17)	3.55 (1.19)
MPI-6	I lose track of how much I am using my mobile phone	2.84 (1.37)	3.21 (1.36)	2.87 (1.20)	3.16 (1.39)	3.24 (1.23)	3.16 (1.31)	3.07 (1.26)
MPI-7	The thought of being without my mobile phone makes me feel distressed	2.72 (1.50)	2.66 (1.39)	2.35 (1.17)	2.84 (1.30)	2.62 (1.22)	2.78 (1.41)	2.54 (1.32)
MPI-8	I have been unable to reduce my mobile phone use	2.54 (1.22)	2.61 (1.18)	2.36 (1.05)	2.71 (1.17)	2.57 (1.16)	2.54 (1.20)	2.48 (1.16)

As shown in Table 15, the most commonly endorsed item by the participants at all schools was that participants felt connected to others when they used their mobile phones (MPI-5). Furthermore, participants at School 1 and School 4 did not give firm responses for having conflict with others because of their mobile phones (MPI-3). Participants at School 2 and School 5 did not endorse items measuring their ability to reduce their mobile phone usage (MPI-8) and possible conflict due to their mobile phone usage (MPI-3).

The responses from participants at School 3 showed that they did not agree with the item measuring "*The thought of being without my mobile phone makes me feel distressed.*" According to Table 15, participants at School 6 did not agree that they were unable to reduce their mobile phone usage (MPI-8). Furthermore, responses from participants at School 7 agreed that they have not been involved in arguments that have arisen due to their mobile phone usage (MPI-3).

Participants who scored higher than 4 out of a possible 5 in the mobile phone involvement section were classified as being highly involved with their mobile phone. On the other hand, participants who scored less than 3 were not seen as being highly involved with their mobile phones. Analysis of the raw data revealed that participants who were classified as highly involved scored 4 or more for the majority of the items in the section. Table 16 below represents the percentage of participants at each school who were highly involved with their mobile phones as opposed to those who were not. School 1 and School 3 were the only schools who agreed that they were not highly involved with their mobile phones. The majority of participants at other schools however agreed that they were highly involved.

Table 16: Summary of Mobile Phone Involvement

	School 1	School 2	School 3	School 4	School 5	School 6	School 7
Variable	**n=466 Count (%)**	**n=1363 Count (%)**	**n=317 Count (%)**	**n=66 Count (%)**	**n=278 Count (%)**	**n=671 Count (%)**	**n=460 Count (%)**
Highly Involved	106 (22.75)	322 (23.62)	43 (13.56)	15 (22.73)	63 (22.66)	148 (22.06)	87 (18.91)
Not Highly Involved	128 (27.47)	203 (14.89)	63 (19.87)	13 (19.70)	53 (19.06)	102 (15.20)	81 (17.61)

4.4.5 Mobile Bullying and Technology Competency

The construct measuring technology competency was divided into two questions. The first question measured *'Intensity of use*' which indicates the time an individual spends using an electronic communication device. The second question measures the *'Frequency of use'* which measures the number of times an electronic communication device is used by an individual. Figure 10 graphically illustrates how much time participants spent online in a day.

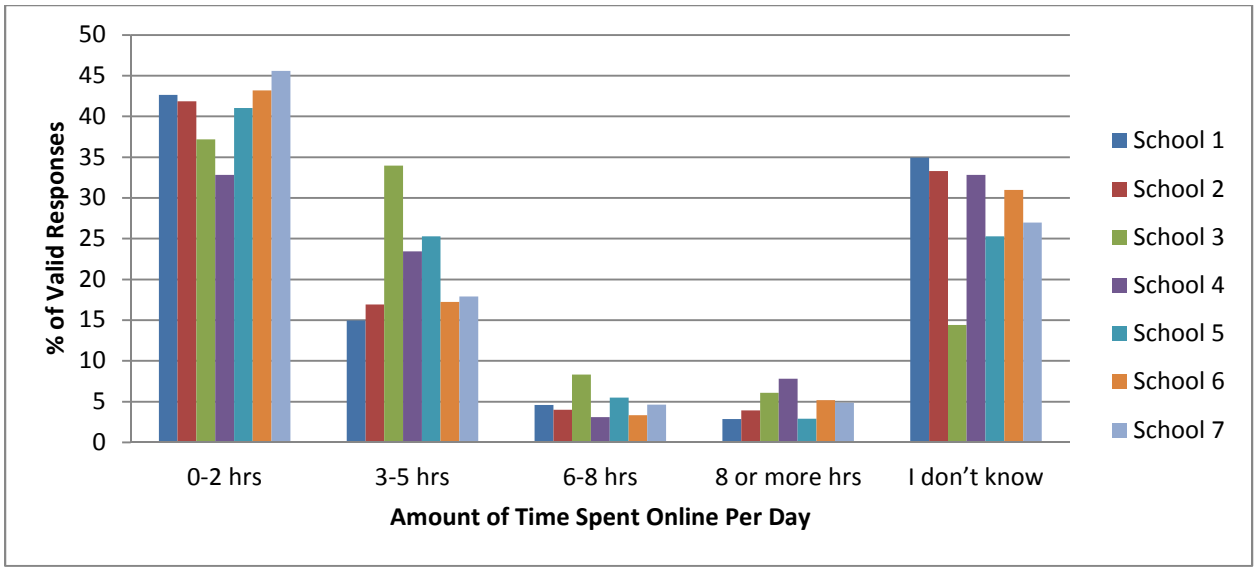

Figure 10 : Amount of time participants spend online daily

According to Figure 10, it is evident that the majority of learners (42%) at most of the schools spend approximately 0-2 hours online every day. This study highlights that adolescents are spending a significant amount of time online on a weekly basis. According to Ybarra & Mitchell (2004), adolescents who spend an average of four or more days online during the week are 73% more likely to engage in online aggressive behaviour. This could be justified by adolescents being more comfortable interacting with others in an online environment and therefore are faced with an opportunity to respond aggressively (Ybarra & Mitchell, 2004). In addition to this,

the increase in the adoption and use of online social interaction may contribute to the rise in the number of adolescents at risk to engage in aggressive online behaviour.

The responses to each item that measured which mobile phone applications are generally used by participants in each school are presented in Figure 11.

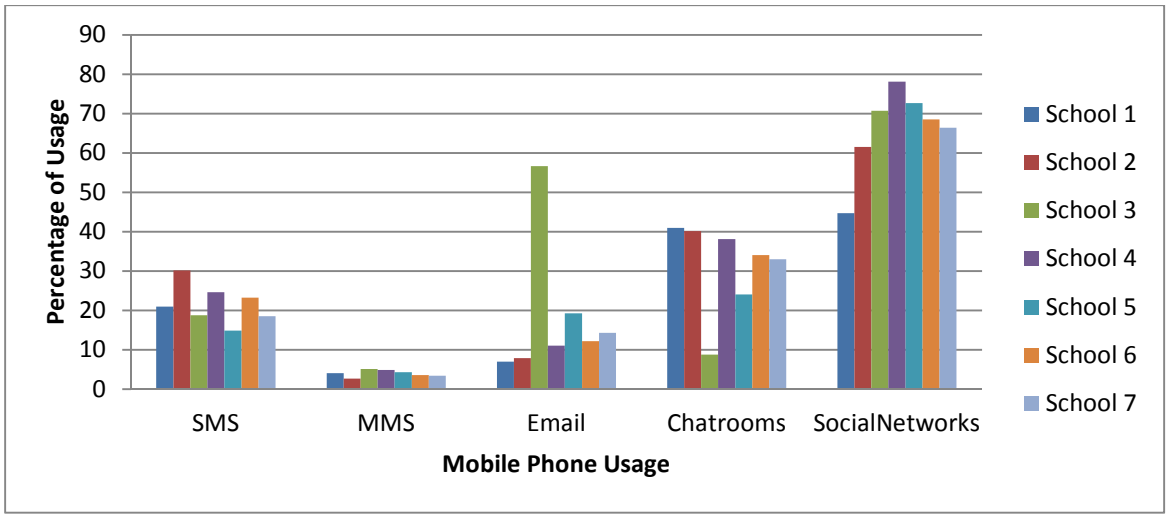

Figure 11: Mobile Phone Facilities used by Participants at Schools

Participants agreed that social networks (63%) were the preferred choice of interaction on their mobile phones. Furthermore, MMS's had the lowest frequency of usage (3.4%) which could be as a result of mobile phone applications advancing to such an extent that image and videos can be sent at a cheaper rate via applications such as WhatsApp and BBM, or shared on social networking sites. Furthermore, participants also agreed that emails do not form an integral part of their daily usage of their mobile phones. Participants at School 3 however indicated that emails are used to communicate on a regular basis. This could be as a result of the facilities available at the school and at their homes which enables them to communicate effectively using emails. According to Campbell (2005) it is suggested that chat rooms and email platforms provide the opportunity for users to act aggressively.

