BULLYING EMBRACES THE VIRTUAL WORLD: ELUCIDATING THE PSYCHOSOCIAL DETERMINANTS AND CORRELATES OF TRADITIONAL VS. CYBERBULLYING TYPES

KATRINA ANNE NEWEY

Bachelor of Psychology
Masters of Psychology (Educational and Developmental**)**

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School of Social Sciences and Psychology
Western Sydney University

This thesis is dedicated to all the children that have every experienced traditional forms and/or cyberbullying, it is my hope to bring forth some small positive change to this field.

STATEMENT OF AUTHENTICATION

The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in full or in part, for a degree at this or any other institution.

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(Signature)

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ABSTRACT

Rapid technological development has drastically changed the social landscape, redefining the ways youth stay connected and communicate with one another. New technologies provide a virtual platform where cyberbullying behaviours are able to thrive. Although international research has made considerable progress in advancing our understanding of traditional forms of bullying, much remains to be done to uncover the complexities of cyberbullying phenomena. This thesis aims to address the research gaps and methodological limitations associated with cyberbullying research by conducting a mixed methods investigation from an ecological framework, to provide a richer and a more complete understanding of bullying phenomena. A total quantitative sample of 625 students was recruited from two NSW secondary schools across grades 7 through 10. A qualitative subsample of 81 participants drawn from the same two schools included the students (n = 57), their parents (n = 10), educational staff and school counsellors (n = 14). Three interrelated studies were conducted to advance cyberbullying research: Study 1 developed a new, psychometrically sound instrument titled the Adolescent Cyber Bullying Instrument (ACBI), which is grounded in a strong theoretical framework and which measures cyberbullying behaviours across all potential perspectives. Confirmatory factor analysis (CFA) and tests of invariance revealed that the new continuous measure was valid and reliable.

Study 2 used structural equation modelling (SEM) to uncover the effects of gender, grade, and school context on cyberbullying and traditional bullying behaviour, as well as to investigate the psychosocial correlates of involvement. The results revealed that students involved in any cyberbullying role (victim, bully, or bystander) were significantly more likely to report symptoms of depression, although to varying

degrees. Generally speaking, cyber victims reported experiencing significantly lower perceptions of physical appearance and parental relations self-concept, whilst cyberbullies reported significantly poorer parental relations and verbal and mathematical (English and maths) self-concept. Interestingly, bystanders witnessing happy slapping behaviours (e.g., embarrassing situations that were set up, recorded and subsequently posted online) also reported significant experiences of depression. These results provide preliminary evidence suggesting that students involved in happy slapping incidents may also be at a greater risk of adverse mental health consequences.

Lastly, Study 3 captured the perspectives of all school stakeholders involved (students, their parents, educators and school counsellors) by uncovering shared bullying experiences. Stakeholder interviews clarified definitions of different cyberbullying forms, why students engage in bullying perpetration, the impact bullying has on peers and families, reasons for the reluctance to disclose, the relation between traditional and cyber forms of bullying, and generated valuable practical suggestions to seed sustainable intervention/prevention programs addressing bullying. One of the most important findings showed that traditional forms of bullying and cyberbullying are positively correlated, suggesting that anti-bullying prevention programs need to target both forms of bullying, to effectively reduce all incidents, both offline and online. Preliminary results indicate that bullying begins in school hours and transfers across to online environments. This reveals that portable technology has provided bullying access to previously established safe havens such as the family home. Further implications of these findings for theory, research, and schools are discussed.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

> *It is a fundamental democratic or human right for a child to feel safe in school and to be spared the oppression and repeated, intentional humiliation implied in peer victimization or bullying.*
> (Olweus, 2001, pp. 11-12)

It is a fundamental human right for all children to feel safe, secure and protected before, during and after school hours and whilst at home (Greene, 2006; Olweus, 2001; Smith, 2000). Schools, educators, parents and society as a whole have a duty of care to protect our children from school bullying, as well as the unprecedented dangers of cyberbullying that persist in online environments. No child or adolescent should feel afraid to attend school for fear of bullying. Such fears may be exacerbated by a previous cyberbullying incident that was experienced at home, which may be followed up with further incidents in the schoolyard the next day. Further, no parent or caregiver should need to worry about a potential threat to their child's physical and psychological health and safety whilst at school (Greene, 2006; Mishna, 2012; Olweus, 2001; Shariff & Churchill, 2010; Smith, 2000).

In the digital age, where information and communication technologies (ICTs) have advanced the ways that people connect, traditional forms of bullying have extended into virtual environments and new electronic platforms (e-platforms) adding to the complexities of bullying behaviour (Li, Smith, & Cross, 2012). Since cyberbullying is a

relatively new form of aggressive behaviour, research has been plagued with fundamental theoretical and measurement issues, as the research community has yet to establish definitional consensus for the cyberbullying construct. Various terms and definitions in the literature lack precision and this issue ultimately reduces the quality of instrument development and the validity of research (Bauman, 2013; Griezel, Finger, Bodkin-Andrews, Craven, & Yeung, 2012; Tokunaga, 2010; Ybarra, Boyd, Korchmaros, & Oppenheim, 2012). Without the international research community reaching definitional consensus on the core elements that constitute cyberbullying, research comparisons are difficult. This is evidenced from reports of inconsistent prevalence rates and important group differences (e.g., gender and age patterns), in respect of which the body of research evidence cannot be relied upon for the advancement of this field (Bauman, 2013; Dooley, Pyzalski & Cross, 2009; Ybarra et al., 2012).

One of the more common definitions of cyberbullying presented in the literature is "an aggressive intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself" (Smith et al., 2008, p. 376). This definition is derived closely from traditional research, in which bullying is defined as an individual or group repeatedly carrying out intentional acts of harm that are inflicted on victim(s) who have difficulty defending themselves, due to an "asymmetrical power relationship" (Olweus, 1993, p. 10).

However, the research stipulates that the key differences between traditional and cyberbullying lie within the online or offline environments in which bullying behaviours thrive (Campbell, 2005; Dooley et al., 2009; Slonje & Smith, 2008). To add further confusion to the field, only some researchers acknowledge and differentiate between the terms cyberbullying and cyberaggression. However, researchers are starting to recognise that if behaviour is not deemed to be repetitive, intentional and involving an underlying

power imbalance between bully and victim(s), then this behaviour may be better defined as a broader construct known as cyberaggression (Bauman, Underwood & Card, 2013; Grigg, 2010). Although international bullying prevalence rates vary widely, it is important that schools, researchers and policy makers have a basic understanding of the frequency of adolescent engagement in cyberbullying behaviours, in order to take the necessary steps for preventative action (Solberg & Olweus, 2003). Across some of the more rigorous research studies on cyberbullying, the reported frequency is disconcerting. A cross-sectional national Australian study of grades 4 through to 9 students estimated that between seven to 10 percent of students reported being cyberbullied (Cross et al., 2009).

Overall, research has established that traditional forms of bullying represent a serious school issue associated with many negative psychosocial and psychological mental health consequences, such as anxiety and depression (Hawker & Boulton, 2000; Nansel et al., 2001; Swearer, Song, Cary, Eagle, & Mickelson, 2001). In more serious cases, it can ultimately lead to suicide and death (Bauman, Toomey, & Walker, 2013). Past research has indicated that similar psychosocial risk factors for engagement in cyber victimisation and cyberbullying reveal comparable outcomes (Campbell, 2005; Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Kowalski, Limber, & Agatston, 2008; Li, 2007a). However, Campbell (2005), Li, Smith, and Cross (2012) and Smith (2015) have indicated that the psychosocial correlates associated with cyberbullying, as compared to traditional bullying, may be even more harmful. This may be due to: (1) the ability of perpetrators to remain anonymous; (2) the fact that it can occur at any time (24/7) and therefore is difficult to escape from; (3) the lack of emotional feedback, which allows the bully to become more hurtful behind the screen; and (4) the fact that it can be viewed by broader audiences instantaneously.

Although there has been a surge of cyberbullying research investigating the psychosocial and mental health risk factors for cyber victims, there is a distinct gap within the literature in respect of exploring the correlates for cyberbullying perpetrators and bystanders (Campbell, Slee, Spears, Butler, & Kift, 2013; Quirk & Campbell, 2015). It is important for researchers and practitioners to unravel the complexities of all potential cyberbullying roles of involvement (i.e., victims, bullies and bystanders). Many studies have neglected to investigate perpetrator and bystander perspectives, and how these differing roles contribute to the reinforcement and maintenance of bullying behaviours. Therefore, these roles should be included in any inquiry investigating bullying phenomena (Barlińska, Szuster, & Winiewski; 2013; Quirk & Campbell, 2015). There is also a need for more research to explore the potential theoretical overlap between traditional and cyberbullying engagement, as students involved in both types of bullying may be at further risk of negative psychological consequences (Li, 2007b; Vandebosch & Van Cleemput, 2009; Waasdorp & Bradshaw, 2015).

Furthermore, there is a lack of research attention and evidence on the motivations and triggers for involvement in traditional forms of bullying and cyberbullying perpetration, which is often driven by societal prejudices that lead to the expression of aggressive behaviours toward minority groups. More research is needed to disentangle the relations between traditional bullying, cyberbullying and discrimination, as most academic work has neglected the connections between these two research fields (Greene, 2006; Mishna, 2012; Scherr & Larson, 2010; Shariff & Churchill, 2010).

Considering the complexities of cyberbullying, it is advantageous to engage in multiple methods of scientific enquiry to expand knowledge, study unrepresented samples and strengthen research findings through triangulation. Currently, only a handful of studies have drawn upon mixed methods or qualitative research designs in this field

(e.g., Agatson, Kowalski, & Limber, 2007; Grigg, 2010, 2012; Mishna, Cook, Gadalla, Daciuk, & Solomon, 2010; Mishna & Van Wert, 2013; Price & Dalgleish, 2010). It is of paramount importance that researchers try to unravel the complexities of bullying behaviour by understanding the perspectives and responsibilities of all the key stakeholders involved, who can play a role in directly or indirectly reinforcing bullying behaviours. Mixed methods research creates a unique opportunity to explore the perspectives of students and key stakeholders, deepening our understanding and insights, allow researchers to build and expand on our knowledge and theory.

Theoretical Lens

The majority of cyberbullying research is conducted in the absence of important theoretical frameworks (Walker, Craven, & Tokunaga, 2013). To address this research limitation, this thesis has drawn upon Bronfenbrenner's (1979; 1992) ecological framework to help address the complexities and possible contributing factors of the ecological system (peers, family relations, schooling and virtual environments). Since cyberbullying engagement does not occur in a vacuum, it is important to study the broader social context, to help understand the multiple contributing factors that may help explain why adolescents engage in bullying incidents using ICTs (Bronfenbrenner, 1979; Espelage & Swearer, 2010).

Cyberbullying research designs also need to be extended to include the technological system—to determine the contributing motivational drivers leading to engagement, and how this new phenomenon is unique in comparison to traditional bullying behaviour. Research should extend beyond the students directly involved in cyberbullying activities to investigate ecological environments that extend beyond the schoolyard, as cyberbullying most likely occurs outside of school hours, which makes it

likely also affect home life (Bronfenbrenner, 1979; Espelage & Swearer, 2010). Several other theoretical perspectives have also been drawn on in conjunction with Bronfenbrenner's ecological framework, to help explain why adolescents are involved in bullying incidents. These include: (1) social information processing theory (SIP); (2) social learning theory; (3) the online disinhibition effect; (4) adolescent identity formation; (5) general strain theory (GST); and (6) the question of how forming in-groups and out-groups leads to bias-based bullying.

Social information processing (SIP) theory explains how the continuation of aggressive behaviour in children has been attributed to ineffective cognitive thinking patterns. In particular, the lack of social cues behind the screens (e.g., no body language, emotive response or eye contact) may lead to a higher likelihood of miscommunication, which can often be misinterpreted as aggressive behaviour, which in turn can escalate into a cyberbullying incident (Crick & Dodge, 1994). Bandura's (1973, 1977) social learning theory reveals how aggressive behaviours are learnt from observation of influential role models. Children exhibiting learnt aggressive behaviours are often positively reinforced and rewarded, which further encourages aggressive involvement. Recent research hypothesises that cyberbullying perpetration may also be socially reinforced through the addition of bystanders "liking" and sharing online incidents (Espelage, Rao, & Craven, 2013). Moreover, a logical and developmental appropriate measure the Adolescent Cyber Bullying Instrument (ACBI) provides a theoretical commencement point for a clearer conceptual framework by considering social learning theory and the important role bystanders play in observing and passively reinforcing cyberbullying incidents.

The online disinhibition effect reveals how online environments provide a natural barrier where perpetrators can separate their real life persona from their online identity.

When students use anonymous online identities, their accountability is diminished, which creates distance between the perpetrator and victim, thereby increasing the likelihood of engagement in aggressive behaviour (Suler, 2004). Moreover, according to Erikson (1968), one of the important challenges adolescents are faced with is to overcome identity confusion and to form a firm sense of identity. Recent research suggests that adolescents are using ICTs and social networking sites to assist with the exploration process of identity formation (Erikson, 1968). However, there is some concern as to whether the use of ICTs can hinder the identity exploration process, due to the prolonged periods of time spent online, the ability to act quickly and respond impulsively and share private intimate thoughts with friends, which can heighten peer aggression and distress (Cyr, Berman, & Smith, 2015). Furthermore, new characteristics of online environments, such as anonymity, can make it easier for students to create false or anonymous identities that allow adolescents to disconnect from their self and create destructive identities (Mesch, 2010).

General strain theory helps shed some light on why adolescents perpetrate bullying behaviours. Engagement in bullying perpetration may be used as a mechanism to reduce life stressors and strains. Stressors and strains may be external or internal for the individual, and may include mistreatment from family members, experiencing bullying at school, or feeling angry and depressed (Agnew, 1992, 2001). Research suggests that bullying behaviours do not occur randomly, and may be motivated by underlying prejudicial views that can be learnt and transferred from influential role models and/or peers (Allport, 1954; Greene, 2006; Mishna, 2012; Rigby, 2002). Prejudicial beliefs can lead to the formation of in-groups and out-groups, leading to rejection, hostility and aggression being directed towards out-group members. Prejudicial beliefs can fuel the segregation of in-group and out-group membership, allowing in-group

members to view themselves as superior in relation to others who are marginalised due to differences in racial background, ethnicity, religious beliefs, sexuality, disability or weight (Greene, 2006; Mishna, 2012; Rigby, 2002). These theoretical frameworks will be considered in further detail in Chapter 3.

Multiple theoretical frameworks help scholars and practitioners understand the process and mechanisms that sustain bullying behaviours, including: (a) the antecedents that trigger the event; (b) the cognitive component (thought, beliefs and attitudes); (c) the social processes (emotions, feelings); and (d) the behavioural response for involvement in aggressive behaviour (Orpinas & Horne, 2006b). It is also important to study the adolescents who exhibit positive pathways from traditional and cyber victimisation, in order to study the specific processes that enable these students to overcome adversity and positively succeed in their home and schooling environments (Bronfenbrenner, 1992).

Aims of this Thesis

This mixed methods thesis comprises of three interrelated studies that address conceptual and methodological concerns in the field. It aims to extend and advance traditional and cyberbullying research to provide a clearer understanding and a more holistic picture of traditional bullying and of cyberbullying phenomena. This research aims to:

1. Explicate and operationalise clear traditional and cyberbullying definitions that young people can understand.
2. To develop a new, valid and reliable multidimensional measure of cyberbullying that measures all potential roles—victims, bullies and bystanders—accurately. The psychometrically sound instrument for use with adolescents will evaluate the level and frequency of specific

behavioural forms (i.e., flaming, identity theft and happy slapping) of cyberbullying engagement.

3. Examine important group differences (i.e., by gender, grade and school context) to uncover important patterns to help schools understand possible at–risk student populations. Employ structural equation modelling to extricate the psychosocial correlates for traditional and cyberbullying involvement (e.g., self-concept, school belonging and mental health consequences).
4. Explore the theoretical relationship between cyber and traditional bullying forms; and
5. Through a social-ecological lens Bronfenbrenner (1979), this study is one of the first cyberbullying studies to qualitatively assess consistent themes across key stakeholder perspectives (students, their parents, educators and school counsellors). The seven themes captured include: definitions of cyberbullying, emotional responses, motivation for involvement, lack of disclosure of victimisation, recommendations to seed successful interventions and uncover unrepresented student perspectives. The themes derived will later lead to recommendations to inform empirical research, theory and practice to reduce cyberbullying in secondary schools.

Significant contributions of this thesis

This thesis makes a unique and valuable contribution to the field of cyberbullying research by focusing on the pressing conceptual and methodological issues that must be addressed to move this field forward. The present mixed methods study was grounded in important theoretical and conceptual frameworks, using both self-report measures and focus group interviews to assess the key stakeholder perspectives. In addition, research questions and hypotheses across the three interrelated studies have been triangulated, to provide further supporting evidence for the research findings. The first step in this research was to provide clear operationalised definitions, to establish a new cyberbullying measure that differentiates it from other sub-forms of cyberaggression and specifically,

one that measures cyberbullying behavioural forms. The instrument was psychometrically assessed to ensure that the measure was reliable, valid and invariant across important groups. The survey was administered anonymously to protect the privacy of students and to yield accurate responses. The new hierarchical and multidimensional cyberbullying instrument structure provides an opportunity to assess important group differences and psychosocial correlates across victim, bully and bystander roles.

Lastly, the qualitative focus groups with key stakeholders (adolescents and school staff), and individual sessions with parents, focused on shared experiences across the ecological system (peer, home, schooling contexts and virtual environments). In particular, this study examined stakeholders' views on how cyberbullying is different to traditional bullying behaviour. It entailed:

1. Clarifying the definition of and operationalising the cyberbullying construct.
2. Understanding the characteristics, motivational drivers and goals of cyberbullies.
3. Exploring the impact on all cyberbullying roles, on schools and families.
4. Understanding how adults respond to a bullying incident and examining the willingness of students to disclose.
5. Providing stakeholder strategies to assist with future intervention/prevention efforts to create a more positive schooling environment and reduce both online and offline bullying.
6. The final theme considers uncategorised and outlier cases arising from the student interviews.

Overview of this thesis

This chapter describes the theoretical and methodological concerns addressed in this thesis that provide a framework in which to consider the multiple factors that

influence traditional and cyberbullying phenomena. It outlines the research aims and specifies how this thesis significantly contributes to the advancement of research knowledge in this field. Chapter 2 presents a literature review of traditional and cyberbullying research that examines the current research problems in cyberbullying definitions, prevalence rates and important group differences (gender, grade and school context), and uncovers the psychosocial correlates for engagement in all forms of bullying.

Chapter 3 evaluates and reviews the current methodological problems that have been identified in relation to conducting traditional and cyberbullying research. It also provides an overview of the guiding theoretical perspectives utilised to understand cyberbullying engagement. A review of the methodological and theoretical limitations of previous research forms the basis of the approach used in this thesis. Chapter 4 states the specific aims, hypotheses, research questions and their rationales for the three interrelated studies of the present investigation. Study 1 aimed to develop and assess the psychometric properties of a new, hierarchically structured and multidimensional cyberbullying instrument, and further test psychosocial and mental health constructs of interest to this study. Study 2 investigated group differences (gender, school context and grade) and uncovered the psychosocial correlates for bullying involvement, which include self-concept, school belonging and mental health consequences. It also explores the relations and theoretical overlap between cyber and traditional bullying forms. Study 3 qualitatively provides access to assessing cyberbullying themes across key stakeholder perspectives (students, their parents, educators and school counsellors). The interview data across stakeholders provide utility to inform research, theory and practice, with the goal of reducing traditional forms of bullying and cyberbullying in secondary schools.

Chapter 5 provides a justification and rationale for the employment of a mixed method design. A step-by-step approach was undertaken for each of the three interrelated studies, explaining participant recruitment and selection, data cleaning and the analyses guiding the scientific enquiry for each of the hypothesis statements and research questions outlined in Chapter 4. Chapter 6 reports the results of Study 1 and presents the psychometric properties for the new cyberbullying instrument and the battery of established measures utilised in this investigation. This chapter presents results on group means, establishes the reliability of each of the subscales for each measure, and verifies the construct validity and factorial invariance for gender, grade and school context.

Chapter 7 presents the results for Study 2, which examines important group differences (gender, grade and school context) and elucidates psychosocial and mental health correlates associated with student engagement in cyber and traditional bullying behaviours. This chapter also explores the potential overlap between traditional and cyberbullying engagement. Chapter 8 presents the key stakeholders' (i.e., students, their parents, educators and school counsellors) cyberbullying perspectives, shared through focus groups and telephone interviews. This study was conducted in order to extend beyond students' involvement, in capturing an holistic perspective on cyberbullying. The following seven themes are captured and framed through an ecological lens: what is cyberbullying, how is it different from traditional bullying; identifying behavioural forms of cyberbullying; emotional effects generated by cyberbullying experiences, motivational drivers for participation in bullying; lack of disclosure of victimisation, and recommendations.

Chapter 9 synthesises and triangulates the quantitative and qualitative findings for the three interrelated studies. This chapter discusses the key findings in relation to previous research and theoretical frameworks by: (a) examining the psychometric

properties of a newly developed instrument of cyberbullying and validating related psychosocial measures; (b) investigating gender, grade and school context differences in both traditional forms of bullying and cyberbullying; (c) examining the psychosocial correlates of student involvement in cyber and traditional bullying behaviours; and (d) providing suggestions from the stakeholders that experience it and/or intervene for future whole-school traditional and cyberbullying prevention and intervention programs. This will help to instil a positive school ethos and peer relations to reduce traditional forms of bullying and cyberbullying engagement. Chapter 9 considers the strengths and limitations of the present investigation and outlines the implications of these findings for future research and practice.

Finally, Chapter 10 concludes the thesis by presenting a summary of the key findings and how these results contribute to the body of knowledge of traditional and cyberbullying for future theory, research and practice. This chapter addresses some of the prominent research gaps within the existing literature to develop a more complex and in-depth understanding of bullying phenomena.

CHAPTER 2: AN OVERVIEW OF TRADITIONAL AND CYBERBULLYING RESEARCH: HOW SCHOOLYARD BULLYING BEHAVIOUR HAS ADAPTED IN THE DIGITAL AGE

Bullying creates memories that often last a lifetime.
(Kowalski, Limber, & Agatson, 2008, p. 1).

Introduction

Documentation of schoolyard behaviour shows the existence of bullying long before it became a focus for empirical researchers, psychologists and educators in the 1970s (Rigby, 2002). Bullying is a pervasive form of aggressive behaviour, while the research focus has been on occurrences within the workplace, in family contexts, and in schools—during and after school hours (Kowalski, Giumetti, Schroeder, & Lattanner, 2014; Mishna, 2012; Rigby, 2002). With the recent phenomenon of widespread use and advancement of new technologies, school students have expanded traditional bullying behaviours into the virtual environment. This relatively new type of bullying is referred to as cyberbullying. These behaviours can take place over multiple e-platforms, such as email, social networking websites (e.g., Facebook), Skype, blogging sites, podcasting, massively multiplayer online role playing games (MMORPGs), applications (apps) and instant messenger services (IMs; Aricak et al., 2008; Smith et al., 2008; Whitaker & Bushman, 2009).

Cyberbullying researchers worldwide recognise that these behaviours are an invasive and persistent school issue. Cyberbullying causes potentially detrimental psychosocial and mental health effects that could, in comparison to traditional bullying (Bonanno & Hymel, 2013; Campbell, 2005; Dooley, Shaw, & Cross, 2012; Hemphill, Tollit, Kotevski, & Heerde, 2015; Hinduja & Patchin, 2007; Mason, 2008) lead to harmful long-term consequences for many students, families, schools and for the overall community. Negative effects of involvement in any form of bullying behaviour can place children at risk of experiencing anxiety, depression, decreased school performance, lack of school belonging, psychosomatic symptoms, school absenteeism, low self-esteem, eating disorders, substance abuse, anti-social behaviour, early school leaving, suicidal ideation, and suicide (Hawker & Boulton, 2000; Fekkes, Pijpers, & Verloove-Vanhorick, 2004; Kaltiala-Heino, Rimpelä, Rantanen, & Rimpelä, 2000; Kowalski et al., 2014; Kowalski & Limber, 2013; Menesini, Modena, & Tani, 2009; Nansel et al., 2001).

Research on cyberbullying is still in its infancy, and it has been impeded by poor theoretical conceptualisation, by a lack of clear definition, inadequate instrumentation to assess cyberbullying, the limited use of qualitative or mixed method approaches to understand cyberbullying, and by atheoretical research practices (Card, 2013; Card & Hodges, 2008; Mishna & Van Wert, 2013; Tokunaga, 2010). The objectives of this chapter include: (a) to investigate the impact of information communication technologies (ICTs) on adolescent behaviour; (b) to review pressing definitional issues relating to traditional and cyberbullying core elements, in order to distinguish between the two types of bullying; (c) to outline the research literature that examines prevalence and group differences in traditional and cyberbullying behaviours; and (d) to review the relationship between traditional bullying and cyberbullying behaviours and their psychosocial

correlates. In summary, this chapter evaluates the inconsistencies and gaps within the research field.

Investigating the Impact of ICTs on Adolescent Behaviour

As ICTs continue to develop and advance, they have revolutionised the way in which people socially interact and communicate with each other. Each new ICT made available to the public changes the nature and social framework for interaction and contact. However, it is debatable whether such technological advancements are beneficial to an individual's social relationships and wellbeing (Kraut et al., 1998; Spitzberg & Hoobler, 2002). Technology has become an integral part of an adolescent's social lifestyle and identity formation. Contemporary youth, known as "digital natives", have been immersed in a digital culture, which has been amplified throughout their period of child development. This has enabled adolescents to refine their technological navigation skills and expertise. However, questions often arise about the amount of information so easily accessed, posted, sent, forwarded and received, which may exceed the limits of what adolescents can cognitively process and manage (Crick & Dodge, 1994; Kaukiainen et al., 1999; Kraut et al., 1998; Prensky, 2001).

Adolescents today are faced with new, unprecedented challenges and with cyber dangers that did not exist for previous generations. Adults, known as "digital immigrants", also experience new challenges, as they may not have developed the advanced digital skills required to monitor and protect their children effectively in the virtual world (Bittman, Rutherford, Brown, & Unsworth, 2011; Kraut et al., 1998; Williams & Guerra, 2007). Further, due to the generational gap, parents or caregivers are often not equipped to deal with the darker side of technology, where online users have the potential to harm others behind an anonymous identity or username (Beran & Li,

2005; Cassidy, Faucher, & Jackson, 2013; Campbell, 2005; Kraut et al., 1998; Prensky, 2001).

In the last 15 years, adolescents in particular have embraced the online movement, as many students now own a personal smartphone. Further, as a result of Federal Government incentive strategies from 2008 to June 2014, most students have access to either a computer or a laptop at home (Lodge, 2014). In 2014-2015, the Australian Bureau of Statistics (ABS) reported that 86 percent of Australian households had access to the Internet, with six devices on average in every Australian household (ABS, 2016). In 2008-2009, the Australian Bureau of Statistics reported that 2.2 million children aged from 5 to 14 had access to the internet. Approximately 79 percent of 5 to 14 year olds used the internet at home, and 31 percent of children had access to their own mobile phone, of which four percent used their mobile phone to access the internet (ABS, 2009). Furthermore, one in ten children had access to a computer inside their own bedroom, with adolescent boys preferring to use the internet during their leisure time (e.g., playing interactive role-playing games, watching Youtube videos). Conversely, adolescent girls preferred to use the internet for social networking activites such as Facebook and Twitter (ABS, 2011). Since technology increases our accessibility to interpersonal contact and exposure of our private lives, our vulnerability to privacy invasion and cyber victimisation also has increased (Spitzberg & Hoobler, 2002).

Bullying Definitions: The Distinction between Traditional and Cyberbullying

Although accumulated research efforts have made significant progress in the area of traditional bullying research, fundamental building blocks of operationalised definitions have been left underdeveloped in investigations of cyberbullying behaviour (Griezel et al., 2012). Thus far, cyberbullying research has suffered from theoretical and

definitional problems, which have caused inconsistent and varied interpretations of prevalence rates, making cross-study comparisons difficult and undermining the validity of the research (Parada, 2006; Vaillancourt et al., 2008; Walker et al., 2013). As with any relatively new research area, issues arise in how to define, operationalise and identify behaviours accurately (Kowalski et al., 2014; Walker et al., 2013). However, it is imperative that definitional consensus is found within bullying research, to ensure clear direction is provided, as these definitions are utilised when developing new instruments to measure the cyberbullying construct. Definitions not only guide measurement development but also provide the criteria to determine what is deemed cyberbullying behaviour, to measure the prevalence rates and psychosocial correlates of involvement for all target perspectives (i.e., victims, bullies and bystanders; Arora, 1996; Bauman, 2013; Menesini & Nocentini, 2009; Vaillancourt et al., 2008).

Arora (1996) illustrates how definitions of bullying translate differently across various groups and settings (e.g., countries and languages, scholars' interpretations, and within popular media, legal settings and school environments). Specifically, there appears to be no clear consensus on how to define the term "bullying". For example, different cultural groups attach different meanings to important terms, which subsequently are translated differently across other countries and languages. This raises questions: for instance, do students from different cultures within Australia think of bullying differently (Nocentini, Calmaestra, Schultze-Krumbholz, Scheithauer, Ortega, & Menesini, 2010; Vaillancourt et al., 2008)? When definitions and terms are used inconsistently in research, the precision of the definition and the key elements that contribute to the core components are diluted. Therefore, the generalisability of research findings needs to be treated with caution, as varying interpretations of terms impact on accuracy when comparing findings across school contexts, gender and age groups (Bauman, 2013). It is therefore critical for

future research on cyberbullying to come to a consensus on a definition. Cyberbullying measurement and methodological shortcomings will be explained in further depth in Chapter 3.

The evidence suggests that there is no consensus for a universal definition of bullying. Yet a broad definition of bullying assists in matching teachers' and students' perspectives on what bullying actually is (Parada, 2006). Such a definition can be useful, therefore, for researchers to gain a more thorough knowledge of how students perceive bullying, and to understand real student issues. However, researcher-developed definitions, while important, fail to canvass the broader scope of what bullying means to students. Gaining student insight therefore a crucial step in closing the gap on current definitional issues and coming to understand the multidimensionality of the bullying construct (Mishna, Saini, & Solomon, 2009; Olweus, 1993; Parada, 2006).

Olweus is considered the pioneering researcher who commenced enquiry into schoolyard bullying behaviours, and most definitions have been adapted from his original works (Olweus, 1978, 1993). Bullying has been defined as the misuse of power by the aggressor towards the victim. The aggressor is perceived as physically, socially, or psychologically more powerful than their victim(s) (Orpinas & Horne, 2006a). Olweus (1993) explains how this power imbalance is exploited by the aggressor to control, inflict pain on and disadvantage their victims in repetitious attacks over a period of time, which makes up the core of what bullying is (Olweus, 1993; Rigby, 2002).

Bullying can happen in many ways: these include relational aggression, physical, verbal, and, more recently, cyber bullying. The latter is intended to provoke fear, distress or hurt in victims across any ICTs and e-platforms (Baldry & Farrington, 2000; Mason, 2008; Olweus, 1993; Smith et al., 2008). Cyberbullying has been acknowledged as a serious act of violence that is not always visible to others. For example,

emotional/psychological anguish can be equally if not more harmful than physical attacks of violence (Cross et al., 2009). Furthermore, researchers and practitioners need to focus on the specific motivational drivers that trigger the most frequent and severe bullying incidents: these include ethnicity, gender, weight, sexuality and disability (Greene, 2006; Mishna, 2012).

Notwithstanding the historical lack of consensus on bullying definitions, in recent times agreement has been reached on the key elements of traditional bullying forms. These include: (a) the intention to cause hurt or distress to a group or individual; (b) a power imbalance between the aggressor and their victims, which occurs where the person targeted is exposed to aggressive behaviours and is unable to defend themself; and (c) bullying incidents take place as repetitive acts of harm (Olweus, 1993; Olweus, 2013; Thomas, Connor, & Scott, 2015). However, there is still heated debate amongst experts, and it is unclear how these definitions apply to cyberbullying behaviours (Arora, 1996; Dooley et al., 2009; Li, Smith, & Cross, 2012; Nocentini et al., 2010). These three core components of traditional bullying, discussed below in more detail, raise questions as to whether these criteria can be applied to a cyberbullying definition.

Intention to cause harm. As cyberbullying incidents often occur anonymously, it can be difficult for the victim to understand the actual intent behind the behaviour. Furthermore, there is still contention within the literature as to whether an intentional act is actually a necessary criterion to deem an incident cyberbullying. For example, Nocentini et al. (2010) argue that it does not matter so much whether the behaviour was intentional or not, as whether the victim was hurt and distressed as a consequence of the behaviour. Furthermore, intent may be difficult to interpret and determine in online environments, in the absence of face-to-face communication. Without the presence of

emotional cues, body language or vocal tones, the student's ability to decide whether the acts are actually malicious or unintentional may be hindered (Bauman, 2013).

Power imbalance. One of the key differences between traditional and cyberbullying behaviours is the perceived power imbalance between the victim and the bully. For traditional bullying behaviours, a large physical stature, aggressive tone of voice and high social status within the schoolyard provide the student with the edge to assert power dominance towards their victim(s) (Olweus, 1993). However, within cyberspace, these features that assert power and authority over another individual are stripped away, due to the anonymity and absents of body language and facial cues during a cyberbullying episode. Computer competency and excellent navigation skills alone may be the key features of the power imbalance between the bully and victims (Hinduja & Patchin, 2007). However, some scholars argue that cyberbullying may level out the playing field, as physical features previously in play, such as height and body mass, do not provide virtual users physical power. Further, cyberbullying victims can now retaliate against the perpetrators online (Walker et al., 2013).

Furthermore, Wolak, Mitchell, and Finkelhor (2007) have questioned the definition of power imbalance for cyberbullying incidents, as victims now have the ability to stop contact and social interactions with the bully, through online functions such as block and delete. This may have an empowering effect on the victim, as they have the ability to terminate the online relationship. However, victims do not have the ability to control cyberbullying behaviours in public domains, as bystanders can re-post or add further aggressive comments even after the victim has terminated the relationship with their perpetrator(s) (Nocentini et al., 2010). Nocentini et al. (2010) and Card (2013) recommend that two new criteria need to be added, further refining cyberbullying's definition to include anonymity and publicity. The anonymous nature of cyberbullying

incidents and whether they occur publicly or privately, can have different psychosocial consequences on the victim.

Research suggests both public and anonymous cyberbullying incidents have more hurtful and serious psychosocial effects in comparison to traditional bullying incidents, such as emotional stress, public humiliation and depression. This is because cyberbullying events can circulate to larger audiences, leaving a digital footprint that in most cases is impossible to remove, with victims remaining vulnerable to further attacks, as the perpetrators are unidentifiable (Slonje & Smith, 2008; Wolak, Mitchell, & Finkelhor, 2007).

Repetition. Several researchers have challenged the idea that a bullying incident has to be repeated, as one-off hurtful events can still lead to a long-term detrimental effect on the student's psychological health and wellbeing (Kowalski, Limber & Agatston, 2008). In addition, the very nature of cyberbullying incidents in public settings means that they are almost immediately repetitive. For example, other users can read a single public post simultaneously; alternatively, a hurtful text message can be forwarded to many contacts in an instant. If a cyberbullying incident is not reported to the appropriate authorities, a single post may be accessible for many years after the incident takes place, leading to long-term abuse of the victim(s) due to the permanency associated with the post (Dooley et al., 2009; Wolak et al., 2007).

Different Forms of Bullying

As described above, three criteria make up the core components of bullying behaviour. With regard to the existing literature on forms of bullying, several types have been identified. Initially, Olweus (1993) identified bullying in a manner such that it

should be considered with regard to its direct (overt) and indirect (covert) forms. Traditional bullying scholars have agreed that bullying incidents can be classified into two distinctive categories of aggression. These include overt (direct and visible aggression toward others) or covert types of bullying (indirect forms that are hidden from view from other students and adults; Banks, 1999; Crick & Bigbee, 1998; Cross et al., 2009; Hemphill, Heerde, & Gomo, 2014).

Overt and covert bullying. Overt bullying tends to include harming others through physical or verbal acts of aggression—for example, hitting, threatening, verbal put-downs, breaking or taking belongings from another person (Crick, 1996; Olweus, 1993). Covert bullying behaviours usually occur in secret or are concealed; this involves purposeful acts of harm through social manipulation, by means such as spreading rumours, gossiping, sending abusive notes or excluding others. It is often difficult to pinpoint which person is doing the harm, given the lack of personal confrontation between the victim and the bully. Since these acts remain anonymous, the bully avoids both the counterattack from the victim and the social stigma attached to the perpetration of aggressive behaviour (Cross et al., 2009; Crick & Grotpeter, 1995, 1996).

Cross et al. (2009) suggest that covert bullying techniques are becoming more prevalent, due to the advent of communication technologies that are often conducted behind screens, under false usernames or identities. The categories of overt and covert bullying can be further broken down into four distinct subcategories: physical, verbal and relational aggression and cyberbullying (Cross et al., 2009; Grigg, 2010, 2012; Marsh, Parada, Craven, & Finger, 2004; Parada, 2006; Smith, Cowie, Olafsson, & Liefooghe, 2002; Smith et al., 2008; Vitaro, Brendgen, & Barker, 2006).

Physical bullying. This form of bullying includes any deliberate physical act of aggression with the potential to harm another: this can include punching, slapping,

kicking, fighting with weapons, and damaging another person's property. It can also include more minor types of behaviour, such as snapping a female's bra strap, throwing food at another, shooting rubber bands and pulling another's pants up to give them a "wedgie" (Shariff, 2008). Research investigating incidents of physical bullying has found that boys are more likely to both bully and be bullied in physical ways, compared to females (Griezel et al., 2012; Marsh et al., 2004; Parada, 2006; Scheithauer, Hayer, Petermann & Jugert, 2006).

Verbal bullying. This form of bullying includes the intentional use of words to hurt another person psychologically—for example, teasing, verbal taunts, put- downs, yelling and coercing. Some scholars theorise that as children get older, both their cognitive and their social skills advance, subsequently leading to a reduction in physical and verbal bullying strategies. This change is most likely attributable to overt aggression being deemed less socially acceptable and to a gradual developmental shift occurring with age to more sophisticated covert strategies, such as rumour spreading. Such behaviours are less likely to be identified and punished by authority figures (Kistner et al., 2010; Vitaro et al., 2006).

Relational aggression. This form of bullying, interchangeably known as social or relational aggression, is characterised by the emotional manipulation of peer relationships, and can include social exclusion, rumours and gossiping (Bjorkqvist, Lagerspetz & Kaukiainen, 1991; Orpinas & Horne, 2006a). Some scholars have found that males are more likely to participate in overt bullying behaviours (i.e., physical and verbal forms), while females are more likely to use covert bullying strategies, such as relational aggression, to inflict psychological harm in more hidden and manipulative ways (e.g., spreading rumours/lies for revenge). Such findings have received considerable attention from mass media, leading to the highly popularised view that relational

aggression is a “female” form of bullying (Bjorkquist, Lagerspetz, & Kaukiainen, 1992; Crick, 1997; Crick & Bigbee, 1998; Crick & Grotpeter, 1995).

Some researchers have speculated that such gender differences in bullying behaviours could possibly be due to: (a) biological factors, as females are inherently physically weaker than males and therefore more inclined to relying on covert types of aggression; (b) interpersonal networks, as females tend to have fewer but closer friends, divulging private and personal information with each other; and (c) a lack of tolerance for females rather than males engaging in physical aggression, as students are socialised to accept that this is not feminine behaviour and therefore it is uncommonly carried out by females (Card, Stucky, Sawalani, & Little, 2008; Kistner et al., 2010).

Furthermore, covert aggression is not possible without the social structure of close and dynamic friendships. Bjorkquist et al. (1992) found that females were more likely than males to develop closer friendships, in-group circles and best friend duos, increasing the possibility of using covert bullying tactics. Due to the closeness of the inner friendship circles formed, when female students lose their best friend they often experience more upset compared to males, as they value the support, the belonging and the ability to vent their problems with their companion. In Besag’s (2006) research, female students revealed they felt most threatened when a third party tried to break this close bond, and that this triggered anxiety and internal conflict.

However, when traditional bullying behaviours have been investigated in reference to the three forms of bullying (i.e., physical, verbal and relational aggression), findings on these gender differences are mixed in regard to relational aggression: this indicates that gender distinctions are complex and not so clearly defined as previously thought (Odgers & Moretti, 2002). Some research studies have found little to no significant gender differences (e.g., Bjorkqvist et al., 1991; Cross et al., 2009; Marsh et

al., 2004). Kistner et al. (2010) recommends that it is important for researchers to consider developmental theory and trends when measuring overt and covert bullying behaviours, as aggressive behaviours fluctuate over time.

Kistner et al.'s (2010) longitudinal study investigated gender and grade differences in bullying engagement with 500 students from grades 3 to 5. The findings show boys were perceived by their peers to be significantly more involved in relational aggressive behaviours in grade 3 in comparison to girls, and no gender differences were found in grade 4. However, in grade 5, girls were reported as utilising relational aggressive behaviours more frequently than boys. Boys were also more likely than girls to engage in overt aggressive behaviours across all years of schooling. Therefore, Kistner et al. (2010) provides evidence to suggest that relational aggression is not female specific, as previously reported, as both girls and boys are engaged in relational aggression, in different age groups.

Cyberbullying. The newest form of aggression, known as cyberbullying, has been defined as an individual or group intentionally using communication technologies as a medium to repeatedly send, upload, post, or text malicious and hurtful content to another individual or group on e-platforms (Mason, 2008; Smith et al., 2008). This can include derogatory, inflammatory, intimidating, humiliating, threating or destructive messages or pictures sent through public or private online environments, all of which signify a power imbalance between the aggressor and their victim (Grigg, 2012; Smith et al., 2008; Willard, 2006). Cyberbullying may be more alluring for potential users, in comparison to traditional forms, as it can occur anonymously, transpires quickly and can be read or seen by broader audiences instantaneously (Campbell, 2005; Kowalski & Limber, 2007; Vandebosch & Van Cleemput, 2009).

Those who cyberbully may not be aware of the extent of hurt they have caused their victims, because they do not see the emotional responses and reactions of their targets. Without this direct feedback, perpetrators are less likely to feel guilt or remorse for their actions, are less inclined to cease their attacks online, and can cause more harm behind the screen (Cross et al., 2009; Li et al., 2012; Mason, 2008). Cyberbullying behaviours are considered by some scholars as more insidious as they can occur at any time (24/7), leaving students no safe haven to escape from such incidents. Additionally, these incidents often have flow-on effects that feed back to the schoolyard the next day (Aricak et al., 2008; Bhat, 2008; Li et al., 2012; Mason, 2008; Nocentini et al., 2010). Although cyber and traditional bullying share some similar characteristics (e.g., they are intentional harmful acts), they are also distinctive in important ways. For example, traditional bullying is most likely to occur when travelling to and from school, or during school hours, whereas cyberbullying can occur any time, day or night (Nocentini et al., 2010; Menesini et al., 2012).

Within the cyberbullying literature, several scholars have theorised that this new form of bullying behaviour can be considered as an extension of traditional bullying behaviours, but embracing ICTs. For example, traditional bullying incidents that occur at school can continue to persist online, outside of school hours (Beran & Li, 2005; Cross et al., 2012; Li, 2007b; Hemphill et al., 2012; Perren, Dooley, Shaw, & Cross, 2010; Waasdorp & Bradshaw, 2015). Lending further support for these findings was Kowalski, Morgan, and Limber's (2012) study, which showed that adolescents being bullied face-to-face are more likely to also experience cyber victimization, and that traditional perpetrators are more likely to engage in cyberbullying behaviours. Further to this, Kowalski et al. (2012) suggest that it is more likely for youth to experience the transition from traditional forms of bullying to cyberbullying, rather than vice versa.

Summary

In the digital age, a relatively new form of bullying has emerged, known as cyberbullying, which differs from traditional bullying in that the aggressive behaviour can now occur at any time and reach broader audiences, and that perpetrators are less likely to be held accountable for their actions, due to anonymity (Campbell, 2005; Li et al., 2012). Researchers have explored the various ways in which the terms "traditional bullying" and "cyberbullying" have been defined across different groups and contexts. As definitions used by researchers, popular media, the legal sector, schools and internationally can vary greatly, this can ultimately impact research findings. For instance, students may have different understandings of the term bullying to that of the research community, educators, and parents, and thus the findings need to be interpreted with caution. There is currently uncertainty in the research, such that key stakeholder perspectives need to be further investigated, to operationalise cyberbullying definitions accurately (Arora, 1996; Parada, 2006).

Due to the rapid rate that technology advances, the ways in which adolescents communicate and socially interact with each other are changing. This presents researchers with new challenges in keeping pace with the development of new technologies and e-platforms. Furthermore, researchers need to understand and address this shifting, new and complex phenomenon, with the goal of identifying the specific behaviours that students are engaging in across virtual environments, while verifying the criteria that make up the cyberbullying construct. As previously noted, inconsistent definitions have brought confusion to the field, undermining the reliability and validity of research and the effectiveness of interventions. Several researchers suggest that cyberbullying is an extension of traditional bullying forms, since face-to-face bullying behaviour continues to persist and to be perpetuated in online environments, and vice versa (Beran & Li, 2005;

Kowalski & Limber, 2013; Kowalski et al., 2012; Li, 2007b; Perren et al., 2010; Smith et al., 2008; Waasdorp & Bradshaw, 2015).

Prevalence and Group Differences in Traditional Bullying and Cyberbullying

Prevalence rates and group differences have been found to vary drastically across bullying studies, depending on whether a definition of cyberbullying has been provided, and also on the validity and reliability of measures utilised (Ybarra, 2013; Ybarra et al., 2012). It is important to note that the age at which you enter a particular grade at school may vary across countries, and also between states of Australia. This issue may also contribute to the difficulties of making cross-study comparisons for prevalence rates and group differences (Ybarra, 2013). This information is crucial in creating effective cyberbullying prevention programs for schools and practitioners, to address the specific behaviours that arise at different grades and ages (Lodge & Frydenberg, 2007).

Prevalence of Traditional Bullying and Cyberbullying

Australian prevalence rates. In their investigation of the prevalence rates of both traditional and cyberbullying behaviours in research published internationally from 1990 to 2009, Rigby and Smith (2011) questioned whether bullying behaviours are actually on the rise. However, these types of comparisons are difficult to make, largely due to methodological differences in definition. Some studies specifically ask questions about the different forms of bullying (e.g., physical, verbal, relational and cyber) while other studies only measured globalised responses. Furthermore, prevalence rates can vary, due to the age and grade of the participants under investigation, the demographics of the sample, the referential timeframe utilised (e.g., previous school term, last month or this

schooling year), differences in frequency response categories (e.g., daily, weekly, monthly), and whether the data were collected anonymously.

In Rigby and Smith's (2011) study, comparisons were drawn between two cross-sectional Australia-wide bullying data sets. Rigby's (1998) as cited in Rigby and Smith (2011) study investigated traditional bullying prevalence rates with a sample of 38,000 students, aged from 8 to 17 years, in comparison with the Australian Covert Bullying Prevalence Study (ACBPS). The more recent ACBPS measured traditional bullying behaviours with a data subset of 7,418 students aged from 9 to 14 years (Cross et al., 2009). Prevalence data were only compared for students reporting traditional bullying victimisation in the survey category "about once a week". The findings revealed an overall reduction of face-to-face bullying participation. Approximately 23 percent of students in Rigby's study (as cited in Rigby & Smith, 2011) study reported being bullied weekly, while Cross et al. (2009) found only 16 percent of students reported being bullied weekly. The Australian traditional bullying data sets show a significant reduction of traditional bullying prevalence rates from the last decade. However, future longitudinal studies are needed before drawing any definitive conclusions (Rigby & Smith, 2011). In contrast, Rigby and Smith's (2011) cyberbullying prevalence comparisons indicate that as cyber technology becomes more cost effective, this increases youth accessibility, which in turn increases cyberbullying prevalence.

Cross et al. (2009) conducted a mixed-methods Australia-wide covert bullying prevalence study, which included three separate studies with a total of 20,832 primary and secondary school students and staff, spanning across eight states and territories. The schools were selected randomly, and included a diverse selection of 106 state, Catholic and independent schools. This government-funded project considered both overt and covert bullying behaviours. However, there was a strong focus on covert behaviours,

which were defined as being bullied in hidden ways that cannot be easily observed by others. This definition extends to social, relational aggression and cyberbullying forms (Cross et al., 2009). Findings from this study indicated that bullying is a significant and prominent issue that needs to be addressed across Australia. Results found that grades 5 and 8 students reported the highest levels of being bullied and bullying others. Furthermore, grade 9 students also reported high levels of bullying others, but lower levels of victimisation. Cyberbullying and cyber victimisation increased consistently with age. Additionally, when government school students were compared to those in non-government schools, the latter were more likely to covertly bully others, including cyberbullying. Overall, the Cross et al. (2009) study estimated, bullying was a common experience, with one in four Australian students being affected by some type of covert and/or overt bullying behaviour. Additionally, they estimated that seven to 10 percent of students reported cyber victimisation and that one in six Australian students experienced covert victimisation every few weeks.

In one of the first longitudinal studies undertaken, Hemphill et al. (2012) measured the traditional and cyberbullying engagement of Australian and American students. This study utilised a two-staged cluster approach design, where students were randomly selected from grades 5, 7 and 9. The results indicated that 15 percent of students perpetrated cyberbullying and 21 percent of students bullied others using traditional methods of engagement. Additionally, seven percent of students had participated in both traditional and cyberbullying behaviours across a 12-month period. A further logistic regression analysis revealed that one of the risk factors for students being involved in cyberbullying and traditional bullying behaviours was involvement in social or relational aggression.

International prevalence rates. Slonje and Smith (2008) administered a cyberbullying survey to 360 adolescents, aged between 12-20 years, for the purpose of understanding the nature and extent of cyberbullying in Swedish high schools. In agreement with Smith et al. (2008), prevalence rates of cyberbullying behaviours were considered higher outside of school hours. One suggested reason for this finding relates to the rules, restrictions and school policies in place to actively stop the inappropriate use of technology during school hours. Nevertheless, some students argue that cyberbullying may be relatively easier for teaching staff to detect, due to the digital footprints left behind. These footprints provide a traceable record that can be utilised as documented evidence by authority figures when determining appropriate disciplinary action, if any.

Furthermore, Wolak, Mitchell and Finkelhor (2007) found that youth harassed by peers were five times more likely to use the internet as a means to harass an individual they were angry with than non-harassed youth. Overall, their findings indicated that incidents in which students were harassed online by known peers, were more likely to fit the definition of cyberbullying. One explanation for this was that in-group harassment within this group often occurred repeatedly, unlike online-only contacts, which in general only occurred as a one-off offence. Wolak et al. (2007) have highlighted that not all aggressive online actions can be classified as cyberbullying. Researchers therefore should be careful in making clear and appropriate distinctions between online harassment and cyberbullying (Bauman, Underwood et al., 2013).

Another study, conducted by Li (2007b), surveyed 177 grade 7 students from middle to lower socio-economic status in two urban city schools in Canada. The purpose of the study was to uncover the nature of cyberbullying and the extent to which adolescents were involved in it. The study found that over half of the students had been traditionally bullied during school hours, and almost one in three students had bullied

others in traditional ways. Over half of the surveyed students reported that they knew someone who had experienced cyberbullying; one quarter of students reported being a victim of cyberbullying, and one out of six students reported perpetration of cyberbullying. The majority of students targeted by cyberbullies did not know who bullied them: 32 percent reported being bullied by school peers, 11 percent being bullied from people outside of school, and 16 percent were bullied by multiple sources.

In a more recent cross-sectional national study, Tsitsika and colleagues (2015) investigated cyberbullying prevalence rates with a sample of 10,930 14 to 17 year olds across six European countries. Their study found that more than one in five adolescents had experienced some form of cyberbullying victimisation and that frequent online use was considered a risk factor for cyber victimisation. The prevalence rate has escalated substantially since the European EU Kids Online survey, which involved a stratified random sample of 25,142 students across 25 countries. The EU Kids Online Network found that six percent of these 9 to 16 year olds received mean messages online and three percent sent nasty messages to others (Livingstone, Haddon, Görzig, & Ólafsson, 2011).

The overlap between traditional and cyberbullying prevalence. Li's (2007b) study found almost 30 percent of face-to-face bullies were also cyberbullies, and one in three bully-victims were also cyberbully victims. A significant correlation was found between the traditional bully and cyberbullying, as well as the traditional victim and cyber victims. Therefore, students who may be involved in the bullying cycle at school may also have a higher chance of harassing others or of being victimised through communication technology, compared to students not involved in traditional school bullying. Preliminary research by Li (2007b) appears to support the link between traditional and cyber bullying, indicating that the cycle of bullying continues from the playground to the virtual environment. Hence, Li (2007b) and Beran and Li (2005)

recommend that cyberbullying should not be examined as a separate entity but rather as a connected bullying issue that has developed out of traditional bullying types and adopted technology.

More recently, Waasdorp and Bradshaw (2015) explored the overlap between traditional bullying and cyberbullying engagement with a sample of 28,104 adolescent students from 58 United States secondary schools, in grades 9 through to 12. Overall the results showed that 23 percent (n = 6,379 students) reported being a victim of any form of bullying (i.e., physical, verbal, relational or cyber). With students reporting at least one form of bullying, 40 percent of them experienced victimisation in one of the four forms: 27.7 percent reported experiencing two forms, 19.5 percent experienced three forms, and 12.9 percent reported experiencing all four forms of bullying. Although less than five percent of students experienced cyberbullying victimisation only, when exploring the overlap between cyber and traditional forms, 50.3 percent of students experienced all forms of bullying victimisation. These findings suggest that if students experience cyberbullying victimisation, this is more likely to coincide with traditional forms of bullying, with the largest overlap being in verbal and relational forms.

Hemphill et al.'s (2015) longitudinal two stage cluster design study with a sample of 673 Victorian Australian students from grades 7 and 9 was part of the larger International Youth Development Study (IYDS). This study found only a relatively small sample of students, 12 percent, had experienced both cyber and traditional bullying victimisation. In general, this result suggests that the majority of students experienced only one type of victimisation and not both. This recent finding is in direct contrast to the recent overlap between the two bullying types in the literature (Beran & Li, 2005; Li, 2007b, 2007b; Perren, Dooley, Shaw, & Cross, 2010; Cross et al., 2012; Hemphill et al., 2012; Waasdorp & Bradshaw, 2015). The overlap between traditional and cyberbullying

may depend on the specific form of cyberbullying engagement and on how well it can transfer from traditional settings to online environments, and vice versa (Kowalski et al., 2014; Hemphill et al., 2015).

Gender and Grade/Age Differences in Traditional Bullying and Cyberbullying

To date, few studies have explored whether there are differences by gender or grade/age associated with all cyberbullying roles (victims, bullies and bystanders) (Barlett & Coyne, 2014). It is important for researchers, educators and psychologists to be able to identify gender and age/grade differences in children's engagement in specific forms of bullying behaviour. From a developmental perspective, researchers investigating traditional bullying trends have found that children tend to be the most physically aggressive in their younger years, as they are yet to develop the language skills to use verbal and social relational aggression (Coyne, Nelson, & Underwood, 2010). As children mature, physical bullying is said to reduce in frequency, while covert types of aggression (e.g., verbal and relational bullying) become more prevalent in later childhood and early adolescence (Finkelhor, Ormrod, Tuner, & Hamby, 2005; Nansel et al., 2001).

Further supporting evidence for this trend was revealed in Scheithauer et al. (2006) research investigating traditional bullying age trends (physical, verbal and social relational aggression) with 2,086 German students, from grades 5 to 10. This study revealed that most forms of traditional bullying behaviour steadily increased from grade 5, peaking in grade 9 and declining in grade 10. Furthermore, younger students were more likely to report victimisation from their peers with possible reasons contributing to this dynamic being that they had not yet developed the confidence and self-assertion skills to discourage perpetrators. Specifically, reports of physical bullying declined in grade 8, while verbal and relational aggression peaked in grade 9.

A study conducted in 78 Colorado schools by Willliams and Guerra (2007) with students from grades 5, 8, and 11, investigated prevalence and predictive factors of cyberbullying compared with face-to-face physical and verbal forms. Results indicated that verbal bullying was the most prevalent form, followed by physical and then cyberbullying forms. Overall, physical and cyberbullying peaked in grade 8, and declined by grade 11. While verbal bullying also peaked in grade 8, it remained high during grade 11. Males were more likely to report physical bullying incidents than females, and no significant gender differences were found for verbal or cyber forms.

Hemphill et al's (2012) longitudinal study investigated both traditional and cyberbullying behaviours with a sample of students from United States and Australia in grades 5, 7 and 9. The findings showed that students in grade 7 involved in cyberbullying perpetration were approximately two and a half times more likely to participate in traditional bullying behaviour. In addition, students who experienced face-to-face victimisation, relational aggression, poor family relations and conflict were one and a half times more likely to experience cyber victimisation; this reveals a strong overlap in bullying behaviours.

Although the evidence for both traditional forms of bullying and cyberbullying engagement is mixed, for gender differences, there is a relatively consistent trend suggesting that males would be more likely than females to participate in or experience most forms of traditional bullying (Due et al., 2005; Henington, Hughes, Cavell, & Thompson, 1999; Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996; Sentse, Kretschmer, & Salmivalli, 2015; Tomada & Schneider, 1997). However, Kaukiainen et al. (1999) argue that the gender differences in bullying (most notably social or relational aggression) may be moderated by age. They suggest relational aggression forms of bullying become more distinct when students develop greater levels of social

intelligence during adolescence. Card and colleagues (2008) conducted a meta-anaytical review of 148 studies across 73,498 children, investigating the gender differences for direct and indirect forms of aggression. This study also further explored the relationship between the two forms. The findings showed that boys in comparison to girls engaged in more direct forms of aggression. However, negligible gender differences were found for engagement in indirect aggression. This result raises questions as to why many other research findings have reported that indirect aggression behaviours are significantly more prevalent in girls. Furthermore, a high intercorrelation ($r = .76$) was found between indirect and direct forms of aggression, suggesting a potential overlap between these two forms, as they are strongly related.

Nevertheless, it is interesting to note that it is at the secondary school level that research seems most contentious with regard to gender differences in relational aggression. For example, Björkqvist, Lagerspetz, and Kaukiainen (1992) found that adolescent females (aged 11 and 15) tended to use more covert forms of bullying (e.g., manipulating withdrawal of friendship, and rumour spreading) in comparison to males. Similarly, Crick, Bigbee, and Howes (1996) revealed that girls and boys perceived it to be more normative for males to participate in physical aggression and for females to engage in covert aggression that damaged or manipulated relationships with other peers. In contrast, Marsh and colleagues (2004), and also Griezel et al. (2012) suggested males (ranging from 12-17 years) are more likely to be involved in relational bullying, associated with a gradual increase with age, whereas girls' relational bullying declines over time.

Beran and Li (2005) examined the nature and extent of cyberbullying amongst adolescent students attending Canadian junior high schools. A total of 432 students were drawn from a pool of nine high schools, with students between grades 7 and 9. Two thirds

of the students surveyed reported hearing about a cyberbullying incident, 23 percent of students had been cyber harassed several times, 35 percent experienced being cyberbullied once or twice, and 42 percent never experienced being cyberbullied. In addition, about a quarter of the sample indicated using technology to harm others intentionally. No significant gender or grade differences were found in this study, which suggests that both female and male students in lower and higher grades experience comparable rates of cyber victimisation. Furthermore, Smith et al. (2008) conducted focus group sessions with students in grades 7 to 10, and found that participation in cyberbullying appeared to be less frequent compared to traditional bullying involvement. Interestingly, focus group students believed that more incidents of cyberbullying occurred in real life than were reported by surveyed students.

Moreover, a recent meta-analysis conducted by Barlett and Coyne (2014) to investigate gender differences in cyberbullying considered whether these sex differences were moderated by age. Literature review searches uncovered 109 research articles that were included in analysis, producing 122 overall effect sizes. The meta-analysis results revealed that males overall in comparison to females were more likely to perpetrate cyberbullying behaviours; however, these results were moderated by age. Gender trends showed that females were more likely to report a cyberbullying incident in early adolescence and males were more likely to engage in cyberbullying perpetration in later adolescence. These findings contribute to our understanding of the group differences in cyberbullying engagement, as females are more likely to engage in cyberbullying behaviours at a younger age, while males were more likely to participate in middle adolescence (Barlett & Coyne, 2014).

A recent cross-lagged longitudinal traditional bullying study conducted by Sentse et al. (2015) investigated the bidirectional associations between peer acceptance, peer

rejection and social status. This study predicted victimisation and bullying behaviours across two different schooling cohorts for grades 3 to 6 (primary school) and grades 7 to 9 (secondary school). The results of this study were part of an extended KiVa (i.e., an acronym for the Finnish expression *Kiusaamista Vastaan*, meaning "against bullying") intervention program conducted in Finland. Boys were found to be at higher risk than girls both for engaging in and being bullied. The findings indicated that for both genders, peer rejection was a strong predictor of engagement in bullying and victimisation. Higher levels of peer acceptance were a significant protective factor for reducing involvement in bullying behaviour (Sentse et al., 2015).

Kowalski and Limber (2007) investigated growing trends and prevalence rates of cyberbullying, with a total of 3,767 United States students in grades 6, 7 and 8. This study used the Olweus Bully/Victim questionnaire, but also included an additional 23 new cyberbullying items for the study. The results indicated that there were more girls than boys involved in cyberbullying methods. This finding is somewhat consistent with the traditional bullying literature, in which adolescent girls are more likely to use covert and concealed methods of aggression than boys. In contrast to this finding, Aricak et al.'s (2008) results showed, with a sample of 269 Turkish adolescent students, that boys were more likely to engage in cyberbullying behaviours. On the other hand, the results from the Li (2006), Slonje and Smith (2008) and Brown, Demaray, and Secord (2014) studies, revealed no gender differences in cyberbullying victimisation.

Overall, the results reviewed above illustrate inconsistent gender, age and grade patterns, with findings largely remaining unclear. Further research is warranted to better determine the role that gender, age and grade play in all forms of bullying victimisation, engagement and bystander behaviours (Brown et al., 2014; Tokunaga, 2010). Regardless of whether findings suggest that specific genders, ages or grades are more frequently

involved in bullying incidents, it is imperative that researchers ensure that the measurement tools used perform tests of factorial invariance. This step is critical, to validate whether different groups interpret the bullying construct similarly (Card, 2013; Marsh, et al., 2004; Sentse et al., 2015).

Summary

Cyberbullying research has replicated the same methodological shortcomings seen in traditional bullying research (such as unclear conceptualisation of what constitutes cyberbullying), which has led to the use of inconsistent definitions and measures. The bullying research reviewed above shows how prevalence rates, and gender and age/grade differences are inconsistent; this makes it difficult to compare accurately across studies and countries, and ultimately undermines the validity, reliability and generalisability of research outcomes. Cyberbullying researchers need to move forward by critically evaluating previous methodological shortcomings and adopting systematic measurement strategies to improve the overall quality of research. Uncovering important gender and age/grade differences is the key to predicting and understanding traditional and cyberbullying psychosocial correlates, and to reducing all forms of bullying behaviour.

The Relationship between Traditional Bullying and Cyberbullying Behaviours and Psychosocial Correlates

Recently, traditional and cyberbullying researchers have focused on the psychosocial factors that are correlated with traditional and cyberbullying behaviours. Emerging research evidence suggests that involvement in cyberbullying behaviours is correlated to a considerable degree with engagement in traditional bullying behaviours (Campbell, Spears, Slee, Butler, & Kift, 2012; Hase, Goldberg, Smith, Stuck, & Campain,

2015; Hemphill et al., 2012; Olweus, 2012; Smith & Slonje, 2010). However, there is some debate as to the extent of negative effects of involvement, as a few researchers have found that traditional bullying incidents lead to more negative psychosocial consequences (e.g., Hase et al., 2015; Olweus, 2012), whereas other scholars suggest that the consequences associated with cyberbullying engagement could be more serious, due to its unique characteristics (Campbell et al., 2012; Kowalski, Limber, & Agatson, 2008; Perren et al., 2010; Smith & Slonje, 2010). Olweus (2012, p. 532) argues that if the majority of children experience both traditional and cyberbullying involvement, it could be difficult for researchers to uncover the "true effects" of cyberbullying. Furthermore, past results may lead to biased interpretations due to the inability to examine the cyberbullying construct independently of traditional bullying involvement, which leading to inflated psychosocial findings.

This review of traditional and cyberbullying literature highlights the complexity of potential psychosocial correlates for engagement in both traditional and/or cyberbullying behaviour. This included: (a) mental health correlates; (b) academic achievement; (c) the role of the family; (d) school belongingness and contextual factors; and (e) self-concept and its integral role in bullying engagement.

Mental Health Correlates

Within the traditional bullying literature, it has been well substantiated that bullying behaviours are associated with negative short-term and long-term psychosocial consequences for victims (Hawker & Boulton, 2000; Kochenderfer & Ladd, 1996; Rigby, 2002, 2005; Roberts & Morotti, 2000; Smokowski & Kopasz, 2005). More recently, an increasing number of cyberbullying findings have shown that cyber experiences, either as perpetrator or as victim, are associated with negative psychosocial consequences on

students' psychological health and wellbeing (Campbell et al., 2013; Campbell, Spears, Slee, Butler, & Kift, 2012; Kowalski et al., 2014; Kowalski & Limber, 2013; Patchin & Hinduja, 2012).

Campbell et al. (2012) report that although the long-term consequences of cyberbullying have only recently begun to be explored, it is speculated that such consequences could be more severe than traditional bullying (Campbell, 2005; Campbell et al., 2012; Cross et al., 2009; Lodge & Frydenberg, 2007; von Marées & Petermann, 2012). A review article by Rigby (2005) examined the consequences of traditional bullying engagement and found four negative health outcomes: (a) poor psychological wellbeing (e.g., anger, sadness, and low self-esteem); (b) poor psychosocial adjustment outcomes, (e.g., school avoidance, absenteeism, and loneliness); (c) psychosomatic complaints, (e.g., headaches, stomach-aches and general chronic illness related complaints); and (d) chronic psychological distress, (e.g., prolonged periods of depression, anxiety, suicidal ideation, and suicide).

In a landmark collaboration with the US National Institute of Child Health and the Human Development unit, a national cross-sectional youth survey was conducted in 1998 with 15,686 students from grades 6-10, throughout the United States (Nansel et al., 2001). The students completed the Health Behaviour of School Aged Children survey to investigate the psychosocial adjustment effects of involvement in traditional bullying behaviours. This study found that involvement in traditional bullying behaviours was strongly associated with poorer psychosocial adjustment. Face-to-face victims reported feeling lonely, and had difficulties in making friendships with fellow classmates. Thus, students who lacked social support seemed to be more susceptible to being victimised. This study further speculated that the students being repeatedly victimised may not have developed age-appropriate social skills to defend themselves. Moreover, these students

may have difficulties in forming new friendships as their peers do not want to be associated with them, due to fear of losing their own social status when befriending victimised students. In addition, student involvement in bullying perpetration was correlated with increased involvement in other risky behaviours, such as under-aged drinking and smoking. Bullies were more likely to experience poorer academic achievement outcomes but were confident in their ability to make new friends (Nansel et al., 2001).

Furthermore, a cyberbullying study conducted by Perren et al. (2010) investigated the depressive symptoms experienced by students involved in traditional and cyber bullying behaviours in Australia and Switzerland. The results suggested that cyber victims experienced depression symptoms at significantly higher levels than traditional bullying victims. This result was also supported by Wang, Nansel and Iannotti's (2011) research, which indicates that all forms of traditional and cyber bullying are strongly linked to depression and frequency of bullying involvement. However, cyber victims, in comparison to cyberbullies and bully-victims, reported higher levels of depression.

Recent research is exploring whether cyberbullying uniquely contributes to more negative psychological effects, in comparison to traditional bullying engagement (Campbell et al., 2012; Hase et al., 2015; Tokunaga, 2010). An Australian study conducted by Campbell and colleagues (2012) with 3,112 students in grades 6 through to 12, examined students who had experienced a traditional and/or cyberbullying incident, either as a victim or bully-victim, and how such events impacted on their quality of life and mental health. The majority of students perceived traditional victimisation to be a harsher, and cruel form of bullying, with more life impacts in comparison to cyberbullying. This result was further supported in that 59.4 percent of students who had experienced both traditional and cyber victimisation still perceived traditional methods to

be harsher, with only 12.5 percent of students reporting cyberbullying as a crueller experience. Interestingly, fewer cyberbullies thought their behaviours were harsh or very harsh, compared to the assessments made by cyber victims, and only 26 percent of cyber perpetrators thought that their behaviours might have had a significant impact on the victim's life.

Although students perceived traditional bullying experiences as more severe, cyber victims reported significantly more negative mental health correlates, including social difficulties, and higher levels of anxiety and depression in comparison to traditional victims. Furthermore, students involved in both traditional and cyberbullying forms reported similar mental health difficulties to cyber victims. One explanation for such a discrepancy in the findings could be that adolescents perceived real-life experiences as crueller than online experiences, without considering the unique contributing factors of cyberbullying (Campbell et al., 2012; Cross et al., 2009).

However, Hase et al. (2015) found that both types of bullying were associated with negative mental health symptoms. After controlling for traditional bullying behaviours, cyberbullying did not remain a significant predictor of negative mental health. Conversely, after controlling for cyberbullying, traditional bullying remained a robust predictor of negative mental health consequences. Similar to Campbell et al.'s (2012) findings, this study suggests that traditional bullying engagement has a stronger relationship with negative mental health symptoms, compared to cyberbullying engagement. These findings also provide further support for the theoretical framework that cyberbullying is an extension of traditional bullying forms. More research is needed to explore the psychosocial and mental health correlates of cyber perpetrators and bystanders and to compare these findings with traditional bullying research, as the majority of research has focused largely on cyber victims alone (Hemphill et al., 2012).

Moreover, Schneider, O'Donnell, Stueve and Coulter (2012) found that students experiencing both traditional and cyberbullying simultaneously were significantly more vulnerable to psychological distress. This group of students was four times more likely to show depressive symptoms and five times more likely to commit suicide, in comparison to non-victims. However, these results should be interpreted with caution as they were based on single self-report items. Similarly, a more recent study conducted by Bauman, Toomey and Walker (2013) with 1,491 high school students in grades 9 to 12 examined depression as a potential mediating pathway associated with traditional and cyberbullying engagement and suicidal attempts. The findings showed that depression was a significant mediator for traditional victimisation for both males and females, while traditional bullying and cyber victimisation were significant mediators for females only. The largest proportion of variance explained for the mediating factor depression was found for female cyber victims, at 74.43 percent. However, depression did not mediate the relationship between cyberbullying and suicide attempts for males or females. Grade 9 students were more likely to report a suicidal attempt, in comparison to other grades (10 through to 12).

A study conducted by McMahon, Reulbach, Keely, Perry and Arensman (2012) investigated mental health and psychosocial correlates for engagement in bullying behaviours with a sample of 1,870 Irish adolescent boys. They found that boys who had experienced bullying at school, reported higher levels of anxiety, depression and lower self-esteem, in comparison to students with no reported incidents of bullying. The risk of self-harm was found to be four times greater for boys who had experienced bullying at school. Boys who were questioning their sexual identity, experienced serious physical abuse or indicated problems with academic progress, were associated with a lifetime of potential self-harm. The combined effect of both experiencing traditional victimisation and being a part of the lesbian, gay, bisexual, transgender, intersex and questioning

(LGBTIQ) community was associated with even higher levels of suicidality and later self-harm in adulthood.

Overall, it is important for researchers not to examine cyberbullying mental health correlates in isolation, as research evidence suggests that cyberbullying behaviours may be an extension of traditional bullying forms. Therefore, researchers need to consider studying traditional and cyberbullying behaviours simultaneously, for a more accurate interpretation of research findings (Hemphill et al., 2012; Olweus, 2012; Smith & Slonje, 2010; Thomas, Connor, & Scott, 2015).

Academic Achievement

It is well established in the traditional bullying literature that when children persistently experience peer victimisation at school, they are more likely to avoid school and to report higher rates of absenteeism (Rigby, 1997, 2007; Smith, Talamelli, Cowie, Naylor, & Chauhan, 2004). Researchers hypothesise that peer victimisation may lead to poorer academic performance, due to an association with being bullied, which is related to negative psychosocial adjustment problems (e.g., anxiety, distress, lower self-esteem and negative thoughts about themselves; Hawker & Boulton, 2000; Nansel et al., 2001). Nakamoto and Schwartz (2010) conducted a meta-analysis of 33 studies, to examine the association between traditional victimisation and academic achievement. The meta-analysis findings showed a small but significant negative association between peer victimisation and academic achievement.

Bullying researchers are exploring whether cyberbullying engagement is also correlated with poorer academic performance. Beran and Li (2005) investigated the psychosocial consequences of students' involvement in cyberbullying, which was conducted with 432 students from Canada, in grades 7 to 9. The results of the study found

that the victims of cyberbullying reported feelings of sadness, anger and anxiety. They also expressed concern that such stressful and hurtful experiences may impact their ability to concentrate, learn, and succeed at school.

Further support was found in Kowalski and Limber's (2013) study with 931 students, in grades 6 through to 12, which examined the psychosocial correlates associated with traditional and cyberbullying engagement. Correlational analyses revealed that traditional and cyberbullying victimisation and perpetration were significantly and negatively associated with mental health problems, physical health and academic performance issues (e.g., absences from school, leaving school early due to illness and poor school grades), with only one exception being found: for traditional victimisation in relation to absences at school. Consistently with traditional bullying findings, students in the cyberbully-victim category, especially males, reported more negative physical, psychological and academic effects in comparison to cyberbullies, cyber victims and students not involved.

In contrast, Hemphill et al.'s (2015) Australian longitudinal study investigated predictor factors associated with engagement in traditional and cyber victimisation. Findings showed school suspension, academic failure and low school commitment were not associated with any type of victimisation experience. Similarly, Li and Fung (2012) found that academic achievement, involvement in extracurricular activities at school, and students' physical strength, were not predictors of bystander responses. This research finding suggests that regardless of the students' aptitude, the most important factor was their belief in their online responsibilities towards others, and understanding of how their behaviour impacted on bullies and victims. More research is needed to examine the relationship between all forms of bullying engagement and their potential effects on academic achievement outcomes.

The Role of the Family in Bullying Behaviour

Parents and caregivers play a critical role in nurturing and supporting children's cognitive, social and emotional development (Nickerson, Mele, & Osborne-Oliver, 2010). Previous research has shown that well-structured and nurturing family environments are important in fostering children's emotional and behavioural resilience against stressful life events, such as bullying experiences at school (Bowes, Maughan, Caspi, Moffitt, & Arseneault, 2010). Similarly, Rigby (2000) found that high levels of social support received from peers, family members and teachers buffered poor mental health consequences for students who experienced traditional victimisation. However, marital discord (Christie-Mizell (2003), high family conflict (Hemphill et al. 2015), consistently harsh punishment practices (Espelage, Bosworth, & Simon, 2000), authoritarian parental styles and families lacking warmth, support and empathy have been associated with bullying victimisation and perpetration (Beran & Violato, 2004; Olweus, 1993). Hemphill et al. (2015) present an argument that ongoing internal family conflict experienced at home can unintentionally place their own children at risk for being bullied.

Shields and Cicchetti (2001) found that when children experience maltreatment at home (e.g., sexual abuse, physical abuse and neglect) they are more likely to experience face-to-face victimisation or to bully others at school. They found that differences in emotional dysregulation (e.g., lack of empathy and avoidant attachment, feeling anxious and withdrawn) mediated differential pathways for bullying and victim status at school. For example, children who experienced anxiety and were socially withdrawn were more likely to be victimised at school, while children who developed a lack of empathy and were emotionally withdrawn as a possible coping mechanism for surviving family abuse, were more likely to engage in the perpetration of bullying.

Although there is a research line of enquiry investigating the association between the role of the family and involvement in traditional bullying behaviour, there are limited studies examining the importance of relationships in cyberbullying (Tanrikulu & Campbell, 2015). Low and Espelage (2013) conducted one of the first studies to examine the longitudinal antecedents for engagement in cyberbullying and non-physical traditional perpetration (i.e., verbal and relational aggression), also considering cultural and gender differences. Family violence and lack of parental monitoring were associated with nonphysical traditional perpetration, and mediated the hostility of white males and symptoms of depression for African American males. In contrast, parental monitoring, mediated by drugs and alcohol use, was a significant predictor of cyberbullying perpetration for white females.

More research is needed to investigate the association between family dynamics (e.g., inconsistent parental styles, negative parental-child relationships and interpersonal violence and aggression experienced at home) and involvement in traditional and cyberbullying behaviours. These associations are important to consider, as online environments could provide a safer, anonymous space to model learnt aggressive behaviour from home toward others (Tanrikulu & Campbell, 2015).

School Belongingness and Contextual Factors

Positive school ethos and school climate have been associated with a reduction in both traditional and cyberbullying engagement (Lee, 1999; Orpinas & Horne, 2010; Williams & Guerra, 2007). students who respect school staff rules, report a strong sense of school belonging, feel more connected to the school and are more likely to perform at optimal levels, emotionally and academically (Kowalski et al., 2014; Orpinas & Horne, 2010; Williams & Guerra, 2007). A large scale study conducted by Schneider, O'Donnell,

Stueve and Coulter (2012) administered an adolescent health survey that investigated a sample including more than 20,000 high school students, in grades 9 through to 12. Students who experienced cyberbullying victimisation reported significantly lower levels of academic performance and school connectedness.

Furthermore, Duggins, Kuperminc, Henrich, Smalls-Glover, and Perilla (2015) investigated the contributing factors associated with traditional bullying behaviours in a two-staged cross-sectional and longitudinal study, with a sample of 373 students in grades 7-10. In the cross-sectional data, strong family connections and school belongingness acted as a mediating protective factor against peer victimisation. Supportive families and educators played a critical role in helping students problem-solve bullying incidents, fostering their resilience and leading to a reduction in bullying behaviours. In contrast, the longitudinal evidence indicated that adult intervention could contribute to an increase in victimisation over time. It was hypothesised that if adults intervene inappropriately (e.g., in over-reactive ways), such interventions may be counterproductive in terms of reducing adolescent bullying incidents (Duggins et al., 2015).

Similarly, Australian bullying research found that understanding school policies on phone and technology use was a protective factor against cyberbullying victimisation in primary school (grades 4 to 6) but not in secondary school students (Cross et al., 2012). Cross et al. (2012) recommended that active student involvement in the process of developing school rules and policy, especially for secondary pupils, would result in a higher rate of student adherence to school rules. Therefore, adherence to school rules reduces bullying engagement and provides a safer school environment by promoting student well-being and school attachment. In contrast to primary school children, secondary students (grades 7 to 9) who reported high levels of school connection were more likely to be victims of cyberbullying. This result was perplexing, considering that

most research has reported school connectedness as a protective factor against bullying involvement (Duggins et al., 2015; McNeely & Falci, 2004; Waters, Cross, & Runions, 2009).

Emerging research suggests that although a lack of school attachment is associated with traditional bullying perpetration, this relationship is not evident for cyberbullying perpetrators (Tanrikulu & Campbell, 2015). This could be due to the fact of most cyberbullying incidents taking place after school hours (Cross et al. 2012). Furthermore, incidents of bullying and victimisation vary across school environments; this is often exacerbated when students hold negative perceptions of the school climate and classroom. Research has demonstrated that when bystanders intervene and defend the victim, bullying perpetration usually ceases. Bullying is more likely to occur when bystanders encourage and reinforce bullying behaviour and are less likely to stand up and support the victim (Saarento & Salmivalli, 2015; Salmivalli, Voeten, & Poskiparta, 2011). Therefore, more research is needed to understand the complexities of how the school ecology (such as school climate, school belonging and perceived school safety) is associated with traditional and cyberbullying engagement (Cross et al., 2012; Lee, 1999).

Self-Concept and its Integral Role in Bullying Engagement

Self-concept is a self-evaluation system principally based on how someone feels about him or herself and what they know about themselves (Hattie, 1992). Self-concept affects our cognitions, emotions, motivations and behavioural responses (Parada, Marsh, Craven & Papworth, 2005). Understanding the role of self-concept in bullying behaviour is fundamental, as ultimately how adolescents feel about themselves helps researchers and practitioners to understand why individuals are involved in certain behaviours (Marsh et al., 2004). Many other descriptive labels, including psychological wellbeing, self-

esteem, self-worth and global self-concept, have been utilised interchangeably to define the term self-concept; this makes result comparisons difficult (Marsh, Parada & Ayotte, 2004).

Traditional bullying research has consistently found that bullied students display poor self-concept outcomes in most, if not all factors, whilst inconsistent self-concept profiles have been found for bullies (e.g., positively perceived body image and poorly perceived academic achievement self-concept; Hawker & Boulton, 2000; O'Moore & Kirkham, 2001). O'Moore and Kirkham (2001) reviewed their original nationwide Irish bullying study, which examined 13,112 students aged between 8 to 18 years from both primary (n = 320) and secondary schools (n = 211). Following this, a smaller subset of 259 primary schools and 135 secondary schools were invited to participate in a subsequent study. The results of this secondary study indicated that students involved in either bully or victim roles are subject to lower self-esteem outcomes, compared to students not involved in bullying. Furthermore, students involved in bully-victim roles were further subjected to even lower self-esteem outcomes in comparison to bullies, victims and students not involved. The results revealed that both victims and bullies in primary school felt anxious and inferior in areas of physical appearance, popularity, academic performance, and school status. However, as bullies approached high school there was a trend to feel less anxious and more physically attractive.

A more recent study investigated the relationship between traditional and cyberbullying effects on self-esteem and loneliness, with a sample of 5,862 high school students from Italy, England and Spain. The findings showed that when traditional victimisation increased in severity, there was a significant reduction in self-esteem for victims of both traditional direct and indirect bullying (i.e., on body image, family, sports, peers, school and global self-esteem dimensions), with the exception of poorly perceived

school self-esteem (role as a student and homework), which affected direct victims only. Furthermore, as the severity of both direct and indirect bullying increased, feelings of loneliness from peers and family also increased significantly. Similarly with traditional victims, increased severity in cyberbullying victimisation was associated with a significant reduction in all self-esteem dimensions, as well as an increase in feelings of loneliness for parents and peers (Brighi et al., 2012).

Brighi and colleagues (2012) have recommended that further research inquiry is needed to explore self-concept correlates with involvement in the different forms of cyberbullying. Slonje and Smith (2008) hypothesise that happy slapping incidents (e.g., recording a fight at school on a mobile phone and posting the incident online) are perceived as having a more detrimental effect on the victim, due to the permanency and visual nature of the attack (Brighi et al., 2012). However, a research gap exists, as there is a lack of inquiry into the relationship between cyberbullying roles (i.e., victims, bullies, bystanders) and effects on self-concept.

Therefore, investigating self-concept with students who have been involved in traditional and/or cyberbullying behaviours is a fundamental component of understanding why students exhibit antisocial and aggressive behaviours. Self-concept is paramount, as ultimately it can affect our social interactions with others, how we perceive and evaluate ourselves, our resiliency to negative life situations, and our perceptions of personal interactions with others. A high self-concept is a powerful psychological attribute, and may be a key component in combating and preventing bullying behaviours, by instilling strong resiliency against the negative, painful events experienced by adolescents and children (Richman & Leary, 2009).