Two questions measured the overall competency of the participants to determine whether or not they were self-reported experts of mobile phone technology. As shown in Figure 12, learners agreed that they felt very comfortable and confident when using mobile phone technology. The percentages indicated in Figure 5 are relatively high (above 60%). According to Ybarra and Mitchell (2004) adolescents who are self-reported i.e. feel confident in their ability to use technology, are twice as likely to be aggressive towards others online. The high percentage of valid responses across all the schools indicates that mobile phone technology is not restricted to the socio-economic category in which learners fall, but the accessibility of these technologies are widespread.

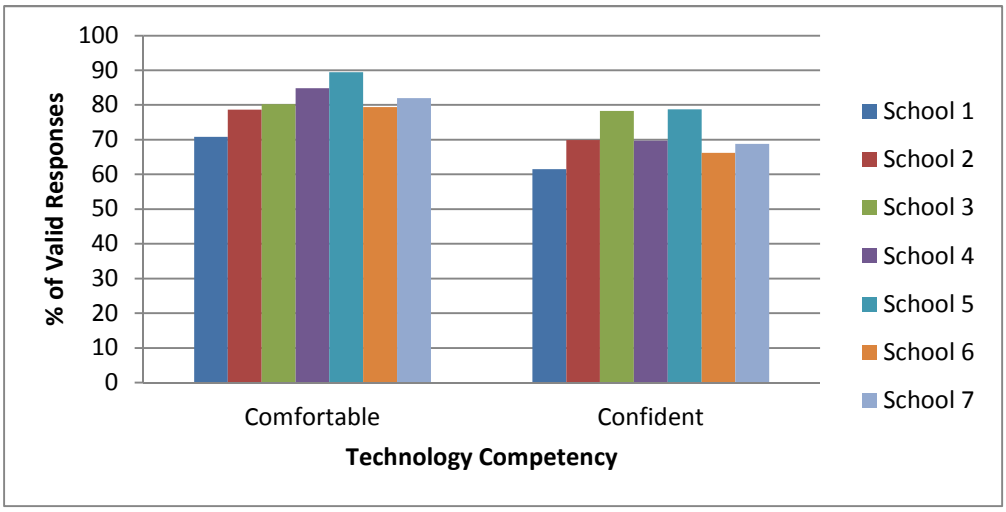

Figure 12: Level of Technology Competency of Participants

4.4.6 Mobile Bullying and Lack of Knowledge

Dooley et al. (2009) argues that the use of ICTs that are initiated as early as pre-adolescence raises concerns about the safety of these young individuals. Adolescents generally lack adequate knowledge and critical thinking skills which is necessary to protect themselves from the dangers of online communication such as mobile bullying, online child pornography and

online fraud (Dooley at al., 2009). Therefore, interventions to educate adolescents about the safe use of ICTs should be initiated at an early stage. The school environment offers the ideal circumstance in which to develop and implement such interventions for the following reasons:

- In developed and certain developing countries such as South Africa (where younger people are most likely to adopt ICTs), adolescents attend school as part of a compulsory education.
- The curricula in primary and high schools include subjects which are related to technology, such as the use of the internet.
- The aim of education is to effectively prepare adolescents for the challenges of being an adult by teaching them about social skills and providing the essential knowledge about the world.

Even though schools play an important role in addressing mobile bullying issues, most schools are not tackling mobile bullying in their curricula or their school policies yet. Staff and learners are therefore not provided with adequate knowledge about ICT and mobile bullying. In this study, participants' responses to whether their schools have implemented policies which address mobile bullying are shown in Figure 13. Campbell (2005) recommends that school policies need to respond to the challenge of mobile bullying and implement a range of prevention policies accordingly.

More specifically, the literature suggests:

- A holistic approach to involving all stakeholders such as educational staff and parents which requires an ongoing awareness to identify and address mobile bullying.
- schools should include mobile bullying in their school policies and by adopting more restrictive usage of mobile phones and social media through social skills training

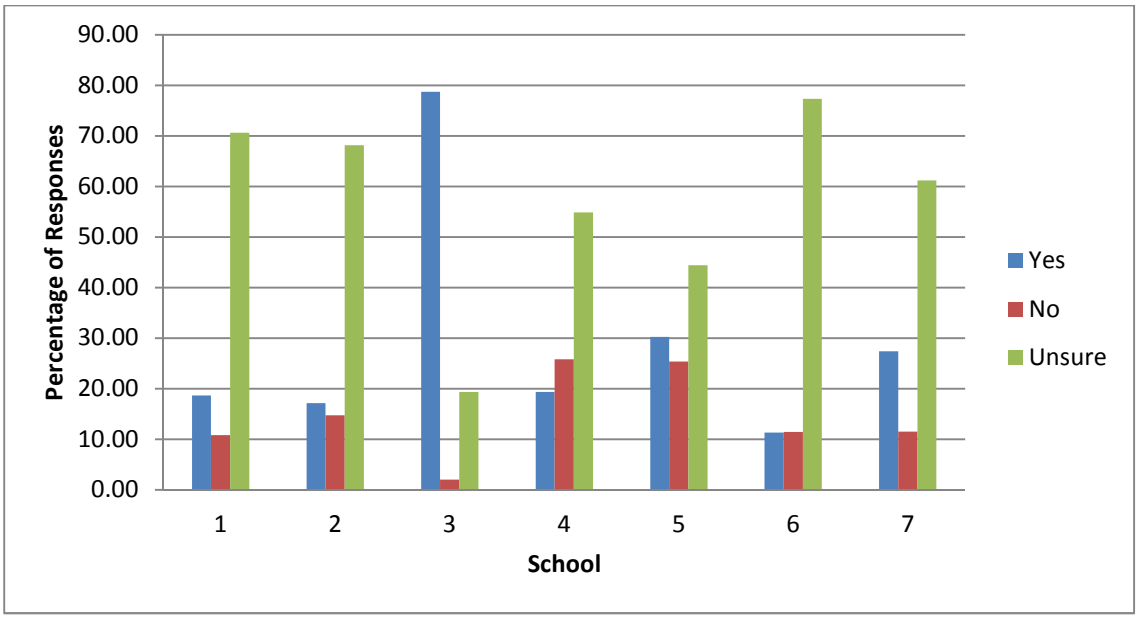

Figure 13: Responses to Anti-Mobile Bullying Policy at Schools

Participants at School 3 indicated that they did have an anti-mobile bullying policy at their school. However, as shown in Section 4.4, perpetrators of mobile bullying at this school were identified as peers from school. Therefore, even though a policy has been implemented at this school, there is still a prevalence of mobile bullying.

In contrast to this, the majority of participants agreed that they were unsure whether or not their school had an anti-mobile bullying policy. This implies that schools are not informing participants about the dangers associated with mobile phone technologies.

4.4.7 Incidents of Mobile bullying and Victimisation

This section discusses the incidents related to mobile bullying. The mean scores for mobile bullying were low (Mean < 1.72). However, responses of participants at School 1 which is a state owned school had the highest responses for mobile bullying items as shown in Table 17. In a study conducted by Akbulut et al., (2010), learners who attend state owned schools were more prone to conduct cyber-bullying behaviour and become victims.

Furthermore, Akbulut et al., (2010) suggests that learners who attend state owned schools reported feeling upset when they were exposed to cyber-bullying as opposed to learners at independent schools who perceived cyber-bullying as a joke. This suggests that adolescents from different socio-economic backgrounds may have different attitudes about using insults or threats as a way of retaliating against mobile bullies.

Furthermore, School 1, a government school, is situated in a crime-ridden area and faces a major challenge of limited financial resources and a high rate of unemployment. Interestingly, School 1 had the highest rate of respondents not knowing how much time they spent online. In fact, School 1 also had the second highest number of respondents not knowing whether their school has an anti-bullying policy. Also, School 1 had the highest usage of chat rooms (40%) and instant messaging which is one of the most adopted forms of communication amongst adolescents. Furthermore, the most frequently endorsed item was excluding others from chat rooms. It should be noted that the other 3 government schools (Schools = 2, 6 and 7) did not have similar findings.

Table 17: Mobile bullying experienced by Schools

Mobile bullying							
Variable	**School 1 (n = 466) Mean (SD)**	**School 2 (n =1363) Mean (SD)**	**School 3 (n = 317) Mean (SD)**	**School 4 (n = 66) Mean (SD)**	**School 5 (n = 278) Mean (SD)**	**School 6 (n = 671) Mean (SD)**	**School 7 (n = 460) Mean (SD)**
Teasing others online in a group	1.32 (0.90)	1.23 (0.73)	1.08 (0.34)	1.14 (0.46)	1.16 (0.60)	1.18 (0.62)	1.10 (0.42)
Threaten others online	1.41 (0.99)	1.33 (0.90)	1.09 (0.44)	1.15 (0.53)	1.25 (0.75)	1.25 (0.77)	1.19 (0.71)
Excluding others from joining an online chat group	1.72 (1.18)	1.57 (1.04)	1.50 (0.97)	1.50 (0.98)	1.68 (1.15)	1.45 (0.93)	1.37 (0.83)
Spreading rumours using a mobile phone	1.40 (0.91)	1.24 (0.65)	1.12 (0.41)	1.11 (0.40)	1.22 (0.61)	1.27 (0.67)	1.20 (0.57)
Get others to dislike someone using a mobile phone	1.31 (0.81)	1.20 (0.57)	1.13 (0.44)	1.18 (0.50)	1.20 (0.57)	1.22 (0.61)	1.14 (0.50)
Threatening others using mobile applications	1.34 (0.89)	1.23 (0.73)	1.05 (0.50)	1.11 (0.40)	1.20 (0.65)	1.21 (0.69)	1.15 (0.62)

As is highlighted by the definitions, bullying involves one or more perpetrators and the victim. What is not recognised is the physical or virtual presence of the bystander. The role of the bystander is significant in preventing or reporting an incident, and new educational programs have been developed to educate adolescents in this regard. Bystanders are uniquely placed to either contribute to the problem or the solution (Li, 2006; Agatston et al., 2007 Smith, 2008).

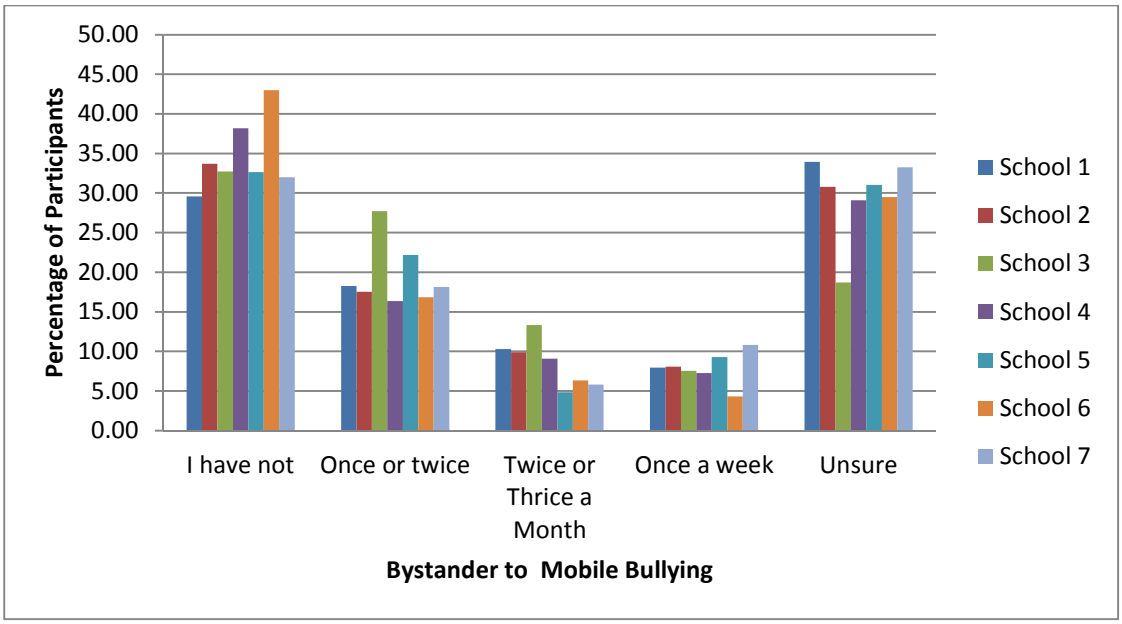

Figure 14: Percentage of Participants who have been bystanders to Mobile Bullying

The results in Figure 14 represent the percentage of participants who have been bystanders of someone who has been mobile bullied. The responses at School 6 indicated the highest number of participants who have not witnessed any bullying in the last three months (43%).

Figure 15 below, highlights the number of incidents whereby participants have been bystanders to mobile bullying which occurred on a regular basis (once or twice, twice or thrice a month, once a week). The number of incidents recorded at School 3 was relatively high as shown in Figure 15 (48.56%). Interestingly, the environment at School 3 endorses ICT usage which means that participants are at a higher risk to engage in mobile bullying behaviour.

Very rarely is the bystander in neutral role, but they often choose to ignore the situation or do nothing about it (Li, 2006, 2007 & 2010; Price & Dalgleish, 2010; Smith et al., 2008). Reasoning for this can be attributed to fear; as the bystander is concerned that the attention may be focussed on them or that they maybe label a snitch. Bystanders are often unwitting

accomplices, drawn to the incident because they find the situation humorous. These reactions serve to encourage the bully in their behaviour and the bystander is as guilty as the offender. Although the role of the bystander in cyber-bullying is very similar to that in school-yard bullying, because of the anonymity factor it is easier to walk away.

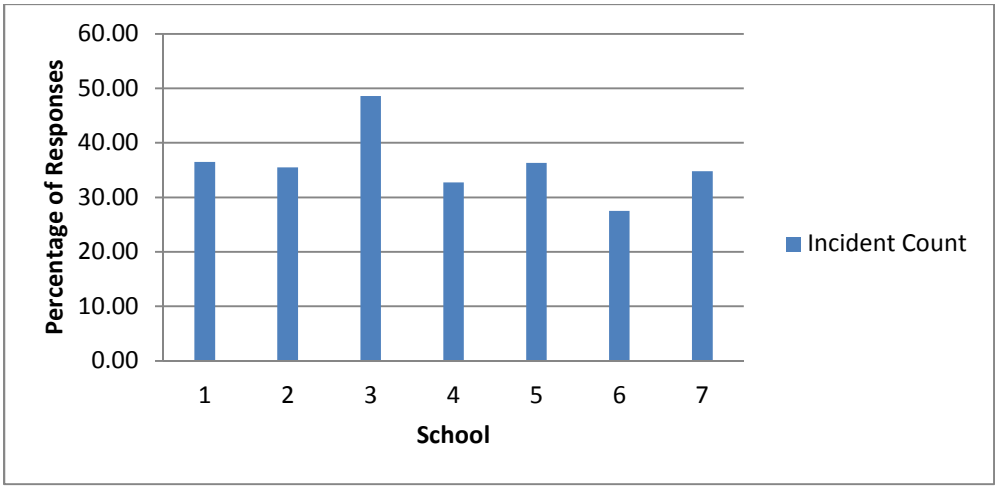

Figure 15: Incidents reported by Participants who are Bystanders

Table 18 summarizes the results with the means and standard deviations of each of the items measuring mobile phone victimisation at each school.

Table 18: Mobile Phone Victimization reported at Schools

Mobile Phone Victimization				
Variable	**School**	**Valid number of Responses**	**Mean**	**Standard Deviation**
I receive insulting messages on my mobile phone	School 1	464	1.61207	1.037288
	School 2	1363	1.61482	0.994397
	School 3	315	1.54603	0.833385
	School 4	65	1.56923	0.847224
	School 5	278	1.50719	0.840074
	School 6	670	1.57761	0.956032
	School 7	459	1.38562	0.745796
I received a threatening call from someone	School 1	460	1.32174	0.781572
	School 2	1363	1.28540	0.762550
	School 3	316	1.17722	0.563650
	School 4	66	1.33333	0.790975
	School 5	278	1.13309	0.473391
	School 6	670	1.24627	0.702723
	School 7	459	1.09804	0.429756
Received a message on your mobile that frightened you	School 1	456	1.52851	0.951147
	School 2	1340	1.54851	0.887994
	School 3	304	1.50000	0.828534
	School 4	65	1.58462	0.933614
	School 5	277	1.58845	0.926821
	School 6	647	1.53941	0.869811
	School 7	453	1.37528	0.792949

Participants at all the schools did not give firm responses to any of the items measuring mobile phone victimisation. From Table 18, participants who reported that they received insulting messages on their mobile phones were highest at School 2 (Mean = 1.61, SD = 0.99). In the case of participants receiving a threatening call, School 4 had the highest number of reports (Mean =

1.33, SD = 0.79). Furthermore, School 5 had the highest average of participants who reported that they have received a frightening message on their mobile phone (Mean = 1.58, SD = 0.93).

According to Due and Merlo (2009) on their study in 35 countries: "*adolescents from families of low affluence reported higher prevalence of being victims of bullying. There is socioeconomic inequality in exposure to bullying among adolescents, leaving children of greater socioeconomic disadvantage at higher risk of victimization*."

4.4.7.1 Mobile Bullying Facilities

The responses to the facilities used to conduct mobile bullying is summarised in Table 19. Participants strongly agreed that instant messaging facilities such as WhatsApp and BBM, was the most preferred mobile bullying facility for perpetrators as graphically illustrated in Figure 16. This could also justify the fact that these types of facilities that replaces traditional messaging services (i.e. SMS and MMS) is chosen due to the more affordable rates provided.