Chapter Summary

This chapter has outlined: (a) the impact of ICTs on adolescent behaviour; (b) clear bullying definitions representing the distinction between traditional and cyberbullying types; (c) the different forms of bullying; (d) a literature review on the prevalence of and gender and grade/age differences between traditional bullying and cyberbullying; and (e) the relationship between traditional and cyberbullying behaviours and psychosocial correlates. Previously, school bullying research focused on traditional bullying forms: physical, verbal and relational aggression. However, in the last 15 years, as ICTs have advanced and revolutionised the ways individuals interact socially with one another, a new type of bullying has emerged; cyberbullying. Cyberbullying is distinctive from traditional forms of bullying in that perpetrators can now post hurtful messages and pictures under the cloak of anonymity, targeting student(s) anytime during the day or night, and can reach a wider audience.

Moreover, the current cyberbullying research reviewed shows mixed results for prevalence rates, and gender and age/grade differences. With such inconsistent findings, due to a lack of definitional consensus and other, related measurement issues (i.e., simple surveys) no conclusive inferences can be drawn. However, one theme that is emerging from recent research is how the psychosocial outcomes of being involved in cyberbullying incidents may lead to more harmful effects on students' psychosocial adjustment, psychological health and wellbeing. Furthermore, several studies have indicated how involvement in cyberbullying behaviours is linked to poorer mental health outcomes (e.g., depression, anxiety and suicidal ideation), loneliness, poorer academic achievement performance, lack of school connectedness, family problems and mixed presentations of self-concept outcomes (e.g., bullies show high physical appearance self-

concept and low academic self-concept). The next chapter will outline in detail the theoretical and methodological challenges presently facing cyberbullying research.

CHAPTER 3: ELUCIDATING METHODOLOGICAL AND THEORETICAL ISSUES IN CYBERBULLYING RESEARCH

Without validation, any inferences made from a measure are potentially meaningless, inappropriate and of limited usefulness.
(Zumbo, 2007, p. 48)

Introduction

A significant component of the present investigation was the design of a new, multidimensional, empirically validated and developmentally appropriate instrument to measure cyberbullying behaviours in adolescents. This instrument, entitled *The Adolescent Cyber Bullying Instrument* (ACBI), was developed to specifically address the limitations and gaps identified in the literature, to overcome problems in cyberbullying research and measurement. This thesis makes a valuable contribution to cyberbullying research by addressing the lack of mixed method designs, to gain access to multiple methods of inquiry and to discover a more complete understanding of the phenomena under investigation (Hong & Espelage, 2012; Mishna & Van Wert, 2013). The purpose of this chapter is to outline and explain the pressing research issues that need to be acknowledged and addressed in order to move forward in traditional and cyberbullying research. This chapter aims to: (a) critically evaluate and outline the current

methodological issues in conducting cyber and traditional bullying research and their implications for researchers; and (b) provide an overview of the prominent theoretical perspectives contributing to how the cyberbullying construct is defined, measured and tested, and understandings of how it might be prevented.

Methodological Issues in Conducting Cyber and Traditional Bullying Research, and their Implications for Researchers

It is imperative that cyberbullying researchers draw upon advancements in traditional bullying literature in order to learn from previous methodological issues that have compromised the validity of some research (Craven, Marsh, & Parada, 2013; Griezel et al., 2012). The former include research methods, theory and practices that are at the forefront of the industry and that can help uncover the structural foundations of the relatively new cyberbullying construct. Employing these best practice guidelines will aid in accurately uncovering the complexities of cyberbullying phenomena across multiple communication technologies (Craven, Marsh, & Parada, 2013; Bauman, Underwood et al., 2013).

Generally, there is a growing concern within the cyberbullying literature, with the number of reported definitional and measurement issues arising internationally. This is due to a lack of attention to the importance of research design and measurement selection; often, instruments used to collect quantitative data have not been objectively assessed for their psychometric properties (Card, 2013; Menesini & Nocentini, 2009; Menesini, Nocentini, & Calussi, 2011). Both traditional and cyberbullying research have suffered from measurement issues, making comparisons across research studies problematic and difficult (Newey & Magson, 2010). There is a pressing need to critically evaluate existing

measures, in order to find consensus from scholars in this field and to create a unified, psychometrically sound and theoretically informed instrument (Bauman, Underwood et al., 2013; Card & Hodges, 2008; Menesini & Nocentini, 2009).

Some scholars in this field have raised concerns about the lack of qualitative or mixed research methods investigating cyberbullying phenomena (Hong & Espelage, 2012; Mishna & Van Wert, 2013). In the social science research community, mixed method designs are considered advantageous, as they can: (a) study the experiences of people who are exposed to the particular phenomena under examination; (b) apply triangulation from multiple sources of inquiry, reducing researchers' chances of committing type I error; and (c) yield complementary survey and interview results, in order to make richer and more meaningful interpretations of study findings. This will provide a complementary integration of qualitative and quantitative research paradigms, allowing researchers to better understand the complexities of multidimensional constructs (Hanson, Creswell, Clark, Petska, & Creswell, 2005; Greene, 2007; Powell, Mihalas, Onwuegbuzie, Suldo, & Daley, 2008). The following section outlines the foundations of measurement, to ensure precision in data collection and testing in future research. The next section investigates methodological issues arising in traditional and cyberbullying research, outlines their implications for current research, and provides practical suggestions for how these issues can be averted and addressed.

Foundations of Measurement: Validity and Reliability

Validity and reliability are fundamental research criteria that need to be considered when developing new measures and conducting research. Bullying researchers have often overlooked testing the validity and reliability of instruments, which is however an essential component of scientific enquiry (Bauman, Underwood et

al., 2013). These shortcomings need to be examined in order to understand the quality of statistical results reported and to provide psychometric indicators of the construct's interpretation and strength, thereby signifying whether result outcomes are robust and can be applied to the greater population (Furr, 2011; Nunnally, 1978).

Nunnally (1978) defines reliability as the degree to which measurement of a particular construct is repeatable under the same test conditions. Sources for unreliable results within the bullying literature include: (a) poorly standardised and inadequate instructions; (b) variation of instruction from each administration group; (c) poor testing environments; and (d) errors due to forced choice responses (Ybarra, 2013). While reliability relates to the precision or reproducibility of scores, validity is concerned with whether the scores are a measure of what they are intended to measure (Urbina, 2014). Validity "is a matter of degree, rather than an all-or-none property, and validation is an unending process" (Nunnally, 1978, p. 133). Nunnally describes three sub-types of validity, which are important criterion checkpoints to consider when determining whether a measure can be deemed valid for research. These include: (1) predictive, (2) content and (3) construct validity.

Predictive validity. In psychological research, predictive validity is an important criterion, as it relates to how well an instrument can predict a relevant outcome, related to the construct of interest. Within the cyberbullying literature, researchers try to forecast the possible psychosocial consequences of involvement in bullying behaviours (i.e., anxiety and depression). However, there is limited research that has attempted to predict why students are motivated to be involved in cyberbullying behaviours (e.g., the possible correlation between authoritarian parents and engagement in bullying others) (Finger, 2009; Nunnally, 1978).

Content validity. Refers to the relevance of the test items and how well they represent the specific construct that it is hypothesised to measure (Urbina, 2004). Content validity can be established when the sample test items are a strong representation of the underlying construct being measured. The validity of the measure should be evaluated on the basis of its planned potential (e.g., creating a measurement breakdown of the items and overall factor structure), and the ability for a research plan to be carried out to fruition (Cronbach & Meehl, 1955; Nunnally, 1978). Nunnally recommends that two important standards be followed, to ensure high content validity: (1) a valid cross-section of items to measure the construct; and (2) rigorous methods of test development. As a prerequisite, if positive evaluations can be determined from a panel of experts in the field, who are not professionally involved in the project, the test can be regarded as having a very high degree of content validity. Throughout instrument development, careful consideration and critical evaluation of the measure should take place, to ensure it measures the construct accurately (Furr, 2011). Furthermore, the measurement items, and the statistical tests conducted whilst developing the measure, should be reported and made transparent (e.g., test manuals demonstrating how these statistical tests have helped guide the development of the new measurement and its list of items) (Nunnally, 1978).

Construct Validity. Researchers have identified that the most important aspect associated with validity is construct validity. Construct validity confirms a hypothesised scaled structure posited from theory and ascertains validations between the hypothesised scale and the actual structure of the construct (Furr 2011; Nunnally, 1978). Card (2013) and Furr (2011) affirm that construct validity is regarded as being of high importance, as it delineates different types of verification reflecting valid instrument construction. This includes the scale's internalised structure: (a) what the actual scale structure represents; (b) what the researcher actually intends to measure; (c) the reasons for utilising the

instrument; and (d) the instrument outcomes and the relationship of test scores with other variables.

Foundations of Measurement: Summary

When new instruments are developed, it is necessary to psychometrically evaluate proposed a priori items and overall factor structure, to ensure strong validity and reliability outcomes. Researchers may need to re-write items that are based on previous psychometric results in order to yield stronger psychometric outcomes. Without such critical evaluation of the scale, instruments may be ambiguous and misleading, leading researchers to report invalid outcomes, due to poor content validity (Card, 2013; Furr, 2011; Tabachnick & Fidell, 2007). Additional measurement issues are reviewed in the next section.

Considering Measurement Issues in Cyber and Traditional Bullying Research

Cyberbullying studies have been predominantly focused on reporting prevalence rates, frequency of involvement, gender differences and psychological correlates attributed to engagement (Menesini, Nocentini, & Calussi, 2011; Tokunaga, 2010). Ybarra (2013) has reported that prevalence rates vary considerably across the peer-reviewed research, with results ranging from six percent to 79 percent during the annual schooling period. With such extreme discrepancies, it is often difficult to navigate the accuracy and reliability of the data. This leads to misunderstandings, and ultimately affects the interpretation of and inferences drawn from these findings (Furr, 2011). Although the sources for the discrepancies within the literature are uncertain, and need further research attention, some likely contributors could be linked to the different types of operational definitions adhered to, the conceptual formulation of the construct, and the

different data sources used by researchers to study bullying behaviours (Card & Hodges, 2008; Menesini et al., 2012; Solberg & Olweus, 2003).

Olweus (1993, 2003) describes the definition of prevalence rates in relation to the school bullying literature as the percentage of students who have experienced bullying by their peers within a measureable period of time. Similarly, students perpetrating bullying can be defined as the percentage of students who expose other students to bullying at a repeated, measureable frequency. Bullying researchers have used the term prevalence rates loosely within the literature, drifting from the original, conventional definition, which has played a substantial role in the large variations in estimated prevalence results (Rigby, 2004; Solberg & Olweus, 2003). Likewise, in respect of definitions of bullying, Olweus' (1993, 2003) most commonly used definition states that traditional bullying is a subset of aggressive behaviours that are often carried out without provocation from their victim(s). In particular, definitions of bullying need to include the following characteristics: (a) incidents are an intentional act of harm; (b) victims are exposed repeatedly to overt (e.g. kicking, punching and insulting comments) or covert behaviours (e.g. rumour spreading and exclusion) involving aggression over time; and (c) an imbalance of power exists between an individual or a group of perpetrators toward their victim(s) (Olweus, 1993, 2003; Rigby, 2002).

Recent evidence suggests that traditional bullying definitions can be broadly applied, and expanded into the new context of virtual spaces, where cyberbullying thrives (Thomas, Connor, & Scott, 2015). Accurate definitions and assessments are an essential pre-requisite, as they measure and evaluate the effectiveness of prevention programs, and so that research findings can provide evidence-based solutions to inform policy (Felix, Sharkey, Green, Furlong, & Tanigawa, 2011). Menensi et al. (2012) evaluated cyberbullying definitional criteria with an adolescent sample of students ranging from 11-

17 years old, across six European countries. The students were asked to evaluate 32 scenarios and to determine whether the incident could be classified as a cyberbullying episode. To decide whether the incident presented in the scenario was indeed cyberbullying, most students considered the criteria presented in the conventional definition of traditional bullying, but with the exception of repetition. Repetition may be omitted in a cyberbullying definition, as posts can be easily forwarded, re-posted and commented on, without the perpetrator's repeated involvement. The strongest predictors of cyberbullying were the imbalance of power (as cyber victims are unable to defend themselves), followed by intentionality and anonymity.

Other factors in this large discrepancy include reporting prevalence rates from different data sources. Some researchers have used one or more data sources to for their findings: these include peer and teacher nominations, school reports, self-report ratings and observations. All data sources contain some tendency towards bias, yet some sources are less biased in prevalence estimation, in comparison to others (Solberg & Olweus, 2003; Smith et al., 2002). For example, teacher reports can be insightful in providing the perspective of an adult who is closely linked to youth interactions on a daily basis. However, a drawback of utilising this data source is that bullying incidents are often undetected by teaching staff, due to the covert nature of the attack, which leads to underreporting by students. Underreporting bullying experiences can often be attributed to fear of further retaliation from the bully or bullies (Card & Hodges, 2008).

Furthermore, studies have been criticised for the different referential timeframes used to measure bullying behaviours. The greater the timeframe referenced when measuring bullying, the greater the probability a student will have experienced a bullying incident, in comparison to a survey measuring for example only one schooling term. Indeed, some studies do not specify any time period when asking respondents to

participate in questionnaires (Solberg & Olweus, 2003; Ybarra, 2013). Similarly, since cyberbullying is a relatively new phenomenon, researchers are still debating the best way to define what cyberbullying is and how to measure the underlying constructs accurately (Menesini et al., 2012; Nocentini et al., 2010).

In the cyberbullying literature it is reported that some researchers provided an operational definition prior to commencing the questionnaire, so that students had some basic understanding of how to classify aggressive behaviour that occurs behind the screens of technologies (e.g., Smith et al., 2008; Walrave & Heirman, 2011). Other researchers (e.g., Cross, Shaw, Epstein, Monks, Dooley, & Hearn, 2012) provided a definition but also included a list of actual examples gathered from focus group interviews. However, due to the lack of consensus on a definition of cyberbullying, even when researchers offer an operational definition prior to survey administration, the actual defining criteria provided are often inconsistent across studies, with different meanings attached, depending on the researcher's perspective (Tokunaga, 2010). For example, terms such as electronic aggression, cyber harassment and cyberaggression have been used interchangeably to define cyberbullying (Walker et al., 2013). Moreover, some researchers provide a list of examples with no definition (e.g., Hinduja & Patchin, 2007), while in some instances, researchers do not provide any type of definition of cyberbullying behavior, and offering participants no guidance on how to interpret this new type of behaviour. In such circumstances, the term cyberbullying becomes subjective and is open to individual interpretation, leading to variation in outcomes (Solberg & Olweus, 2003; Walker, Craven, & Tokunaga, 2013; Ybarra, 2013).

Definition choices influence instrument selection (i.e., whether to investigate types of bullying with reference to both direct and indirect types, and/or to the four forms: physical, verbal, social, and cyber), and which cut-off points to use when categorising

data (e.g., does repetition refer to more than once, or on a weekly basis at least, what does repetition refer to in cyberbullying?) (Tokunaga, 2010; Solberg & Olweus, 2003). Furthermore, since cyberbullying is still in its research infancy, there are many theoretical and conceptual issues that still need to be addressed and explored. Research is yet to find consensus as to whether cyberbullying is in fact a new form of bullying or can be defined under the broad banner of bullying, and labelled as a new, sub type (Bauman, 2012; Li, 2006, 2007b; Kowalski et al., 2014).

Furthermore, several researchers have attempted to investigate the potential overlap between cyber and traditional bullying. However, some studies have found evidence to suggest that engagement in face-to-face bullying is a risk factor linked to a higher likelihood of involvement in cyberbullying, and vice versa (Beran & Li, 2007; Espelage, Rao, & Craven, 2013; Perren et al., 2010; Smith et al., 2008). However, in contrast, a recent longitudinal Australian study found that cyber victims were not likely to be involved in traditional victimisation (Hemphill et al., 2015). More research is needed to explore the potential theoretical overlap and to investigate the strength and directionality of this relationship (Kowalski et al., 2014; Perren et al., 2010).

The Importance of Multidimensional and Continuous Measures in Cyberbullying Research

Previously, classical test theory recommended the construction of homogeneous or unidimensional scales with test items developed to measure only a single psychological attribute (Lucke, 2005; Spector, 1992). Unidimensional scales are appropriate when it is predicted that only one single fundamental dimension explains the psychosocial behaviour (Gustafsson & Åberg-Bengtsson, 2010; Spector, 1992). Measurement scholars

such as Cronbach (1951) favoured unidimensional models because of their clarity and the precision of psychometric interpretation.

However, Lucke (2005) argues that, due to the multidimensional nature of most psychological constructs, one attribute alone cannot explain the complexity of psychosocial variables, especially when measures are utilised for multiple purposes (e.g., theoretical, diagnostic, predictive). For instance, when unidimensional scales are used inappropriately they misrepresent the underlying construct and neglect to capture the complexity of the psychological phenomenon: for example, the behavioural, cognitive, and social aspects of behaviour (Gustafsson & Åberg-Bengtsson, 2010). Research argues that psychosocial constructs such as cyberbullying and self-concept can only be explained by a multitude of attributes that contribute to an holistic understanding of the psychological phenomena (Card, 2013; Lucke, 2005). Cyberbullying research attempting to measure a single attribute in isolation may lead to inaccurate and unreliable findings and interpretations as bullying theory suggests that multiple attributes and drivers explain the underlying processes that contribute to involvement in aggressive behaviours (Espelage et al., 2013; Lucke, 2005). Therefore, for a cyberbullying measure to be valid and reliable, instruments should be designed to reflect the continuous and multidimensional nature of the construct, in an attempt to encapsulate all relevant attributes that explain the complexity of the theoretical model (Card, 2013; Lucke, 2005).

Comparison of single item vs. multi-item measures. Tokunaga (2010) critically reviewed the cyberbullying literature, uncovering 75 articles on cyberbullying victimisation. A meta-synthesis was conducted on the 25 quantitative articles that met the selection criteria for inclusion in analysis. Requirements to meet selection criteria included researching cyberbullying phenomena, investigating important relationship factors such as age, gender, psychosocial correlates, coping strategies or prevalence rates,

and acceptance from a peer-reviewed academic journal. The meta-synthesis revealed that most research designs used simple surveys, constructed with a few single-items, and developed with dichotomous forced choice (e.g., yes/no) response sets. Most research methodologies implemented atheoretical research methods, with a lack of psychometric evaluation. Single-item, simple surveys may be tempting for researchers to implement, as they are quick and efficient to use, because participants and schools are not burdened with lengthy survey administration periods, hence resulting in a reduction in overall research costs (e.g., reductions in costs associated with scale development) (Finger, 2009; Furr, 2011). The costs associated with implementing single-item surveys outweigh the benefits, as there is a far greater chance of the psychometric results being compromised through highly probable measurement errors when using the single-item global scale, in comparison to multi-item measures (Nunnally, 1978; Pellegrini & Long, 2002; Spector, 1992).

Many of the cyberbullying instruments that have been developed are placed as an extension attached to a traditional bullying survey: for example adding a global single-item cyberbullying measure (Kowalski et al., 2014). Unfortunately, these ad hoc cyberbullying scales adopt the same methodological problems previously seen in traditional bullying screening tools (e.g., the Olweus (1996) Bully/Victim questionnaire). Such screening tools are effective in the identification of non-involved students, but are less sensitive in terms of identifying the degree to which students are involved in bullying, and are also less accurate in detecting specific behavioural forms (Vaillancourt et al., 2010). When researchers develop their own instruments to measure the cyberbullying construct, they often do not provide a valid justification for why their survey is more accurate, or why other researchers should choose to utilise their survey over existing measures (Tokunaga, 2010).

In comparison, it has been argued that multi-item surveys yield more reliable and valid findings when measuring complex multidimensional bullying models. The reasons include that: (a) a multi-item measure is more likely to represent a multidimensional theoretical concept accurately; (b) multi-item surveys can attune to the fine degrees of an attribute; and (c) multi-item factors are more stable and reliable, as they statistically factor in the computations of all-scale items, to reduce random error in measurement (Menesini et al., 2011; Nunnally, 1978; Spector, 1992). Nonetheless, multi-item surveys are not without their limitations. Researchers are often presented with the difficult challenge of identifying all the specific cyberbullying behavioural forms that students engage in, with all these items needing to be included in a comprehensive behavioural checklist. Furthermore, multi-item behavioural factors may not be reported as frequently, and therefore may become more difficult to quantify, due to floor effects (Menesini & Nocentini, 2009; Thomas et al., 2015).

Problems with using dichotomous variables. Since the end of the 1990s there has been a surge of literature concentrating on categorising participants into separate groups: victims, bullies, bully/victims and non-involved students (Solberg, Olweus & Endresen, 2007). To establish such groups for statistical purposes, researchers dichotomise variables with arbitrary cut-off points. Different cut-off points have been used to segregate participants into different groups by different researchers, and as yet, no clear cut-off criterion has been established. The allocation process is often problematic, as individual participants can fall into more than one category, or they may not be categorised correctly, which can ultimately lead to bias in outcomes (MacCallum, Zhang, Preacher, & Rucker, 2002).

New literature published in the area of cyberbullying suffers from the same statistical shortcomings and poorly constructed instrumentation that have previously been

seen in traditional bullying research. For example, the convergent reliability and validity of measures are not assessed or reported, nor is a unidimensional global score of cyberbullying adopted that lowers estimated prevalence rates, due to the lack of specificity (Kowalski et al., 2014). Furthermore, some studies have been prone to sampling problems (e.g., small sample sizes, convenience sampling). For example, one study obtained data by posting surveys online and inviting adolescents to participate. However, many of the surveys were completed by adult respondents (Hinduja & Patchin, 2007). Hence, when reviewing and comparing bullying literature, comparing findings across studies should be conducted with caution, as different authors use different definitions, different samples and cut-off points, even where they do at least use the same instruments (Finger, Marsh, Craven, & Parada, 2005; Griezel et al., 2012; MacCallum, 2002).

Some of the justifications for employing dichotomisation techniques in bullying research include: (a) using the same research methods as prior researchers; (b) categorising data because of skewness issues in bullying data sets; (c) investigating clinically significant samples; (d) increasing statistical power; and (e) simplifying statistical analysis to create categorical variables so as to conduct analysis of variance (ANOVA), to determine whether there is a significant difference in the mean of the dependent variable. However, dichotomisation leads to loss of important information about individuals, to loss of effect size and power, which leads to a higher likelihood of committing a type I error (e.g., rejecting the null hypothesis, reporting significant differences where they do not exist) (Cohen, 1983; Finger et al., 2005; MacCallum et al., 2002). MacCallum et al. (2002) state that they are unaware of any benefits associated with dichotomising data for applied research in psychology.

Several bullying researchers recommend the use of continuous variables in analysing data sets. This method allows researchers to discover the relations among variables (Card, 2013; Finger, Marsh, Craven, & Parada, 2005; Griezel et al., 2012). Finger et al. (2005) in particular argues that this would allow for the reciprocal relation of "bullying" and "being bullied" to be analysed more accurately. Recent literature has exhumed the position that bullies and victims are not mutually exclusive constructs; rather, they are hypothesised to provide reciprocally reinforcing roles. Marsh, Parada, Craven, and Finger (2004) proposed a new theoretical model to gain further understanding of the nature of the bullying process. Their model provides support for the theory that bully and victim roles are interconnected, with reciprocal and mutually reinforcing effects. Thus, being a bully may lead to victimisation, and being targeted may lead to bullying others. The present study aims to explore the potential theoretical overlap between traditional and cyberbullying engagement, utilising a continuous data set without loss of information, helping to reduce the likelihood of type I errors (Finger et al., 2005; MacCallum et al., 2002).

Moving Towards a Validated Multidimensional Scale of Cyberbullying

Most empirical research asserts that school bullying behaviours can be defined as multidimensional, and that bullying is a continuous construct (Card, 2013; Finger et al., 2005; Griezel et al., 2012). Previous attempts to measure the a priori bullying factor structure based on sound theoretical conceptualisations, have been rare (Marsh, Parada, & Ayotte, 2004; Marsh et al., 2011). This section will review a selection of both cyber and traditional bullying instruments' strengths and weaknesses, in order to identify best practice that contributes to the advancement of scale development, testing and refinement. The selected instruments are reviewed due to their advancement in the measurement and

assessment of traditional and cyberbullying. The instruments provide a clear definition, measurement scales are transparent, and they establish relevant content to extend beyond face validity, so as to obtain acceptable psychometric quality (Furr, 2011).

A recent systematic review performed by Vivolo-Kantor, Martell, Holland, and Westby (2014) identified the problems with measurement practices used in data collection, including inconsistent terminology, a lack of key definitional components being provided in the definition, and limited assessment of the psychometric properties for testing of bullying measures. The aim of this study was to obtain the necessary steps to move forward and advance bullying measurement through the development of valid and reliable measures. The researchers conducted a systematic review and evaluated instrument publications spanning from 1985 through to 2012, their search initially generating over 1,000 cyber and traditional bullying scales or indexes. Abstracts were then screened for relevance to the research topic; this narrowed the initial search from 1,000 to 164 bullying measures, with a total of 69 measures being deemed eligible for this study. Stringent inclusion criteria were applied to shortlisted quantitative/qualitative measures selected for analysis, with a total of 41 measures remaining to be included in analysis. The inclusion criteria stipulated that scales assessed bullying behaviours either across traditional bullying forms (physical, verbal, social relational aggression, sexual harassment, weight based bullying or homophobic bullying) and/or cyberbullying forms across the perspectives of perpetuators, victims and/or bystanders. Furthermore, scales needed to be administered to either students, parents, teachers or peers who could report bullying behaviour, and psychometric results needed to be accessible to the researchers, to be included in the study.

The findings showed that only 11 out of the 42 measures provided participants with an operationalised definition of bullying. Only four out of the 11 measures provided

a clear definition that included all five main criteria of the conventional definition (power imbalance, intentional act of harm, repeated incidents, victim experienced harm, behaviours were aggressive). Furthermore, just over half of the measures reported summing the responses across the scale factors to create either a total global score or a composite score for the scale factor(s) measured. Furthermore, 11 measures analysed the data by creating dichotomous or binary categories (e.g., true/false), ultimately leading to a reduction of bullying information. For example, the Traditional Bully and Cyber-Bullying scales, developed by Hinduja and Patchin (2010), created a composite score for each potential bullying role (e.g., bully victims, bully perpetrators, cyber victims and cyberbully perpetrators). The researchers decided on a cut-off score criterion such as "never/once" for non-involved or low frequency students, and "three or more" to meet frequent bullying criteria. The research also found that most measures relied on youth self-report, and only a few studies considered supplementing self-report measures with other data collection methods such as peer nomination or qualitative focus groups. The review unveiled that few measures include bystanders' perspectives, to better understand the psychosocial effects on students who witness traditional or cyberbullying incidents.

Moreover, similar findings were also demonstrated in a systematic assessment of cyberbullying instruments, in a literature review search limited to the instruments published prior to October 2010 (Berne et al., 2013). The search initially generated 636 measurement publications. Instruments were excluded from the study if they used single-item global factors, or if psychometric properties were not reported. The remaining 61 instruments were checked for inter-rater reliability, leaving a total of 44 instruments to be analysed. Consistently with Vivolo-Kantor et al.'s (2014) findings, Berne et al. (2013) reported that almost half of the instruments administered to participants did not use the term cyberbullying, even though the authors claimed to be measuring this concept.

Overall, there was a lack of definitional consensus found across the measures, in relation to which criteria were utilised to operationalise the term cyberbullying. For example, only 12 out of the 44 instruments included the criterion of a power imbalance between the aggressor and their victim. When researchers are developing new measures, uncertainty arises as to which are the most useful definitional terms and concepts that explain the underlying cyberbullying concept. Furthermore, the systematic review uncovered that only 18 instruments included in this study reported internal reliability, and only 12 of the 44 instruments conducted confirmatory or exploratory factor analysis on their instruments. This review highlighted the pressing need for researchers to further investigate the reliability and validity of existing measures, to accurately assess cyberbullying engagement.

Psychometric considerations: the use of confirmatory factor analysis in bullying research. Confirmatory factor analysis (CFA) is a statistical structural equation modelling technique that is often used in scale development as an analytical tool to examine the factor structure and psychometric properties of multidimensional constructs (Brown, 2006; Card, 2013). However, for researchers to use this technique, a strong measurement theoretical framework needs to be identified and specified in advance, to hypothesise a clear a priori model that delineates the pattern of observed indicators (e.g., test items) that correspond to each of the latent factors. The results of CFA testing can provide researchers evidence of model fit, to determine the convergent and discriminant validity of a measure, demonstrating statistical support that the parameter estimates are consistent with the theoretical framework, and also shedding light on how a measurement model is operationalised (Brown 2006; Byrne, 2001; Hair, Black, Babin, & Anderson, 2010).

In addition, in both traditional and cyberbullying research, validation through invariance testing with new scales is commonly overlooked and not tested. Nevertheless, it is important to implement invariance testing in bullying research to establish whether the underlying factor structure is the same when used across different groups (Card, 2013; Marsh et al., 2011). The next section discusses two bullying measures that utilise the aforementioned statistical techniques, to advance measurement.

The Adolescent Peer Relations Instrument-Bully and Target (APRI-BT). Traditional bullying research has defined the different forms of bullying behaviour as: physical and verbal bullying, and social relational aggression (Bjorkqvist, Largerspetz & Kaukiainen, 1991; Olweus, 1993, 2010, 2013). On the basis of these definitions, Parada (2000) developed the Adolescent Peer Relations Instrument- Bully and Target (APRI-BT)—one of the first multidimensional, multi-item and developmentally appropriate behavioural measures, which aims to uncover the factor structure of traditional bullying phenomena (Marsh, Parada, Craven, & Finger, 2004).

Confirmatory factor analyses (CFAs) were conducted with a sample of 4,000 secondary students in grades 7 to 11. The APRI-BT hypothesised scale structure measured six a priori scale factors measuring both bullying and target behaviours with secondary students. Cronbach's alpha reliabilities ranged from good to excellent for three bullying factors: physical, verbal and social (alpha coefficients .82 to .92), and for three parallel target factors: physical, verbal and social (alpha coefficients .87 to .93). The CFA model results revealed excellent model fit with the addition of two higher-order global bully and target factors. The findings indicated a clear factor structure, with each item loading on the factor it was intended to measure. These findings show that the APRI-BT has strong psychometric properties, and indicate a marked improvement over most instruments used in bullying research. Since the APRI-BT has overcome many of the

measurement obstacles presented in bullying research, it has been chosen to measure traditional bullying behaviour in this thesis.

Revised Adolescent Peer Relations Instrument-Bully/Target (RAPRI-BT). Parada's (2000) APRI-BT was later extended to include the new, emerging phenomenon of cyberbullying with secondary students. Two new a priori cyberbullying factors were developed (i.e., visual and text) across both the bully and the target scales of the RAPRI-BT, which included 13 new items, 31 items in total. To test the new hypothesised factor structure, four CFAs were conducted, assessing the first-order and second-order hierarchical factor structure for bully and target scales. The analyses were conducted with a sample of 803 secondary students, from grades 7 through to 11, to determine the validity and reliability of the theoretically driven model. The CFAs were performed to ensure the newly proposed five a priori factor structure supported the hypothesised model. Reliabilities were good for the five bullying factors: physical, verbal, social, visual and text (alpha coefficients .80 to .88) and for the five parallel target factors: physical, verbal, social, visual and text (alpha coefficients .80 to .91). A first-order bully scale CFA revealed strong psychometric properties supporting the traditional and cyberbullying model (CFI .96, TLI .96, and RMSEA .078). A first-order target scale CFA also supported the extended a priori model structure (CFI .97, TLI .97, and RMSEA .062). However, due to some of the high factor correlations above .80, a higher-order CFA was conducted on both traditional and cyber bully factors and traditional and cyber target factors: this demonstrated an overall improvement in model fit. Factorial invariance testing showed the factor structure of the scales consistently held the same meaning for adolescent male and female groups (Griezel, Finger, Bodkin-Andrews, Craven & Yeung, 2012).

Again, the newly extended APRI-BT scale results supported the hypothesised factor structure, indicating the instrument to be psychometrically sound. This was a

substantial achievement in advancing cyberbullying measurement research, as it capitalises on a strong statistical approach and is the first multidimensional categorisation of cyberbullying behaviours. However, there are still potential limitations from this study that need to be considered, including the small sample size used in this study, as the data were collected from only one NSW Catholic secondary school. Caution should be undertaken when generalising these results to the larger, non-denominational student population. Future research should build on this study's advancement, utilising a broader school sample and continuing to define the underlying cyberbullying factor structure to establish a well-developed conceptual framework (Card, 2013; Griezel et al., 2012).

Uncovering the Factorial Structure and Behavioural Forms of Cyberbullying

Researchers in the area of cyberbullying have been hypothesising some of the possible behavioural forms that make up the cyberbullying construct. There is general agreement within the research community that cyberbullying can take on various forms of behaviour, can occur anonymously in public and private spaces, can reach broader audiences, can enter previously known safe locations such as the family home. Furthermore, the immediacy of receiving information and how quickly technology is changing and constantly evolving, provides new methods of bullying others (Beran & Li, 2007; Campbell, 2005; Hinduja & Patchin, 2008; Kowalski et al., 2008; Li, Smith, & Cross, 2012; Pearce, Cross, Monks, Waters, & Falconer, 2011; Smith et al., 2008). Willard's (2006) classification system of the different forms of cyberbullying behaviours is considered to be one of the most complete behavioural conceptualisations suggested within the cyberbullying literature to date (Li et al., 2012; Kowalski et al., 2014).

Willard's (2006, 2007) behavioural forms include flaming (i.e., heated exchanges that can transpire into an online fight), online harassment (i.e., victims are persistently sent offensive communications), cyberstalking (i.e., the act of dangerously stalking another online to blackmail or send threatening messages) denigration (i.e., distributing untrue and malicious information online, often in the form of gossip), impersonation/identity theft (i.e,. perpetrators take over a victim's social media accounts to impersonate them and communicate inappropriate information about their friends without being held accountable for their actions), outing and trickery (i.e., sharing personal/private information about others without acquiring consent) and exclusion (i.e., blocking/deleting a victim from social media to intentionally hurt them). Furthermore, Hinduja and Patchin (2012), Smith et al. (2008) and Kowalski et al. (2008) discuss other behavioural forms of cyberbullying behaviour, which include sexting (i.e. distributing unsolicited sexual images and content) and happy slapping (i.e. setting up victims to record or photograph their embarrassing actions for the purposes of uploading the content electronically).

The present study addresses some of the above cyberbullying behavioural forms by adapting and synthesising the work of Kowalski et al. (2008) and Willard (2006, 2007), uncovering the specific forms of cyberbullying across the three important target perspectives (victims, bullies and bystander). Three specific cyberbullying behavioural forms were chosen to be investigated (i.e., flaming, identity theft and happy slapping), as these specific behaviours were persistently raised by students when discussing bullying behaviours in practice. Orpinas and Horne (2006b) indicated that students, parents and teachers can aid in the identification of which constructs and theories should be used and how they should be evaluated. For example, different target perspectives may perceive different definitions of bullying

behaviour. Hence, the identity theft factor was only measured across cyber victim and cyberbully perspectives, as this form is often conducted in secret. Scholars hypothesise that these behavioural forms have the most impact on a student's mental health and well-being (Smith et al., 2008; Kowalski et al., 2008). The adaption and synthesis of Kowalski et al.'s (2008) and Willard's (2006, 2007) behavioural perspectives has aided in the development of a multidimensional measure of cyberbullying. This new behavioural scale is driven by strong empirical evidence and theory, and measures specific behaviours in adolescent students in order to understand the complexity of cyberbullying behaviours, so as to inform future school policies and practices.

Summary

This review of measurement research suggests that there are large inconsistencies in the overall measurement strategies that have been employed to assess cyber and traditional bullying constructs within school settings; this makes cross study comparisons difficult. Key measurement issues identified include: (a) the lack of definitional consensus on what constitutes cyberbullying behaviour; (b) the use of different referential timeframes to measure bullying behaviours (e.g., the past month, past school term or current school year); (c) operational definitions generally not being provided on administration to participants; (d) an overreliance on youth self-report measures; (e) the use of single-item global scores to measure a multidimensional construct; and (f) the lack of valid and reliable measures. Traditional and cyberbullying researchers need to work collaboratively to find definitional consensus and referential timeframes of measurement, and to ensure the employment of continuous, multidimensional and theoretically underpinned instruments. Bringing

attention to methodological shortcomings and challenges in the field may help researchers advance cyber and traditional bullying measurement. The next section addresses the theoretical frameworks employed to understand engagement in cyber and traditional bullying behaviours.

Theoretical Frameworks to Understanding Bullying Phenomena

Researchers have been challenged to underpin the theoretical phenomena of cyberbullying. The bullying literature points to several theoretical frameworks and perspectives that endeavour to explain and uncover the reasons why bullying behaviours are enacted (Rigby, 2002). In order for a theoretical perspective to be useful in predicting behaviour in applied settings, the theory should be evaluated according to its ability to initiate psychological change. Therefore, theories must endeavour to uncover the motivations behind the behaviour, as well as the underlying intervening mechanisms responsible for activating change (Bandura, 1977). It is important that theory drives research, as theoretical frameworks help identify, explain and predict why individuals engage in certain behaviours (Orpinas & Horne, 2006b).

Unfortunately, due to a lack of funding, to budget cuts, time restrictions and limited resources, theory is often overlooked and neglected (Orpinas & Horne, 2006b). Since cyberbullying is a fairly new form of behaviour; there is a sense of urgency to develop new instruments and intervention programs to help schools combat bullying behaviours. However, new instruments and intervention programs have often been created and implemented without considering the importance of a solid theoretical framework (Menesini & Nocentini, 2009). The gold standard of research should aim for

a critical interlocking of theory, empirical research and practice to achieve research advancement within the bullying field (Craven, Marsh, & Parada, 2013).

In this thesis, Bronfenbrenner's (1979) ecological framework was drawn upon to understand how the interconnections of the ecological system (e.g., microsystem, mesosystem and exosystem) indirectly or directly influences how adolescents actively develop prosocial skills or engage in cyber and traditional bullying. This theoretical framework aids in our understanding of the complexities and reciprocal influences of bullying behaviours, and therefore it is important to study bullying phenomena from multiple stakeholder perspectives (Espelage & Swearer, 2010; Mishna, 2012). Several other prominent cyberbullying theories are discussed in conjunction with Bronfenbrenner's ecological framework (1979, 1992), as they offer insight into the motivations and reasons why students engage in bullying behaviour in the virtual world. The following theoretical perspectives are discussed in detail below: (1) social information processing theory (SIP); (2) social learning theory; (3) the online disinhibition effect; (4) adolescent identity formation; (5) general strain theory (GST); and (6) how the forming of in-groups and out-groups leads to bias-based bullying.

Social Ecological Framework

Bronfenbrenner (1979) considers that "the ecological environment is conceived topologically as a nested arrangement of structures, each contained within the next, like a set of Russian dolls" (p. 3). This ecological developmental perspective addresses the complexity of the bullying construct through understanding how traditional and cyberbullying problems can be influenced implicitly or explicitly from the interactive and reciprocal levels of the ecological system (Bronfenbrenner 1979; Espelage & Swearer, 2010). More recently, this systems framework can be extended to encapsulate

the advent of the virtual world as Bronfenbrenner's ecological perspective has been extended to include the techno-subsystem, to explore how ICTs influence children's social ecology at home, school and in community contexts (Johnson, 2010; Mishna, 2012).

Bronfenbrenner's hierarchical framework defines these intersecting structured layers as: (a) the microsystem, which is the immediate environment an individual interacts with (e.g., home, work and school settings); (b) the mesosystem, consisting of the interactions occurring within major settings, such as the interaction of two microsystems (e.g., family members interacting with the school body); (c) the exosystem, an extension of the mesosystem where individuals may not have direct contact with the environment, but the system still has influencing properties over their immediate environment (e.g., the neighbourhood and mass media) and; (d) the macrosystem, the overarching layer that includes institutional cultures and subcultures (e.g., the government, economy, education and legal systems) that are associated with powerful structures, which can permeate throughout the layers of the system and consequently influence and affect behaviour (Bronfenbrenner, 1979).

There is a consensus within the bullying literature to utilise Bronfenbrenner's (1977) ecological theoretical framework to study the contributory contextual factors that are associated with the maintenance and persistence of peer aggression (e.g., negative school climate and lack of attachment, impact of family relations, and community attitude towards bullying behaviour) (Espelage & Swearer, 2010; Losey, 2011; Mishna, 2012; Waters, Cross, & Runions, 2009). The framework encapsulates four layers of environment that comprehensively explain the social environment in its entirety, and which are important for understanding and addressing bullying at its core (Mishna, 2012; Losey, 2011).

Viewing bullying from an ecological perspective allows researchers and practitioners to understand how bullying dynamics can extend and penetrate across the different layers of the system. For example, bullying may initially occur within the microsystem layer, where students partake in bullying behaviours during school hours. However, it is important to understand that these behaviours have reciprocal consequences, which can have a ripple effect extending into and impacting other level within the system (e.g., bullying behaviour influences new laws, government and school policies) (Mishna, 2012; Losey, 2011). This theoretical perspective applies to the current mixed methods investigation, as quantitative measures assess how structural characteristics of a school, school attachment, family relationships and perceived verbal and mathematics self-concept correlate with traditional and cyberbullying engagement. Furthermore, the qualitative research findings provide schools (teachers, students, parents and community members) with practical recommendations and strategies grounded in solid ecological frameworks to prevent and address cyberbullying, that will inform future policy, practice and research at all layers of the ecological system.

Social Information Processing Theory (SIP)

One theoretical position that proposes to explain aggressive maladaptive social behaviour patterns in children is Crick and Dodge's (1994) and Dodge's (1986) revised model of social information processing theory (SIP). This empirically supported model proposes that children are faced with daily social dilemmas, in which they need to make relatively quick informative responses. The six-step process includes: (1) encoding of cues; (2) interpretation and mental representation of those cues; (3) clarifications of goals; (4) response access or construction; (5) response decision; and (6) behavioural enactment.