Table 19: Facilities used to Conduct Mobile Bullying

Mobile Bullying Facilities							
% of Respondents	**School 1**	**School 2**	**School 3**	**School 4**	**School 5**	**School 6**	**School 7**
SMS	27	18	10	21	5	18	17
Email	3	1	8	2	3	1	2
Instant Messaging	36	53	57	60	65	46	53
Social Networks	23	18	19	7	17	23	17
Voice Calls	11	10	5	10	10	12	10

Akbulut (2010) states in his study that bullying and victimization instances were found to be correlated with the frequency usage of several ICTs including Internet, MSN, SMS, cellular phone, forum sites and chat rooms. Furthermore, according to Figure 16, emails which is a preferred form of communication at School 3, also has a higher preference for conducting mobile bullying behaviours than at other schools. In addition to this, it appears that the

technology competency at School 5 is also high which suggests that the higher the technology competency, the greater the degree of mobile bullying. However, this is not the case because responses to the mobile bullying questions were lower than that of School 1 which had the highest mean scores.

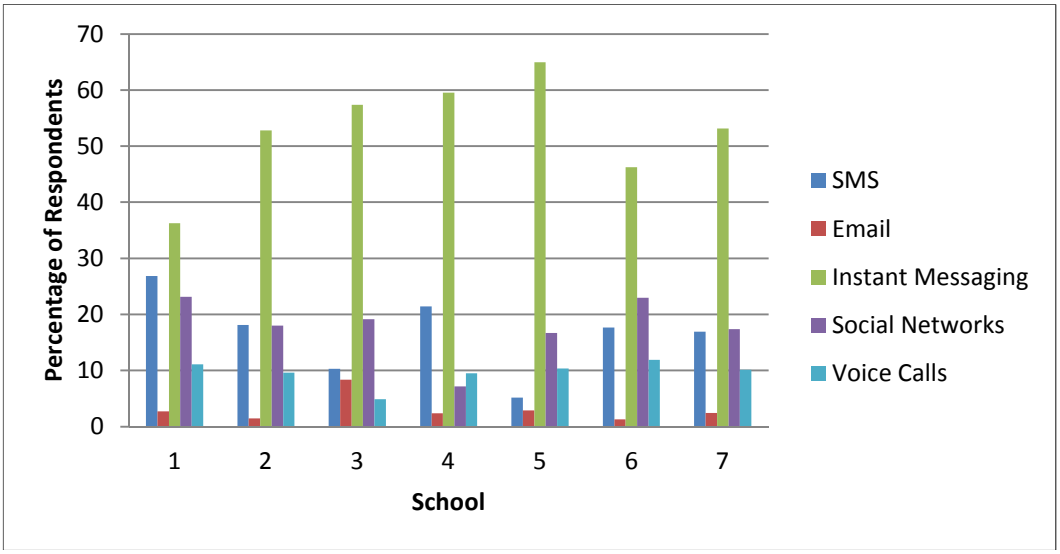

Figure 16: Graphical Illustration of Mobile Bullying Facilities

4.4.8 Traditional Bullying

Traditional bullying was not emphasised in this research but two items were used to measure if traditional bullying and victimisation exists at the schools. The results discussed below should therefore only be used as a guide. School 5 had the highest number of participants agreeing to be traditional bullies (Mean = 1.46, SD = 0.92). According to Campbell et al., (2005), learners who would not normally engage in traditional bullying, may be tempted to do so in response to the anonymity associated to an online environment. However, a mobile bullying incident can very often be an extension of a traditional face-to-face bullying relationship.

Table 20: Traditional Bullying experienced by Schools

Traditional Bullying				
Variable	**School**	**Valid number of Responses**	**Mean**	**Standard Deviation**
I like to get into a fight with someone I can easily beat	School 1	465	1.37634	0.864954
	School 2	1350	1.32519	0.766343
	School 3	311	1.33762	0.837719
	School 4	66	1.36364	0.888150
	School 5	278	1.46403	0.921348
	School 6	660	1.37121	0.757415
	School 7	460	1.29130	0.641630

Research also indicates that, when compared to traditional bullying, online harassment can cause greater harm (Willard, 2007). The impacts range from mild frustration and distress to more serious long term psychosocial and affective disorders. Furthermore, the results of victimisation through traditional bullying are presented in Table 21. The incidents of victimisation reported by participants are not high. School 6 has the highest number of reports of participants being victimised by traditional bullies (Mean = 1.74, SD = 1.00).

Table 21: Victimisation reported at Schools

Victimisation				
Variable	**School**	**Valid number of Responses**	**Mean**	**Standard Deviation**
I get picked on by others	School 1	464	1.65733	1.029285
	School 2	1347	1.71121	0.997270
	School 3	312	1.72436	0.989161
	School 4	66	1.54545	0.788022
	School 5	278	1.63309	0.999234
	School 6	660	1.73939	1.003163
	School 7	458	1.73362	1.024324

In Burton and Mutongwizo's (2009) study, findings indicate that 7 out 10 (69.7%) of those who had admitted to bullying via SMS, had themselves been a victim. A similar trend was established in both chat rooms and other electronic media. Reasoning for this can be attributed to the clear lack of mediating and control factors which tend to be present in traditional bullying incidents. Victims retaliate and respond to the harassment using the same or similar means relying on the internet's inherent anonymity.

4.5 Hypotheses Testing

Hypotheses testing were conducted as follows:

- **Hypothesis 1**: An individual's technology usage competence affects their mobile bullying behaviour.
- **Hypothesis 2**: An individual's perception and attitude towards the internet affects their mobile bullying behaviour.
- **Hypothesis 3:** The greater the leverage of online anonymity, the higher the likelihood of an individual expressing themselves in an aggressive manner by becoming a mobile bully.
- **Hypothesis 4:** The greater the failure of knowledge distribution and awareness around mobile bullying in schools, the higher the risk of mobile bullying occurrences**.**

The testing methods to determine significant relationships between variables is summarised in Table 22 below.

Table 22: Hypotheses Testing Methods

Hypothesis	Testing Method
Hypothesis 1	ANOVA
Hypothesis 2	ANOVA and Spearman Rank Order Correlation
Hypothesis 3	Frequencies and Percentages of Respondents
Hypothesis 4	Frequencies and Percentages of Respondents

4.5.1 Hypothesis 1

An individual's technology usage competence affects their mobile bullying behaviour.

The hypothesis was tested by comparing the three items measuring technology competency and their effect on the degree of mobile bullying. The three items were namely: intensity of use, frequency of use and the comfort and confidence level of participants. The ANOVA test measured the following null hypothesis (H0) and alternative hypothesis (H1) for the effect of the intensity of mobile phone usage on the degree of mobile bullying:

H0: The intensity of mobile phone usage does not influence the degree of mobile bulling.
H1: The intensity of mobile phone usage does influence the degree of mobile bulling.
The results of the ANOVA test are represented in Table 23 below.

Table 23 : Results comparing Intensity of Use and Mobile bullying

Items measuring Mobile bullying	F	p
Online group teasing	5.20697	**0.000351**
Threaten others online	9.22259	**0.000000**
Exclusion	8.02342	**0.000002**
Spread Rumours	11.81613	**0.000000**
Influence others using mobile phones	6.71628	**0.000022**
Using Mobile Technology to threaten others	8.69880	**0.000001**

Each of the items measuring mobile bullying scored a p value of less than 0.05. Therefore, the null hypothesis should be rejected because the intensity of mobile phone usage significantly affects the degree of mobile bullying. The alternative hypothesis is therefore accepted.

The null hypothesis and alternative hypothesis for the frequency of use and its effect on the degree of mobile bullying is as follows:

H0: The frequency of mobile phone usage does not influence the degree of mobile bulling.
H1: The frequency of mobile phone usage does influence the degree of mobile bulling.

The frequency at which participants use their mobile phones has a significant effect on the degree of mobile bullying as shown in Table 24 ($p < 0.001$). H0 is therefore rejected in favour of H1.

Table 24: Results comparing Frequency of Use and Mobile bullying

Items Measuring Mobile bullying	F	p
Online group teasing	1.334850	**0.000000**
Threaten others online	1.436272	**0.000000**
Exclusion	1.197163	**0.000671**
Spread Rumours	1.400832	**0.000000**
Influence others using mobile phones	1.324815	**0.000000**
Using Mobile Technology to threaten others	1.495673	**0.000000**

The following null hypothesis and alternative hypothesis suggests:
H0: Participants who feel more comfortable and confident using mobile phone technology would not be more prone to mobile bullying behaviour.
H1: Participants who feel more comfortable and confident using mobile phone technology would be more prone to mobile bullying behaviour.

Table 25 suggests that H0 should be rejected in favour of H1 because the comfort and confidence level of participants has a significant effect on 5 of the 6 items measuring mobile bullying ($p < 0.05$).

Table 25: Results comparing Comfort and Confidence to Mobile bullying

Items Measuring Mobile bullying	F	p
Online group teasing	4.772669	**0.002552**
Threaten others online	6.474494	**0.000232**
Exclusion	9.240641	**0.000004**
Spread Rumours	6.831659	**0.000140**
Influence others using mobile phones	3.352339	**0.018254**
Using Mobile Technology to threaten others	2.137130	0.093537

The ANOVA test results therefore support Hypothesis 1 for all the variables measuring technology competency.

4.5.2 Hypothesis 2

An individual's perception and attitude towards the usage and functionality of mobile phones affects their mobile bullying behaviour.

The 8 item scale measuring the mobile phone involvement of participants was compared to the items measuring mobile bullying to test Hypothesis 2. The null hypothesis and alternative hypothesis for the effect of mobile phone involvement on the degree of mobile bullying is as follows:

H0: An individual's perception and attitude does not influence the degree of mobile bulling.
H1: An individual's perception and attitude does influence the degree of mobile bulling.

According to the ANOVA results, participants who were highly involved with their mobile phones were more likely to have mobile bullying tendencies. The p values were significant for 5

of the 6 items measuring mobile bullying ($p < 0.0001$). H0 is therefore rejected in favour of H1 and it can be concluded that Hypothesis 2 is supported by the ANOVA test results.

Table 26: Results comparing Mobile Phone Involvement and Mobile bullying

Items Measuring Mobile bullying	F	p
Online group teasing	1.255447	**0.000005**
Threaten others online	1.460199	**0.000000**
Exclusion	1.084780	0.056668
Spread Rumours	1.340982	**0.000000**
Influence others using mobile phones	1.410014	**0.000000**
Using Mobile Technology to threaten others	1.499680	**0.000000**

The Spearman Rank Order correlations indicate that there is a positive significant correlation between the perception and attitude of participants and the degree of their mobile bullying behaviour (Spearman $R < 0.1$, $p < 0.0001$). The results of the ANOVA test are therefore verified and it can be concluded that Hypothesis 2 is supported.

4.5.3 Hypothesis 3

The greater the leverage of online anonymity, the higher the likelihood of an individual expressing themselves in an aggressive manner by becoming a mobile bully.

The hypothesis was tested by determining what percentage frequency of participants agreed that their mobile bullying perpetrator was unknown to them. The two items considered was the identity of the perpetrator and the gender of the perpetrator. Participants who scored 4 or more for each of the items measuring mobile bullying were considered. Figure 17 below illustrates the interaction between mobile bullying and the identity and gender of mobile bullying perpetrators.

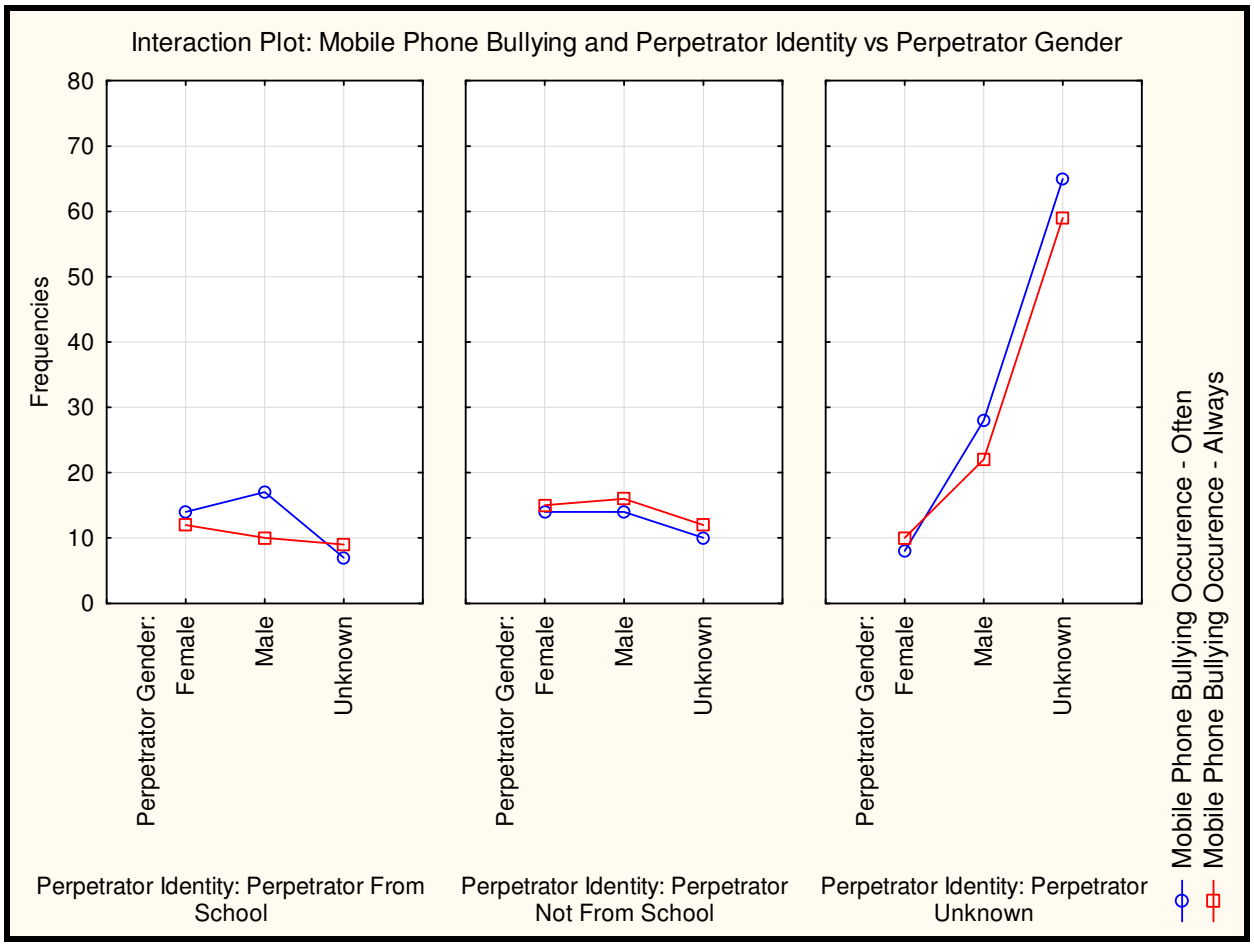

Figure 17: Interaction plot indicating the leverage of online anonymity

In Figure 17, "*Perpetrator Unknown*" and "*Perpetrator Gender: Unknown*" refers to an individual being anonymous. Participants who indicated that their perpetrators were from their school, agreed that males were more prone to conduct mobile bullying behaviour for occurrences that were stated as often (see Table 27, 49% of respondents). On the other hand, females were more prone to show mobile bullying tendencies for occurrences that were stated as always (34%). The anonymity level is low because the perpetrators are at the same school as the victims and therefore it is less likely that they would not know each other.

Table 27: Percentage of Responses

Occurrence	Perpetrator Identity	Perpetrator Gender		
		Female	Male	Anonymous
Often	Perpetrator From School	40%	49%	20%
	Perpetrator Not From School	40%	40%	29%
	Anonymous	8%	28%	65%
Always	Perpetrator From School	34%	29%	26%
	Perpetrator Not From School	43%	46%	34%
	Anonymous	10%	22%	59%

According to Figure 17 and Table 27, participants who identified perpetrators as individuals who were not from the same school, indicated that females and males could be mobile phone bullies for occurrences that are often (40%). Furthermore, males were more likely to be mobile bullies for occurrences that are stated as always (46%). From this information it can be concluded that gender does not have a significant effect on the mobile bullying potential of an individual.

In the third graph in Figure 17 ("*Perpetrator Identity: Perpetrator Unknown"*), it is clear that participants could not identify who their mobile bullying perpetrators are. For occurrences stated as often, 65% of participants agreed that their perpetrators were anonymous. Furthermore, for occurrences stated as always, 59% of participants agreed that their perpetrators were anonymous. Additionally, it should be noted that even though participants stated their perpetrators were anonymous, 36% (occurrence stated as often) and 32% (occurrence stated as always) indicated the gender of their perpetrators. This implies that participants were able to establish the gender of their perpetrator even though they did not know who the perpetrator was. The results of the interaction plots indicate that there is a high leverage of online anonymity and therefore Hypothesis 3 is supported.

4.5.4 Hypothesis 4

The greater the failure of knowledge distribution and awareness around mobile bullying in schools, the higher the risk of mobile bullying occurrences.

Hypothesis 4 was tested by using the frequencies of participants who have shown mobile bullying tendencies and comparing the results with the level of awareness around mobile bullying policies in the schools. Figure 18 indicates that even though there are policies at certain schools, mobile bullying still occurs (24% (Often), 20% (Always)). Furthermore, participants indicated that there is a high level of uncertainty about whether or not there are anti-mobile bullying policies at their schools (58% (Often), 59% (Always)). This indicates that participants are not aware of the dangers with regards to mobile bullying and how they need to protect themselves from perpetrators. This hypothesis is therefore supported because the participants who indicated the highest level of uncertainty with regards to mobile bullying policies showed mobile bullying tendencies.