Each child's decision-making process is influenced by its inherited biological personality and temperament traits. Decisions are further subjected to influence from past memories, social schema scripts and knowledge. It is hypothesised that early socialising experiences set up and develop new neurological pathways of decision making. As these pathways become continually used, neurological networks become embedded and part of an automatic response set. When students are faced with an overwhelming social decision, there is often too much information to attend to and encode, leading to an overload of cognitive energy. To overcome this, students will often rely on these neurological networks, to simplify the cognitive task. These simplifying rules include the use of heuristics and schemas, which make processing more efficient but can result in biased judgements. For example, children who have developed deficient information processing abilities (e.g., a lack of understanding of peers' emotional responses) are more likely to interpret neutral or ambiguous cues as antagonistic situations and thus are more likely to engage in aggressive behaviours, which ultimately leads to enacting inappropriate social responses (Crick & Dodge, 1994; Dodge, 1986).

Crick and Dodge (1996) extended their theory and found support for two types of sub-groupings of aggressive behaviour in children: reactive (hostile) and proactive (instrumental) aggression. Reactive aggressive behaviours occur when children interpret a scenario with malicious intent. For example, when a peer uses aggression to deliberately inflict harm on them, aggressive behaviours are often employed for retaliatory purposes, and to defend oneself against harm. Proactive aggressive behaviour is described as a deliberate and calculated behaviour used as a means to achieve a desired goal. Children exhibiting this type of behaviour will assess a situation and utilise an aggressive scenario that is most likely to result in their desired positive outcome.

Crick and Dodge (1996) found support for their hypothesis that proactive aggression is a controlled behaviour and is motivated by the anticipated perceived reward. These children are less likely to spend time enhancing relationships with other peers and are more interested in advancing and rewarding themselves. Furthermore, proactive aggressive children significantly perceived physical and verbal aggressive acts in more positive ways, in comparison to reactive aggressive and nonaggressive peers. Specifically, step three in the SIP model becomes critical for these children, as they are less concerned about maintaining friendships and preference self-serving instrumental goals, which over time contribute to the reinforcement and maintenance of engagement in aggressive behaviour. Alternatively, reactive aggressive children are more likely to attribute hostile intent to an incident (whether the act was intentional or not) and are less likely to find alternative reasons why students, in comparison to nonaggressive peers, may have engaged in a certain behaviour.

This investigation of social information processes has provided clear insights into the reasons why students engage in different types of aggressive traditional bullying behaviours, and the underlying cognitive mechanisms that maintain these behaviours. However, most of the literature to date has concentrated on examining face-to-face aggressive exchanges only (Dooley, Pyzalski, & Cross, 2009). More research is needed to uncover the underlying drivers and cognitive processes associated with engagement in cyberbullying behaviours. These unique cyberbullying drivers and processes may include the lack of social cues to process behind the screen, determining the intention behind the online behaviour, the rewards associated with cyberbullying, the degree of confidence in their online navigation skills, and the delay in reaction times. These new factors are likely to impact on how information behind the screen is processed and acted on (Dooley, Pyzalski, & Cross, 2009; Espelage, Rao, & Craven, 2013). Within the six-step process of

the SIP model the ACBI measures the final stage, whereby adolescents enact their behavioural responses.

Social Learning Theory

Bandura's (1977) social learning theory subscribes to the view that individuals are not innately born with a repertoire of inbuilt behaviours: rather, behaviours are learnt. Hence, behaviour can be explained as a continuous interaction of both personality and environmental influences. Bandura argues that new behaviours are acquired either through direct experience or by observing others. In day-to-day life, individuals make decisions, which can result in either a positive successful outcome or a negative outcome ending in punishment. Throughout this implicit behavioural shaping process, successful behaviours are reinforced and are more likely to be chosen again, while unsuccessful behaviours are often abandoned. Within the learning process, individuals become aware of the effects they create through their past actions and respond in the most suitable ways to achieve their desired outcomes. Past experiences are used as a guide to predicting and steering future outcomes. Learning would be a slow process if individuals relied exclusively on the repercussions of their own actions to steer behaviours. Most behaviours are learnt vicariously through modelling, through exposure to and observation of another person's behaviour. As a result, repeated exposure provides guidelines and develops similar behaviours. The people one socially interacts with, either through their own preferences or through obligations draw up the boundaries of behaviours that are acceptable and will be frequently displayed, thus providing more opportunities to be learnt. Opportunities to learn aggressive behaviours are distinctly different, depending on what the authority figures deem to be socially acceptable behaviour.

Aggressive behaviour often develops when an individual is subjected to socially aggressive role models. These role models reinforce aggressive behaviours, and this behaviour becomes socially accepted by the individual as the norm. Within any social context, some individuals will be more domineering and will demand greater attention than others. Hence, modelling influences can change, depending on the nature of the exposure and the extent of attention held by the individual. Attention is often paid to models that possess socially pleasing and desired characteristics, whereas models lacking such preferred characteristics are often ignored (Bandura, 1977). During the formative years of development, children observe salient examples of parental management of interpersonal problems. When these models employ harsh, aggressive tactics (e.g., verbal and physical aggression) to achieve their desired outcome, children and adolescents are more likely to emulate these aggressive methods with their peers at school. Furthermore, inconsistent or harsh punitive discipline practices in child rearing exemplify and maintain antisocial behaviour, thereby encouraging children to further engage in aggressive behavioural acts with their peers.

Moreover, at school, aggressive adolescent behaviour can be further reinforced and maintained by external factors such as peer laughter and attention, gaining power through a higher social rank, achieving tangible goals, elevating self-esteem, and gaining popularity in the school playground (Bandura, 1973). Educational staff may inadvertently reward bullying behaviour by suspending students, which is often perceived by students as time out from school, if parents do not follow up with some form of disciplinary action at home (Orpinas & Horne, 2006b). Parents, teachers and other authority figures play an important role, as they provide examples of pro-social behaviours that are in accordance with important ethical principles that demonstrate powerful self-control and that employ anger management techniques (Bandura, 1973; Orpinas & Horne, 2006b).

However, as children grow older they learn how to get around their parents' moral consequences, and avoid punishment by providing elaborate reasons justifying their immoral behaviours (Bandura, 1977). Researchers are not sure whether Bandura's social learning theory can be applied in a similar way to explain student involvement in cyberbullying behaviours. Espelage, Rao, and Craven (2013) explain that if cyber bystanders use social networking sites such as Facebook to comment or "like" a cyberbully post, this type of behaviour may provide enough reinforcement for the perpetrator, or for other bystanders to join in and continue the cyberbullying harassment. Moreover, in this study the ACBI multidimensional measure captures social learning theory through the inclusion of all potential target audience perspectives, as bystanders are often neglected. This plays an integral role in observing and passively reinforcing cyberbullying incidents. Furthermore, key stakeholders were included in this study to obtain more information on how learning by observation of those closest to the student (e.g., peers, educators and parents) has influenced their behaviour, which can later be modelled (either as a perpetrator, victim or bystander). Parents and educational staff can also serve positively as role models, to demonstrate how to peacefully counteract and reduce bullying behaviours. Alternatively, adults can ignore bullying episodes, which passively reinforces this behaviour.

The Online Disinhibition Effect

Another relatively new theoretical perspective, the online disinhibition effect (Suler, 2004) explains that the reason some individuals exhibit aggressive behaviours online is due to diminished censorship, or may behave in other ways that they would not in real life. For example, some individuals may reveal very personal, intimate and private information about themselves online that they would not normally convey and share with

others in face-to-face conversations. Similarly, other individuals may become ruder, crueller and more critical during online conversations, as online anonymity creates detachment from the behaviour exhibited, and individuals can hide behind usernames that do not reveal their true personal identity. Therefore, individuals behind the screens of technology can compartmentalise their online persona from their offline identities, and this acts as a buffer providing opportunities and power for an individual to act in more deviant ways, as their aggressive behaviours are unlikely to affect their real life reputation (Suler, 2004). Specifically, the ACBI factor identity theft, represents how the online disinhibition effect operates in virtual environments, as cyber perpetrators can steal/hack into another student's account to act in more harmful ways without dealing with the fallout from their actions. The extent that this form of behaviour has been realised would not be observed so often in real world settings, due to the perceived anonymity.

Furthermore, the invisibility factor provides the means to mentally separate their online activity from their real life identity, as perpetrators do not have to deal with the repercussion and consequences of their actions. In addition, the online aggressor is not confronted by the victim's reactions or responses, (e.g., facial expressions, emotions, and body language), which may have the potential to stop the escalation of aggression in face-to-face bullying. Thus, online aggressors are relieved of the burden of guilt, as they do not see their victims' emotive responses. Lastly, online relationships can create a false sense of security and closeness by misinterpreting the relationship bonds, leading the individual to convey thoughts and feelings that they would not normally express in real life situations. It can feel safe to post an intimate message to someone, as you do not need to confront him or her face-to-face and therefore, once the message has been posted, complete detachment from the information can be experienced, leaving it behind (Suler, 2004).

Adolescents' Identity Formation

Adolescence is often referred to as a time of "storm and stress", and a period of exploration and transitioning from being a child to an adult (Heaven, 2001; Erikson, 1968). Adolescents need to overcome the important milestone of being aware of themself, striving for autonomy and being comfortable with their own strengths and weaknesses. Erikson theorises that a psychologically healthy person can progress through the obstacles of each developmental psychosocial stage if they have a stable sense of self, and inner strength (Erikson, 1968).

One reason for adolescents' quick adoption of technology could be the need for them to explore and find their identity outside of the family unit (Cyr, Berman, & Smith, 2015; Erikson, 1968). During this time, it is important for adolescents to explore who they are and to create a sense of independence by forming new friendships that are vital to the development of their identity. Friendships help adolescents affiliate with a social group, provide important role models, and help them develop intimate relationships, to gain a sense of belonging and independence from parents. Adolescents need to find a balance of coping with the pressures from their family, their newfound freedom to make their own choices, and dealing with the pressures of conforming to their peers' expectations (Erikson, 1968; Heaven, 2001). Therefore, ownership of a mobile phone or access to the internet may make adolescents feel closer and more connected to their peer group and help with maintaining a strong, healthy relationship, leading to positive wellbeing (Erikson, 1968; Gross, Juvonen & Gable, 2002; Tyler, 2002).

Tyler (2002) suggested that the internet (e.g., online discussion forums) might be viewed as a secure place where teens can explore their identities without judgement. They can express thoughts and feelings anonymously, by using online platforms as a place for social experimentation and trial, before revealing such information to family and friends

that know them (Gross et al., 2002; Kraut et al., 1998; Tyler, 2002). However, communication technologies are not always used in positive and user-friendly ways. When adolescents reveal their inner, personal battles or crises, they may become targets of cyberbullying, if friends gossip and divulge such private and personal information to others (Erikson, 1968; Tyler, 2002). Furthermore, our personal and intimate details are becoming more public as we share our daily life experiences with countless friends using online social networks. The boundaries between personal and online life are becoming increasingly blurred as private information is easily shared and readily accessible, making online users more vulnerable to cyber victimisation (Cyr, Berman, & Smith, 2015). There is growing concern from educators, parents and the overall community at the number of school, media and anecdotal reports of adolescents using information and communication technologies for hurtful and harmful purposes (Patchin & Hinduja, 2006).

General Strain Theory (GST)

According to general strain theory (GST), individuals engage in antisocial and criminal behaviours when they experience stressors and strains in their daily life. Strain theory, which can be understood from a social ecology framework, is contingent on the premise that there is a disconnection between societal goals and an individual's means to achieve such goals. This gap is largely founded on the inequality created by society's formation of in groups and out-groups, which leads to marginalisation. Stressors and strains refer to negative life events or unstable environments that bring about discomfort and pain to individuals. This can include a desperate need for money, the bereavement of a close family member or friend, experiencing physical or emotional abuse, the end of a romantic relationship, divorced or separated parents, experiencing bullying or receiving poor grades at school (Agnew, 2006; Paternoster & Mazerolle, 1994). Often, adolescents

experiencing a vast variety of stressors and strains will experience negative emotions such as anger, frustration or depression. They often feel frustrated, overflowing with internal anguish, which can lead them down the path to antisocial behaviour, and, in a case detailed by Agnew (2006), turning to crime as a coping mechanism to reduce or escape the strain (Agnew, 2006).

Agnew (2001; 2006) labels peer abuse, parental rejection and negative experiences at school as marked strains, which can result in the development of delinquent behaviours. Aggressive and delinquent behaviour may serve as an outlet for adolescents to seek revenge against individuals who have hurt them. It is important to note that not all young adults subjected to stressors and strains will turn to violence and crime. Students with low self-worth and poor attachments to family, and those who have not acquired the cognitive skills to negotiate, rationalise and problem solve within stressful scenarios, are most likely to act in revenge against the individuals who have mistreated them (Agnew, 2006).

Hay, Meldrum, and Mann (2010) investigated the link between bullying behaviours on internalised and externalised forms of aggressive behaviour on the basis of GST theoretical principles. The results found that both traditional and cyberbullying behaviours were significantly linked to participation in delinquent behaviours, effects being slightly greater for adolescents involved in cyberbullying behaviours. Hay et al. research suggests that involvement in cyberbullying behaviours places students at further risk of poorer psychosocial consequences. Hay et al.'s (2010) results also ascertained not only that involvement in bullying behaviour can trigger externalising acts of aggression, but that aggressive behaviour can also manifest within internalised forms of aggression inflicted on the self (e.g., self-harm and suicidal ideation). One likely reason for involvement in internal forms of harm can be the social exclusion experienced by the

victims of bullying, which may make them prone to internalising acts of aggressive behaviour. Furthermore, significant gender differences were found for involvement in cyberbullying behaviours and involvement in self-harm, as it was reported that males were 70 percent more likely to be involved in an internalised act of aggression (Hay et al., 2010).

The present research closely examines how disconnection from the school, mental health issues and poorly perceived self-concept domains in verbal, mathematics, parental relations and physical appearance, can contribute to adolescent stressors and strains that lead to victim, bully and bystander engagement.

Formation of In-Groups and Out-Groups Leading to Bias-Based Bullying

Bullying behaviours can be purposely motivated by underlying prejudicial views that are often learnt and transferred by unfavourable parental beliefs, social and cultural factors that induce derogatory attitudes in outsiders. Prejudice is often created by previous encounters and impulsive decisions that draw on insufficient evidence, that elicit negative emotional responses and lead to generalised, unsupported and irrational judgements (Allport, 1954). According to Allport (1954), children are naturally predisposed to having a positive preference for their own group without developing dislike for children on the outer. However, when the home environment is unsupportive and suppresses different ways of thinking, "where parents' words are law" and critical authoritarian parental styles are adopted, this is likely to contribute to the development of prejudicial views, instead of fostering healthy relationships built on love, equality and trust (Allport, 1954, p. 298).

In-group and out-group social categorisation may be ultimately responsible for the development of negative attitudes, as it uses stereotyping to generalise the characteristics of out-group members. In-group members lose sight of the individual and

tend to view out-group members as a collective, due to long-term verbal complaints that creates animosity, leading to aggressive social exchanges and physical violence. Rejection, hostility and aggression toward out-group members strengthen in-group loyalty and affiliation, further reaffirming in-group egocentric values that their own perspectives are normalised, whereas out-group perspectives are incorrect (Aboud, 1981; Aboud, 2003).

Bias-based bullying is driven by the membership of a perceived superior in-group, which is counterposed with the perceived inferiority of children from minority groups that are marginalised due to differences in racial background, ethnicity, religious beliefs, sexuality, disability or weight (Greene, 2006; Mishna, 2012; Rigby, 2002). Research has recently indicated that children from multiple marginalised communities are especially vulnerable to bias-based bullying. This is due to the intersectionalities of compounding oppressions (e.g., race and sexuality) leading to the co-occurrence of discrimination and bullying behaviours that are linked to negative mental health outcomes, including higher levels of engagement in self-harm and suicidal ideation (Garnett et al., 2014: Mishna, 2012). This theoretical framework will be further explored and addressed in Chapter 8 the qualitative focus group interviews.

Chapter Summary

Since research on the cyberbullying phenomenon is still within its infancy, academics are grappling with key conceptual and methodological issues that undermine the quality and validity of research conducted in this field. Measurement challenges include finding a research consensus on the definition and conceptualisation of the cyberbullying construct, overcoming current instrument concerns such as the use of global-item and unidimensional measures and the lack of agreement in referential

timeframes with which to measure cyberbullying engagement. Such inconsistencies in measurement and administration make cross-study comparison difficult, due to the lack of reliable data about prevalence rates and the limited psychometric testing of instruments. For example, checking the reliability of items and assessing the construct validity of newly developed measures through confirmatory factor analysis can be difficult to achieve.

Moreover, the majority of cyberbullying research has been conducted without a solid theoretical framework to underpin the new measures and empirical research. Prominent psychological theories that have received attention in traditional and cyberbullying research have been discussed above, to review researchers' understandings of the social, emotive, behavioural, cognitive and developmental reasons why students may engage in certain forms of behaviour. Furthermore, the theoretical perspectives reveal the complexities of cyberbullying phenomena, and how different levels of the ecological system can play a role in influencing a young person, directly or indirectly. Several researchers recommend that an ecological perspective would be a suitable foundation for the implementation of holistic cyberbullying intervention programs that consider multiple causes of bullying behaviour throughout the different layers of environments (Bronfenbrenner, 2005, 1979; Cross et al., 2009; Mishna, 2012). Further research is warranted to develop specific cyberbullying theory to help in furthering our understanding of this field.

CHAPTER 4: AIMS, HYPOTHESES, RESEARCH QUESTIONS, AND THEIR RATIONALES

Introduction

The central purpose of this chapter is to outline the aims, hypotheses and research questions of the present investigation, which are based on the current literature and theory. Cyberbullying experiences are recognised as a growing global problem, and this has drawn attention to the urgency of generating valid and reliable measures to identify and address emerging online psychological health and safety issues (Shariff, 2009; Walker, Craven, & Tokunaga, 2013). This study aims to further uncover the complexities of the problem and the harm it causes, and to identify the reinforcing drivers ultimately to combat all forms of bullying. The present study consists of three overarching aims directing the current research outcomes:

1. To develop and assess the psychometric properties of a new multidimensional cyberbullying instrument that measures all potential perspectives (victim, bully and bystander) accurately. Additional psychometric tests will assess the validity and reliability of all existing measures utilised in this investigation.
2. To investigate group differences (gender, school context and grade) and extricate the psychosocial correlates for bullying involvement, which include self-concept, school belonging and mental health consequences. In

addition, to explore whether there is a relationship and theoretical overlap between cyber and traditional bullying forms; and

3. To provide one of the first qualitative investigations moving beyond students' experiences by gathering data through semi-structured interviews with important stakeholders (students, their parents, educators and school counsellors) to later inform empirically driven, holistic cyberbullying intervention programs for secondary schools modelled on Bronfenbrenner's social-ecological (1979) theoretical perspective.

To achieve these aims, the present mixed methods investigation comprises three interrelated studies that provide a more complete picture of bullying. It is important to note that cyberbullying research is still in its infancy, and thus, many questions remain unanswered. Consequently, hypotheses are only created when there is enough literature and theory to suggest a direction; otherwise, research questions are posed. Each study is labelled with a three-digit identifier corresponding to the aims, hypotheses or research questions and their rationale (this latter is outlined in the section that follows). For example, Hypothesis 1.1.1 refers to study 1, aim 1 and Hypothesis 1; Research Question 1.2.1 refers to study 1, aim 2 and Research Question 1.

Study 1: Psychometric Evaluation of the Newly Developed Cyberbullying Instrument, and Validation of Existing Measures in Bullying Research

Statement of the Problem

There is a lack of reliable and valid instrumentation to measure cyberbullying, due to inconsistencies in definition, and the utilisation of dichotomous practices on continuous datasets leading to a loss of information, which consequently makes drawing comparisons across studies difficult (MacCallum et al., 2002; Vivolo-Kantor, Martell, Holland, & Westby, 2014). The present study aims to overcome pressing measurement issues by developing a new multidimensional and continuous measure of cyberbullying, to assess the levels of involvement of the bully, victim and bystander. The new cyberbullying instrument's psychometric properties will be assessed for the total group, and measurement equivalence will be examined across gender, grade and school context. Tests will be conducted on the existing psychosocial measures for secondary students, to further examine whether the selected battery of scales are reliable and valid for the current sample, and hold equivalent meaning across groups.

Research Issues

Recent cyberbullying studies have been built on atheoretical approaches that often rely on problematic single-item instruments that lack psychometric evaluation, and that fail to address the validity or reliability of their instruments (Griezel et al., 2012; Vivolo-Kantor et al., 2014). More recently, a multidimensional and psychometrically robust measure has been introduced in traditional bullying research: the Adolescent Peer Relations Instrument–Bully/Target (APRI-BT) (Parada, 2000). Given the rigour of this multidimensional conceptualisation, the present study aims to develop a new, reliable and

valid measure of cyberbullying, based on recent advances that conceive of bullying as a multidimensional continuous variable that is founded on a strong conceptual framework (Kowalski et al., 2008; Willard, 2006).

Study 1 aims to test the psychometric properties of the hypothesised a priori factor structure of the newly developed Adolescent Cyber Bullying Instrument-Victim, Bully and Bystander (ACBI) and to further validate the factor structure of the selected battery of instruments to ensure all measures are valid, reliable and invariant across different groups.

Aims

The aims of Study 1 are to:

1. Test the psychometric properties of the newly developed Adolescent Cyber Bullying Instrument: Victim, Bully and Bystander measure (ACBI). The new ACBI is designed to measure eight distinct factors of cyberbullying. This includes three factors of victimisation (flaming, identity theft and happy slapping), three factors for cyberbullying (flaming, identity theft, and happy slapping) and two factors for cyber bystanders (flaming and happy slapping);
2. Further validate the psychometric properties of the Adolescent Peer Relations Instrument-Bully/Target (APRI-BT) which is designed to measure six distinct scales of bullying: three aspects of bullying (physical, verbal, social relational bullying), and three aspects of targets (physical, verbal, social relational bullying) (Parada, 2000);
3. Further validate the psychometric properties of the Self Description Questionnaire-II-Short (SDQII-S), which measures 11 dimensions of adolescent self-concept. Four selected factors related to cyberbullying were utilised in this investigation. These included physical appearance, parental relations, verbal and mathematics self-concept (Marsh, 1990);
4. Further validate the psychometric properties of the School Belonging Scales (SBS), which were designed to measure three separate aspects of school

belonging: attachment, support, and rule acceptance. One selected factor, Attachment to School, was utilised in this investigation (Parada & Richards, 2002);

5. Further validate the psychometric properties of the Depression, Anxiety, and Stress Scales (DASS-21), which measures the three negative emotional states of depression, anxiety, and stress. One selected factor Depression was utilised in this investigation (Lovibond & Lovibond, 1995);
6. Investigate the whole battery of instruments simultaneously, to ensure structural integrity is maintained when all instruments are grouped together into a single battery assessment.

This will include tests of:

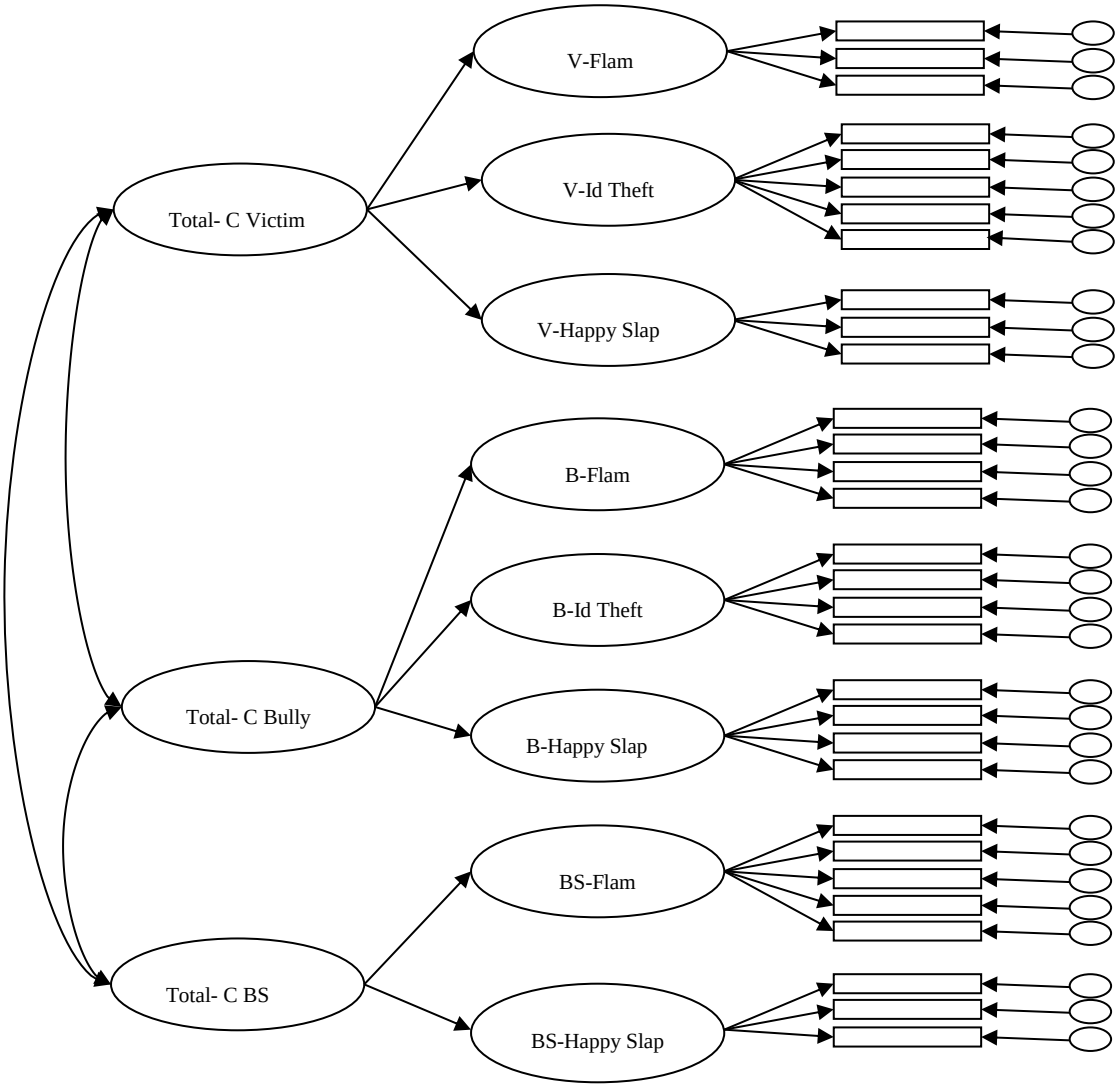
1. Reliability (Cronbach's Alpha estimates);
2. Criterion related validity (construct, convergent and discriminant validity) via analysis of factor structure using confirmatory factor analysis methods;
3. Invariance tests across different groups (multi-group CFAs: i.e., males vs. females, single-sex school vs. co-educational school);
4. Further validate the psychometric properties of existing instrumentation utilised in this investigation; and
5. The definition and factorial integrity of a model structure including all items for each of the multidimensional scales is well defined and maintained across group differences.

Statement of the Hypotheses and Research Questions

Hypothesis 1.1.1: Internal consistency of the new ACBI. The first-order eight a priori factor structure (victim flaming, victim identity theft, victim happy slapping, bully flaming, bully identity theft, bully happy slapping, bystander flaming and bystander happy slapping) and second-order three factor structure (total cyber victim, total cyber bully and total cyber bystander) of the Adolescent Cyber Bullying Instrument (ACBI)

will demonstrate acceptable Cronbach's alpha coefficients for total sample and for different groups with the secondary student sample.

Hypothesis 1.1.2: Factorial structure of the new ACBI. It was predicted that Confirmatory Factor Analysis (CFA) will support the newly developed ACBI's a priori eight first-order and a priori three factor second-order structure, where all items load onto only those corresponding factors which they were designed to measure, and distinctive factors will be found (see Figure 4.1). Figure 4.1 is a pictorial representation of the multidimensional factor structure of ACBI to be tested.



Note. Second-order factors: Total C Victim = Total Cyber Victim, Total C Bully = Total Cyber Bully and Total C BS = Total Cyber Bystander. First-order factors: V-Flam = Victim Flaming; V-Id Theft = Victim Identity Theft; V-Happy Slap = Victim Happy Slapping; B-Flam = Bully Flaming; B-Id Theft = Bully Identity Theft; B-Happy Slap = Bully Happy Slapping; BS-Flam = Bystander Flaming; BS-Happy Slap = Bystander Happy Slapping.

Figure 4.1. Hypothesised Higher-Order Factorial Structure of the Adolescent Cyber Bullying Instrument (ACBI)

Hypothesis 1.1.3: Factorial invariance of the new ACBI across gender. The eight a priori first-order factor structure and three a priori second-order factor structure of the new ACBI hold equivalent meaning across gender (males and females), demonstrated by tests of invariance across these groups.

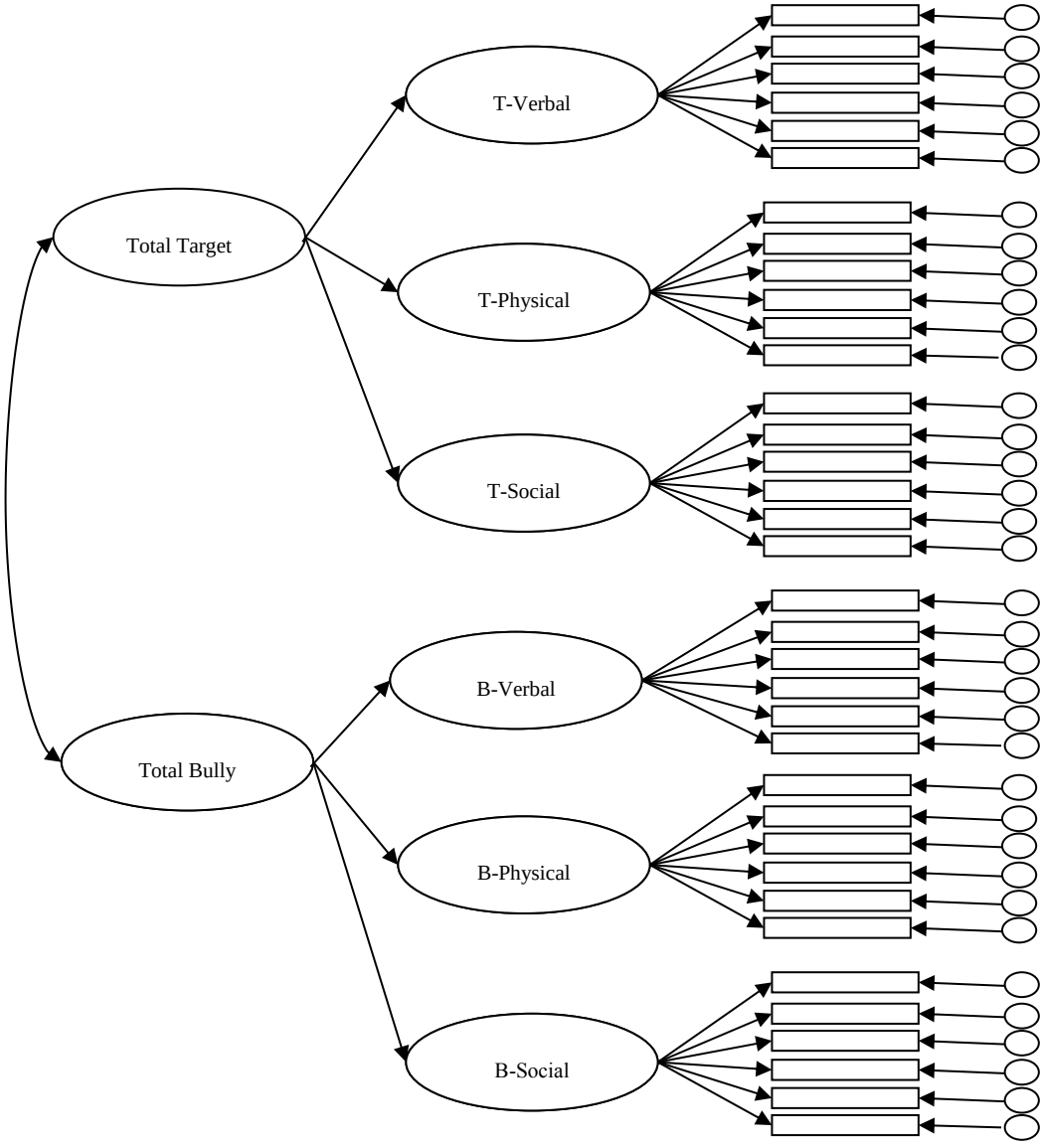
Hypothesis 1.1.4: Factorial invariance of the new ACBI across school context. The eight a priori first-order factor structure and three a priori second-order factor structure of the new ACBI will hold similar meaning across school context (single-sex and co-ed) demonstrated by tests of invariance across these groups.

Hypothesis 1.1.5: Factorial invariance of the new ACBI across grade. The eight a priori first-order factor structure and three a priori second-order factor structure of the new ACBI will be consistent across grade, as demonstrated by the restrictive nested models.

Hypothesis 1.2.1: Internal consistency of the APRI-BT. The internal consistency of the first-order six a priori factor structure APRI-BT (bully physical, bully verbal, bully social, target physical, target verbal and target social) and the two factor a priori second-order structure (total bullying and total target) will demonstrate acceptable reliability estimates for total sample and across groups.

Hypothesis 1.2.2: Factorial structure of the APRI-BT. It is predicted that CFA will demonstrate a good model fit for the six a priori first-order factor structure and two a priori second-order factor structure (see Figure 4.2) of the APRI-BT traditional bullying measure. The CFA will reveal the scale's multidimensional factor structure, where all

items load onto only the corresponding factors they were designed to measure, and distinct factors will be found Figure 4.2 is a pictorial representation of the multidimensional factor structure of APRI-BT to be tested.



Note. Second-order factors: Total Target and Total Bully. First-order Factors: T-Verbal = Target Verbal, T-Physical = Target Physical, T-Social = Target Social, B-Verbal = Bully Verbal, B-Physical = Bully Physical, B-Social = Bully Social.

Figure 4.2. Hypothesised Higher-Order Hierarchical Structure of the Adolescent Peer Relations Instrument -Bully/Target factors

Hypothesis 1.2.3: Factorial invariance of the APRI-BT across gender. The six a priori first-order and two a priori second-order factor structure of the APRI-BT

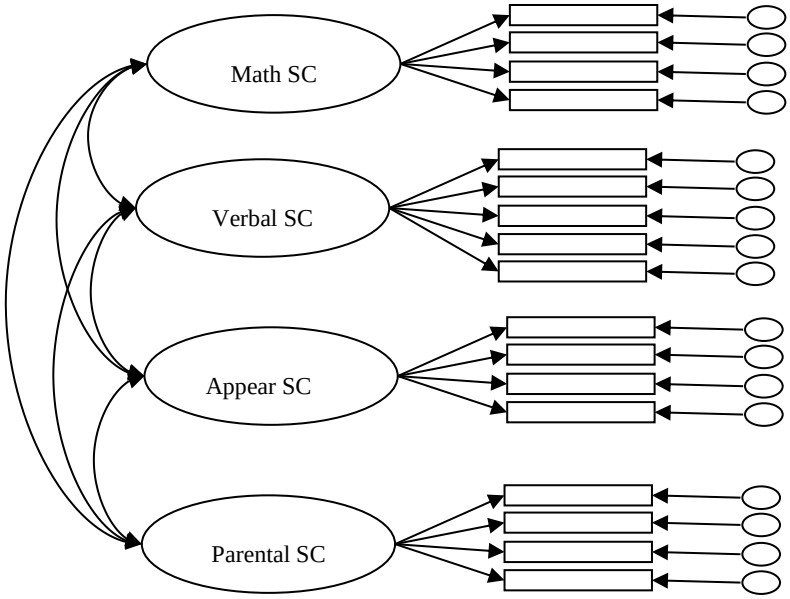
instrument will hold equivalent meaning across gender (males and females), demonstrated by tests of invariance across these groups.

Hypothesis 1.2.4: Factorial invariance of the APRI-BT across school context. The six a priori first-order and two a priori second-order factor structure of the APRI-BT will hold similar meaning across school context (single-sex and co-ed), as demonstrated by tests of invariance across these groups.

Hypothesis 1.2.5: Factorial invariance of the APRI-BT across grade. The six a priori first-order and two a priori second-order factor structure of the APRI-BT will be consistent across grade, as demonstrated by the restrictive nested models.

Hypothesis 1.3.1: Internal consistency of the SDQII-S. The internal consistency of the selected four a priori factor structure of the SDQII-S (mathematics, verbal, physical appearance and parental relations self-concept) will demonstrate excellent reliability estimates for total sample and across groups with the secondary student sample.

Hypothesis 1.3.2: Factor structure of the SDQII-S. It is predicted the selected four a priori factor structure of the SDQII-S (see Figure 4.3) will be a valid measure of students' self-concept, demonstrated by acceptable model fit. Figure 4.3 is a pictorial representation of the selected factor structure of the SDQII-S.



Note. Math SC= Mathematics Self-Concept, Verbal SC = Verbal Self-concept, Appear SC = Physical Appearance Self-Concept and Parental SC = Parental Relations Self-Concept.

Figure 4.3. Hypothesised Hierarchical Structure of the Self-Description Questionnaire II-Short (SDQII-S)

Hypothesis 1.3.3: Factorial invariance of the SDQII-S across gender. The four a priori factor structure of the SDQII-S will be invariant across gender (males and females), as it is predicted to be a consistent measure across these groups.

Hypothesis 1.3.4: Factorial invariance of the SDQII-S across school context. The selected four a priori factor structure of the SDQII-S will be invariant across school context as the measure holds the same meaning across single-sex and co-educational schools.

Hypothesis 1.3.5: Factorial invariance of SDQII-S across grade. The selected four a priori factor structure of the SDQII-S will be consistent across grade, as demonstrated by the restrictive nested models.

Hypothesis 1.4.1: Internal Consistency of the SBS Attachment to School. The internal consistency of the one-dimensional factor structure of the SBS will demonstrate acceptable reliability estimates for the attachment to school subscale across total sample and groups with secondary students.

Hypothesis 1.4.2: Factor structure of the SBS Attachment to School. It is predicted that the one-dimensional attachment to school scale of the SBS demonstrates a strong factor structure and acceptable fit, as tested by CFA. Figure 4.4 is a pictorial representation of the one factor structure of the SBS.

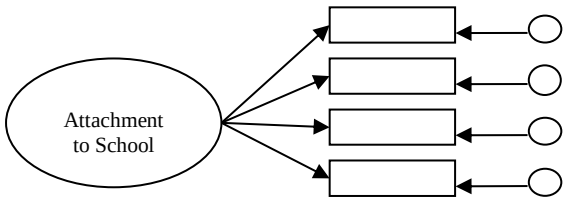


Figure 4.4. Hypothesised Unidimensional Factor Structure of the School Belonging Scale (SBS)

Hypothesis 1.4.3: Factorial invariance of the SBS Attachment to School across gender. The attachment to school factor of the SBS scale will be invariant across gender, as the subscale holds the same meaning and factor structure for both males and females, as demonstrated by restrictive nested models.

Hypothesis 1.4.4: Factorial invariance of the SBS Attachment to School across school context. The attachment to school factor of the SBS scale will be consistent across school context (single-sex and co-ed), as demonstrated by tests of invariance.

Hypothesis 1.4.5: Factorial invariance of the SBS Attachment to School across grade. The attachment to school factor of the SBS scale will hold the same meaning across grade, as demonstrated by the restrictive nested models.

Hypothesis 1.5.1: Internal consistency of the Short Form Depression Scale (DASS-21). The internal consistency of the one-dimensional depression factor of the DASS-21 will demonstrate acceptable reliability estimates across total sample, and groups with secondary students.

Hypothesis 1.5.2: Factor structure of the Short Form Depression Scale (DASS-21). It is predicted that the one-dimensional factor depression of the DASS-21 will demonstrate a strong factor structure and good model fit with adolescent students. Figure 4.5 is a pictorial representation of the one factor structure of the DASS-21.

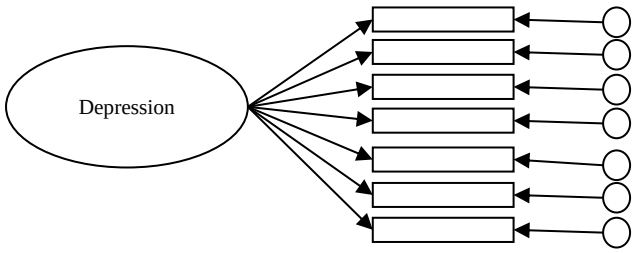


Figure 4.5. Hypothesised Unidimensional Structure of Depression (DASS-21)

Hypothesis 1.5.3: Factorial invariance of the Short Form Depression Scale (DASS-21) across gender. The depression factor of the DASS-21 scale will be invariant across gender, as the measure holds the equivalent meaning for males and females, as demonstrated by restrictive nested models.

Hypothesis 1.5.4: Factorial invariance of the Short Form Depression Scale (DASS-21) across school context. The depression factor of the DASS-21 scale will be similar across school context (single-sex and co-ed), as demonstrated by tests of invariance.

Hypothesis 1.5.5: Factorial invariance of the Short Form Depression Scale (DASS-21) across grade. It is predicted that the factor depression of the DASS-21 will

demonstrate a strong factor structure and good model fit with adolescent students. Figure 4.5 is a pictorial representation of the one factor structure of the DASS-21.

Research Question 1.6.1: Structural Integrity of the Battery of Instruments. When all individual scales are analysed and combined into one single battery of instruments, is the factorial structural integrity of all individual measures maintained when conducting confirmatory factor analysis? Are the network relations with other constructs logical and theoretically consistent?