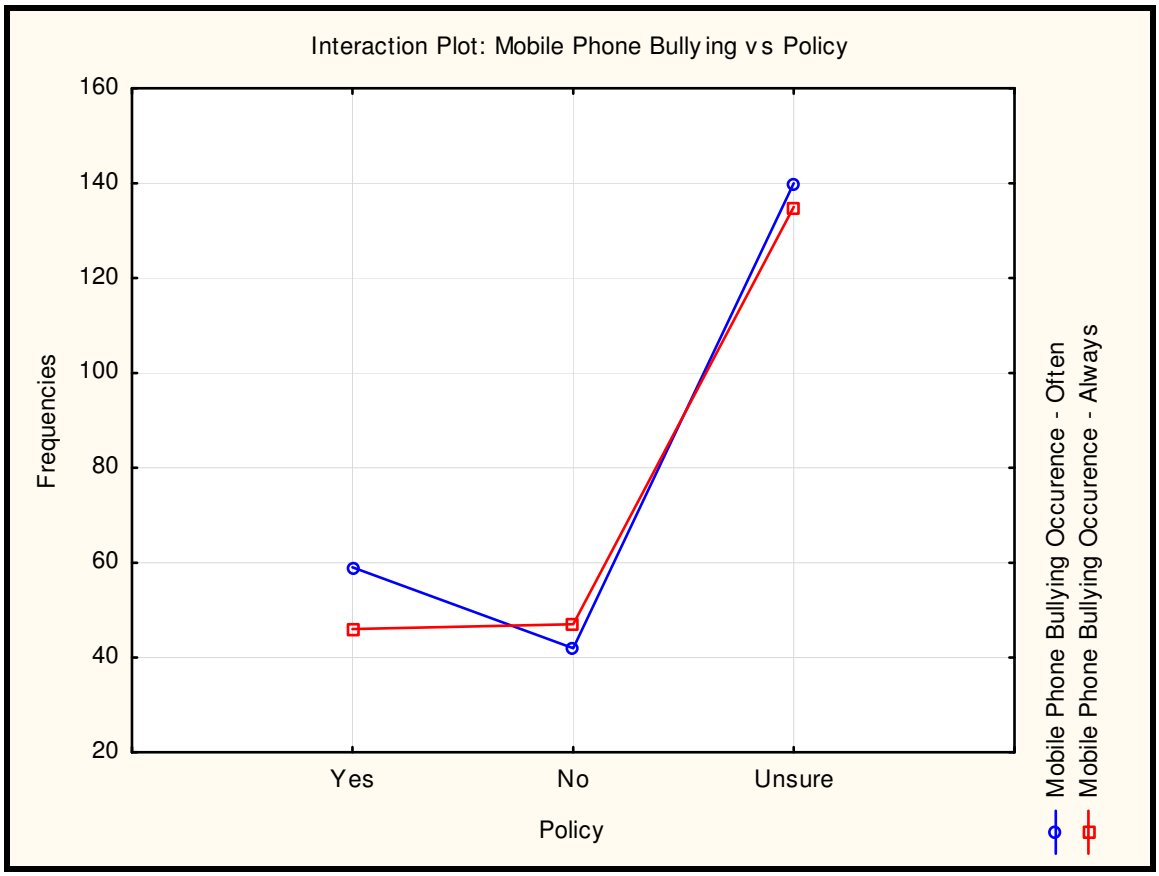

Figure 18: Interaction plot indicating the lack of knowledge about policies

4.5.5 Summary

The following table summarises the results from the hypotheses testing.

Table 28: Summary of Research Findings

Hypothesis	Description	Outcome
Hypothesis 1	An individual's technology usage competence affects their mobile bullying behaviour.	Supported
Hypothesis 2	An individual's perception and attitude towards the internet affects their mobile bullying behaviour.	Supported
Hypothesis 3	The greater the leverage of online anonymity, the higher the likelihood of an individual expressing themselves in an aggressive manner by becoming a mobile bully.	Supported
Hypothesis 4	The greater the failure of knowledge distribution and awareness around mobile bullying in schools, the higher the risk of mobile bullying occurrences.	Supported

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

In the past it was only big business and government agencies that were concerned with cyber security and privacy, but with the rapid uptake of electronic media, it is now a concern of both parents and schools alike. Cyber violence, and in particular mobile bullying, is an unfortunate by-product of this dangerous cocktail of teenage aggression and electronic media.

The main objectives of this research were to investigate the influencing factors and to determine the implications of mobile bullying. The key factors identified are: the power of being anonymous; the lack of knowledge amongst adolescents and the judicial system of South Africa and the regulation regarding mobile bullying; the perception and attitude of adolescents towards mobile technology; accessibility of mobile technology; and the competency of learners to use technology to bully.

In addition the review reveals gaps in research on mobile bullying; the prevalence of the problem in schools; and the awareness of legislation and implications. These gaps include the fact that there is limited empirical research on this topic; lack of knowledge of the nature and prevalence in schools; and that there are no effective models to predict or measure the level of this aggression. By identifying these gaps, this thesis has managed to better our understanding of what mobile bullying is and how it impacts society. Furthermore, in an attempt to create awareness of this problem, the researcher presented a guide that can be used to understand the South African legislation (as shown in Table 4 in Section 2.4.6).

This study therefore developed a conceptual model based on the premise that since there is an increase in the adoption of mobile technologies, emphasis needs to be placed on the process of identifying the influential factors of mobile bullying and therefore aim to minimise mobile bullying occurrences. This model was empirically tested through propositions which measured the relationship between the influential factors and its impact on the degree of mobile bullying.

In total 7 schools within Cape Town were approached. Emerging from the findings is that adolescents have constant access to the internet with over 70% of learners accessing the internet at least 0-2 hours per day. Analysis of the findings suggests that there could be a possible relationship between the intensity (amount of time spent online) and frequency (how often a device is used) of an individual's mobile phone usage and online aggression. Additionally, the most commonly used mobile phone feature amongst learners was social networks, followed by chat rooms. More than 60% of learners indicated that they felt confident and comfortable when interacting with others using their mobile phones. Ybarra and Mitchell (2004) suggest that adolescents who feel confident in their ability to use technology are twice as likely to be aggressive towards others online.

The findings show that gender and age is not a predictor to mobile phone victimisation and mobile phone bullying. Furthermore, the researcher investigated whether victims of mobile bullying could identify their perpetrators. The study showed that 60% of perpetrators were anonymous but victims were able to identify the gender of 36% of their perpetrators. The researcher aimed to determine the perception and attitudes of learners towards their mobile phones by measuring the mobile phone addiction components adopted by Walsh et al., (2010). The findings reveal that learners at 5 of the 7 schools were highly involved with their mobile phones as opposed to learners who were not. This implies that learners could possibly show signs of mobile phone addiction.

Furthermore, the highest prevalence of mobile bullying incidents recorded at schools was found in crime-ridden areas. On the other hand, the number of mobile bullying incidents reported by bystanders was highest at schools that were situated within areas that have low safety risks. Furthermore, the mobile phone facility that is used most to conduct the act of mobile bullying is instant messaging. Learners tend to adopt facilities that are cheap and easily accessible to communicate and hence will be more prone to use these facilities to act

aggressively online. Badenhorst (2011) asserts that it is difficult to establish whether mobile bullying happens in school or outside school. Research conducted elsewhere suggests that it tends to happen outside of school (Ybarra and Mitchell, 2004; Dehue, Bolman and Vollink, 2008; Smith et al., 2008a), but this has not been well established in South Africa. However, in this study the findings suggest that the predominant location of mobile bullying occurs outside of the school premises.

The researcher aimed to establish whether or not schools have implemented policies to address the issues around mobile bullying and protect learners from the implications thereof. The findings revealed that 13% of learners reported that their schools did not have anti-mobile bullying policies and 63% were unsure. Adolescents lack sufficient knowledge about mobile bullying and its implications and it is evident that schools have not implemented appropriate measures to protect the learners. This is supported by a statement made by Popovac and Leoschut (2012), who suggests that there is a lack of appropriate information on which to base policy decisions. Therefore, the development of online safety strategies is impeded.

Furthermore, participants agreed that MMS (3.4 %) was the least likely mobile facility to be used. This could be due to expensive MMS rates as participants prefer to use cheap downloadable mobile applications (such as WhatsApp and BBM) to send media and pictures.

The recommendation for future studies is that researchers do pre-testing of surveys before gathering large amount of data to analyse. Studies could also use hybrid methods to generate new hypotheses from large amount of data.

5.2 Limitations and suggestions for future research

This research has however some limitations. The study was conducted during high school exams. While effort was made to explain the term mobile bullying to the learners, still there were some who appeared to not understand the term well. A lack of knowledge and disinterest in mobile bullying was evident in the way that some of the questionnaires were answered. A significant limitation of the paper-based questionnaire was identified where learners completing the paper-based survey gave contradicting responses to questions. E.g. indirect questions relating to Mobile Phone Victimisation (Q17, Q18 and Q27) indicated that learners were not victimised. However, the direct questions (Q30-Q32) related to mobile phone victimisation indicated that learners were victimised.

The sample count in this study was large compared to other cyber-bullying studies conducted in South Africa. However, it was not possible to interview the learners due to limited contact time that was made available by schools. It is therefore recommended that in future studies, a few learners should be sampled for interviews so that more qualitative data is available to compliment the quantitative findings. Further, interviews should also include interviews with school principals, educators, learner support groups (counsellors), parents, law enforcement and mobile manufacturers.

Software products such as SurveyMonkey, would have assisted in the streamline of the collection process. However, most of the schools used in this study had limited access to computers and internet facilities. This made it difficult and time consuming to count each questionnaire judging by the time limit of the study. Also, pre-tests of the questionnaire were not conducted.

In addition to the development of mobile bullying theory, future studies could develop a detection tool determine the level of mobile bullying aggression in a school as well as a website

and guide to create awareness of social, legal and other implications of mobile bullying. Furthermore, the website could be used for exchanging ideas and gathering policy suggestions. These products can enhance the capacity of schools to deal with this escalating online aggression.

Responding to the above concerns and requirements, this study has strong potential for a high policy impact. Future studies could also be developed that can assist policy-makers in education and security in identifying and substantiating specific strengths and weaknesses of existing policies and in formulating strategies to improve the implementation of a better policy. A report on the nature of mobile bullying across provinces in South Africa can be produced on which policy interventions can be based. Furthermore, this approach could provide useful input into the development of the national framework for cybercrime by the ministry of state security.

Mobile bullying is dynamic, in other words it may change over time, and therefore monitoring online behaviour over a longer period of time would provide more interesting results. Also, future studies could contribute to the on-going public debate on whether or not mobile phones should be used in schools (van Tonder, 2011).

This research is therefore significant as it confirms that the nature of mobile technology influences the degree of mobile bullying behaviour adopted by learners. Researchers with expertise in mobile technology, information security, law, data analysis and education will contribute greatly to the development of a mobile bullying theory.

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APPENDIX A: AN ETHICS FORM

Ethics in Research

Any individual in the Faculty of Commerce at the University of Cape Town undertaking any research that involves the use of human subjects, or research that may hold ethical consequences for the University of Cape Town, is required to complete this form. The completed form should be submitted to the Ethics Committee in the Faculty of Commerce, and should be accompanied by the following:

A full copy of the research proposal.

The consent form that will be signed by the participants (if no consent form is being used, and then the applicant must provide a motivation as to why this is the case)

Any interview schedules, forms, instruction sheets or other material that will be used in the study.

A. PROJECT TITLE: Mobile Bullying in South Africa – Exploring its nature, Influencing Factors and Implications.

A.1. Name of Principal Investigator: Grant Oosterwyk

A.2. Name of Co-Investigator/s: N/A

A.3. Primary research methodology (outline the main research tool being use i.e. interviews, experiments, secondary data use etc):

Surveys and semi-structured interviews will be used on adolescents and higher authority.

B. CHARACTERISTICS OF STUDY PARTICIPANTS:

In this section, please describe the characteristics of the individuals who will be participating in the study. (This includes interview respondents, experimental subjects etc). *(If additional space is needed for an item, use a separate sheet)*

B.1. Sex, race or ethnic group, age range, location etc.

The interviewees will be drawn from the Police force as well as from the school governing society as case studies in Cape Town (South Africa). There is neither sex, race, ethnic group nor age discrimination in this study.

B.2. Affiliation of subjects, e.g., institutions, hospitals, general public, etc.

People who participated in an IS project.

B.3. If human subjects are either children (aged 15 and below), mentally incompetent, or legally restricted groups please explain why it is necessary to use these particular groups

It was found that the generation is becoming more competent with the use of mobile

technology. This has prompted this research as these young generations is more susceptible to acts of mobile bullying which could lead to severe harm.

C. TYPE OF CONSENT

C.1. What type of consent will be obtained from study participants?
*Written or verbal (if the participant is not willing to sign any consent form) consent will be sought before commencing an interview (**Appendix D**).*

C.2. If participants are required to sign a written consent form, please submit a copy of the consent from with your application. If there is no written consent, please provide a motivation as to why this is not the case.

Consent form has been attached.

C.3. How and where will consent/permission be recorded?

By obtaining the interviewee's signature on a consent form

C.4. If subjects are minors or mentally incompetent, describe how and by whom permission will be granted?

Permission will be granted from the relevant parents and guardians.

D. CONFIDENTIALITY OF DATA

D.1. What precautions will be taken to safeguard identifiable records of individuals? These questions also apply if you are using secondary sources of data. Please describe specific procedures to be used to provide confidentiality of data by you and others, in both the short and long run.

The information is not released in a way that permits linking specific individuals to responses and is publicly presented only in an aggregate form (e.g. percentages, means.) It will be treated in strict confidence. As soon as the analysis is over, the information will be professionally disposed of.

E. RISKS TO SUBJECTS

E.1. Describe in detail the extent of any physical, psychological, social, legal, economic, or other risks to study participants you can foresee, both immediate and long range, and provide the rationale for the necessity of such risks.

No risks are foreseen in this study.

E.2. Where possible, outline any alternative approaches that were or will be considered and why alternatives may not be feasible in the study. Also outline whether and why you feel that the value of information to be gained outweighs the risks?

N/A

E.3. ADDITIONAL COMMENTS:
The researcher believes that it will be good practice as to provide the participants with a written record of the researchers' information.

SIGNATURE:_____DATE:_____

APPENDIX B: LETTER OF INVITATION

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http://www.commerce.uct.ac.za/informationsystems/

NAME OF THE SCHOOL
Address

Mobile Bullying in South Africa: Exploring its nature, Influential factors and Implications

PRINCIPALS NAME:
In advance, I would like to thank you for taking the time to read this letter, and hope that you will consider the prospect of conducting this survey within your school. This research is to be conducted under the supervision of Professor Michael Kyobe (Information Systems, Masters Course Convener), and meets the requirements of the Research Ethics Committee of UCT. Approval to request permission to undertake this survey has been received from the Directorate for Research at the Western Cape Education Department, and is contained within this letter.

As a Network Engineer and part-time IS Masters Student, I have a passion for education and IT, and consequently in turn very keen and interested in the issue of security, mobile technology and online safety. It is for this reason that I have selected to research the relatively new, but particularly pertinent phenomenon of mobile bullying.

Aim of the Research
Although there is a raft of international data, the concern is that there is limited local research. The purpose of this study is to shed light on the phenomenon, to understand its nature, implications and influential factors within the context of South African schools.

Background
The Internet, and in particular social media, is playing an ever increasing role in the daily lives of our pupils. It has opened up a wealth of opportunities for learning, exploration, and social and

public engagement. However, despite its power, there are ever increasing reports of teenagers, using electronic media to send harmful messages intended to harass, belittle, and bully their peers.

Both locally and internationally online harassment has been thrust to the forefront of public agenda, and concerns have been raised owing to the apparent psychological and health impacts resulting from online victimisation.

Conceptually, mobile bullying (use of mobile phones to perform the act of cyber-bullying) and bullying share the three main attributes of repetition, the intention to do harm and the imbalance of power. There are several key differences:

- Firstly, victims can now be targeted anywhere and at any time, and learners feel there is nowhere to hide;
- Secondly, the power of the bully now lies in their anonymity, there is little accountability and their actions can often become more brazen as there is little chance of being caught;
- Thirdly, learners who don't normally engage in bullying may be tempted to do so in response to the anonymity associated to the online environment;
- Fourthly, most incidents of mobile bullying go unreported as learners feel that their internet or phone privileges will be revoked;
- Finally, little is known about either the rate of incident or the damaging effects.

Benefits of the Research for the School

I believe that if your school chooses to be part of this study, that there would be several benefits:

- Schools would gain a better understanding of the phenomenon, empowering management to be more proactive in their response to the issue;
- Via direct statistical feedback management would have data on which to base a strategy;
- Learners would gain knowledge and be able to express their concerns anonymously;
- Finally, as a school you would be making a significant contribution to empirical research in this subject area, which would help protect our youth in their formative years.

Research Plan and Method

The study would utilise an online approach consisting of 28 web based questions, which can be complete in school-time. Learners will not be required to enter any personal details, and all responses will be anonymous. The questionnaire would take approximately 20 minutes to complete and data will be treated in strictest confidence.

Communication with parents is essential, and included in this letter is *pro forma* letter which can be used to advise parents of the study, giving them the option to withdraw consent. Participants too may withdraw from the study at any given time.

Participation in this study is strictly voluntary and all responses are anonymous. At no stage is the school or any participant's name recorded, and it is the right of the school to withdraw from the process at any stage.

School Involvement

Once I have received your written consent to conduct the study, I will approach a designated member of staff, preferably a school counsellor, and conduct an initial interview. At this point I will lend assistance in drawing up correspondence and we will set up a time for the data collection to take place.

Please note that current international research indicates that the phenomenon is most prevalent from ages 13 to 17, and I would therefore propose that the study be conducted from Grades 8 to 12.

Further Information

Attached to this letter are the following documents: an example of a parents' information letter; a paper copy of the online survey; UCT Research Ethics Committee approval.