Rationale for the Hypotheses and Research Questions

Rationale for Hypotheses 1.1.1-1.1.5: Psychometric testing of the ACBI. Cyberbullying is a relatively new area of research that is changing the way students bully one another, due to technological advancements, and although it shares some similarities in definition with traditional bullying, it also sets new precedents and identifies unique differences in behaviour (Rivers, 2013; Tokunaga, 2010). Research in the area has yet to address whether cyberbullying is in fact a new type of bullying, or whether it can be defined under the broad banner of bullying as a new sub type (Li, 2006, 2007b; Dooley et al., 2009; Kowalski, Morgan, & Limber, 2012; Smith 2012; Olweus, 2012; Waasdorp & Bradshaw, 2015). These definitional problems have led to researchers using a diverse selection of research tools, conceptualisations and theoretical frameworks, which in turn make comparisons across empirical studies impractical. Therefore, advancements in our understanding are problematic, due to the lack of consensus within the field, which leads to measuring potentially different constructs (Berne et al., 2013; Griezel et al., 2012; Li, 2006; Tokunaga, 2010).

Recently, researchers in the area of cyberbullying have begun to highlight and agree on some possible definitions and factors that may clarify what constitutes

cyberbullying, such as: incidents occurring over communication technologies and extending beyond physical locations, bullying 24/7, having the ability to reach larger audiences, and occurring anonymously (Tokunaga, 2010; Smith et al., 2008; Willard, 2007). Behavioural factors that have been documented include flaming, identity theft, sexting, harassment, cyber stalking and happy slapping (Hinduja & Patchin, 2009; Slonje & Smith, 2008; Willard, 2006). The present study attempts to advance cyberbullying research and address the above issues by creating a valid and reliable instrument with strong psychometric properties that: (a) measures cyberbullying behaviour; (b) is founded on a strong conceptual framework; and (c) encapsulates all possible perspectives, including victim, bully and bystander roles. It is therefore hypothesised that the psychometric properties of the ACBI will be a valid multidimensional measure with a clear and distinct a priori factor structure that is held invariant across different groups.

Rationale for Hypotheses 1.2.1-1.2.5: Psychometric testing of the APRI-BT. In the traditional bullying literature, there is a consensus that the definition of bullying is characterised by repeated acts of harm, whereby the aggressor intentionally provokes and hurts an individual or group (Olweus, 1993). Within this complex relationship there is a power imbalance, where the aggressor takes advantage of their higher social status and harms their targets by physically, verbally and/or socially causing hurt and psychological distress (Houbre, Tarquinio, Thuillier, & Hergott; 2006; Olweus, 1993; Sanders, 2004).

Marsh, Parada, Craven et al. (2004) and Finger, Yeung, Craven, Parada, and Newey (2008) examined the psychometric properties of the APRI-BT to provide support for its multi-dimensional factor structure. This instrument measures six scales (bully physical, bully verbal, bully social, target physical, target verbal, target social) in both secondary and upper primary student samples. Both studies conducted confirmatory factor analyses on the 36 item APRI-BT and found acceptable reliabilities for the six

bullying and target factors (ranging from .82 to .92), demonstrating strong factor loadings (Parada, 2006). However, some first-order factor correlations were high and lacked discriminant validity, suggesting the need to implement a second-order hierarchical factor structure.

It is therefore hypothesised that the APRI-BT instrument will be psychometrically sound, where all items load onto only those corresponding factors they were designed to measure, and distinctive factors will be found for the a priori first-order target (physical, verbal, social relational) and bully (physical, verbal, social) and second-order total bully and total target factor structures.

Rationale for Hypotheses 1.3.1-1.3.5: Psychometric testing of the SDQII-S. Shavelson, Hubner, and Stanton (1976) theorised self-concept to be a stable, developmental and multidimensional construct. Marsh and colleagues (Marsh, Bryne & Shavelson, 1988) created the Self Description Questionnaire to empirically evaluate Shavelson et al. (1976) and their hypothesised hierarchical factor structure. Subsequent developmental and domain specific self-concept versions were adapted, including the Self Description Questionnaire II (SDQII), which tailors measurement to specifically measure self-dimensions with adolescent samples. However, in school settings, the original 102 item version was considered lengthy, especially when researchers were utilising a combined battery of instruments with adolescents (Marsh, Ellis, Parada, Richards, & Heubeck, 2005).

A shorter version of the SDQII was developed to decrease administration time, leading to a 50 percent reduction of scale items. The SDQII-S's psychometric properties were evaluated, revealing a well-defined measurement model that was invariant across the original and short version samples under study (Marsh et al., 2005). Due to the number of instruments utilised in this study, four factors predicted to be strongly related to cyber

and traditional bullying motivation were selected (Marsh, Parada, & Ayotte, 2004). Factors selected included academic achievement (verbal and mathematics), physical appearance and parental relations self-concept. It is predicted that the selected four factor model will replicate previous psychometric results, and therefore the selected a priori factors will be psychometrically sound and invariant across different groups.

Rationale for Hypotheses 1.4.1-1.4.5: Psychometric testing of the School Belonging Scale (SBS). There are only a handful of studies that have investigated the relationship between cyberbullying and school connectedness (Cross et al., 2009; Cross, Shaw, Epstein, Monks, Dooley, & Hearn, 2012). In general, traditional bullying literature has found bullied students reporting lower levels of school connectedness and self-esteem, describing a lack of satisfaction in their lives and limited social support from their peers and teachers (Flaspohler, Elfstrom, Vanderzee, Sink, & Birchmeier, 2009; Skues, Cunningham, & Pokharel, 2005).

Parada and Richards (2002) created the SBS self-report measure to assess three important factors of belonging to a school: this included support, acceptance of school rules, and attachment to the school. Parada (2006) conducted a confirmatory factory analysis demonstrating an acceptable fitting model that reports high correlations between all latent factors ($r = .71$ to $r = .87$). Due to possible issues with multicollinearity, a unidimensional model of school belonging was proposed and psychometrically assessed. It is therefore predicted the SBS one factor model of attachment to school will demonstrate strong psychometric properties with secondary students.

Rationale for Hypotheses 1.5.1-1.5.5: Psychometric testing of the DASS-21. Traditional bullying research has found strong associations for students involved in bullying behaviours, with poorer psychosocial adjustment, as evidenced for example by psychosomatic complaints (e.g., headaches, stomach aches, body tension), which are

often associated with elevated levels of stress, anxiety and depression (Fekkes, Pijpers, & Verloove-Vanhorick, 2004; Hawker & Boulton, 2000; Nansel et al., 2001). Recent literature has found that victims associated with any form of bullying are all significantly at risk of experiencing depression symptoms (Perren et al., 2010; Wang et al., 2011).

The DASS-21 aims to measure three aspects of negative mental states, which comprise of the Depression, Anxiety and Stress subscales (Lovibond & Lovibond, 1995). Previously, studies with adult samples have replicated the three factor structure for the original 42 item DASS in both clinical and nonclinical populations, demonstrating good internal consistency and construct validity (Antony, Bieling, Cox, Enns, & Swinson, 1998; Lovibond & Lovibond, 1995; Page, Hooke & Morrison, 2007). Szabó (2010) extended this research by investigating the psychometric properties of the shortened version of the DASS-21 with an adolescent sample (grades 7 to 9). Szabó (2010) tested eight alternative models utilising CFA techniques; overall, the models lacked discriminatory validity and goodness of fit. The accepted model was the quadripartite structure revealing one second-order factor of negative affect (NA), as well as three first-order factors of depression, anxiety and stress, which improved model fit compared to the original DASS-21 structure. However, on closer examination, the first-order item loadings of the quadripartite model were quite low, with the majority of items reported below the recommended requirement of .40 (Bowen & Guo, 2011).

The results suggest that adolescents may not yet be developmentally aware of specific differences in emotional states, as reflected in the high correlations between stress/tension and anxiety items that need further refinement. Furthermore, many terms utilised in the questionnaire to describe negative affect, such as “agitated”, may be considered too technical for adolescent populations and should be interpreted with caution. Based on the reviewed literature, it was hypothesised, due to the lack of

discriminative validity in the adolescent age group and the technical language, that a unidimensional depression factor would be tested with an adolescent sample, as this factor had the strongest reported factor loadings (Szabó, 2010). It is predicted that the unidimensional factor structure will demonstrate good reliability estimates, strong factor loadings and model fit for this age group.

Rationale for Research Question 1.6.1: Structural Integrity of the Battery of Instruments. All instruments utilised in this study were selected to measure cyber and traditional forms of bullying and their related psychosocial outcomes. Throughout this study, individual instrument psychometric assessment predicts strong model fit for each scale, where all items load on their designated factors. However, even when individual model fit is found, the structural integrity of each scale may not be upheld when a battery of instruments are incorporated into one larger analysis (Marsh, 1994).

To test the structural integrity of the battery of instruments, a CFA was conducted, including all of the measures in one analysis. Due to the large number of instruments included in this analysis, psychometric assessment will be weighted on the pattern of results, and the goodness of fit criteria. An examination of within-network validity includes an evaluation of items, factor loading and latent factor correlation coefficients, to ensure that different factors have high discrimination validity. Furthermore, an assessment of between-network validity will be undertaken, assessing the logical theoretical pattern of relations between the measures of bullying and other related psychosocial constructs (Marsh et al., 2005). Thus, a research question was posed, exploring the structural integrity and network relations validity of the instrument battery utilised in this study.

Study 2: Examining the Psychosocial Correlates of Student Involvement in Cyberbullying and Traditional Bullying Behaviours

Statement of Problem

The aim of this study is to investigate both traditional and cyberbullying differences in gender, grade and school context: To explore whether cyber and traditional types of bullying vary as a function of: (a) gender and grade; and (b) school context and grade in school to ascertain the cyberbullying psychosocial correlates for involvement as a victim, bully and bystander; and traditional bullying psychosocial correlates as victim and bully. Additionally, this study sought to understand how traditional and cyber forms of bullying impact on psychosocial outcomes (i.e., self-concept, depression, school belongingness). Finally, this study investigates the potential overlap and relationship between traditional and cyberbullying constructs.

Research Issues

There are still gaps in the literature; these include the group differences and psychosocial correlates associated with bullying involvement (Brown, Demaray, & Secord, 2014; Walker et al., 2013). Investigating developmental differences can help us discover the peaks and declines in adolescent bullying behaviours, and uncover the key grades and ages when students are at their most vulnerable to victimisation and potential bullying involvement (Tokunaga, 2010; Varjas, Henrich, & Meyers, 2009). From an ecological perspective, it is important to investigate both traditional and cyberbullying holistically, to understand the connections between schoolyard aggression and how such incidents can translate onto virtual environments (Bronfenbrener, 1979; Li, 2006; Li, 2007a, Li, 2007b).

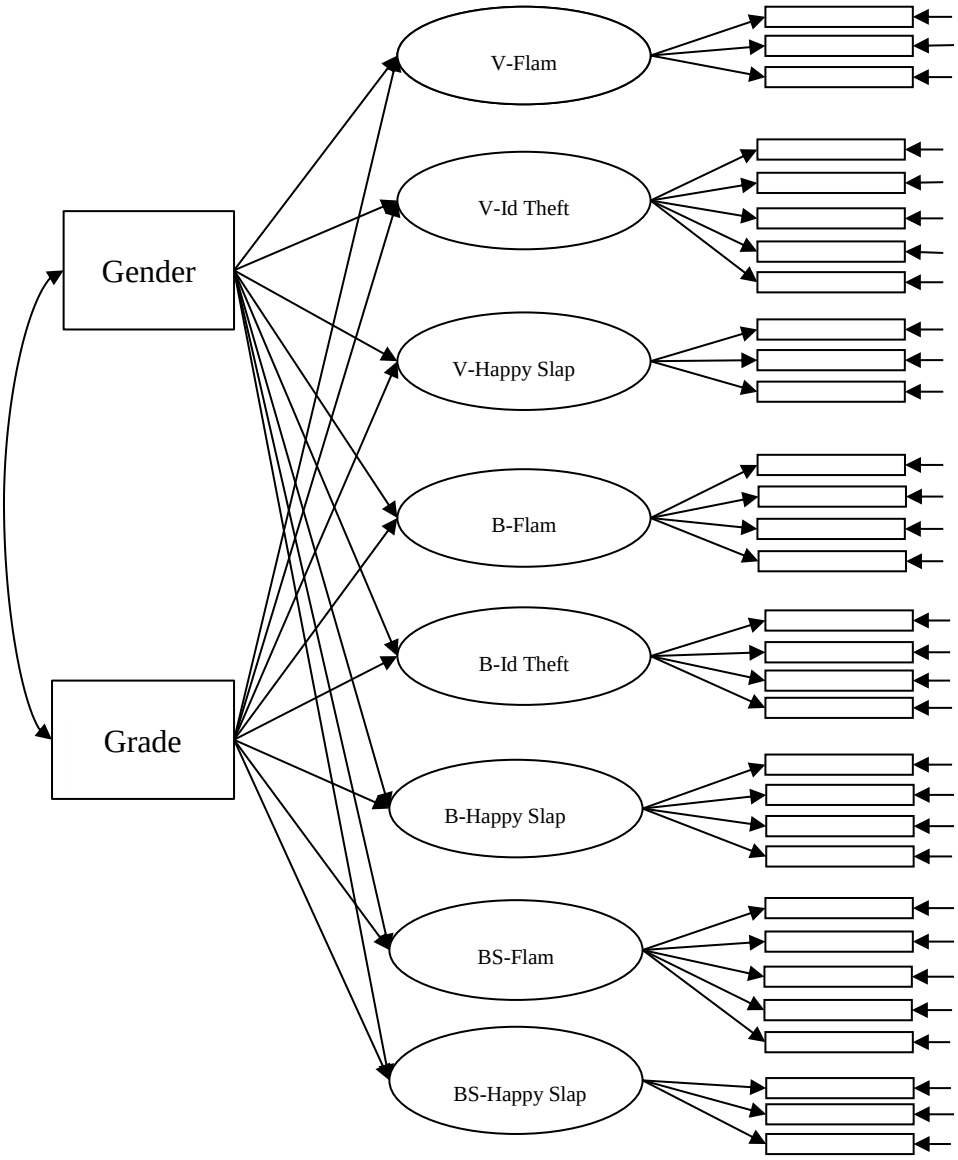
Aims

The aims of Study 2 are to conduct:

1. Multiple-indicator-multiple-cause (MIMIC) models to test the effects of gender and grade in relation to cyber and traditional types of bullying, to ascertain whether males and females engage in and experience different types of bullying behaviours at different grade levels;
2. MIMIC models to test whether cyber and traditional types of bullying vary as a function of school context and grade, to ascertain whether students who attend co-educational vs. single-sex schools engage in and experience different types of bullying behaviours at different grade levels;
3. Structural equation modelling (SEM) to investigate how traditional and cyberbullying involvement relates to the psychosocial correlates of: (a) self-concept; (b) school belonging; and (c) mental health (depression); and
4. CFA to investigate the connection between cyber and traditional bullying involvement.

Statement of the Hypotheses and Research Questions

Research Question 2.1.1: Gender and grade differences for student engagement in cyberbullying forms. Do males and females engage in and experience different forms of cyberbullying in different grades? This research question explored possible gender and grade differences with cyberbullying forms. See Figure 4.6 for a pictorial representation of the MIMIC model to be tested, analysing gender and grade demographic variables on the latent cyberbullying factors of the ACBI.



Note. First-order ACBI factors: V-Flam = Victim Flaming; V-Id Theft = Victim Identity Theft; V-Happy Slap = Victim Happy Slapping; B-Flam = Bully Flaming; B-Id Theft = Bully Identity Theft; B-Happy Slap = Bully Happy Slapping; BS-Flam = Bystander Flaming; BS-Happy Slap = Bystander Happy Slapping.

Figure 4.6. Hypothesised MIMIC model analysing gender and grade variables on the latent cyberbullying factors (ACBI).

Research Question 2.1.2: Gender and grade differences for student engagement in traditional bullying forms. Do males and females engage in and experience different forms of bullying behaviours in different grades? See Figure 4.7 for a pictorial representation of the MIMIC model to be tested, analysing gender and grade

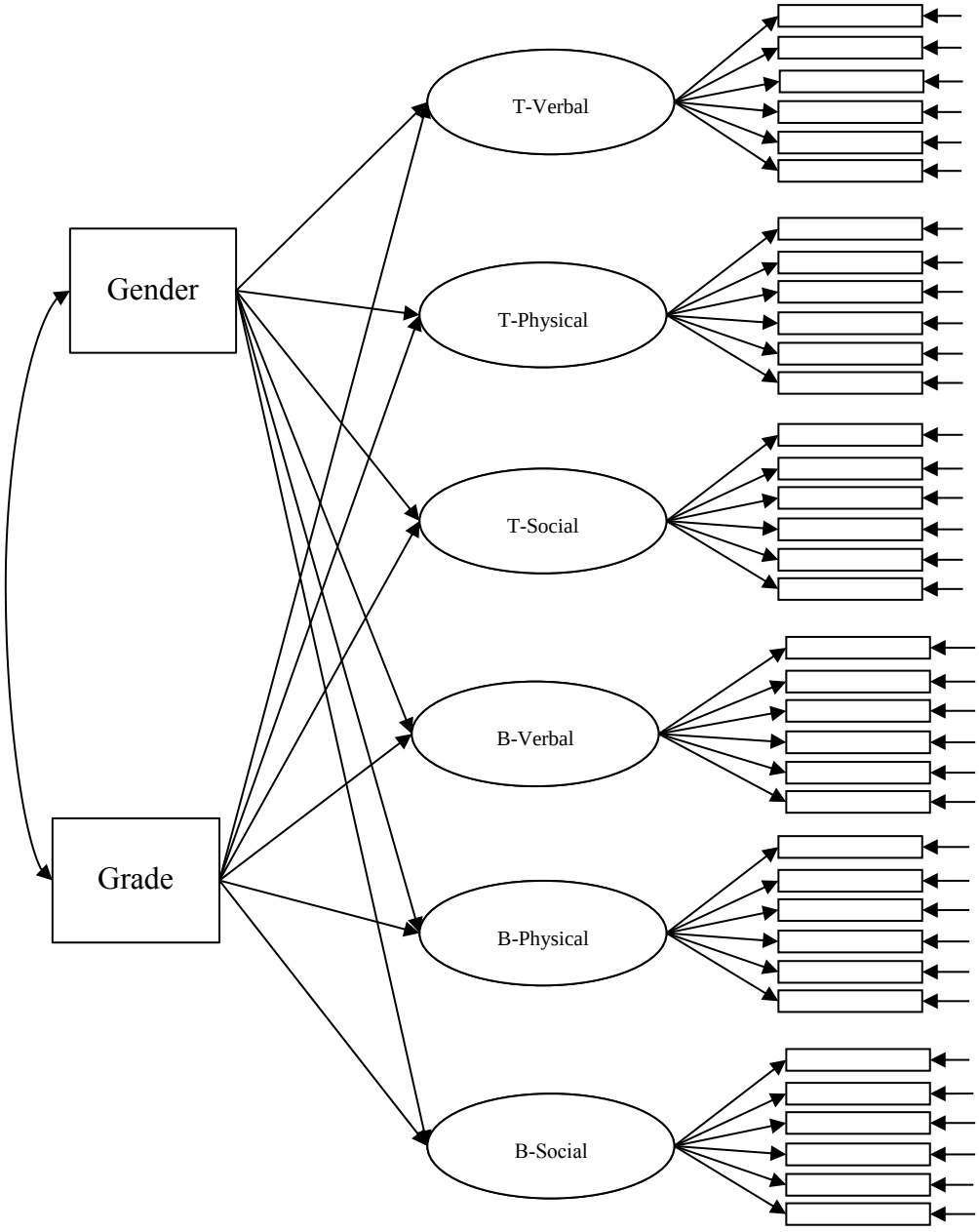
demographic variables on the latent traditional bullying factors of the APRI-BT. Traditional gender and grade differences will be explored in regard to the following matters:

(a) Are males more likely to participate in overt bullying aggression, to report higher levels of physical and verbal aggression and lower levels of social relational bullying?

(b) Are females more likely to participate in covert forms of bullying, to report higher levels of social-relational aggression and lower levels of physical and verbal bullying forms?

(c) Will students in Stage 4 (grades 7 and 8) report higher levels of physical bullying behaviours in comparison to Stage 5 students (grades 9 and 10)? and

(d) Will students in Stage 5 report higher levels of social relational aggression in comparison to students in Stage 4?

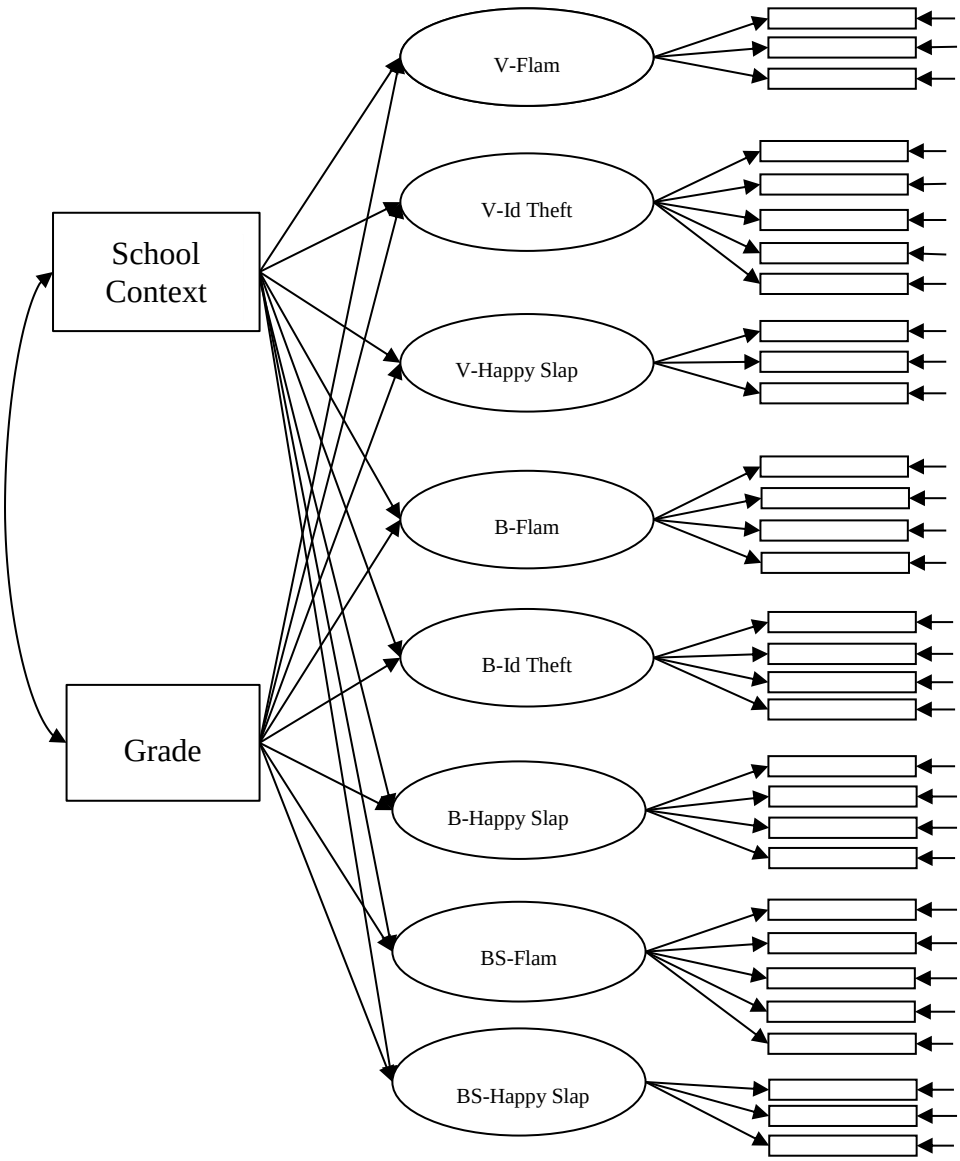


Note. First-order Factors APRI-BT: T-Verbal = Target Verbal, T-Physical = Target Physical, T-Social = Target Social, B-Verbal = Bully Verbal, B-Physical = Bully Physical, B-Social = Bully Social.

Figure 4.7. Hypothesised MIMIC model analysing gender and grade variables on the latent traditional bullying factors (APRI-BT).

Research Question 2.2.1: School context and grade differences for student engagement in different cyberbullying forms. Does school context (single-sex catholic school vs. state co-educational school) and grade (Stage 4 and Stage 5) affect

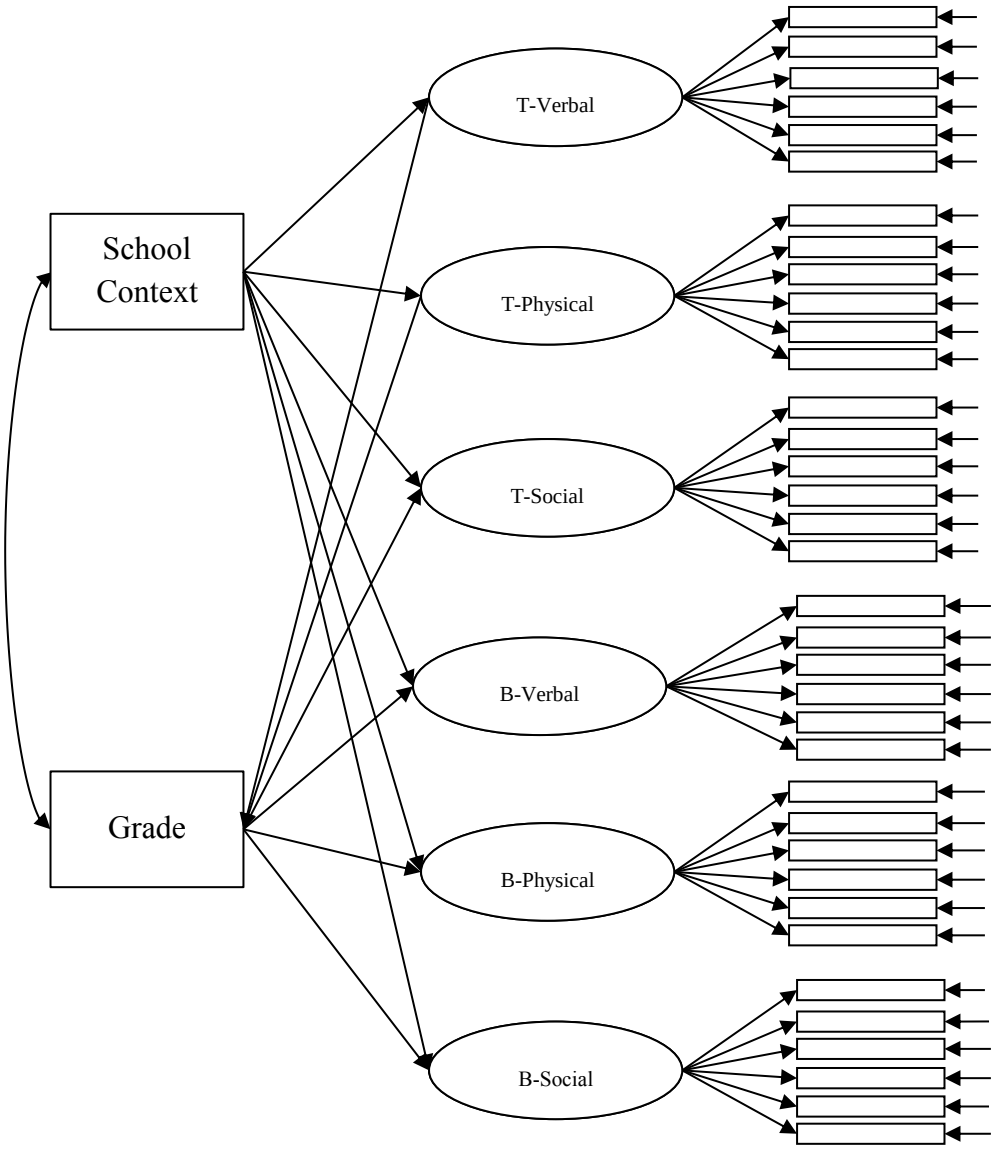
cyberbullying engagement? Research question 2.2.1 explores whether school context or grade affect participation in the cyberbullying forms of victim, bully and bystander. Figure 4.8 presents a pictorial representation of the MIMIC model to be tested, analysing school context and grade demographic variables on the latent cyberbullying factors of the ACBI.



Note. First-order ACBI factors: V-Flam = Victim Flaming; V-Id Theft = Victim Identity Theft; V-Happy Slap = Victim Happy Slapping; B-Flam = Bully Flaming; B-Id Theft = Bully Identity Theft; B-Happy Slap = Bully Happy Slapping; BS-Flam = Bystander Flaming; BS-Happy Slap = Bystander Happy Slapping.

Figure 4.8. Hypothesised MIMIC model analysing school context and grade variables on the latent cyberbullying factors (ACBI).

Research Question 2.2.2: School context and grade differences for student engagement in different traditional bullying forms. Do students from the single-sex school reveal higher levels of physical, verbal and social bullying in comparison to students from the co-educational school? (See Figure 4.9, a pictorial representation of the MIMIC model to be tested, analysing school context and grade demographic variables on the latent traditional bullying factors of the APRI-BT.)



Note. First-order Factors APRI-BT: T-Verbal = Target Verbal, T-Physical = Target Physical, T-Social = Target Social, B-Verbal = Bully Verbal, B-Physical = Bully Physical, B-Social = Bully Social.

Figure 4.9. Hypothesised MIMIC model analysing school context and grade variables on the latent traditional bullying factors (APRI-BT).

Research Question 2.3.1: Relations between cyberbullying factors and the psychosocial correlates for being bullied, bullying and witnessing others. What are the short-term effects for being involved in cyberbullying? What are the psychosocial

correlates of involvement as victim, bully and bystander in relation to: (a) self-concept; (b) school belonging; and (c) mental health (depression)?

Research Hypothesis 2.3.2: Relations between traditional bullying factors and the psychosocial correlates for being bullied and bullying. It is predicted that being bullied and bullying will be associated with poorer psychosocial functioning in terms of: (a) self-concept; (b) lack of school belonging; and (c) mental health (depression), with the exception that bullies reveal some small positive self-concept factor correlations (e.g., physical appearance).

Research Question 2.4.1: Exploring the overlap between traditional and cyberbullying behaviours. Explores the connections and potential overlap between cyber and traditional bullying constructs: Are perpetrators of traditional bullying more likely to be perpetrators online, and are cyber victims more likely to be traditionally bullied at school?

Rationale for the Hypotheses and Research Questions

Rationale for Research Question 2.1.1 and Hypothesis 2.1.2: Gender and grade differences for student engagement in cyberbullying and traditional bullying forms. Researchers have explored whether the same gender and grade patterns found in traditional bullying research can be applied to cyberbullying. Past evidence in traditional bullying research has revealed distinctive gender differences. Boys are more likely to participate in overt forms of aggression (e.g., physical fighting and verbal threats), while girls are perceived to be more manipulative and therefore more likely to participate in covert behaviours (e.g., damaging a peer's reputation) (Crick, Bigbee, & Howes, 1996; Crick & Dodge, 1994; Nansel et al., 2001; Olweus, 1993). However, research has found that gender differences may actually be more closely related than previously thought, as

Scheithauer et al. (2006) found boys were significantly more likely to perpetrate all forms of bullying, while no gender differences were found for victimisation. Interestingly, boys and girls indicated similar levels of verbal and relational aggression victimisation.

Furthermore, the traditional bullying literature has been divided in relation to when aggressive behaviour forms a developmental peak (Ma, 2001). Some studies suggest an increase in aggressive behaviour in grades 6, 7 and 8, followed by a gradual decline in grades 9 through to 11 (Marsh, Parada, Craven et al., 2004; Nansel et al., 2001). Other researchers suggest that different forms of bullying peak at different ages (William & Guerra, 2007). Williams and Guerra (2007) reported that physical and cyberbullying peaked in year 8 and declined in year 11. However, verbal bullying peaked in year 8 and stayed high in year 11. Scheithauer et al. (2006) found that younger students were more than twice as likely to be victimised and older students were more likely to be perpetrators of schoolyard aggression, as bullying stabilised and peaked from grades 7 to 9 and declined in grade 10. Overall, the cyberbullying literature on gender and grade differences has published largely inconsistent findings (Brown et al., 2014; Card et al., 2008).

Several researchers, drawing on similarities with traditional relational aggression findings (Keith & Martin, 2005; Kowalski & Limber, 2007; Smith et al., 2008) have predicted that females may be more likely to be involved in cyberbullying behaviours, because of the covert nature of cyberbullying. In direct contrast, Erdur-Baker's (2010) study reports males are most likely to bully in both physical and cyber settings. A recent meta-analysis study that included 122 effect size estimates found that males were more likely than females to be perpetrators of cyberbullying incidents. However, this result was moderated by age effects, as females were more likely to perpetrate cyberbullying behaviours in early adolescence, whereas males were more likely to perpetrate it in later adolescence (Barlett & Coyne, 2014).

Due to the complex nature of bullying phenomena, Gradinger, Strohmeier, and Spiel (2009) have recommended that both traditional and cyberbullying research must be studied simultaneously, before any age and gender differences can be clearly understood, as different groups may experience different levels of involvement for each bullying form. It is therefore critical that these gender and age differences are explored.

Rationale for Research Questions 2.2.1-2.2.2: School context and grade differences for student engagement in different cyberbullying and traditional bullying forms. Through the lens of the Bronfenbrenner theoretical perspective it is important to consider all micro-level factors when investigating adolescent bullying behaviour, as school environments can indirectly influence students' aggressive behavioural patterns. Such factors include individual school ethos and culture, gender composition and school climate, which make each individual school setting unique (Bronfenbrenner, 1977, 1979).

Preliminary research evidence suggests that when students become involved in bullying behaviours they often experience a feeling of disconnect from their school environment, due to the limited support and encouragement received from school staff, their teachers and peers (Cassidy, 2009; Skues et al., 2005). However, the school environment can also foster positive mental health outcomes, as research has found that school connectedness acts as a protective factor against antisocial and aggressive behaviours (Waters, Cross, & Shaw, 2010; Whitlock, 2006; You, Furlong, Felix, Sharkey, & Tanigawa, 2008).

Recent literature suggests that male single-sex school environments are more prone to conform to the pressures of gender stereotypical norms, which can ultimately influence the way students participate in, and are subjected to, aggressive behaviours (Gee & Cho, 2014; Johnson & Gastic, 2014). New research conducted by Gee and Cho (2014)

in South Korea revealed that boys in single-sex schools were more likely to participate in overt aggression behaviours such as physical and verbal bullying, in comparison to their male counterparts in co-educational schools.

Currently, there is limited research examining structural and functional school context factors such as gender composition (co-educational vs. single-sex), type of school (Catholic vs. Government) and school connectedness. Such factors may contribute to either the minimisation, or alternatively to the exacerbation of involvement in traditional and cyberbullying behaviours (Gee & Cho, 2014; Waters et al., 2010). Thus, unique individual school contextual and grade differences were explored, to help understand whether different school environmental factors play a role in reducing cyberbullying engagements.

Rationale for Research Question 2.3.1 and Hypothesis 2.3.2: Relations between cyberbullying/traditional bullying factors and the psychosocial correlates for being bullied, bullying and witnessing others (cyberbullying only). Since research into the area of cyberbullying is relatively new, little is known about the possible psychosocial outcomes (self-concept, school connectedness and mental health). Campbell (2005) reports that although the long-term consequences of cyberbullying are not known, it is speculated that such consequences could be more severe than those associated with traditional methods (Campbell, Spears, Slee, Butler, & Kift, 2012; Lodge & Frydenberg, 2007; Kowalski, Limber, & Agatson, 2008; Perren et al., 2010; Smith & Slonje, 2010). In contrast, a few researchers have provided a counter argument: that traditional bullying involvement leads to more negative psychosocial correlates (e.g., Hase, Goldberg, Smith, Stuck, & Campain, 2015; Olweus, 2012).

Smith (2012) has countered Olweus (2012), stating that although some similarities and overlap between the two types of bullying can be found, cyberbullying incidents

comprise of new, unique characteristics. For example, cyberbullying can occur continuously, with the victim having no place to hide. Even when victims block the perpetrator or delete their social networking profile, perpetrators can persist with their online abuse. More research is needed to identify the psychosocial effects of being bullied, bullying and witnessing others so as to probe the complexity of the bullying cycle and later to inform prevention/intervention programs to reduce negative psychosocial outcomes for students.

Moreover, traditional bullying research has consistently found that bullied students display poor self-concept outcomes in most, if not all factors, while inconsistent self-concept outcomes have been found for bullies (Hawker & Boulton, 2000; O'Moore & Kirkham, 2001; Marsh, Parada, Yeung, & Healey, 2001). A longitudinal national American study examined students in grades 8, 10 and 12 with aggressive and troublemaking behaviours (i.e., involvement in overt aggressive behaviours at school), and their victims' self-concept profiles. The results revealed that both victim and aggressor factors were positively correlated over time; this reveals a theoretical overlap between the two groups (i.e., victims are more likely to be involved in aggressive behaviour, and aggressors are more likely to be victimised). The results revealed that low self-concept may be a trigger of participation in aggressive behaviours as a coping mechanism to boost a victim's low self-concept. For example, victims are likely to model aggressive behaviour toward weaker peers (Marsh et al., 2001). As predicted, the victim factor was consistently and negatively correlated with self-concept factors over time. However, troublemaker correlates were substantially smaller and sometimes were not statistically significant, in comparison. Specifically, the troublemakers' opposite-sex self-concept factor was positively inflated, which indicates that perceived support of the

troublemakers' aggressive actions from peers of the opposite sex may have further reinforced the aggressive behaviour (Marsh et al., 2001).

It was therefore hypothesised that traditional victims and bullies will report negative psychosocial effects for most outcomes, with the exception of bullies reporting a small positive self-concept for some SDQII-S factors.

Rationale for Research Question 2.4.1: Exploring the overlap between traditional and cyberbullying behaviours. Li (2006; 2007a, 2007b) was one of the first researchers to explore the overlap between traditional and cyberbullying types**.** These findings appear to support the relationship between traditional and cyberbullying, which indicates that the cycle of violence continues from the playground to the virtual environment. Hence, Li and others recommend that cyberbullying should be examined not as a separate entity but rather as a connected bullying issue that has developed out of traditional bullying types, and that has adopted technology (Beran & Li, 2005; Cross et al., 2009; Li, 2007; Waasdorp & Bradshaw, 2015). Therefore, it is predicted that with cyberbullying behaviours, bully and victim can be mutually reinforcing roles that are perpetuating the cycle of violence. The relationship between traditional forms of bullying and cyberbullying behaviours will be explored, as the research provides strong evidence suggesting that these two forms of bullying overlap.

Study 3: A Qualitative Investigation Capturing Three Stakeholders' Perspectives of Cyberbullying Experiences

Statement of Problem

As intervention programs have had limited to modest success in reducing bullying incidents, it is important to examine bullying phenomena from a socio-ecological

perspective that extends beyond students involvement, by examining the broader social context, which includes students, school staff and families (Bronfenbrenner, 1979; Smith, 2011; Ttofi & Farrington, 2011).

Questions from the student questionnaires guided the development of the semi-structured qualitative interview schedules. The key focus of this study was to gather stories from participants, to gain access to all the key stakeholders involved, and to identify both the psychosocial drivers that perpetuate bullying and the positive drivers that prevent bullying from occurring. This research advances the field by providing recommendations from key stakeholders to seed an intervention to promote the health, online safety and wellbeing of students.

Research Issues

The majority of bullying research is based on quantitative experimental designs, with only a small number of qualitative studies investigating cyberbullying (Mishna & Van Wert, 2013). In particular, a lack of qualitative or mixed methods research exists in this field. One of the first published qualitative articles investigating bullying through student, parent, and teacher interviews has enriched our understandings of bullying (Mishna, Pepler, & Wiener, 2006). The results indicated that students and adults agreed that bullying is a harmful issue that needs to be addressed. Teaching staff noticed a lack of school policies in dealing with indirect forms of bullying, which resulted in difficulties for educators in differentiating bullying incidents from non-bullying issues. Furthermore, teachers reported struggling with how to respond to a bullying incident, as they are often not present when the bullying incident occurs. Students reported feeling frustrated when they deemed an incident to be bullying and adults did not intervene appropriately. Mishna

et al.'s (2006) study reaffirmed the need for a clearer operationalised definition of what constitutes bullying, and the increased need for all stakeholders to be trained in how to respond and mediate when bullying incidents occur. The present investigation seeks to address the lack of mixed methods studies in bullying research, in order to provide a more thorough understanding of the bullying dynamic, and in particular, that of cyberbullying.

Aims

Study 3 aims to enrich and extend the findings from Studies 1 and 2 by elucidating students', parents', vice principals', school counsellors' and teachers' shared perceptions of:

1. The nature and forms of cyberbullying;
2. The characteristics, motivations, and goals of traditional and cyberbullies;
3. The impact of traditional and cyberbullying on bullies, victims, bystanders and families;
4. How adults respond to a bullying incident and the willingness for students to disclose the incident;
5. The relations between cyberbullying and traditional bullying types; and
6. Characteristics of seeding success for cyberbullying interventions.

Statement of Research Questions

Research Question 3.1.1: Students', parents' and school staffs' definitions of traditional and cyber forms of bullying. Stakeholders' perceptions of how they define traditional and cyber forms of bullying will be explored through three sub-questions: (a) how do key stakeholders' descriptions of traditional bullying and cyberbullying differ; (b) can stakeholders give some examples of the different forms of bullying they may have

encountered; and (c) can stakeholders give examples of bullying incidents that have occurred (personal involvement, as a bystander, or adult intervening)?

Research Question 3.1.2: Students', parents', school staffs' perceptions of where and when cyberbullying incidents most likely take place. Where and when are cyberbullying incidents most likely to take place, do they occur more frequently in schools or after school hours?

Research Question 3.2.1: Students', parents' and school staffs' perceptions of why students are involved in bullying. What motivates students to participate in bullying behaviours?

Research Question 3.3.1: Students', parents' and school staffs' perceptions of the effects of cyber and traditional bullying. What are the psychological effects of bullying involvement? How does a bullying incident affect the bullies, victims, bystanders, schools and families? When a bullying incident takes place, how do students, school educators and parents cope and feel?

Research Question 3.4.1: Students', parents' and school staffs' perceptions of to whom students disclose and how adults respond. This research explores the barriers for peers against disclosing a bullying incident, with questions including: (a) how do students disclose a bullying incident; (b) whom are they most likely to disclose to and why; and (c) how do adults respond to a bullying incident?

Research Question 3.5.1: Students', parents', school staffs' perceptions of the connection between cyber and traditional bullying. Are cyber and traditional bullying behaviours connected?

Research Question 3.6.1: Characteristics of seeding successful cyberbullying prevention/interventions strategies. Key stakeholders will be asked to generate

recommendations to seed successful intervention and prevention efforts for school, family and the community, in respect of the following broad questions:

(a) Are students aware of any safety measures that can prevent a bullying incident?

(b) Do students know of any strategies to prevent bullying incident occurrences?

(c) Are students and parents aware of the school procedures in place to prevent bullying (i.e., prevention programs) and are these procedures effective?

(d) What procedures are schools using to prevent traditional and cyberbullying?

(e) How do school staff members intervene when a bullying incident has occurred?

(f) Can key stakeholders provide recommendations to reduce bullying?

(g) How can schools deal with cyberbullying that can occur anytime, anywhere?

(h) What can schools do when cyberbullying happens beyond school?

(i) What do parents think when cyberbullying has the potential to occur in their home?

Rationale for Research Questions

Rationale for Research Questions 3.1.1-3.1.2: Students', parents' and school staffs' definitions of traditional and cyber forms of bullying. Research consensus on definitional criteria for traditional bullying research seems to be evident, as most studies define an incident as: (a) an intentional act of harm; (b) signified by the power imbalance between the perpetrator and victim; and (c) repetitive in nature (Olweus, 1993). However, researchers are still debating whether the same criteria can be applied to cyberbullying forms (Menesini, 2012). Focus groups across all important stakeholder groups assist in clarifying and triangulating the research findings by defining and identifying the specific behavioural forms students engage in. Furthermore, focus groups will aid our

understanding of how traditional and cyberbullying are conceptually related yet uniquely different.

Moreover, it is important for researchers to uncover the most common locations where cyberbullying behaviours thrive, in order to provide educators and parents practical recommendations on how to reduce bullying incidents over ICTs. The ACBPS found that students in grades 7, 8 and 9 who experienced cyber victimisation every few weeks, reported that the most common locations were at school (during breaks) and at home. More research is needed to explore where bullying incidents are most likely to take place, in order to better equip schools to prevent such incidents (Cross et al., 2009).

Rationale for Research Questions 3.2.1: Students', parents', teacher' and school staffs' perceptions of why students are involved in bullying. Currently there is a gap in the literature, as only a few research studies have investigated the potential motivational drivers for engagement in cyberbullying perpetration. Using open-ended survey questions, Raskauskas and Stoltz' (2007) preliminary study explored students' perceived motivational reasons as to why students engage in cyberbullying perpetration. The most common responses for why they would be involved in cyberbullying perpetration were for fun (38 percent), followed by anger and retaliation (25 percent), low self-worth ("because bullies felt bad about themselves") (six percent) and unsure (31 percent). These perceived motivational drivers were consistent with traditional bullying motives, as students often rationalise their behaviours, using an external locus of control, and placing the blame on their targets (Espelage & Swearer, 2003; Raskauskas & Stoltz, 2007).

Similarly, a more recent study, further investigated whether cyberbullies, cyberbully-victims, traditional bullies and traditional bully-victims differ in underlying motivational mechanisms. The findings showed that the leading reason for engagement

in either traditional and cyberbullying was anger. However, traditional bully-victims and cyber bully-victims scored higher overall in motives of anger, power, affiliation and fun. These results suggest that combined bully-victim roles not only engage in perpetration to cope with anger, but also to reach instrumental goals (e.g., popularity). Furthermore, boys scored significantly higher in power and fun motives in comparison to girls (Gradinger, Strohmeier, Schiller, Stefanek, & Spiel, 2012). Overall, there is a considerable gap in cyberbullying and traditional bullying research in respect of examining complex underlying drivers such as feeling, motivations and emotions in a mixed methods or qualitative bullying research design.

Rationale for Research Question 3.3.1: Students', parents' and school staffs' perceptions of the effects of cyber and traditional bullying. School bullying is a serious issue that can have a negative emotional impact on students, teachers, schools, and families, if left unaddressed (Cross et al., 2009). Within the literature, there is limited research on the psychosocial effects cyberbullying behaviours can have on bystanders and families. In comparison to students not involved in traditional bullying, research has revealed that students involved in bullying behaviours perceive reduced life satisfaction and feel less socially supported by their teachers and peer group, in comparison to students not involved (Flaspohler et al., 2009). Research conducted by Colarossi and Eccles (2003) found that if adolescents perceived they had low social support from peers, teachers and/or parents, bullying, could lead to detrimental effects on mental health outcomes: for example, depression and low self-esteem.

It is important that research explores the gaps in the literature qualitatively, investigates the impact of cyberbullying on bullies, targets, bystanders and families, and identifies strategies to reduce bullying that will ultimately reduce community costs by avoiding poorer mental health outcomes.

Rationale for Research Question 3.4.1: Students', parents' and school staffs' perceptions of whom students disclose to and how adults respond. It is important that youth subjected to bullying abuse can disclose the incident to an adult, to facilitate an intervention process (Mishna & Alaggia, 2005). Consistent with traditional bullying literature, students are often reluctant to disclose instances of cyberbullying to an adult, to avoid confrontation and possible retaliation from their perpetrators. Generally, there is a lack of student confidence that adult involvement would achieve a positive outcome. Recent qualitative research conducted by Mishna, Saini et al. (2009) uncovered some unique factors contributing to lack of cyberbullying disclosure. This included a fear that parents will overreact and remove technological access (e.g., confiscate their phone) in an effort to protect their children from further victimisation. Therefore, more research is needed, to uncover the reasons why adolescents do not disclose, as this could be a key contributing factor to understanding why bullying intervention programs have had mixed success.

Rationale for research question 3.5.1: Students', parents', and school staffs' perceptions of the connection between cyber and traditional bullying. Generally, cyberbullying incidents occur outside school hours, but the issues are often brought back to the schoolyard the next day. It is essential that researchers work closely with students, schools and families to understand the reciprocal relations and interactions across multiple contexts, which can ultimately affect the behaviours that manifest in situated and cyber spaces (Mishna, 2012). Therefore, it is important to conduct interviews across multiple stakeholders, to gain a clearer picture of a theoretical structure of how traditional and cyberbullying co-exist.

Rationale for Research Question 3.6.1: Characteristics of seeding successful cyberbullying prevention/interventions strategies. The existing literature suggests that

the best interventions advocate a whole school approach, which encourages input from parents, students, teachers and the wider community (Cross et al., 2011; Frisen & Holmqvist, 2010; Olweus, 1994). Hence, drawing from the wisdom and experiences of the individuals that experience, witness and intervene in cyberbullying, it is important for researchers to acquire the ideas and perspectives of all stakeholders, to elucidate the best strategies to counter cyberbullying, and to produce new, nuanced understandings of the phenomena.

Chapter Summary

This chapter has outlined and identified the aims, research questions, hypotheses and rationales for the three studies. On the basis of theoretical underpinnings and empirical evidence, the chapter has explained the purpose of each stage of the research design and a rationale for each Research Question and Hypothesis, responding to the research reviewed in chapters 2 and 3.

The overarching aims for this research study are to:

1. Create a psychometrically sound measure of cyberbullying and find valid and reliable instruments to measure other psychological constructs.
2. Investigate the contributing factors that lead to involvement in bullying behaviours, and ascertain the psychosocial correlates of traditional and cyberbullying for victims, bullies and cyber bystanders in adolescents.
3. Gather qualitative data through semi-structured interviews with students, parents and teaching staff to gain knowledge of their personal perspectives and experiences with cyberbullying, to provide prevention/intervention recommendations generated by the key stakeholders involved.

CHAPTER 5: METHODOLOGY

A mixed methods way of thinking actively engages us with difference and diversity in service of both better understanding and greater equity of voice.
(Greene, 2008)

Introduction

The overall purpose of this chapter is to explain the methodology used for each of the three interrelated studies. The current research investigation adopts a concurrent mixed methods design to examine three interrelated studies. This chapter outlines the methodology for the hypotheses and research questions detailed in Chapter 4. Study 1 investigates the psychometric properties of the newly developed cyberbullying instrument (Adolescent Cyber Bullying Instrument: Victim, bully and bystander scale [ACBI]) and confirms the psychometric properties of the established psychosocial instruments. Study 2 closely continues from study 1 by using advanced statistical analyses to investigate the underlying behaviours and psychosocial correlates of bullying incidents, as reported by adolescent students. Specifically, structural equation modelling analyses will be used to examine the relationships between bullying behaviours, psychosocial and mental health outcomes. Lastly, study 3 involves semi-structured focus group and individual telephone interviews with relevant stakeholders (students, their

teachers and their parents), which provide insights into, and enrich our understanding of students', educators' and parents' perceptions of cyberbullying behaviours. Study 3 draws on the different perspectives of the stakeholders to triangulate the data and provide recommendations to seed successful cyberbullying prevention/intervention programs.

Mixed methods Research Design

A Rationale for a Mixed Methods Design in Bullying Research. Historically, the behavioural and social sciences have debated whether it is better to engage in quantitative or qualitative research paradigms (Datta, 1994; Guba & Lincoln, 1994; Johnson & Gray, 2010; Tashakkori & Teddlie, 1998). Quantitative researchers endorse the scientific enquiry method of research, where observations are objective, testable and measurable. According to this viewpoint, researchers should remain unbiased and emotionally detached from their research, and should test their hypotheses empirically (Cherryholmes, 1992; Guba & Lincoln, 1994). On the other hand, qualitative researchers pursue multiple understandings of social reality, as there is not one story but many stories of lived experiences to contribute to research knowledge. Qualitative researchers interpret and reflect on the expert knowledge of their respondents' stories, which empowers and gives a voice to the lived experiences of their participants through empathic discovery (Hesse-Biber, 2010; Johnson, & Onwuegbuzie, 2004).

In these paradigm debates, quantitative and qualitative purists are strong advocates for their respective research paradigms, and each position their approach as superior. Out of these debates however, a third research paradigm, of mixed methods, emerged. This approach recognises the value of both quantitative and qualitative research, as it enhances the strengths and reduces the weaknesses of each position, subsuming the

middle ground and adopting an holistic research paradigm (Onwuegbuzie & Johnson, 2006; Tashakkori & Teddlie, 1998).

Mixed methods research can be defined as the eclectic third wave research movement that attempts to incorporate multiple approaches in answering research questions, by integrating both quantitative and qualitative methods into a single study or series of interrelated studies. The mixed methods approach is an open and creative research paradigm, which neither limits the researcher nor forces them to choose one methodology over another, but allows the researcher to embrace multiple approaches. Many research questions will benefit from a mixed approach, as it can offer a more complete answer to understanding multidimensional and complex social phenomena (Greene, 2008; Johnson & Onwuegbuzie, 2004). Greene (2008) asserts that a mixed methods approach allows researchers to "participate in multiple ways of seeing and hearing, multiple ways of making sense of the social world" (p. 20).

The advantages of employing a mixed methods approach. A mixed-methods design can aid researchers to gain a deeper understanding of existing theoretical perspectives, and enables the discovery of new theoretical territory (Hesse-Bieber, 2010). Combining both quantitative and qualitative research produces a more complete understanding of a phenomenon, which can then inform theory, research and practice (Johnson & Onwuegbuzie, 2004).

Greene, Caracelli, and Graham (1989) identified five important rationales for using a mixed methods approach: triangulation, complementarity, development, initiation and expansion. Triangulation refers to seeking convergent validity by using multiple methods to investigate the same phenomenon, and assists in offsetting biases in each method and enhancing the validity of result findings. Complementarity allows the researcher to cross-validate both quantitative and qualitative findings when both methods

are yielding similar result outcomes. Development assists project progress by applying the results of one method to help shape and inform the other method, adds value to the project and capitalises on method strengths. Initiation can highlight the divergent findings across different methods, and compares quantitative with qualitative data by analysing results for the purpose of investigating new perspectives about the phenomena brought forth by contradiction. Finally, expansion is intended to increase the coverage and range of inquiry by utilising multiple methods to facilitate future research possibilities.

This thesis employs and capitalises on the following mixed methods analytical tools: (a) triangulation of quantatitative and qualitative findings to strengthen the validity of research findings; (b) drawing on complementarity findings to increase meaningfulness and clarification of research outcomes; and (c) seeking to capitalise on development, as one method helps to inform another research method.

Mixed methods designs in bullying research. The majority of school bullying literature has used quantitative approaches (Hong & Espelage, 2012; Powell, Mihalas, Onwuegbuzie, Suldo, & Daley, 2008). Powell et al. (2008) conducted a review of mixed-method designs utilised in bullying research by examining psychological database publications from 2000 to 2004. This review identified 75 bullying articles, with only seven studies (9 percent) using a qualitative approach and 12 (16 percent) implementing mixed method designs. An over-reliance on quantitative studies limits the field's scope and overall understanding of complex social phenomena (Hong & Espelage, 2012; Powell et al., 2008). It is recommended that bullying researchers employ multiple measurement strategies to assist in obtaining a more accurate depiction of the bullying phenomenon. This includes obtaining data from multiple sources (parents, teachers and peers) and using multiple methods to understand and identify the relations of bullying

behaviour, as well as uncovering bullying correlates (age, sex, and psychosocial factors) (Hong & Espelage, 2012; Griffin & Gross, 2004; Smith, 2004).

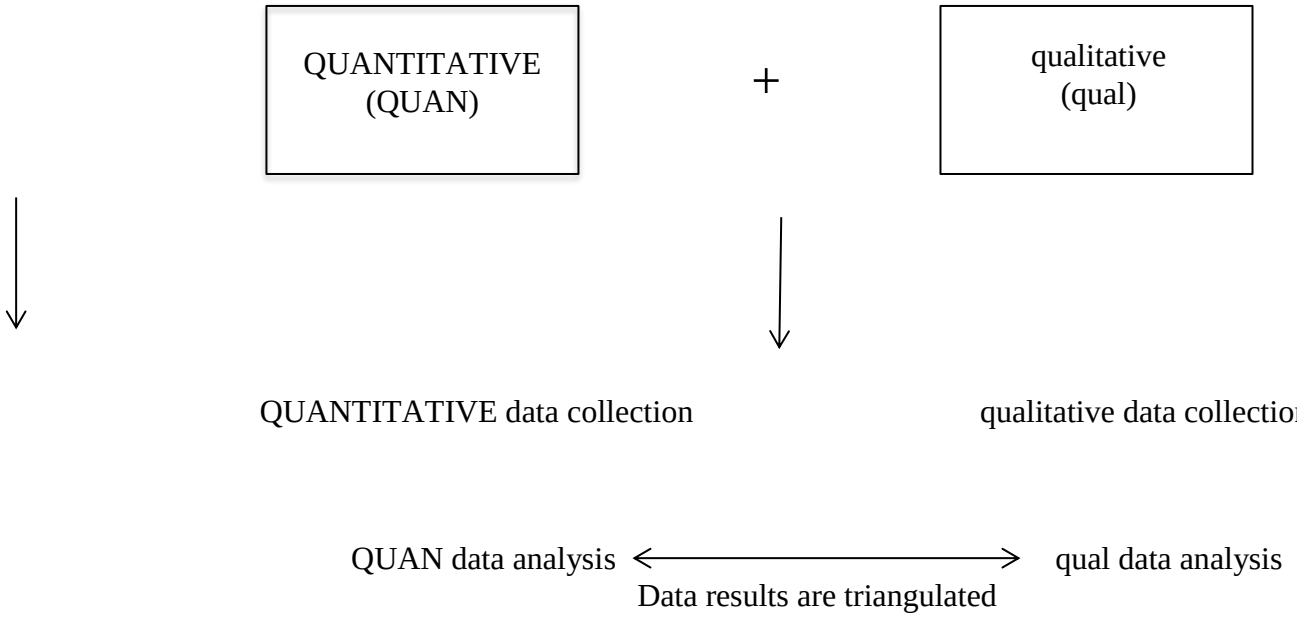
Hong and Espelage (2012) recently conducted a mixed methods review of bullying studies published from 1997 to 2011. A total of 20 mixed method studies on school bullying were identified. Overall, the results found that mixed methods research helps to advance knowledge by generating new insights and empirical tests of new ideas, which enables an investigation of complementary and divergent findings. It combines objective scientific enquiry with an empathic understanding of an individual's personal experiences at school. It enables researchers to ask new questions from different perspectives and provides a more in depth and holistic understanding of the bullying phenomenon.

Since bullying behaviours are constantly changing and evolving, Hong and Espelage (2012) recognise the need for future mixed-method studies in bullying. More research is needed to capture how adolescents socially interact and adopt new technologies, as a means to cyberbully others. Moreover, a mixed-method approach assists in exploring the extent to which student involvement in traditional bullying behaviours overlaps with involvement in cyberbullying behaviours. Such an holistic research paradigm has the potential to explain the gaps in our understanding and offer clarity in understanding the bullying dynamic. Utilising a mixed-method paradigm can advance scholars' and practitioners' knowledge, whilst aiding in the development of prevention programs by accounting for the complexities of the bullying dynamic between adolescents, schools, families and technology (Hong & Espelage, 2012).

Basic steps in choosing a mixed methods design. Developing a mixed methods study involves a number of critical steps. These steps are: (a) mapping out the overall aims and purpose of the study; (b) designing the research questions; (c) deciding on your

research sample and type of data to be collected; (d) deciding whether a specific theoretical lens will be used to examine the data; (e) planning the data collection process; (f) determining an appropriate method of data analysis; and (g) indicating when integration of quantitative and qualitative data occurs (Hanson, Creswell, Clark, Petska, & Creswell, 2005). There are several typologies of mixed methods research designs available for researchers to choose from, and ultimately the choice depends on the researcher's overall questions and design.

The typology selected in this research investigation is called a concurrent triangulation design (see Figure 5.1). In this mixed methods study, both the quantitative and the qualitative data were collected and analysed simultaneously, and each study used the Bronfenbrenner ecological lens (1979) to guide the purposes, research questions, design and analysis of the study. The research prioritised the quantitative methodology (two quantitative studies and one qualitative study), but quantitative and qualitative data were integrated and interpreted at the discussion stage of the study. This design was implemented to triangulate and cross-validate the findings across methods. As cyberbullying is a relatively new phenomenon, using this mixed methods design will aid in answering the research questions and uncovering the gaps in the research literature, by attempting to present well- supported research results for the three interrelated studies (Creswell, 2010; Hanson et al., 2005; Jick, 1979).



Note. The Concurrent Triangulation Design model has been adapted from Creswell, Clark, Gutmann, and Hanson's (2003) model. The upper case letters on the quantitative data collection suggests the greater emphasis on this form of data collection, as there were two quantitative studies in this thesis and one qualitative study.

Figure 5.1. Concurrent Triangulation Design

Research Participants and Recruitment Procedures

Ethical Requirements. Prior to approaching potential schools for this research investigation, ethical approval was required and obtained from Western Sydney University's (Western) Human Research Ethics committee, through the completion of a National Ethics Application Form. On approval from Western's ethics committee, the New South Wales Department of Education and Community (DEC) was contacted to obtain state schools' ethics approval. Individual principals were contacted for permission to conduct research in private schools. Once this was granted, letters of invitation were distributed to potential NSW secondary schools in the Western Sydney and Central Coast regions. The school principal in each school made the final decision as to whether the

school would voluntarily take part in this study. All professionals, students and parents of students in this study were treated equally and respectfully, and they were invited to participate on a voluntary basis.

School Recruitment Process

Four high schools (private and public) were initially approached on the basis of the schools' geographic locations. School invitation letters were sent to obtain principal consent. Two NSW secondary schools (one co-educational and one single-sex) agreed to participate in this study. At the time of school recruitment, the NSW state co-educational school consisted of a total of 1,100 students and the faith based single-sex boarding school, reported 1,000 student enrolments. The researcher then contacted both schools and arranged to meet with the vice principals, counsellors and year co-ordinators (from grades 7-10) to discuss the overall research design of the study in detail. Vice principals, school counsellors and year co-ordinators received information sheets relaying the background information and purpose of the research (see Appendix A). Vice principals, school counsellors, teachers and year co-ordinators also received a consent form indicating whether they would be willing to participate in a focus group interview on their perceptions of cyber and school bullying. Staff consents were collected by school counsellors (see Appendix B).

A total of 1,350 parental consent forms were distributed across the two schools. Year co-ordinators from the NSW state school distributed 650 parental permission letters to students in grades 7 through 9 during roll call. Year co-ordinators from the faith based boarding school distributed 700 parental permission letters to students in grades 7 through 10 during roll call On the parental consent form, parents were asked whether their children were able to participate in both a student questionnaire and focus group interview

on students' perceptions of bullying behaviour. Parents were also invited to participate in a telephone interview about their perceptions of cyberbullying and school bullying (see Appendix C). Year co-ordinators collected and returned parental consent forms, and school counsellors collected staff consent forms to participate in this study across the two secondary high schools (see Appendix D). It should be noted that student consent was later obtained immediately prior to survey administration.

Participants

Quantitative studies 1 and 2. Participants were drawn from two secondary schools. The private, faith-based single-sex (male) school recruited 442 students in grades 7 to 10 (approximately 63% response rate), and the state co-educational school recruited 183 students in grades 7 to 9 (approximately 28% response rate). The state co-educational secondary school did not include their grade 10 students in this sample (except for one student eager to participate in this study), as data collection occurred during the time of their school certificate examinations. Participants ranged from 11 to 16 years of age (M = 13.9, SD = 1.2). The sample consisted of 533 males and 92 females, with a total sample of N = 625 students, which is presented in Table 5.1. The sample of students for studies 1 and 2 participated in taking the student survey.

Table 5.1.

Characteristics of Participants by Grade in Studies 1 and 2 Across Both Schools

Grade	Total Participants		Male		Female		Mean Age	SD
	N	%	*N*	%	*N*	%		
7	195	31.2	149	23.8	46	7.4	12.6	.50
8	154	24.6	127	20.3	27	4.3	13.7	.50
9	153	24.5	135	21.6	18	2.9	14.5	.51
10	123	19.7	122	19.5	1	0.2	15.6	.49
Total	625	100.0	533	85.3	92	14.7	13.9	1.2

Note. Percentage indicates percentage of total sample, not of grade.

Qualitative study 3. The qualitative component of this research investigated the personal perceptions and life events of students, their parents, and professional school staff, in respect of experiences of cyber and traditional bullying behaviours during secondary school. The qualitative sample consisted of a total of 81 participants drawn from the two secondary schools. The sample was drawn from students in grades 7-10, their parents and professional school staff (i.e., secondary teachers, grades 7-10 unit co-ordinators, school counsellors and vice principals. Participants from this study were a subsample of students from the same two schools described in the previous, quantitative studies (studies 1 and 2). The data were collected in the form of focus groups with students and professional school staff. Individual telephone interviews were conducted with the students' parents. Unit co-ordinators and school counsellor/social welfare officers were asked to nominate student participants who had consented to the focus group interview sessions and who were ideal candidates to discuss school bullying issues. This resulted in 13 focus group interviews with a sample of 57 students (see Table 5.2), 14 professional staff (n = 8 female; n = 6 males) and 10 individual telephone parental interviews (n = 10 females): a total of 25 semi-structured interviews.

Table 5.2.

Characteristics of Student Participants by Grade in Study 3 Across Both Schools

Grade	Total Participants		Male		Female	
	N	%	*N*	%	*N*	%
7	16	28.1	10	17.6	6	10.5
8	18	31.6	8	14.0	10	17.5
9	15	26.3	10	17.6	5	8.8
10	8	14.0	8	14.0	0	0.0
Total	57	100.0	36	63.2	21	36.8

Note. Percentage indicates the percentage of total sample, not percentage of grade.

Study 1: Psychometric Evaluation of the Newly Developed Cyberbullying Instrument, and the Validation of Existing Measures in Bullying Research

Overview

This section outlines and discusses the initial design and development stages of the ACBI and the selection of established instruments, followed by the procedure and a detailed description of the treatment of data prior to analysis (i.e., data screening, missing data, and tests of reliability). After the completion of preliminary data analysis, confirmatory factor analysis (CFA) and tests of factorial invariance were utilised, to ensure the ACBI was psychometrically validated. CFA was also utilised to ensure the established comprehensive battery of instruments within the survey was also psychometrically sound.

Materials and Instrumentation

Initial instrument considerations. An instrument test battery was selected on the basis of established instruments' strong psychometric properties, and to address the psychosocial research gaps present in cyberbullying research. This ensured that the instruments used were valid and reliable for measuring the psychological constructs under investigation. The surveys contained a series of multidimensional and unidimensional measures to examine the overarching research aims, hypotheses, research questions and demographic characteristics of interest (see Appendix E for all instrument items). The research survey included 56 demographic questions relating to ownership and hours using technology, and 95 survey items. Constructs measured by the selected instrument battery included: cyberbullying (flaming, identity theft and happy slapping), traditional bullying (physical, verbal and social relational), school belonging, self-concept and a mental health

outcome (depression). The instruments used in the present investigation were administered to all students participating in the quantitative study.

The Development of the Cyber Bullying Instrument (ACBI)

The Adolescent Cyber Bullying Instrument: Victim, bully and bystander measure (ACBI) was specifically developed for the purposes of the current study. As previously discussed in Chapters 2 and 3, due to the plethora of methodological and measurement issues arising in cyberbullying research, it was deemed necessary to develop a new, psychometrically sound measure that was grounded in a solid conceptual framework, and which could be rigorously tested statistically, and validated.

Item generation. In developing the ACBI, a four step scale construction process was implemented. The scale construction process included: (a) devising theoretically grounded constructs to be measured; (b) choosing an appropriate response format and creating an initial item pool that was relevant to the intended constructs to be measured; (c) checking survey items had been written in a language that could be understood by the intended population to be measured, including standardised instructions and operational definitions; and (d) conceptually attending to the proposed scale as a whole, to confirm the scale would be valid, practical and psychologically informative (Furr, 2011). Three cyberbullying factors were developed to measure the various specific behaviours of the cyberbullying construct, whilst trying to reduce the overlap between factors to ensure strong discriminant validity (Furr, 2011; Nunnally, 1978).

Factors and items were generated and founded on the conceptual framework of Willard's (2006) definitions of the different types of cyberbullying behaviours and Kowalski et al.'s, (2008) extension and revision of these behaviours. The taxonomy of

factors included: (a) flaming, when a hostile exchange occurs whereby perpetrators send rude and/or vulgar messages via ICTs to their targets, usually in public forums; (b) identity theft, which can occur when an individual gains access to a target's account for the purpose of sending inappropriate and cruel information to the victim's friends; and (c) happy slapping, to set up and take photos or record their targets during embarrassing moments or pranks without the victim's permission (see Chapters 2 and 3 for an in depth review). The factors and items were created to test the conceptual theoretical framework, and to assess the frequency and extent of student involvement in these behaviours. This resulted in a total of eight a priori first-order factors, measuring cyberbullying behaviours from three potential student perspectives. This includes victim factors (Victim Flaming, Victim Identity Theft and Victim Happy Slapping), bully factors (Bully Flaming, Bully Identity Theft, Bully Happy Slapping), bystander factors (Bystander Flaming and Bystander Identity Theft) and three second-order factors (Total Cyber Victim, Total Cyber Bully and Total Cyber Bystander) (See Chapter 4). At the conceptual stage of instrumentation, an initial item pool of 31 questions was developed, to create the ACBI (see Appendix F for instrument breakdown).

The Adolescent Cyber Bullying Instrument (ACBI). The ACBI was specifically developed by the researcher to measure cyberbullying behaviours for secondary school students. The ACBI measures victim, bully and bystander behaviours. The first section (11 items) asked students to what extent they had experienced the following, using ICTs, in this schooling year. Questions are rated across a seven-point Likert scale (1 = *never* to 6 = *everyday*). The second section (12 items) asked students to state whether they have engaged in a series of cyberbullying behaviours against others via ICTs this schooling year. The third section (8 items) asked to what extent they have witnessed the following via ICTs this schooling year (see Table 5.3 for definitions of

factors and sample items). Each section's items were randomly ordered within the separate sections of the survey. The final psychometric properties of the model will be presented in Chapter 6.

Table 5.3.

Summary item description of the Adolescent Cyber Bullying Instrument: Victim, Bully and Bystander (ACBI)

Scale	Description	Sample Items
Victim Flaming	When a victim receives hostile and rude messages via ICTs, usually in public forums.	Individuals have been spiteful to me on public websites.
Victim Identity Theft	An individual gains access to a target's account for the purpose of sending inappropriate and cruel information to the victim's friends.	Individuals have taken my mobile phone to send nasty messages to my friends.
Victim Happy Slapping	When victims are set up by students taking inappropriate photos or recording targets without their permission during embarrassing moments or pranks.	Individuals have "set me up" by creating and recording an embarrassing situation that was later uploaded.
Bully Flaming	When an individual antagonises their victims by leading a heated, nasty exchange via ICTs, which is intended to hurt their targets, usually in public forums.	On public websites I've used offensive language directed at certain individuals.
Bully Identity Theft	When a cyber perpetrator gains access to a target's account (e.g., stealing password) for the purpose of sending inappropriate and cruel information to the victim's friends.	I have pretended to be "someone else" to send/post information to make them look bad
Bully Happy Slapping	When cyber perpetrators setup students by taking photos or recording of their targets without permission to embarrass and intentionally hurt their victims.	I have posted embarrassing photos of individuals without their permission to expose them.

Bystander Flaming	When an individual witnesses hostile and rude messages being sent to victims via communication technology in a public forum.	When I'm using some public websites I have observed users who have been hostile towards others.
Bystander Happy Slapping	When an individual witnesses embarrassing photos or recording uploaded without the targets permission to intentionally hurt them.	I have viewed a video online which makes fun of other individuals.

Note. Responses were made on a seven-point scale 1 = *never* to 6 = *every day*.

Traditional Bullying: The Adolescent Peer Relations Instrument-Bully/Target (APRI-BT)

The Adolescent Peer Relations Instrument-Bully/Target (APRI-BT) was specifically devised to measure traditional bullying behaviours in adolescents (Parada, 2000). The APRI-BT was based on previous theoretical frameworks measuring school bullying and target experiences. Bullying behaviours were divided into three different types of traditional bullying behaviours: physical, verbal and social-relational aggression (Bjorkqvist, 1994; Olweus, 2013; Owens, Shute, & Slee, 2000; Salmivalli, kaukiainen, & Lagerspetz, 2000) and there are a total of six a priori factors (Bully Physical, Bully Verbal, Bully Social Relational, Target Physical, Target Verbal And Target Social Relational). This instrument was developed to measure traditional bullying behaviour on a six point Likert scale; the original response scale was used in this study.

The first section of the APRI-BT (18 items) asked students to state how often on a six point Likert scale (1 = *never* to 6 = *everyday*) they engaged in a series of behaviours against other students; for example, a physical subscale sample item included, e.g., "I slapped or punched a student". The second section (18 items) asked participants how often they had been a target of such behaviours: for example, a verbal subscale sample

item included, e.g., “A student made rude remarks about me”. Previous research has shown instrument item reliabilities to be strong, ranging from α = .82 to .92 (Marsh, Parada, Craven et al., 2004; Parada, 2000, Parada, 2006).

School Belonging Scale (SBS)

The School Belonging Scale (SBS) was originally developed by Parada and Richards (2002), and is a self-report instrument measuring three aspects of school connectedness. These three aspects were highlighted in the literature as important indicators of aggressive behaviour in schools (Jenkins, 1997; Mayer & Leone, 1999; Wilson, 2004). There is a total of three a priori factors: attachment to school, acceptance of the rules and school support. The original scale comprises a total of 12 items for all three a priori factors, with responses indicated on a six-point Likert scale (1 = *strongly disagree* to 6 = *agree*) asking students how they feel about their school at the present time. Due to the lack of discriminant validity between factors, the scale was adapted to include the strongest factor, attachment to school, with a Cronbach’s alpha estimated reliability of α = .87. The attachment to school scale (containing four items) sample item included, e.g., “I feel like I belong at my school”. Further studies are required to ensure the model demonstrates good fit with other populations (Parada, 2006). Staying consistent with the SBS, the attachment to school factor was scored on a six point Likert response scale (1 = *strongly disagree* to 6 = *agree*); the original response scale was used for this study.

Self-Description Questionnaire II Short-Form (SDQII-S)

The SDQ-II was developed to measure self-concept with adolescent samples, from grades 7 through 12. The original 102 item SDQ-II questionnaire measured multiple

dimensions of self-concept, including 11 specific factors (General School, Verbal, Mathematics, Emotional Stability, Honesty-Trustworthiness, Parent Relations, Single-sex Relations, Opposite-Sex Relations, Physical Appearance, Physical Abilities, Global Self-Esteem) (Marsh, 1990).

Due to the length of the SDQ-II, a short version was adapted (SDQII-S), without compromising the psychometric validity (Marsh, Ellis, Parada, Richards, & Heubeck, 2005). The revised shortened version refines the original 11 dimensions of self-concept, with a total of 51 items, wherein 20 items are negatively worded. For the purposes of this cyber and traditional bullying study, two academic and two non-academic domains were adapted from the SDQII-S. These were Verbal (5 items), Mathematics (4 items), Physical Appearance (4 items) and Parent Relations (4 items). Academic subscale sample items included, e.g., "Mathematics is one of my best subjects", and "I am hopeless at English classes". Non-academic subscale sample items included "I have a nice looking face" and "I get along well with my parents". Staying consistent with the SDQII-S, all items were scored on a six point Likert response scale (1 = *False* to 6 = *True*), the original response scale used in this study.

Previous rigorous psychometric testing has found that the SDQII-S has a valid and stable factor structure with high discriminant validity (Hattie, 1992; Marsh, Parada, & Ayotte, 2004; Marsh et al., 2005). Alpha estimates of reliability have been found to range from $\alpha = .79$ to .91 (Hattie, 1992; Marsh, Parada, & Ayotte, 2004; Marsh et al., 2005). Furthermore, the SDQII-S has been acknowledged within the research community as one of the most valid and reliable measures of self-concept. Research has recently shown that the SDQII-S is also a sound and robust measure across many cross-cultural groups and educational settings (Bodkin-Andrews, Ha, Craven, & Yeung, 2010; Hattie, 1992).

Depression, Anxiety, and Stress Scale-21 (DASS-21)

The Depression, Anxiety, and Stress Scale-21 (DASS-21) is a shortened self-report measure designed to assess negative mental health states experienced over the past week (Lovibond & Lovibond, 1995). The DASS-21 is adapted from the original DASS 42-item scale, and consists of three dimensions of mental health states: Depression, anxiety and general stress. Each subscale contains seven items, and Depression, Anxiety and Stress scores are determined by summing the seven items for each related factor. Due to the limited discriminant validity between latent factors, correlations were high, as depression and anxiety share a common underlining latent factor of general negative affect (see Chapter 4). The strongest subscale, depression, was selected, due to the strong item factor loadings and the Cronbach's alpha reliability estimate of $\alpha = .94$ (Antony, Bieling, Cox, Enns, & Swinson, 1998). The Depression subscale measures dysphoria, hopelessness, lethargy, anhedonia, and loss of interest in enjoyable activities. Sample scale items included, e.g., "I couldn't seem to experience any positive feelings at all" (Clark & Watson 1991; Lovibond & Lovibond, 2005, p. 1). Participants were asked to rate their responses on a four-point Likert scale from 0 ("*did not apply to me at all*") to 3 ("*applied to me very much, or most of the time*"); the original response scale was used in this study (Lovibond & Lovibond, 2005).

Survey Administration Procedure

A strict protocol was followed during data collection, to ensure the data were collected consistently across the two schools. A roll was taken during school assembly, and students without parental consent were sent back to class to work on an alternative task. Students with parental consent forms were allocated to either a computer lab (online survey) or the school hall (paper survey). All students were informed that their

participation was on a voluntary basis only and that they could withdraw from the study at any time without penalty. The purpose of the study was explained to students prior to taking part, and participation was anonymous. Students from the private faith based school received an http web link to access an online survey. Students from the state school received a paper survey, as there was a limited number of computers at this school.

Paper survey. A paper version of the survey was distributed; students were asked to sign and date the consent form to participate in the study. To ensure all students understood the content of the survey, the survey was read aloud to all students by an experienced researcher. School teachers were also present during administration to answer any questions, and to help supervise student behaviour. The survey took approximately 50 minutes for students to complete, and all testing commenced simultaneously so as to avoid feedback with other students. The researcher and school staff collected all surveys. Student surveys were assigned a unique identification code to ensure the anonymity of student participation. At the end of participation, students were all thanked and debriefed, and the school counsellor was available for students who needed further debriefing. All paper surveys were locked and stored in the secure data storage unit at the university.

Online Survey. A replica online survey was created using Survey Monkey in 2012. Teachers administering the online survey during class were trained by the researcher to administer the survey uniformly. Teacher were provided with the web link and with written instructions explaining how to administer the online survey. During administration, the researcher was available in the event that any questions from teachers or students needed to be answered. All online data were saved on a USB stick and stored in the secure data storage unit at the university.

Quantitative Data Analyses

Data Screening. Using SPSS software version 21.0, all data were screened for accuracy in survey responses, data entry, missing values and univariate and multivariate outliers. The data were screened to ensure that assumptions of normality, linearity and homoscedasticity were met (Hills, 2011; Tabachnick & Fidell, 2007). Preliminary data screening included checking each survey to ensure there were no patterns or misleading responses. Any survey found to have patterned or unusual responses (e.g., extreme scores) was deleted. A missing value analysis was conducted in SPSS to check the percentages of non-random missing data for individual cases. All individual cases with 50 percent missing data or over were deleted (as recommended by Hair, Black, Babin & Anderson, 2010): a total of $n = 36$ cases were removed, equating to five percent of the overall sample.

The assumptions of linearity and homoscedasticity were met. Initially, univariate and multivariate outliers were identified in the data through histograms and box plots. Following the recommendations of Tabachnick and Fidell (2007), raw scores were converted to standardised scores (z-scores) to identify outliers. Z-scores greater than ±3.29 are potential outliers. Outliers were modified by transforming the raw score to one unit more extreme than the next most extreme score. Multivariate outliers were identified by a large Mahalanobis distance score ($p < 001$). Hills (2011) recommends large scores be removed from analysis, as outliers can lead to type I and II errors, distorting data outcomes. Subsequently, four cases were identified as multivariate outliers and were deleted from the analysis using listwise deletion.

Small percentages of random missing data are to be expected in survey data. However, any type of missing data can present problems, especially when using advanced statistical software packages such as Mplus. For randomly missing data, the data were replaced via the Expectation Maximization (EM) algorithm in SPSS. EM is an iterative

two stage process that does not alter the variance covariance matrix. EM estimates replacement values by making the best possible estimates of missing data by utilising means, standard deviations and correlations of data that are not missing for that particular item (Hair et al., 2010; Tabachnick & Fidell, 2007). Schafer and Graham (2002) recommend utilising the EM algorithm as it is a sophisticated state of the art approach in dealing with missing data, overcoming problems associated with traditional methods such as listwise deletion.

Reliability Analyses

The importance of measuring validity and reliability in psychological constructs is discussed in Chapter 3**.** Reliability analysis was conducted utilising Cronbach's alpha, which assesses the internal consistency of each subscale of the entire scale. Cronbach's alpha is the most widely reported and recognised method to measure internal consistency (Hair et al., 2010). Although there is no clear consensus on what constitutes acceptable reliability, it is generally agreed the lower limit should be .70 or .80 (Anastasi & Urbina, 1997; Hair et al., 2010). However, Nunnally (1978) and Hair et al. (2010) suggest that alpha may be set at .60 for exploratory research. Therefore, for the purpose of this study, considering there are aspects within this investigation that are exploratory (e.g., creating a new cyberbullying instrument), reliability estimates greater than .90 will be considered excellent, above .80 good, and above .70 acceptable; alphas above .60 are to be interpreted with caution. Cronbach's alpha was performed for each instrument factor, prior to confirming the a priori factor structure for adolescent high school students.

Confirmatory Factor Analysis (CFA)

When acceptable reliabilities were established for each instrument's factor scales, rigorous psychometric testing was conducted by a series of CFAs to validate the a priori factor theoretical structure of each instrument using Mplus 6.12 (Brown, 2006; Muthén & Muthén, 2010). CFA is a statistical technique widely used during the process of scale development as it provides a confirmatory test of the measurement theory (Hair et al., 2010). CFA examines the model relationships between survey items (observed indicators), testing whether the items are an accurate representation of the underlying psychological constructs (latent factors, e.g., cyberbullying, self-concept). CFA provides statistical evidence of convergent and discriminant validity. Convergent validity is provided by strong evidence indicating that items developed on theoretical frameworks are closely interrelated, and discriminant validity is provided by results indicating factors are distinctive and not highly correlated (Brown, 2006).

CFA was utilised in the present investigation to test the a priori hypothesised theoretical structure by evaluating whether: (a) the significant parameter estimates are consistent with a priori theory; (b) the solution is parsimonious; and (c) the goodness of fit indices can be deemed acceptable (Brown, 2006; McDonald & Marsh, 1990). The CFA obtains estimates for each parameter of the model: e.g., factor loadings, factor variance, factor co-variances, and unique error variances. Multiple CFAs were conducted on the eight factors of the Adolescent Cyber Bullying Instrument; six factors of the Adolescent Peer Relations Instrument-Bully/Target (Parada, 2000); one factor of the School Belonging Scale (Parada & Richards, 2002); four factors of the Self Description Questionnaire II Short-form (Marsh, 1992); and one factor of the Depression Anxiety and Stress Scale-21 (Lovibond & Lovibond, 2005).

After specifying the model to be estimated, the next phase is to evaluate how closely the actual data represent the proposed theoretical model; this process of examining goodness-of-fit indices (Brown, 2006) is called "model fitting". Although the "golden rules" or cut-off criteria guidelines are highly debated within psychological literature, the two most common ways of evaluating model fit are the chi-square statistic (χ^2) and goodness of fit-indices in relation to rules of thumb (Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004). The most commonly used guidelines were suggested by Hu and Bentler (1999), where rigorous goodness of fit between the hypothesised model and observed data is obtained when: (a) the chi-square examines the difference in the observed and estimated covariances matrices (i.e., "product of the sample size minus 1 and minimum fitting function denoted as $\chi^2 = (N - 1) F_{min}$" (p. 2); Standardised Root Mean Square Residual (SRMSR) values are close to .08 or below; (b) Root Mean Square Approximation (RMSEA) values are close to .06 or below; and (c) Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) values are close to .95 or greater.

However, caution should always be exercised when interpreting the data. It is recommended that the researcher should "immerse themselves in their own data" for greater understanding (Marsh, Hau, & Wen, 2004, p. 321). Therefore, cut-off values and rules of thumb should be used as a general guideline only. Researchers should use their own professional judgement when selecting the best fitting model, as values can often fluctuate, due to differing modelling conditions and sample sizes (Brown, 2006; Hu & Bentler, 1999; Marsh, Balla, & McDonald, 1988; Marsh, Hau, & Wen, 2004).

Factorial Invariance Testing Across Gender, School Context and Grade

After CFA has verified and established the construct validity of each factor structure, an extension of this analysis is to determine whether the measurement model

holds the same structure across different sub-groups (e.g., gender, school, grade) (Byrne & Campbell, 1999). Testing to ensure equivalent representations of the construct are held across sub-groups is key for the development of new psychometric instruments, as invariance testing ensure items within a questionnaire have the same meaning to all sub-groups of the sample. This process is achieved by conducting a logical series of statistical model comparisons with increasingly restrictive constraints (Brown, 2006; Byrne, 2012; Hair et al., 2010; Marsh, 1994).

Factorial invariance testing for school context and grade. This study examined factorial invariance across school context and grade in relation to the ACBI, APRI-BT, SBS, SDQII-S and the DASS-21. Although there is no clear consensus within the literature on how to order invariance constraints, Marsh (1994) recommends that the hierarchical ordering of tests should be decided by evaluating the aims and objectives of each individual study. Therefore, three logically structured and increasingly restrictive models were run, that were appropriate to this study's aims and objectives. The first model (M1), configurable invariance, also known as a totally free model, is the least restricted model, and all parameters are estimated separately for each group; this model becomes the baseline model for subsequent comparisons. The first model is a critical step: if this model does not fit the data, then none of the other, more restrictive models will succeed (Hair et al., 2010; Marsh, 1994). The second model (M2), metric invariance, holds factor loadings invariant across groups, and determines cross-group validity beyond the factor structure. The third and final model (M3), scalar invariance, tests for equality of the measured variable intercepts (e.g., means) of the construct. These tests are helpful in determining the reliability of the scales and determining invariance across groups (Hair et al., 2010).

The baseline model was compared with two subsequent models, and changes of goodness of fit indices were checked to determine whether the factor structure was invariant across the groups of interest. Invariance can be determined by the chi-square difference test (χ^2). A non-significant χ^2 value indicates failure to reject the null hypothesis, "indicating the covariance matrix is identical to the observed co-variance matrix", which is usually accepted as evidence of invariance (Hair et al., 2010; Cheung & Rensvold, 2002, p. 234). However, using the traditional χ^2 statistic test alone can be problematic because of its sensitivity to large sample sizes. Goodness of fit indices have been proposed as an alternative to the χ^2 statistic. Cheung and Rensvold (2002) recommend that changes in the CFI statistic should ideally be no greater than 0.01 to meet the cut-off criteria for invariance between groups. Although there is much controversy in the literature as to what level of invariance is required to satisfy factorial invariance, Marsh, Hau, and Wen (2004) explains that the minimum requirement to establish weak invariance is to examine metric invariance, testing equivalence for all factor loadings across multiple groups. A general consensus within the literature suggests that strong invariance can be obtained when metric invariance and scalar invariance are established (Hair et al., 2010; Marsh, 1994; Meredith, 1993). Therefore, the suggested guidelines above will be utilised to establish strong factorial invariance in the current study.

Factorial invariance testing for gender. This study adopted a factorial MIMIC invariance approach across gender, due to the small female sample, relative to the male sample (females $n = 92$, males $n = 533$). Since the gender groups were not proportionally balanced, and traditional invariances tests could not be examined, the group differences of the model could not be identified. Increasingly within the social sciences, it has become common practice to test measurement invariance utilising MIMIC models, as when researchers collect data in applied settings, group sizes often vary (Kim, Yoon, & Lee,

2012). This technique is often utilised to overcome smaller and unequally distributed sample issues by examining latent means and intercept invariance. This approach integrates and interprets the analysis on the basis of combining both MIMIC and invariance testing model strengths. This alternative approach is more parsimonious, allowing invariance tests to be conducted with smaller, unequally distributed sample sizes (Marsh, Nagengast, & Morin, 2013; Morin, Marsh, & Nagengast, 2013).

MIMIC models are a multivariate regression technique allowing causal indicators of factors to be regressed on observed predictors (Marsh, Tracey, & Craven, 2006; Morin et al., 2013). To measure MIMIC invariance, monotonic DIF (non-invariance of intercepts) can be assessed by two nested model conditions. To test measurement invariance, the first model is the (baseline) where (β) path parameters are constrained to zero; this model is referred to as the comparison model of latent means. The second model (invariant intercepts) freely estimates the paths from the predictor variables to the latent factors. If model 1 fits substantially better than model 2, then there is evidence to suggest the non-invariance of intercepts. However, if both models are equivalent, and the two models' CFI do not differ by more than .01, as recommended by Cheung and Rensvold (2002), and the RMSEA increases by less than .015, then intercept invariance can be assumed (Chen, 2007; Morin, Marsh, & Nagengast, 2013).

Summary

This section has outlined the development of the new ACBI and the battery of instruments selected. Study 1 describes the statistical procedures required to achieve the aims outlined, which includes rigorously testing the psychometric properties of the ACBI and established instruments. Furthermore, this study tested the factorial invariance of the measurement scales to ensure that measurement equivalence across multiple groups was

obtained. Advanced structural equation modelling techniques will be described in Study 2.

Study 2: Examining the Psychosocial Correlates of Student Involvement in Cyberbullying and Traditional Bullying Behaviours

Overview

Study 1 developed the new ACBI and conducted CFA to evaluate the psychometric properties and validate the construct validity of the battery of instruments selected. Study 2 investigates the causal relationships between variables, where two or more variables can be used to predict a desired outcome. The study investigated: (a) traditional and cyberbullying differences in gender, grade and school context; (b) how traditional and cyber types of bullying impact differently and correlate with psychosocial outcomes (i.e., self-concept, depression, school belongingness); and (c) the potential overlap between traditional and cyberbullying constructs. To answer the research questions derived in Chapter 4, multiple-indicator-multiple-cause models (MIMIC) and structural equation modelling (SEM) will be utilised. This technique builds upon the previous CFA results.

Multiple-Indicator-Multiple-Cause Models (MIMIC)

In establishing factorial invariance for each scale, it is important to examine potential group differences for each scale (e.g., are girls more likely to participate in cyberbully behaviours, in comparison to boys?) (Bodkin-Andrews, O'Rourke, & Craven, 2010). Multiple-Indicator-Multiple-Cause model (MIMIC) analysis is a special type of structural equation modelling (SEM) that is often described as a multivariate regression model, which is conducted when "multiple indicators reflect the underlying latent

variables/factors, and multiple causes (observed predictors) affect latent variables/factors" (Marsh, Tracey, & Craven, 2006; Wang & Wang, 2012 p. 90). MIMIC models identify the causal relationships between demographic variables and key latent constructs (Wang & Wang, 2012). It is important that factorial invariance be established for each psychological instrument, as MIMIC models assume that all measurement and structural parameters are equal, across all levels of groups. MIMIC models are evaluated utilising the same goodness of fit criteria used for CFA and SEM analyses. An advantage of utilising MIMIC models is that they are relatively insensitive to smaller sample sizes, and have the potential for many groups to be involved in drawing comparisons (Brown, 2006). This type of statistical analysis is more advanced than traditional simultaneous equation models such as multivariate analysis of variance (MANOVA), which are based on measured variables using scale scores (Wang & Wang, 2012).

For the purposes of the MIMIC multiple group comparisons, the demographic variable grade was dichotomised in accordance with the NSW Board of Studies' educational stages. Two groups were formed, Stage 4 (grades 7 and 8) and Stage 5 (grades 9 and 10), which were treated as a continuous variable in the MIMIC analyses. Two MIMIC models were performed on the latent ACBI cyberbullying factors established in the CFA analyses. The exogenous indicators investigated were gender and grade as well as school context and grade, to predict the latent variables (i.e., self-concept, school belonging and depression). The first cyberbullying MIMIC model included the effects of gender (1 = male, 2 = female), grade (1 = Stage 4 [grades 7 and 8], 2 = Stage 5 [grades 9 and 10]), and gender x grade interaction. The second cyberbullying MIMIC model included the effects of school context (1= single-sex Catholic, 2 = state co-educational), grade (1 = Stage 4, 2 = Stage 5), and school context x grade interaction effect. When statistically significant interaction effects were observed, interaction plots were graphed

and examined in the result section, to assist with interpretation. This was then repeated for two more MIMIC models on the latent traditional bullying factors of the APRI-BT, investigating gender and grade, and gender x grade interaction effects, as well as investigating traditional bullying school context and grade, and school context x grade interaction effects.

Structural Equation Modelling

Structural equation modelling (SEM) integrates both a confirmatory hypothesis testing approach and pathway analysis. The hypothesised structure is based on a strong theoretical framework (Byrne, 2012; Wang & Wang, 2012). In SEM, unobserved latent constructs are estimated from observed indicator variables and are represented by a series of structural equations. SEM has many advantages over traditional multivariate approaches (e.g., multiple regression, factor analysis and analysis of variance [ANOVA]), as they are limited to examining only one relationship at a time. SEM's advantages include: (a) estimating multiple causal and interrelated relationships among constructs; (b) representing latent unobserved variables and accounting for measurement error in the estimating process; and (c) providing a visual representation of the model, demonstrating a clearer conceptualisation of the theory under examination (Bryne, 2012; Hair et al., 2010; Wang & Wang, 2012). SEM assesses the validity of the measurement model and its corresponding hypothesised theoretical relations by achieving acceptable goodness-of-fit indices. The modelling process is a flexible approach allowing researchers to refine, revise and reconstruct the model, ensuring that the model not only has acceptable fit, but also achieves better outcomes than previous models (Hair et al., 2010).

Prior to analysis, a planned series of structural equation models were implemented, to assist with smaller sample sizes by reducing the number of pathways in

each model. This process involved grouping scale factors into logical categories prior to analysis. For example, the ACBI: 1st model: Victim Flaming, Bully Flaming and Bystander Flaming; 2nd model: Victim Identity Theft and Bully Identity Theft; final model: Victim Happy Slapping, Bully Happy Slapping and Bystander Happy Slapping.

Finally, a CFA model was performed to explore the connections between engagement in cyberbullying and traditional bullying types. Several possible online and offline bullying relationships were explored: (a) the relationship between cyber and traditional victimisation; (b) cyber and traditional bullying perpetration; (c) cyberbullying and traditional victimisation; (d) cyber victimisation and traditional perpetration; (e) cyber bystander and traditional victimisation and; (f) cyber bystander and traditional perpetration.

Summary

Study 2 uses MIMIC models to tests the effects of gender and grade and also school context and grade in relation to involvement in traditional and cyberbullying types. SEM investigates the psychosocial correlates (i.e., self-concept, school belonging and depression) for engagement in cyberbullying (i.e., as a victim, bully and bystander) and also in traditional bullying (i.e., as a victim and bully). CFA explores the connections and relations between engagement in traditional and cyberbullying behaviours. Study 2 is divided into three distinct sets of analyses. The first set of analyses uses MIMIC modelling to examine the relationships between demographic variables and latent variables. When statistically significant interaction effects are observed, interaction plots are displayed to assist with interpretation.

The second set of analyses utilises structural equation modelling (SEM) that permits researchers to postulate complex multidimensional relationships by specifying and testing a theoretical model examining the relations between predictor and outcome variables, whilst incorporating the structural relations between latent and observed variables. For example, the multiple exogenous indicators (e.g., variables of cyberbullying and victimisation) predict endogenous latent outcomes (self-concept, school belongingness and depression) (Byrne, 2012; Kaplan, 2000). The last set of analyses conducts a CFA to explore the connection between traditional and cyberbullying behaviours.

Study 3: A Qualitative Investigation Capturing Three Stakeholders' Perspectives on Cyberbullying Experiences

Introduction

The overarching aim of the present investigation is to obtain the shared experiences across three key stakeholders' perspectives, to:

(a) Address the lack of qualitative and mixed methods in bullying research and to go beyond student perspectives;

(b) To provide a more thorough and comprehensive understanding of the field by uncovering rich descriptions of bullying experiences through both focus group and telephone interviews;

(c) To reveal practical suggestions to seed successful cyberbullying prevention programs, inspired by students, their parents and school professional staff; and

(d) To explore unanticipated findings and outlier cases.

Interview Instrumentation and Administration Procedure

Prior to conducting interviews, semi-structured interview questions were prepared for each target group (students, their parents and professional staff) to ensure interview discussion related to the relevant research questions being investigated in this thesis (see Appendix G). Moreover, a semi-structured open-ended interview technique was employed, to provide flexibility together with direction and structure in discussion, and to provide boundaries to ensure sessions remained on topic. Semi-structured focus group discussion gives the researcher the freedom to investigate new topics raised by participants that warrant further exploration (Hesse-Biber & Leavy, 2010). It also aids in eliciting the perceptions and beliefs of participants regarding complex and sensitive issues, which at times need further probing to clarify responses (Barriball & While, 1994; Miles & Huberman, 1994).

Focus group interviews. The researcher contacted each school's counsellor/social welfare officer to organise a suitable day and time to conduct the group interviews. Focus group interviews were approximately 45 minutes per session and were conducted with school professional staff and students separately during school hours. Focus group discussions were favoured over single interviews, as group discussion provided a forum in which new ideas emerged, and were challenged by other participants. These group dynamics reflected a natural group situation similar to everyday life (Flick, 2009). Student focus groups included four to six students in each session and were grouped by grade, to examine age trends in bullying behaviours. Professional staff focus group interviews included six staff members: the school's vice principal, school counsellor and unit co-ordinators from grades 7 through to 10.

The researcher is a registered educational and developmental psychologist who conducted the student focus group sessions in the presence of a school counsellor/social

welfare officer. Two digital recording devices were used, one recording being saved as a backup. The researcher provided a brief introduction about the purpose of the study and all participants were reminded that their participation was voluntary and they were free to withdraw anytime without penalty. Furthermore, all participants were reminded that their interviews would be anonymous and all transcripts would remain confidential. It was explained to all participants that their participation in the focus group session would not affect their relationship with their school. Furthermore, due to the sensitive nature of the information disclosed during focus group interviews, all information discussed was not to be shared outside of the focus group session. Participants at the end of each focus group session could discuss any issues that arose from discussion with the social welfare officer/school counsellor, if needed.

Parent telephone interviews. Individual parent interviews were organised directly with the consenting parent over the phone, after the researcher initially contacted the parent to arrange the interview. Parent phone interviews were approximately 30 minutes per session, and an explanation was provided to the parents that they would be digitally recorded for the purposes of recall and analysis. Again, parent participants were informed that the interview would be confidential, they could withdraw without penalty at any time, and their identities would remain anonymous.

Qualitative Data Analysis

Thematic analysis is a coding technique originally performed within the framework of analytical approaches such as grounded theory and narrative analysis. However, Braun and Clarke (2006) have argued that thematic analysis should be a qualitative approach in its own right, as it is a powerful technique for analysing,

organising and reporting themes emerging from data. Thematic analysis is a research tool that provides the theoretical freedom and flexibility to identify meaningful patterns and nuances that emerge from within the data. Thematic analysis was conducted through the Bronfenbrenner ecological systems lens to understand three key stakeholder perspectives (i.e., students, parents and educational staff) on traditional and cyberbullying involvement (Bronfenbrenner, 1979).

The complexities of bullying involvement can be further understood when one considers multiple levels of the ecological system that contribute directly or indirectly to traditional and cyberbullying involvement (Bronfenbrenner, 1979; Mishna, Pepler & Wiener, 2006).

Thematic Analysis

All interview data were transcribed verbatim and coded using NVivo software, to transform recorded interviews into text and to assist in organising the data into content categories (Flick, 2009). Prior to the commencement of analysis, a list of research questions and hypotheses were generated, arising from a rigorous review of the literature that identified key issues and gaps; this allowed conceptual interests to be linked directly to the data (see Chapter 4) (Tuckett, 2005). However, the researcher was also open to redefining or discarding codes when codes were ill-fitting; this allowed the data to drive the analysis inductively when necessary (Miles & Huberman, 1994). Specifically, the thematic analysis focused on and highlighted shared experiences across students, parents, professional staff and school counsellors.

Thematic analysis was conducted following the step-by-step guidelines to analysis provided by Braun and Clarke (2006). Phase 1 involved getting acquainted with

the data by transcribing and re-reading data, and taking notes of initial codes. Phase 2 involved finding repeated and meaningful patterns through the process of coding, recoding and extracting potential themes. At this point, cases that did not reflect the dominant patterns found in the data were retained, as these outlier perspectives were considered important to acknowledge in the discovery of new insights and nuances. Phases 3 and 4 involved searching for themes and gathering all data related to each theme. A visual thematic map was created to assist in organising and compiling different codes under overarching broader themes. Phase 5 involved refining the specific nature of each theme, determining clear definitions, names, and the corresponding subthemes. The final stage involved producing a results report that related analysis themes back to the original research questions and literature. The final stage involved producing a results report that related analysis themes back to the original research questions and literature. This included a newly emerging theme, one that reflected on this study's unanticipated insights and outlier cases (Braun & Clarke, 2006)

Summary

Prior to conducting interviews, the development of interview instrumentation for each target group was described. The semi-structured interview questions were derived from the research questions to be addressed in this thesis. All interviews were digitally recorded, and focus group sessions were run in small groups with high school students in grades 7 through to 10. Focus group sessions were organised with the schools' professional staff. Telephone interviews were also carried out with the students' parents. Focus group and telephone interviews were organised to capture the different

perspectives of each of the stakeholders, in order to provide recommendations to seed successful cyberbullying intervention/prevention programs.

Mixed Methods Data Integration

Once the independent data collection, analysis and interpretation of the quantitative and qualitative results were completed, both methodologies were integrated and were studied together for completeness (Bryman, 2006). Moreover, combining methods achieves a more accurate picture of the bullying phenomenon under investigation, through the process of triangulation. Triangulation is a strategy that allows the researcher to use more than one method to cross-validate results. When convergent validation across two methodologies is established, this enhances and provides further credibility to the conclusions drawn from both methods. Jick (1979, p. 220) suggests that "the effectiveness of triangulation rests on the premise that weaknesses in each single method will be compensated by the counterbalancing strengths of another". Triangulation goes beyond the scope of just validating data, as divergent results may arise from using multiple approaches, and a single method may ignore new or deeper dimensions of a phenomenon. Researchers have argued that inconsistent results are just as important for providing new insights, for elucidating further theoretical complexities, and discovering new theoretical perspectives (Hesse-Bieber, 2010; Jick, 1979).

When quantitative analysis establishes correlates between two variables, such results may be suggestive of a causal relationship, but the researcher is faced with the obstacle of interpretation. Qualitative research can fill the gaps and provide the answers to the "how" and "why" by exploring the fundamental processes and mechanisms behind the statistical relationships (Bryman, 2006). Therefore, behavioural and social researchers

can achieve greater internal validity to their findings when these are established from more than one methodological perspective (Bryman, 2006). The challenge for researchers is to integrate the most informative aspects of the methodologies, to highlight the full potential of the mixed methods approach (Caracelli & Greene, 1993).

Chapter Summary

This chapter has outlined the mixed methods design, and the procedures utilised, to address the aims, hypotheses and research questions proposed for this current study. A description of the participants' demographic details, research setting and school recruitment procedures has been provided, and the instrument development and the selection of established battery of instruments has been explained. This has been followed by an explanation of the preparation of data and a description of the quantitative and qualitative analyses. More specifically, Study 1 described the rigorous psychometric evaluation that utilised confirmatory factor analysis (CFA) and factorial invariance testing. Study 2 described multiple-indicator-multiple-indicator-cause (MIMIC) modelling to investigate gender, grade, and school context and grade group differences. Structural equation modelling (SEM) identified the psychosocial correlates between involvement in both traditional and cyberbullying. Furthermore, study 2 explored the potential overlap between traditional and cyberbullying types. Study 3 outlined the procedures for collecting qualitative data, coding and analysing data through the process of thematic analysis. The next chapter provides the results of the psychometric outcomes for the battery of instruments, including reliability analyses, the CFAs, and invariance testing.

CHAPTER 6: STUDY 1 PSYCHOMETRIC EVALUATION OF THE NEWLY DEVELOPED CYBERBULLYING INSTRUMENT, AND VALIDATION OF EXISTING MEASURES IN BULLYING RESEARCH

Introduction

Psychological variables are largely latent constructs that need to be validated utilising a construct validity approach (Marsh, 1990; Marsh, Ellis, Parada, Richards, & Heubeck, 2005). "Validation is an ongoing process in which theory and practice are used to develop a measure, empirical research is used to test the theory and the measure" (Marsh et al., 2005, p. 83). While there has been a surge in studies investigating cyberbullying over the last decade, there is a gap in relation to the empirically tested and standardised instruments that are used to measure cyberbullying (Hunt, Peters, & Rapee, 2012; Griezel et al., 2012).

Scholars have recommended that the first logical step to overcoming this gap is to identify a psychometrically sound cyberbullying measure, before proceeding to analyse and relate the instrument to other constructs (e.g. self-concept) (Craven, Marsh, & Burnett, 2003; Craven, Marsh, & Parada, 2013; Bauman, Underwood et al., 2013). The primary purpose of this chapter is to assess the psychometric properties of the newly developed Adolescent Cyber Bullying Instrument (ACBI) as a standardised and continuous measure. Secondly, this chapter will examine the psychometric properties of

the established instruments used within this study to measure constructs related to cyberbullying (Adolescent Peer Relations Instrument-Bully/Target [APRI-BT]), four selected factors of the Self Description Questionnaire-II-Short (SDQII-S), one selected factor of the Attachment to School of the School Belonging Scale (SBS), and one selected factor of the Depression, Anxiety and Stress Scale-21 (DASS-21), further addressing the issues of reliability and validity. Study 1 is a quantitative study using advanced statistics to evaluate each research question and hypothesis. Results are presented in tables to assist interpretation. These tables include reliability analyses, confirmatory factor analysis (CFA), factor structure and invariance testing. The results are presented in order of the specific research questions and hypothesis statements, which correspond to the aims and rationales outlined in Chapter 4.

Examining the Psychometric Properties of a Newly Developed Adolescent Cyber Bullying Instrument (ACBI)

The ACBI was specifically developed for the purposes of the present investigation (see Chapter 5 for an overview). The use of dichotomous values has been problematic in bullying research as several studies have concentrated on categorising participants into separate groups of victims, bullies and bully/victims, and those not involved (see Chapter 3). In order to create separate cyberbullying groups, researchers need to develop arbitrary cut-off points. Previously, different arbitrary cut-off points have been used by different researchers, and as of yet, no agreed upon cut-off criteria has been established to define relevant classification criterion. This measurement process can present as an issue when students fall into more than one category, due to a lack of sensitivities to some grouping of participants. Scores could therefore narrowly miss their category and subsequently lead

to inaccurate reporting of results (MacCallum et al., 2002; Parada, 2006; Vivolo-Kantor et al., 2014),

To overcome these measurement challenges, the ACBI was designed to assess the multiple dimensions of cyberbullying in adolescent students using continuous variables, capturing the perspectives of three important target groups: victim, bully and bystander. The scale consists of 30 items measuring eight distinct factors: victim flaming, victim identity theft, victim happy slapping, bully flaming, bully identity theft, bully happy slapping, bystander flaming and bystander happy slapping. This chapter presents the results for the instrument's reliability, a priori factor structure, and factorial invariance testing across the total sample, gender, school contexts and grades (Stage 4 [grades 7 and 8] and Stage 5 [grades 9 and 10]). As outlined in Chapter 5, reliabilities above .60 were considered reasonable, above .70 acceptable, .80 and above good, and .90 or greater, excellent (Cohen, 1988; Nunnally, 1978). Initially, descriptive statistics are reported for each scale, to allow for a more complete assessment of the ACBI**.**

ACBI Factor Means for the Total Sample, Gender, School Contexts and Grades

Table 6.1 shows mean comparison scores for the total sample, gender, school contexts and grades. In the male mean sample (range M = 1.28-2.22), the highest reported mean was found for the factor "bystander flaming". Slight gender differences were found, as males overall reported higher levels of involvement in cyberbullying perpetration, and females reported higher levels of victimisation (except for victim happy slapping) and witnessing cyberbullying behaviours. Students from the independent single-sex school reported slightly higher levels of cyberbullying perpetration, compared to students from the state co-educational school. However, students from the co-educational school reported higher levels of cyber victimisation (except for victim happy slapping) and

witnessing cyberbullying incidents. Overall, there was a consistent trend of cyberbullying behaviours increasing from Stage 4 to Stage 5.

Table 6.1
Mean subscale Scores for the Adolescent Cyber Bullying Instrument for Total Sample, Gender, School Context and Grade

Scale	Total Sample (*N*=625)	Males (*n*=533)	Females (*n*=92)	Single-Sex (*n*=442)	Co-Ed (*n*=183)	Stage 4 (*n*=349)	Stage 5 (*n*=276)
V-Flam	1.42 (.92)	1.41 (.93)	1.48 (.87)	1.40 (.92)	1.47 (.93)	1.35 (.82)	1.51 (1.04)
V-Id Theft	1.55 (.93)	1.53 (.94)	1.62 (.87)	1.53 (.92)	1.60 (.96)	1.48 (.87)	1.63 (1.01)
V-Happy	1.30 (.77)	1.31 (.81)	1.21 (.53)	1.31 (.82)	1.26 (.68)	1.25 (.71)	1.36 (.85)
B-Flam	1.44 (.86)	1.44 (.89)	1.40 (.64)	1.45 (.89)	1.41 (.78)	1.34 (.77)	1.56 (.95)
B Id Theft	1.31 (.76)	1.34 (.81)	1.16 (.30)	1.33 (.77)	1.27 (.74)	1.23 (.68)	1.41 (.85)
B-Happy	1.26 (.70)	1.28 (.74)	1.18 (.37)	1.28 (.74)	1.22 (.56)	1.18 (.62)	1.27 (.76)
BS-Flam	2.32 (1.66)	2.22 (1.64)	2.84 (1.72)	2.16 (1.66)	2.69 (1.61)	2.10 (1.49)	2.59 (1.83)
BS-Happy	1.87 (1.36)	1.85 (1.37)	2.00 (1.33)	1.79 (1.30)	2.06 (1.49)	1.75 (1.31)	2.02 (1.42)
Total-CV	1.44 (.79)	1.44 (.82)	1.47 (.68)	1.43 (.78)	1.47 (.80)	1.38 (.73)	1.52 (.85)
Total-CB	1.33 (.69)	1.35 (.74)	1.24 (.35)	1.34 (.72)	1.30 (.62)	1.26 (.62)	1.43 (.76)
Total-CBS	2.12 (1.43)	2.06 (1.41)	2.48 (1.47)	2.00 (1.41)	2.42 (1.44)	1.95 (1.32)	2.34 (1.53)

Note: Standard deviation values are shown in parentheses. N = total number of participants in sample. Adolescent Cyber Bullying Scale factors, V-Flam = Victim Flaming, V-Id Theft = Victim Identity Theft, V-Happy = Victim Happy Slapping, B-Flam = Bully Flaming, B-Id Theft = Bully Identity Theft, B-Happy = Bully Happy Slapping, BS-Flam = Bystander Flaming, BS-Happy = Bystander Happy, Total-CV = Total Cyber Victim; T-CB = Total Cyber Bully, Total-CBS = Total Cyber Bystander.

Psychometric Properties of the ACBI

Hypothesis 1.1.1: Internal consistency of the new ACBI. Hypothesis 1.1.1 predicted that tests of reliability would demonstrate acceptable alpha coefficient scores for each of the eight subscales of cyberbullying, measured in the ACBI three target groups (victim, bully and bystanders). Internal consistency coefficient estimates of the eight factors of the ACBI are presented in Table 6.2. For the total sample, all scales demonstrated good reliability estimates (α ranging from .82 to .92). For gender, the

reliability estimates for males ranged from .82 to .92, and for females from .45 to .91. For school context, the reliability estimates for the single-sex school students ranged from .82 to .92, and for the state co-educational students from .78 to .91. Lastly, for grade levels, reliability estimates for Stage 4 students ranged from .79 to .93 and for Stage 5 students from .79 to .92.

Table 6.2
Reliability Estimates Cronbach's alpha (α) for the Adolescent Cyber Bullying Instrument: For the Total Sample, Gender, School contexts and Grades

Cronbach's Alpha (α)

Scale	Total Sample (*N*=625)	Males (*n*=533)	Females (*n*=92)	Single-Sex (*n*=442)	Co-ed (*n*=183)	Stage 4 (*n*=349)	Stage 5 (*n*=297)	No. Of Items
V-Flam	.85	.86	.79	.85	.86	.79	.89	3
V-Id Theft	.85	.86	.80	.85	.86	.83	.82	5
V-Happy	.82	.84	.67	.82	.85	.80	.84	3
B-Flam	.82	.82	.76	.83	.78	.80	.79	4
B-Id Theft	.85	.86	.45	.85	.86	.83	.86	4
B-Happy	.86	.86	.56	.86	.81	.85	.85	4
BS-Flam	.88	.88	.89	.91	.83	.86	.89	4
BS-Happy	.85	.86	.82	.85	.85	.85	.85	3
Total-CV	.91	.92	.87	.92	.91	.92	.92	11
Total-CB	.92	.92	.77	.92	.91	.93	.92	11
Total-CBS	.91	.91	.91	.92	.86	.91	.91	7

Note: Adolescent Cyber Bullying Scale factors, V-Flam = Victim Flaming, V-Id Theft = Victim Identity Theft, V-Happy = Victim Happy Slapping, B-Flam = Bully Flaming, B-Id Theft = Bully Identity Theft, B-Happy = Bully Happy Slapping, BS-Flam = Bystander Flaming, BS-Happy = Bystander Happy, Total-CV = Total Cyber Victim, T-CB = Total Cyber Bully, and Total-CBS = Total Cyber Bystander.

Hypothesis 1.1.1 was supported, with satisfactory reliability estimates across the total sample, and across groups. As the majority of alpha levels were acceptable for the total sample for both females and males, across school contexts as well as grades (Stages 4 and 5), these results offer support for the ACBI as a reliable measure of cyberbullying, capturing three different target groups; therefore, this hypothesis was accepted.

Hypothesis 1.1.2: Factorial structure of the new ACBI. Hypothesis 1.1.2 predicted that the student self-report responses to the ACBI would validate the construct validity of the hypothesised multidimensional eight a priori factor structure through confirmatory factor analysis (CFA). A highly restrictive CFA was conducted where all 30 items were constrained and specified to load only on their designated factors, so as to evaluate model fit (Bryne, 2001; Hair et al., 2010). Consistent with best practice (Byrne, 2001; Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004), Standardised Root Mean Square Residual (SRMR) values need to be .08 or below, Root Mean Square Error Approximation (RMSEA) values need to be close to .05 with an upper limit of .08, Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI) values need to be close to .90 and .95 or greater to be deemed acceptable to excellent fitting models.

Results from the first-order CFA were used to validate the ACBI a priori eight-factor structure. The hypothesised model demonstrates excellent goodness of fit indices, with a CFI of .955, TLI of .948, and RMSEA of .030. Furthermore, it is important not only to examine overall goodness of fit, but also to begin a detailed evaluation of the model comparing each individual parameter estimate and factor correlation to ensure that the factors are distinctive constructs (Marsh, Nagengast, & Morin, 2013). The factor loadings for each individual item indicate that all eight factors are well defined, with acceptable factor loadings ranging from .64 to .89 (all are $p < .001$).

The CFA factor correlations for all eight cyberbullying scales ranged from .27 to .89 (all are $p < .01$), providing reasonable support for the distinct nature of each of the factors. As predicted, factor correlations for the three cyberbullying scales ranged from .27 to .89; the three cyber victimisation scales ranged from .29 to .83, and the two bystander scale correlations ranged from .27 to .84. First-order factor correlations suggest appropriate convergent validity, with sufficient distinctive factors to maintain

discriminant validity. However, some of the higher correlations may also support the possibility of a second-order cyberbully, victim and bystander factor structure.

Table 6.3
Confirmatory Factor Analysis including Item Factor Loadings, Latent Factor Correlations, and Model Fit for First and Second-Order Adolescent Cyber Bullying Instrument

	Victim			Bullying			Bystander	
	Flaming	Identity Theft	Happy Slapping	Flaming	Identity Theft	Happy Slapping	Flaming	Happy Slapping
	First-Order Parameter Estimates (λ)							
Item 1	.84	.73	.84	.63	.80	.78	.68	.82
Item 2	.88	.74	.83	.78	.80	.81	.89	.80
Item 3	.72	.71	.67	.82	.78	.86	.83	.81
Item 4	--	.76	--	.66	.68	.70	.83	--
Item 5	--	.71	--	--	--	--	--	--
	Second-Order Parameter Estimate (β)							
TCV	.84	.90	.93					
TCB				.90	.95	.93		
TCBS							.86	.98
Factors	Correlations of First-Order a priori Factors (ρ)							
V-Flam	--							
V-Id Theft	.76	--						
V-Happy	.78	.84	--					
B-Flam	.52	.55	.56	--				
B-Id Theft	.54	.58	.60	.86	--			
B-Happy	.53	.57	.58	.84	.88	--		
BS-Flam	.38	.40	.41	.35	.37	.36	--	
BS-Happy	.43	.46	.47	.40	.42	.41	.84	--
	Correlations of Second-Order a priori Factors (ρ)							
	Total-CV	Total-CB	Total-CBS					
Total-CV	--							
Total-CB	.68	--						
Total-CBS	.52	.45	--					
	Model Fit							
	N	χ^2	df	CFI	TLI	RMSEA		
1st	625	615.08	435	.955	.948	.030		
2nd	625	653.685	366	.934	.927	.037		

Note. Items 1-5 = Instrument items corresponding to factors, V-Flam = Victim Flaming, V-ID Theft = Victim Identity Theft, V-Happy = Victim Happy Slapping, B-Flam = Bully Flaming, B-Id Theft = Bully Identity Theft, B-Happy = Bully Happy Slapping, BS-Flam = Bystander Flaming, BS-Happy = Bystander Happy, Total-CV = Total Cyber Victim, Total-CB = Total Cyber Bully, Total-CBS = Total Cyber Bystander. Model fit: 1st = First-order Model, 2nd = Second-order Model, N = total number of participants in sample, χ^2 = Chi-Square, df = degrees of freedom, CFI = comparative fit index, TLI = Tucker Lewis index, RMSEA = root mean square error of approximation.

On further analysis, a second-order model was introduced, due to some of the higher first-order factor correlations. Theoretically speaking, there may be the possibility

of a more generalised construct accounting for the covariation of the first-order factors, which are presented in Table 6.3 (Wang & Wang, 2012). The second-order CFA model analysed three higher order factors: a second-order cyber victim factor (defined by the first-order victim flaming, victim identity theft, and victim happy slapping), a second-order cyber bully factor (defined by first-order bully flaming, bully identity theft, and bully happy slapping), and a second-order cyber bystander factor (defined by the first-order bystander flaming and bystander happy slapping).

The results indicate that the second-order factor model was slightly weaker than the first-order model, observed by the reduction in goodness of fit. However, the second-order model had acceptable model fit to the data, as goodness of fit indices were CFI of .934, TLI of .927, and RMSEA of .037, revealing a well-defined factor structure. Parameter estimates revealed that the first-order factors loaded considerably onto the three higher-order factors (victims: ranging from .84 to .93; bullies: ranging from .90 to .95; and bystanders, ranging from .86 to .98). The correlations represent the second-order relations between: the total cyber victim factor and total cyber bully factor (r = .68); the total cyber bully factor (r = .52), and total cyber bystander factor; and the total cyber bystander factor and total cyber bully factor (r = .45), all of which were positive and significant. The results suggest that the higher-order model led to an improvement in overall model fit that is consistent with the theoretical underpinning of the instrument. However, converging multidimensional scales into second-order factors may result in a loss of statistical information, leading to a less accurate model. Therefore, both the first-order and second-order models were retained and accepted for later statistical analysis.

In summary, the results support the first and second-order a priori factor structure of the ACBI, which is consistent with cyberbullying theory. The high correlations between factors led to further analyses of a second-order CFA model encompassing total

cyber victim, total cyber bully and total cyber bystander factors. This analysis was a logical progression providing strong evidence for the multidimensional and developmental appropriateness of the instrument. Both models resulted in a good fit to the data, with good factor loadings for all 30 items, providing reasonable evidence of discriminant validity between factors, particularly for those measuring cyberbullying and cyber victimisation. Hypothesis 1.1.2 therefore is supported and accepted, demonstrating the ACBI to be a valid and reliable measure of the cyberbullying construct.

Invariance Testing for the ACBI

Hypothesis 1.1.3: Factorial invariance of the new ACBI across gender. Hypothesis 1.1.3 predicted that the factor structure of the ACBI would be similar for both males and females, as demonstrated by tests of factorial MIMIC invariance. A MIMIC factorial invariance approach was used to overcome the imbalanced gender sample size (females n = 92, males n = 533) by assessing latent means and intercept invariance (Marsh, Nagengast, & Morin, 2013).

Table 6.4

MIMIC Invariance Tests Across Gender for the Adolescent Cyber Bullying Instrument

Model	χ^2	Df	CFI	TLI	RMSEA	P-value	Description
1.	615.10	370	.946	.937	.034	p <.01	Latent Factor Means (baseline model)
2.	578.66	349	.950	.937	.032	p <.01	Factor Intercepts

Note. χ^2=chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

As shown in Table 6.4, Model 1 resulted in an acceptable fit to the data, supporting the hypothesis of an equivalent factor structure for both males and females. In Model 2, when factor intercept variables were held invariant, there was minimal change to the model, supporting the hypothesis of intercept invariance.

Hypothesis 1.1.4: Factorial invariance of the new ACBI across school context. Hypothesis 1.1.4 predicted that the factor structure of the ACBI would be similar for both types of schools under investigation (independent single-sex and state co-educational). Measurement invariance in this study involved three nested models, with increasingly restrictive parameters. The three tests comprised configural, metric and scalar measurement invariance testing (see Chapter 5 for a review) (Hair et al., 2010; Meredith, 1993). Due to the small sample size constraints and the large size of the new ACBI, measurement invariance was divided into three important overarching subgroups: cyber victim, cyber bully and cyber bystander factors. These three cyber subgroup a priori first-order factors were analysed separately.

As seen in Table 6.5, the cyber victim Model 1 indicates acceptable fit to the data, providing support for the hypothesis that a three factor victim model occurs in both school contexts. In Model 2, establishing equivalence through constraining factor loadings indicated slight changes in fit indices. Since the changes of the CFI did not exceed the +/- 0.01 Cheung and Rensvold (2002) criterion, this model satisfies the minimal requirement of weak invariance across the two school contexts. Imposing further constraints in Model 3, the equivalence between the two groups was evaluated by testing the variable intercepts. This model showed minimal changes in fit indices compared to the baseline model: therefore, this model meets the strong invariance test requirement.

As indicated in Table 6.5, the cyber bully initial baseline Model 1 revealed acceptable fit to the data, again lending support for the hypothesis that a three factor bully model occurs in both school groups. In Model 2 there was a slight reduction in fit indices. Nevertheless, the changes did not exceed the CFI +/- 0.01 criterion; therefore, the second model can be considered invariant. However, subsequent Model 3, fit was slightly

reduced not meeting the desirable criteria of invariance; therefore this model did not meet the strong invariance test requirement.

Similarly, cyber bystander Models 1 and 2 indicate that the changes in CFI met the invariance criteria requirement. However, the differences in the CFI between Model 1 and Model 3 were greater than +/- 0.01, thereby achieving only the minimal requirement of metric invariance.

Table 6.5

Invariance Test Across School Context for the Adolescent Cyber Bullying Instrument

Model	χ^2	df	CFI	TLI	RMSEA	P-value	Factors	Description
M1.	144.82	88	.953	.942	.045	*p* <.01	Victim	Configural invariance
M2.	144.32	90	.955	.945	.044	*p* <.01	Victim	Metric invariance
M3.	166.63	101	.946	.941	.046	*p* <.01	Victim	Scalar Invariance
M1.	168.59	82	.917	.888	.058	*p* <.01	Bully	Configural invariance
M2.	185.21	90	.909	.888	.058	*p* <.01	Bully	Metric invariance
M3.	202.88	101	.902	.893	.057	*p* <.01	Bully	Scalar Invariance
M1.	24.85	26	1.000	1.000	.001	*ns*	Bystander	Configural invariance
M2.	41.20	31	.991	.988	.032	*ns*	Bystander	Metric invariance
M3.	71.13	38	.970	.967	.053	*p* <.01	Bystander	Scalar Invariance

Note. χ^2=chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

Hypothesis 1.1.5: Factorial invariance of the new ACBI across grade. Hypothesis 1.1.5 predicted that the factor structure of the new ACBI would be equivalent across grades (Stage 4 [grades 7-8] and Stage 5 [grades 9-10]) as demonstrated by structural equation modelling tests of invariance. The results are presented in Table 6.6: the cyber victim configurable Model 1 showed excellent fit to the data, providing support for the three factor victim model. Model 2 showed minimal change, with factor loading coefficients across groups held invariant. Furthermore, Model 3 goodness of fit was fairly stable, meeting the desirable criteria of scalar invariance; therefore, this model met the strong invariance test requirement.

The cyber bully baseline results indicated that the model fit was acceptable, providing support for the hypothesis that a three factor bully model holds across Stages 4 and 5. Further nested comparison tests were imposed, meeting the criteria for both metric and scalar invariance. However, the cyber bystander model met only the minimal requirement for metric invariance. The results are suggestive that the underlying factor structure holds equivalent meaning across Stages 4 and 5.

Table 6.6

Invariance Test Across Grade for the Adolescent Cyber Bullying Instrument

Model	χ^2	df	CFI	TLI	RMSEA	P-value	Factors	Description
M1.	135.36	82	.953	.937	.047	p <.01	Victim	Configural invariance
M2.	144.16	90	.953	.942	.045	p <.01	Victim	Metric invariance
M3.	163.65	101	.945	.940	.046	p <.01	Victim	Scalar Invariance
M1.	176.76	102	.927	.906	.050	p <.01	Bully	Configural invariance
M2.	175.82	111	.937	.925	.044	p <.01	Bully	Metric invariance
M3.	196.33	123	.928	.923	.045	p <.01	Bully	Scalar Invariance
M1.	36.40	26	.989	.983	.037	*ns*	Bystander	Configural invariance
M2.	45.61	31	.985	.980	.040	p<.05	Bystander	Metric invariance
M3.	65.47	38	.972	.969	.049	p <.01	Bystander	Scalar Invariance

Note. χ^2=chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

Overall, the results show that the ACBI first-order factors across victim, bully and bystander roles held an equivalent factor structure across gender, school context and grade. These results indicate that the ACBI under different conditions yields similar representations of the cyberbullying construct. Therefore, Hypotheses 1.1.3, 1.1.4 and 1.1.5 were supported and accepted.

Section Summary

In summary, this section has assessed the psychometric properties of the newly developed multidimensional ACBI. The eight a priori factor, 30-item scale measuring the

cyberbullying construct is deemed to be a valid and reliable scale evaluated by confirmatory factor analysis. Furthermore, the ACBI held an invariant factor structure across gender, school contexts and grades, revealing that the observed scale indicators and items under study were measuring the same conceptual construct across the different groups. These findings have made a valuable contribution to the complexity and multi-dimensionality of the cyberbullying construct. The above results provide support for the ACBI being used with adolescent high school students, for the different forms of cyberbullying behaviours across the first-order cyberbullying construct, captured from three different target groups.

Examining the Psychometric Properties of the Adolescent Peer Relations Instrument-Bully/Target (APRI-BT)

The Adolescent Peer Relations Instrument-Bully/Target was developed to measure adolescent engagement in bullying behaviours, measuring six distinct factors of traditional bullying: target verbal, target physical, target social, bully verbal, bully physical and bully social (Parada, 2000). As this instrument is a newly-developed measure of bullying, further psychometric testing and refinement provides additional support to confirm the validity of the scale across different samples. The original 36-item scale was modified slightly, due to the original weak model fit. The following sections report on the modified APRI-BT 30-item scale, where one item per factor has been deleted, in accordance with the generally accepted goodness of fit cut-off criteria values of a CFI and TLI of .90 or higher (Bentler & Bonett, 1980; Marsh et al., 1988). The modified APRI-BT factor means for the total sample, males and females, across school contexts and grades were reported. This is followed by the results of reliability analyses,

confirmatory factor analysis (CFA), and factorial invariance testing across different groups.

APRI-BT Factor Means for the Total Sample, Gender, School Context and Grade

The means reported in Table 6.7 show similar scores for the traditional bullying factors across the total sample, gender, school context and grade. Overall, across all the categories, the most frequently reported type of traditional bullying was verbal aggression. Male students in comparison to female students, report slightly higher mean scores for physical target and physical bullying behaviours. Students from the single-sex school reported lower means of involvement in bullying behaviours compared to students from the co-educational school, with the exception of bully verbal and physical factors. Furthermore, the students from the co-educational school reported slightly higher involvement across most bullying factors, in comparison to the total sample, with the exception of verbal and physical bullying. Similarly to cyberbullying engagement, there was a consistent trend of traditional bullying behaviours peaking in Stage 5.

Table 6.7

Mean Subscale Scores for the Adolescent Peer Relations Instrument: Bully/Target for Total Sample, Gender, School Context and Grade

Scale	Total Sample (*N*=625)	Males (*n*=533)	Females (*n*=92)	Single-sex (*n*=442)	Co-Ed (*n*=183)	Stage 4 (*n*=349)	Stage 5 (*n*=276)
T-Verbal	2.28 (1.62)	2.25 (1.65)	2.44 (1.42)	2.20 (1.60)	2.48 (1.65)	2.20 (1.54)	2.39 (1.72)
T-Physical	1.99 (1.45)	2.02 (1.51)	1.84 (1.00)	1.91 (1.43)	2.19 (1.47)	1.94 (1.42)	2.05 (1.50)
T-Social	1.80 (1.34)	1.78 (1.35)	1.94 (1.26)	1.73 (1.28)	1.98 (1.44)	1.78 (1.33)	1.83 (1.34)
B-Verbal	2.16 (1.48)	2.22 (1.54)	1.83 (1.65)	2.18 (1.53)	2.11 (1.36)	1.85 (1.25)	2.55 (1.67)
B-Physical	1.90 (1.34)	1.94 (1.39)	1.01 (1.01)	1.90 (1.36)	1.90 (1.31)	1.68 (1.18)	2.18 (1.48)
B-Social	1.56 (1.09)	1.57 (1.13)	1.51 (.82)	1.54 (1.12)	1.63 (1.01)	1.47 (.99)	1.68 (1.19)
Total-T	2.03 (1.37)	2.02 (1.41)	2.07 (1.14)	1.95 (1.36)	2.22 (1.39)	1.97 (1.33)	2.09 (1.42)
Total-B	1.88 (1.20)	1.91 (1.25)	1.67 (.86)	1.87 (1.24)	1.88 (1.11)	1.67 (1.06)	2.14 (1.32)

Note. Standard deviation values are shown in parentheses. N = total number of participants in sample. Adolescent Peer Relations Instrument: Bully/Target Scale factors, T-Verbal = Target Verbal, T-Physical = Target Physical, T Social = Target Social, B-Verbal = Bully Verbal, B Physical = Bully Physical, B-Social = Bully Social, Total-T = Total Target, and Total-B = Total Bully.

Psychometric Properties of the APRI-BT

Hypothesis 1.2.1: Internal consistency of the APRI-BT. Hypothesis 1.2.1 predicted that tests of internal consistency will demonstrate high reliability for each of the six subscales measured by the APRI-BT (target verbal, target physical, target social, bully verbal, bully physical and bully social). Cronbach's alpha values were individually calculated for the total sample, males and females, across school context and grade.

As presented in Table 6.8, the reliability results for the a priori six factor traditional bully scale for the total sample were all within good to excellent values (α ranging from .89 to .96) (Cohen, 1988; Nunnally, 1978). In addition, when reliabilities were conducted across gender, results demonstrated acceptable values, with internal consistency scores for males ranging from .90 to .96, and for females from .79 to .94. Results across school context were all within the acceptable range for both single-sex and

co-educational schools, ranging from .86 to .96. Finally, reliability estimates across grades, Stages 4 and 5 students, ranged from good to excellent: .89 to .96.

Table 6.8

Reliability Estimates Cronbach's Alpha (α) for the Adolescent Peer Relations Instrument: Bully/Target for the Total Sample, Gender, School contexts and Grades

Cronbach's Alpha α

Scale	Total Sample (*N*=62)	Males (*n*=533)	Females (*n*=92)	Single-sex (*n*=442)	Co-ed (*n*=183)	Stage 4 (*n*=349)	Stage 5 (*n*=297)	No. Of Items
T-Verbal	.92	.92	.90	.91	.91	.91	.93	5
T-Physical	.91	.92	.79	.92	.89	.91	.90	5
T-Social	.91	.92	.90	.91	.92	.92	.91	5
B-Verbal	.91	.91	.88	.91	.91	.89	.91	5
B-Physical	.89	.90	.86	.90	.89	.90	.89	5
B-Social	.91	.91	.83	.92	.86	.89	.92	5
Total-T	.96	.96	.94	.96	.94	.96	.96	15
Total-B	.95	.96	.94	.96	.94	.95	.95	15

Note. N = total number of participants in sample. Adolescent Peer Relations Instrument: Bully/Target Scale factors, T-Verbal = Target Verbal, T-Physical = Target Physical, T Social = Target Social, B-Verbal = Bully Verbal, B Physical = Bully Physical, B-Social = Bully Social, Total-T = Total Target, and Total-B = Total Bully.

Hypothesis 1.2.1 was supported, as the results confirm the APRI-BT to be a reliable traditional bullying measure for adolescent students, capturing bullying behaviours from both target and bully perspectives. Furthermore, the results revealed a strong internal consistency across the total sample, gender, school context and grade.

The Factorial Structure of the APRI-BT

Hypothesis 1.2.2: Factorial structure of the APRI-BT. Hypothesis 1.2.2 predicted that the modified APRI-BT would be a valid measure of traditional bullying behaviours for adolescent students, demonstrating acceptable model fit using CFA to test the six a priori factor structure. The results of the first-order CFA testing a highly

restrictive six a priori factor structure of the modified APRI-BT demonstrates good fit to the data, with a CFI of .921, TLI of .912, and an RMSEA of .050. The factor loadings for each individual item indicate all six factors are well defined within acceptable ranges, from .71 to .87 (all are p <.001).

The CFA factor correlations ranged from .39 to .91 (all are $p < 0.01$), providing some convergent and discriminant validity for each of the factors. For the three target scales, correlations ranged from .39 to .91, and for the three bully scales, correlations ranged from .40 to .91. It is important to note that these high correlations are in line with those found by Parada (2006) and Finger (2009) for the APRI-BT; this is suggestive of the possibility of a second-order traditional target and bully factor structure.

In a follow up analysis, a second-order CFA with two higher order factors was examined: a second-order target factor (defined by the first-order target verbal, target physical, and target social) and second-order Bully factor (defined by first-order bully verbal, bully-physical, and bully social). The results presented in table 6.9 indicated the higher-order model fit to be slightly weaker than the first-order model, yet resulted in acceptable fit to the data (higher-order fit indices were: a CFI of .908, a TLI of .900 and RMSEA of .053). The parameter estimates revealed first-order factors loaded well onto the two higher-order factors targets (ranged from .94 to .95) and bullies (ranged from .86 to .98). The correlations between the second-order bully and target factors were substantial (r = .51). The results suggest that the higher-order model provided a slightly weaker model fit to the data. Both models were accepted and retained for later statistical evaluations, in order to test the effect of bullying on outcomes.

Table 6.9
Confirmatory Factor Analysis including Item Factor Loadings, Latent Factor Correlations, and Model Fit for First and Second-Order Adolescent Peer Relations Instrument-Bully/Target

	Target			Bully		
	Verbal	Physical	Social	Verbal	Physical	Social
			First-Order Parameter Estimates (λ)			
Item 1	.78	.79	.79	.80	.77	.78
Item 2	.83	.78	.82	.80	.72	.86
Item 3	.87	.79	.83	.87	.83	.77
Item 4	.84	.85	.84	.81	.85	.83
Item 5	.84	.86	.84	.84	.84	.83
			Second-Order Parameter Estimates (β)			
Total-T	.95	.94	.95			
Total-B				.93	.98	.86
Factors			Correlations of First-Order a priori Factors (ρ)			
T-Verbal	--					
T-Physical	.89	--				
T-Social	.90	.89	--			
B-Verbal	.45	.45	.45	--		
B-Physical	.48	.47	.48	.91	--	
B-social	.42	.42	.42	.80	.85	--
			Correlations of Second-Order a priori Factors (ρ)			
	Total-T	Total-B				
Total-T	--					
Total-B	0.51	--				
			Model Fit			
	N	χ^2	df	CFI	TLI	RMSEA
1st	625	994.388	390	.921	.912	.050
2nd	625	1102.353	398	.908	.900	.053

Note. Items 1-5 = Instrument items corresponding to factors, T-Verbal = Target Verbal, T-Physical = Target Physical, T-Social = Target Social, Bully Verbal = Bully Verbal, Bully Physical = Bully Physical, Bully Social = Bully Social, Total-T = Total Target, Total-B = Total Bully. Model Fit: 1st = First-order Model, 2nd = Second-order Model, N = total number of participants in sample, χ^2 = Chi-Square, df = degrees of freedom, CFI = comparative fit index, TLI = Tucker Lewis index; RMSEA = root mean square error of approximation.

The six a priori first-order factor model and the two a priori second-order factor model demonstrated acceptable model fits; thus, Hypothesis 1.2.2 was supported, although high correlations between first-order factors indicate the possibility of a second-order generalised construct total target and total bully factors.

Invariance Testing for the APRI-BT

Hypothesis 1.2.3: Factorial invariance of the APRI-BT across gender. Hypothesis 1.2.3 predicted that the factorial structure of the APRI-BT would have similar psychometric properties across male and female secondary students, as demonstrated by tests of MIMIC invariance. Table 6.10 displays the fit indices across two models under nested conditions. The baseline model shows acceptable fit statistics, indicating an equivalent factor structure for both male and female groups. The second, increasingly restrictive model, factor intercepts, indicates minimal change, supporting the hypothesis of intercept invariance.

Table 6.10

MIMIC Invariance Tests across Gender for the Adolescent Peer Relations Instrument: Bully/Target

Model	χ^2	df	P-value	CFI	TLI	RMSEA	Description
1.	1038.43	414	p <.01	.922	.912	.049	Latent Factor Means (baseline model)
2.	995.58	390	p <.01	.924	.910	.050	Factor Intercepts

Note. χ^2=chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

Hypothesis 1.2.4: Factorial invariance of the APRI-BT across school context. Hypothesis 1.2.4 predicted that the factor structure of the APRI-BT would be consistent across both school contexts under investigation (independent single-sex and state co-ed). To investigate this prediction, three nested first-order models were evaluated. Due to the small sample size and the enormity of APRI-BT, measurement invariance was divided into two important overarching subgroups: traditional target and traditional bully. The first-order subgroup factors were analysed separately.

As presented in Table 6.11, the completely free target model meets the requirements for an acceptable fitting model, providing evidence for a similar factor structure across schools. In Model 2, constraining factor loadings produced minimal changes in fit indices. When factor intercepts were constrained Model 3 produced a slightly poorer model fit, not meeting the scalar invariance criteria. The target traditional bullying model showed minimal changes in fit indices compared to the baseline model. Therefore, this model meets the minimal requirement of metric invariance.

As indicated in Table 6.11, the bully configurable Model 1 revealed satisfactory fit to the data, providing support for the hypothesis that a two factor bully model occurs in both school contexts. The rule of thumb suggested for adequate fit is to ensure that the RMSEA does not exceed .08 (Browne & Cudeck, 1993). Model 2 showed minimal change in fit, and subsequently Model 3 showed only a slight reduction, thus meeting the desirable criteria of scalar invariance.

Table 6.11

Invariance tests across school context for the Adolescent Peer Relations Instrument-Bully/Target

Model	χ^2	df	CFI	TLI	RMSEA	P-value	Factors	Description
M1.	393.86	174	.933	.919	.064	p <.01	Target	Configural invariance
M2.	425.08	186	.927	.917	.064	p <.01	Target	Metric invariance
M3.	467.21	201	.918	.915	.065	p <.01	Target	Scalar invariance
M1.	461.20	174	.911	.892	.073	p <.01	Bully	Configural invariance
M2.	475.31	186	.910	.899	.071	p <.01	Bully	Metric invariance
M3.	509.91	201	.904	.900	.070	p <.01	Bully	Scalar invariance

Note. χ^2=chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index P-value = statistical significants.

Hypothesis 1.2.5: Factorial invariance of the APRI-BT across grade. Hypothesis 1.2.5 predicted that the traditional bullying scale conceptually has a similar meaning across the different grades (Stages 4 and 5), demonstrated by increasingly

restrictive tests of invariance. The results, presented in Table 6.12, show that the completely free target model revealed good fit statistics. With the second model the factor loadings were held invariant across grade, shown by the minimal change in model fit. Finally, the most restrictive model tested similarity in scale meaning across intercepts, supporting the hypothesis of strong scalar invariance for grade (Stages 4 and 5).

Consistently, the bully baseline model produced an acceptable goodness of fit. Model 2 and Model 3 resulted in only a slight change in fit, well within the minimal criteria range of change criteria +/-.01 (Cheung & Rensvold, 2002). Therefore, it can be concluded that APRI-BT is invariant across grade (Stages 4 and 5).

Table 6.12

Invariance tests across Grade for the Adolescent Peer Relations Instrument-Bully/Target

Model	χ^2	df	CFI	TLI	RMSEA	P-value	Factors	Description
M1.	404.65	174	.923	.908	.067	p <.01	Target	Configural invariance
M2.	420.41	186	.922	.912	.065	p <.01	Target	Metric invariance
M3.	449.81	201	.917	.914	.065	p <.01	Target	Scalar Invariance
M1.	417.22	174	.914	.897	.069	p <.01	Bully	Configural invariance
M2.	422.68	186	.917	.906	.066	p <.01	Bully	Metric invariance
M3.	462.05	201	.908	.904	.066	p <.01	Bully	Scalar Invariance

Note. χ^2=chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

Following tests of measurement invariance, the model fit provides support for the modified APRI-BT, which demonstrated an identical factor structure across gender, school context and grade. Therefore, Hypotheses 1.2.3, 1.2.4 and 1.2.5 were supported and accepted.

Section Summary

In summary, strong support was evident for the psychometric properties of the modified multidimensional Adolescent Peer Relations Instrument-Bully/Target (APRI-BT). The a priori six-factor instrument reliability estimates were all within acceptable

ranges and CFA item-to-factor loadings were all significant and above the minimal requirements of acceptability (Bowen & Guo, 2011). The modified APRI-BT was found to have an invariant factor structure across gender, school context and grade, indicating that results were conceptually similar across the different groups under examination. The results demonstrated support for both first-order model structures measuring the different types of traditional bullying experiences in adolescent students.

Examining the Psychometric Properties of the Self-Description Questionnaire II-Short (SDQII-S)

Due to the long length of the complete survey, four selected self-concept factors related to cyber and traditional bullying research were utilised in the current investigation: these were adapted from the original Self Description Questionnaire II-Short (Marsh et al., 2005). Four of the 11 factors selected for evaluation included: mathematics, verbal, physical appearance and parent relations self-concept. Since the SDQII-S is an internationally established measure of self-concept, psychometric properties were assessed to check that reliability, construct validity and invariance testing results were similar to prior published findings (Bodkin-Andrews et al. 2010; Marsh, Ellis, Parada, Richards, Heubeck, 2005). The following section reports the factor means for relevant groups, Cronbach's reliability, confirmatory factor analysis and invariance tests across different groups.

SDQII-S Factor Means for the Total Sample, Gender, School Contexts and Grades

As reported in Table 6.13, the mean scores across the total sample, gender, school contexts and grades are consistent. The total sample of students reported the highest mean

scores for the parental relations self-concept. There were reported gender differences in academic self-concepts, with males reporting higher mathematic self-concepts and females reporting higher verbal self-concepts. Males also reported slightly higher physical appearance self-concepts, in comparison to the female sample. The students from the co-educational school reported slightly lower physical appearance self-concepts in comparison to the students from the total sample and the single-sex school. Finally, self-concept factors seem to be slightly higher in Stage 4 in comparison with Stage 5, with the exception of physical appearance self-concept. Overall, the highest self-concept means were reported for parental relations and physical appearance, followed by verbal and mathematics self-concepts.

Table 6.13

Mean subscale scores for the Self Description Questionnaire II-Short Self Description Questionnaire II-Short for Total Sample, Gender, School context and Grade

Scale	Total Sample (*N*=625)	Males (*n*=533)	Females (*n*=92)	Single-sex (*n*=442)	Co-Ed (*n*=183)	Stage 4 (*n*=349)	Stage 5 (*n*=276)
Maths SC	3.99 (1.46)	4.11 (1.42)	3.32 (1.51)	4.07 (1.44)	3.80 (1.50)	3.99 (1.50)	3.98 (1.40)
Verbal SC	4.02 (1.40)	3.98 (1.39)	4.28 (1.45)	3.98 (1.40)	4.11 (1.39)	4.10 (1.37)	3.93 (1.43)
Appear SC	4.19 (1.42)	4.37 (1.39)	3.21 (1.17)	4.42 (1.39)	3.64 (1.33)	4.18 (1.38)	4.21 (1.47)
Parental SC	4.88 (1.14)	4.88 (1.15)	4.90 (1.04)	4.87 (1.16)	4.91 (1.09)	5.05 (1.07)	4.68 (1.19)

Note. Standard deviation values are shown in parentheses. Self-Concept factors: Maths SC = Mathematics Self-Concept, Verbal SC = Verbal Self-Concept, Appear SC = Physical Appearance Self-Concept, Parental SC = Parental Relations Self-Concept.

Psychometric Properties of the SDQII-S

Hypothesis 1.3.1: Internal consistency of the SDQII-S. Hypothesis 1.3.1 predicted that the four factors of the SDQII-S would demonstrate high reliability. Reliability values are presented in Table 6.14. Internal consistency estimates ranged from acceptable to excellent levels (α ranging from .72 to .93). The parental relations scale had

the lowest reliabilities for total sample, gender, across school contexts and grades but was nevertheless still within the acceptable range. Internal consistency values for mathematics, verbal and physical appearance across all categories ranged from .79 to .93 (Cohen, 1988; Nunnally, 1978), reaching good to excellent criteria of reliability.

Table 6.14

Reliability Estimates Cronbach's Alpha (α) for the Self Description Questionnaire II-Short for the Total Sample, Gender, School Context and Grade

	Cronbach's Alpha α							
Scale	Total Sample (*N*=625)	Males (*n*=533)	Females (*n*=92)	Single-sex (*n*=442)	Co-ed (*n*=183)	Stage 4 (*n*=349)	Stage 5 (*n*=297)	No. Of Items
Maths SC	.83	.81	.92	.80	.89	.86	.79	4
Verbal SC	.91	.85	.93	.85	.90	.86	.86	5
Appear SC	.89	.90	.82	.89	.88	.89	.89	4
Parental SC	.75	.73	.87	.72	.84	.75	.73	4

*Note.*Self-Concept factors: Maths SC = Mathematics Self-Concept, Verbal SC = Verbal Self-Concept, Appear SC = Physical Appearance Self-Concept, Parental SC = Parental Relations Self-Concept.

Hypothesis 1.3.1 was supported, revealing that the SDQII-S was found to be a reliable four factor a priori measure that could be used with adolescent students across the total sample, gender, school contexts and grades. Therefore, Hypothesis 1.3.1 was accepted for all four subscales.

The Factorial Structure of the SDQII-S

Hypothesis 1.3.2: Factor structure of the SDQII-S. Hypothesis 1.3.2 predicted that the SDQII-S student responses would validate the four factor multidimensional factor structure of self-concept for use with adolescent students. This hypothesis predicts that the factor structure will demonstrate acceptable model fit. Furthermore, the Hypothesis

1.3.2 proposes that the latent factor correlation coefficients between the four factors would establish acceptable convergent and discriminant validity.

Results of the first-order CFA, testing a highly restrictive four a priori factor structure of the SDQII-S, are represented in Table 6.15. The hypothesised model demonstrates acceptable fit to the data, with a of CFI .921, TLI of .902, and RMSEA of .065. The factor loadings for each individual item indicate all six factors were well defined and well above the minimum requirement of .40 on their designated factors, ranging from .55 to .91 (all showing p <.001) (Bowen & Guo, 2011). Table 6.15 also displays the factor coefficient correlations of the SDQII-S. The CFA factor correlation ranged from 16 to .38, providing strong convergent and discriminant validity for each of the four distinctive factors. These results provide further support for the multidimensional factor structure of the SDQII-S.

Table 6.15

Confirmatory Factor Analysis including Item Factor Loadings, Latent Factor Correlations, and Model Fit for First-Order Self Description Questionnaire II-Short

	Mathematics	Verbal	Physical Appearance	Parental Relations		
			First-Order Parameter Estimates (λ)			
Item 1	.77	.58	.85	.80		
Item 2	.91	.82	.90	.55		
Item 3	.63	.82	.70	.72		
Item 4	.82	.81	.77	.62		
Item 5	--	.85	--	--		
Factors			Correlations of First-Order a priori Factors (ρ)			
Maths	--					
Verbal	.21	--				
Appear	.27	.16	--			
Parent	.24	.20	.38	--		
			Model Fit			
	N	χ^2	Df	CFI	TLI	RMSEA
	625	378.623	110	.921	.902	.065

Note. Items 1-5 = Instrument items corresponding to SDQII-S factors. N = total number of participants in sample, χ^2=Chi-Square, df = degrees of freedom, CFI = comparative fit index, TLI = Tucker Lewis index; RMSEA = root mean square error of approximation.

The CFA provides strong support for the selected four factor structure of the SDQII-S, as the results are consistent with previous psychometric findings (Bodkin-Andrews et al., 2010; Marsh et al., 2005). The CFA demonstrated moderate factor loadings, with strong convergent and discriminant validity. The model fit indices showed acceptable fit to the data, providing further support for the established SDQII-S multidimensional measure; therefore, Hypothesis 1.3.2 was accepted.

Invariance Testing for the SDQII-S

Hypothesis 1.3.3: Factorial invariance of the SDQII-S across gender. Hypothesis 1.3.3 predicted that the a priori four factor structure of the SDQII-S would be equivalent across male and female secondary students. This hypothesis was evaluated by tests of MIMIC invariance. Table 6.16 presents the goodness of fit indices across two increasingly restricted models. The configural model (total free model) indicated acceptable goodness of fit indices. The Model 2 factor structure was stable, although there was a slight deterioration in model fit. However, the deterioration in RMSEA is still within the minimum requirement of an increase less than .015 (Chen, 2007), thus supporting the hypothesis of intercept invariance.

Table 6.16

MIMIC Invariance Tests across Gender for the Self Description Questionnaire II-Short

Model	χ^2	df	CFI	TLI	P-value	RMSEA	Description
1.	405.27	123	.920	.901	p <.01	.061	Latent Factor Means (baseline model)
2.	379.77	110	.924	.894	p <.01	.063	Factor Intercepts

Note. χ^2 = chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index P-value = statistical significants.

Hypothesis 1.3.4: Factorial invariance of the SDQ-II-S across school context. Hypothesis 1.3.4 predicted that the factor structure of the SDQII-S would be consistent across both types of school under investigation (single-sex and co-ed). To examine this prediction, a four factor model was tested for both groups, with three increasingly restrictive nested models. The results of the invariance testing are presented in Table 6.17. The baseline model meets the acceptable requirement for a good fitting model, indicating a similar factor structure across school context. Model 2 metric invariance results were found to be stable, with minimal changes in model fit. However, imposing further constraints, model 3, testing scalar invariance, found a slight decrease in model fit. Compared to the initial baseline model, Model 3 did not meet the requirement of scalar invariance. Results overall found a good-fitting model meeting the minimal criteria of metric invariance.

Table 6.17

Invariance tests across school Context for the Self Description Questionnaire II-Short

Model	χ^2	df	CFI	TLI	P-value	RMSEA	Description
M1.	522.27	223	.917	.899	p <.01	.068	Configural invariance
M2.	531.00	233	.918	.904	p <.01	.066	Metric invariance
M3.	624.39	250	.896	.887	p <.01	.072	Scalar Invariance

Note. χ^2 = chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

Hypothesis 1.3.5: Factorial invariance of SDQ-II-S across grade. Hypothesis 1.3.5 predicted that the factorial structure of the SDQII-S across grades (Stages 4 and 5) would be conceptually interpreted equally across the different groups. The results for the invariance tests are presented in Table 6.18. The configural model (free model) with no constraints placed on parameters provided a satisfactory model fit, indicating that the underlying factor structure is equal across Stages 4 and 5. The second model metric invariance placed constraints on the factor loadings, indicating only minimal change in

model fit as the CFI remained stable. The final model tested scalar invariance, to ensure the vectors of the factor intercepts also remained invariant. Although the model reduced slightly in goodness of fit criteria, it satisfied the strong factorial invariance test.

Table 6.18

Invariance tests across Grades for the Self Description Questionnaire II-Short

Model	χ^2	df	CFI	TLI	P-value	RMSEA	Description
M1.	637.35	223	.901	.879	p <.01	.079	Configural invariance
M2.	644.06	233	.901	.885	p <.01	.077	Metric invariance
M3.	691.46	250	.894	.885	p <.01	.077	Scalar Invariance

Note. χ^2 = chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

In conclusion, the a priori four factor structure of the SDQII-S was found to be invariant across gender, school context and grade. This result suggests that the SDQII-S operates similarly across the different groups under investigation. Therefore, Hypotheses 1.3.3, 1.3.4 and 1.35 were accepted.

Section Summary

In summation, further psychometric support was found for the established multidimensional Self Description Questionnaire II-Short. The SDQII-S reliability estimates were all within acceptable ranges and confirmatory factor analysis supported the four factor model, indicating high construct validity. Furthermore, the SDQII-S was found to be invariant across gender, school contexts and grades, suggesting that the results are comparable across the different groups under examination. These results demonstrated strong psychometric support for the hierarchical structure of the self-concept instrument utilised with adolescent students.

Examining the Psychometric Properties of the School Belonging Scales (SBS)

Attachment to School Factor

The School Belongingness Scale is a brief instrument that examines three important aspects of school belonging that have been identified as important contributors to traditional bullying behaviour in schools. The SBS measures school attachment, acceptance of rules and school support (Parada & Richards, 2002). Due to the limited discriminant validity of this instrument, this study examined only the Attachment to School factor (Parada, 2006).

SBS Attachment to School Factor Means for the Total Sample, Gender, School Contexts and Grades

Mean factor scores are reported in Table 6.19. Highest school attachment was found for students from the single-sex school, as slightly lower means were found for students from the co-educational school. Furthermore, attachment to school was highest in Stage 4 (grades 7 and 8) in comparison to Stage 5 (grades 9 and 10).

Table 6.19
Mean subscale scores for SBS Attachment to School Factor for Total Sample, Gender, School context and Grade

Scale	Total Sample (*N*=625)	Males (*n*=533)	Females (*n*=92)	Single-sex (*n*=442)	Co-Ed (*n*=183)	Stage 4 (*n*=349)	Stage 5 (*n*=276)
Attachment	4.25 (1.42)	4.32 (1.45)	3.86 (1.17)	4.46 (1.44)	3.76 (1.23)	4.43 (1.39)	4.03 (1.43)

Note. Standard deviation values are shown in parentheses. School Belonging Scale factor: Attachment = Attachment to School.

Psychometric Properties of the Attachment to School Factor

Hypothesis 1.4.1: Internal Consistency of SBS Attachment to School. Hypothesis 1.4.1 predicted that the selected attachment to school factor of the SBS would be a reliable measure of students' school belonging. The attachment to school factor of the SBS would demonstrate high reliability estimates across total sample, gender, school contexts and grades. Cronbach's alpha reliability coefficients are displayed in Table 6.20. The SBS attachment to school factor demonstrated excellent levels of reliability (α ranging from .91 to .93) across total sample, gender, school contexts and grades (Cohen, 1988; Nunnally, 1978). These results are consistent with those found by Parada (2006) in tests across an adolescent sample.

Table 6.20

Reliability Estimates Cronbach's Alpha (α) for SBS Attachment to School Factor for the Total Sample, Gender, School Context and Grade

	Cronbach's Alpha α							
Scale	Total Sample (*N*=625)	Males (*n*=533)	Females (*n*=92)	Single sex (*n*=442)	Co-ed (*n*=183)	Stage 4 (*n*=349)	Stage 5 (*n*=297)	No. Of Items
Attachment	.92	.92	.91	.92	.91	.93	.91	4

Note. School Belonging Scale factor: Attachment = Attachment to School.

Hypothesis 1.4.1 was supported, as excellent reliability levels were attained. The results confirm the SBS to be a reliable one a priori factor measure to use with adolescent students across the total sample, males and females, and school contexts and grades. Therefore, Hypothesis 1.4.1 was accepted.

The Factorial Structure of the SBS Attachment to School Factor

Hypothesis 1.4.2: Factor structure of SBS Attachment to School. Hypothesis 1.4.2 predicted that the SBS would be a valid measure of students' school belongingness. The CFA results are shown in Table 6.21. The hypothesised model demonstrated excellent fit to the data, with a CFI of .999, TLI of .998, and RMSEA of .021. The factor loadings for each individual item indicate that all four items were well defined and above the minimum requirement of .40 on the school attachment factor loadings (Bowen & Guo, 2011). The one factor congeneric model results help to refine the SBS and reduce future multicollinearity issues that may result in type II error (Tabachnick & Fidell, 2007).

Table 6.21

Confirmatory Factor Analysis including Item Factor Loadings and Model Fit for SBS Attachment to School Factor

	Attachment to School					
	First-Order Parameter Estimates (λ)					
Item 1	.91					
Item 2	.76					
Item 3	.91					
Item 4	.89					
	Model Fit					
	N	χ^2	df	CFI	TLI	RMSEA
	625	2.547	2	.999	.998	.021

Note. Items 1-4 = Instrument items corresponding to SBS factor School Attachment. N = total number of participants in sample, χ^2=Chi-Square, df = degrees of freedom, CFI = comparative fit index, TLI = Tucker Lewis index; RMSEA = root mean square error of approximation.

In conclusion, the CFA provides strong support for the one a priori factor structure of the SBS. The one factor congeneric CFA results have eliminated high factor correlations in the SBS (Parada, 2006). The goodness of fit indices were excellent, with high item factor loadings. Therefore, Hypothesis 1.4.2 was accepted.

Invariance Testing for the SBS Attachment to School Factor

Hypothesis 1.4.3: Factorial invariance of the SBS Attachment to School across gender. Hypothesis 1.4.3 predicted that the a priori one factor structure of the SBS would be a consistent measure for both male and female secondary students. To evaluate this prediction, two MIMIC invariance nested models were carried out with the same factor structure and items for each gender group. As shown by Table 6.22, the latent factor means baseline model demonstrates an excellent fit to the data, providing evidence to suggest an equivalent factor structure for both male and female students. Model 2 factor intercepts resulted in no changes.

Table 6.22

MIMIC Invariance Tests across Gender for the SBS Attachment to School Factor

Model	χ^2	df	CFI	TLI	P-value	RMSEA	Description
1.	2.57	2	.997	.998	*ns*	.015	Latent Factor Means (baseline model)
2.	2.57	2	.997	.998	*ns*	.015	Factor Intercepts

Note. χ^2 = chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

Hypothesis 1.4.4: Factorial invariance of SBS Attachment to School across school context. Hypothesis 1.4.4 predicted that the a priori one factor structure of the SBS Attachment to School would demonstrate equivalent meaning for this construct across single-sex and co-educational schools. The results of the invariance testing are presented in Table 6.23. The baseline model met the acceptable requirements for a good fitting model that met the minimal requirement of an RMSEA of .08. Model 2, metric invariance, places further constraints on all factor loadings, and a slight change was found to the model fit, indicating equivalence for single-sex and co-educational schools. Model 3 tested for similarity of the measured variable intercepts, and a substantial decline in model fit occurred was found, compared to the initial baseline model. Model 3, with CFI changes greater than +/- 0.01 and an RMSEA more than .08 (Cheung & Rensvold, 2002)

did not satisfy the scalar invariance requirement. The results overall indicate an acceptable model fit that satisfied only the minimal criteria of metric invariance.

Table 6.23

Invariance tests across school context for SBS Attachment to School Factor

Model	χ^2	df	CFI	TLI	P-value	RMSEA	Description
M1.	15.73	12	.989	.964	p <.01	.073	Configural invariance
M2.	10.34	7	.998	.997	*ns*	.059	Metric invariance
M3.	42.12	11	.957	.953	p <.01	.095	Scalar Invariance

Note. χ^2 = chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

Hypothesis 1.4.5: Factorial invariance of the SBS Attachment to School across grade. Hypothesis 1.4.5 predicted that the factor structure of the a priori attachment to school scale would hold a similar meaning across grades (Stages 4 and 5). The results of the invariance tests are presented in Table 6.24. The configural model, where no parameter constraints were imposed, was found to be a good fitting model, indicating similarity in meaning across Stages 4 and 5. However, when both metric and scalar invariance models were compared with the baseline model, a substantial deterioration in goodness of fit was found: it did not meet the minimum CFI requirement of +/- 0.01, and it also fell short of the requirement of an RMSEA equal to or less than .08 (Cheung & Rensvold, 2002). The results overall indicate that the model fit did not meet the minimal criteria of metric invariance.

Table 6.24

Invariance tests across Grade for the SBS Attachment to School Scale

Model	χ^2	df	CFI	TLI	P-value	RMSEA	Description
M1.	13.88	5	.984	.962	p <.05	.077	Configural invariance
M2.	26.27	7	.966	.941	p <.01	.096	Metric invariance
M3.	49.65	11	.931	.925	p <.01	.109	Scalar Invariance

Note. χ^2 = chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

In summary, the a priori one factor structure of the SBS attachment to school factor was found to be equivalent across gender and school context. Hence, the invariance tests conducted, supported the structural integrity of the a priori one factor congeneric. Hypotheses 1.4.3 and 1.4.4 were therefore accepted as reliable measures of school belonging. However, the invariance tests across grade (Stages 4 and 5) fell outside the recommended criteria of a CFI +/- 0.01 and RMSEA of +/- 0.015 (Chen, 2007; Cheung & Rensvold, 2002), therefore not meeting the minimum criteria of weak metric invariance. Hypothesis 1.4.5 was not accepted, as the attachment to school factor was not considered equivalent across grades.

Section Summary

In summary, the results presented above indicate the one factor congeneric model attachment to school to be a valid and reliable scale of school belonging. All reliability estimates were within the acceptable range, and confirmatory factor analysis indicated good fit to the data, with all item-to-factor loadings above the minimal requirement of acceptability (Bowen & Guo, 2011). Furthermore, invariance testing showed equivalent meaning across gender and school contexts, with the exception of grade invariance. Therefore, these results demonstrate support for statistical improvement in the modified unidimensional structure of the SBS, validating the instrument as psychometrically sound, and suitable to measure cyber and school bullying outcomes in this study (Parada, 2006). However, caution should be undertaken when interpreting grade related comparison results for the SBS.

Examining the Psychometric Properties of the Short Form Depression Scale (DASS-21)

The research evidence indicates that both the original 42-item Depression, Anxiety and Stress Scale (DASS) and the short version Depression, Anxiety and Stress Scale-21 (DASS-21) (Lovibond & Lovibond, 1995) are psychometrically sound and stable measures of mental health outcomes in both clinical and non-clinical adult samples (Antony, Bieling, Cox, Enns, & Swinson, 1998; Henry & Crawford, 2005). However, researchers utilising the DASS-21 for adolescent samples have not been able to clearly identify its psychometric properties, due to overlapping qualities and clinical symptoms that are conceptually interrelated and present for adolescent samples (Tully, Zajac, & Venning, 2009; Szabó, 2010).

To eliminate issues of multicollinearity, a modified one factor model examining depression only was used in this study. Further psychometric testing will help to refine and provide further evidence for its use with adolescent samples. This section is followed by reported factor means, reliability analyses, confirmatory factor analysis (CFA), and invariance testing across different groups.

Short Form Depression Scale DASS-21 Factor Means for the Total Sample, Gender, School Contexts and Grades

The means and severity ratings for the modified DASS-21 are displayed in Table 6.25. In summary, students scored within the normal to mild range for depression across the total sample, gender, school contexts and grades. On closer examination, female students attained the highest depression score, followed by the state co-educational school. The lowest depression means were found for Stage 4 (grades 7 and 8) schooling period.

Table 6.25

Mean subscale scores for the Short Form Depression Scale DASS-21 for Total Sample, Gender, School contexts and Grades

Scale	Total Sample (*N*=625)	Males (*n*=533)	Females (*n*=92)	Single-sex (*n*=442)	Co-Ed (*n*=183)	Stage 4 (*n*=349)	Stage 5 (*n*=276)
Depression	8.33 (10.41)	8.11 (10.33)	9.59 (10.86)	7.87 (10.36)	9.43 (10.49)	7.84 (10.32)	8.94 (10.52)

Scoring	Normal	Mild	Moderate	Severe	Extremely Severe
Depression	0-9	10-13	14-20	21-27	28+

Note. Standard deviation values are shown in parentheses.

Psychometric Properties of the Short Form Depression Scale DASS-21

Hypothesis 1.5.1: Internal consistency of the Short Form Depression Scale (DASS-21). Hypothesis 1.5.1 predicted that the selected depression factor of the DASS-21 would be a reliable estimate of students' depression scores and that the modified DASS-21 would demonstrate high internal consistency estimates across the total sample, gender, school contexts and grades.

Cronbach's alpha reliability coefficients are displayed in Table 6.26. The DASS-21 depression factor demonstrated excellent levels of reliability (α range = .91 to .93) across the total sample, gender, across school contexts and grades (Cohen, 1988; Nunnally, 1978). These results are consistent with previous research findings indicating the DASS-21 to be a reliable measure screening for symptoms of depression (Antony et al., 1998).

Table 6.26
Reliability Estimates Cronbach's Alpha (α