Many thanks for time and if you require any further information or would like to schedule a meeting, please contact me, Grant Oosterwyk (078 306 7610 or alternatively grant@oosterwyk.za.net)

Grant Oosterwyk
Masters Researcher
UCT

Professor Michael Kyobe
Supervisor
UCT

APPENDIX C: PRO FORMA CONSENT LETTER TO PARENTS

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http://www.commerce.uct.ac.za/informationsystems/

Dear Parents/Guardians/Counsellor/Police official,

We would like to include your child, along with their grade, in a survey dealing with mobile bullying. This survey will form part of an active research study titled "Mobile Bullying in South Africa – Exploring its nature, Influencing Factors and Implications", which is being conducted by Grant Oosterwyk (UCT Master Student) and supervised by Professor Michael Kyobe (Information Systems, Faculty of Commerce). In the paragraphs below we will summarise the procedure and how we will maintain your child's confidentiality.

Background

The Internet, and in particular social media, is playing an ever increasing role in the daily lives of our pupils. It has opened up a wealth of opportunities for learning, exploration, and social and public engagement. However, despite its power, there are ever increasing reports of teenagers, using electronic media to send harmful messages intended to harass, belittle, and bully their peers.

Both locally and internationally online harassment has been thrust to the forefront of public agenda, and concerns have been raised owing to the apparent psychological and health impacts resulting from online victimisation.

Aim of the Research

Although there is a raft of international data, the concern is that there is limited local research. The purpose of this study is to shed light on the phenomenon, to understand its nature and to gauge its impact on our learners.

Benefit of the Research

- Schools and Education Departments would gain a better understanding of the phenomenon, empowering educators to be more proactive in their response to the issue;
- The process will ensure that the learners are better informed, while allowing them to express their concerns anonymously;
- Finally, this study will help protect our adolescents in their formative years, as it will make a significant contribution to understanding the phenomenon.

Procedure and Confidentiality

The information gathered will be used for research purposes only. The online questionnaire will be completed during school hours, and will take approximately 20 minutes to complete. The questionnaire will areas of cover basic internet and cell phone usage, as well as incidents of face-to-face and mobile bullying.

Participation in this study is strictly voluntary and all responses are anonymous. At no stage is a schools or learner's name recorded; it is the right of the parent/guardian or learner to withdraw from the process at any stage.

MOBILE BULLYING SURVEY – Please return to the school office

I, _____ wish to withdraw consent for my child _____ in Grade _____ to partake in the mobile bullying survey to be conduct.

Signature: _____ Date: _____

APPENDIX D: PRO FORMA CONSENT LETTER TO PARTICIPANTS

Department of Information Systems
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http://www.commerce.uct.ac.za/informationsystems/

Dear Participant

Hello, my name is Grant Oosterwyk. I am currently completing my Masters in Commerce Information Systems at the University of Cape Town. One requirement of the Masters course involves the completion of a research dissertation. The research that I am conducting aims to explore the nature, influencing factors and implications of mobile bullying amongst high school learners.

I wish to invite you to participate in my Masters Research project. Should you agree to participate, you will be given a survey to complete a questionnaire. As a researcher I will make arrangements with your school to distribute and collect the questionnaires. The research also aims to create awareness around mobile bullying in South Africa.

Participation in the study is entirely voluntary and you may withdraw from the study at any time and it will not be held against you in any way. You have the right not to answer any questions you feel uncomfortable answering. Your identity will be kept strictly confidential and your privacy is assured. Please note that no identifying data will be included in the research report. Should you be interested in the results of the study, a 1 page summary will be made available to you through your school. The data in this study may be used as part of a larger research study and that the raw data will only be destroyed once this is completed and accepted for qualification. The data (questionnaire) will be kept in a safe and secure location.

Your participation in this study would be greatly appreciated. If you choose to participate in the study please will you fill in your details on the forms below. You have also been given a form to take home for your parents to read and sign if you wish to take part in the study. Please return both these forms to the researcher.

Yours sincerely,

_____

Grant Oosterwyk (Student – Masters in Commerce: Information Systems)
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Tel: 078 306 7610
Email address: grant@oosterwyk.za.net

Supervisor's details

_____

Michael Kyobe (Professor of Information Systems)
Department of Information Systems
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APPENDIX E: SURVEY – ABSENT FORM FOR PARTICIPANTS

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I have read and understood what this research involves and what is expected of me.
I understand that:

- I may refuse to answer any questions that I feel uncomfortable answering
- I may withdraw from the study at any time and it will not be held against me in any way
- Participation for this survey entirely voluntary and no information that may identify me will be included in the research report
- I agree to the use of direct quotes in the research report
- I am aware of the limitations of confidentiality and anonymity
- I am aware that there are no direct benefits for participation in this research
- This is a minimal risk study

I hereby consent to participate in this research project. I also give Grant Oosterwyk permission for my results to be used in the write up of this study.

Name: _____
Date: _____
Signature: _____
Contact Number: _____

APPENDIX F: QUESTIONNAIRE

Mobile Bullying Survey

Mobile bullying can be defined as a form of electronic online bullying through email, chat rooms, instant messaging and small text messages using mobile phones (Kowalski *et al.* 2007).

This questionnaire is confidential and so no one in your school will know what you have answered. It is anonymous, so please don't put your name on it anywhere.

This questionnaire is completely <u>voluntary</u> and you can decide to exit at any time. Please mark with an X in the relevant box provided.

A. General Information - Demographics					
1. Gender			Female		Male
2. Grade	8	9	10	11	12
3. Age	14 or younger	15	16	17	18 or older
4. Where do you live?					

B. Mobile Phone Internet Accessibility and Usage					
5. How much time do you think you spend on the internet in a day?	0 – 2hrs	3 – 5hrs	6 - 8hrs	8 or more	I'm not sure

6. Please indicate how often you use the following facilities?

	Never	**Rarely**	**Sometimes**	**Often**	**Always**
SMS	1	2	3	4	5
MMS	1	2	3	4	5
Email	1	2	3	4	5
Chat rooms	1	2	3	4	5
Social Networks (Facebook, Twitter)	1	2	3	4	5

C. Feelings about my Mobile Phone	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
7. I often think about my mobile phone when I am not using it	1	2	3	4	5
8. I often use my mobile phone for no particular reason	1	2	3	4	5
9. Arguments have arisen with others because of my mobile	1	2	3	4	5

phone use					
10. I interrupt whatever else I am doing when I am contacted on my mobile phone	1	2	3	4	5
11. I feel connected to others when I use my mobile phone	1	2	3	4	5
12. I lose track of how much I am using my mobile phone	1	2	3	4	5
13. The thought of being without my mobile phone makes me feel distressed	1	2	3	4	5
14. I have been unable to reduce my mobile phone use	1	2	3	4	5
15. I am comfortable using mobile phone technology	1	2	3	4	5
16. I feel confident using mobile phone technology	1	2	3	4	5
D. Mobile bullying	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
17. I receive insulting messages on my mobile phone	1	2	3	4	5
18. I receive a threatening call from someone	1	2	3	4	5
19. I am part of an online social networking group going around teasing others using my mobile phone	1	2	3	4	5
20. I like threatening others by using mobile applications (SMS, WhatsApp, BBM)	1	2	3	4	5
E. Traditional Bullying	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
21. I like to get into a fight with someone I can easily beat	1	2	3	4	5
22. I get picked on by others	1	2	3	4	5
F. Mobile Phone Victimisation	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**
23. I belong to a mobile phone chat-group that excludes others	1	2	3	4	5

from joining					
24. Used your mobile to start or spread a rumour	1	2	3	4	5
25. Used your mobile to get others to dislike a person	1	2	3	4	5
26. Received a message on your mobile that frightened you	1	2	3	4	5
27. If any of the previous events has happened to you, which mobile facility was used? (Check all that apply)	SMS/MMS	Email	Instant Messaging (BBM, WhatsApp)	Social Network (Facebook, Twitter)	Voice Calls
28. What is the likelihood that you would get back at them using your mobile phone?	Definitely would not do	Would not consider	Unsure	Would consider	Definitely would do

29. Who mobile bullied you?	Fellow peer(s) from your school	Fellow peer(s) not from your school	I don't know who it was
30. The person(s) who mobile bullied you was: (Check all that apply)	Female	Male	Unknown
31. Where were you mobile bullied?	On the school premises	Outside of school premises	

32. Have you seen or heard of anyone else being bullied in the last 3 months?

I haven't seen or heard of anyone else	It has only happened once or twice	Two or three times a month	About once a week	I'm not sure

33. Your school has an anti-mobile bullying policy	Yes	Not sure	No

Complete

You have now completed all the questions. All of the sections are confidential, so please do not discuss the answers you have written with your friends.

If you have been bullied or mobile bullied and would like to discuss it with someone then please contact a teacher or parent/caregiver. If you are not comfortable with this then call Childline (08000 55 555), they are experience at giving advice and support. Childline is free 24-hour support.

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE.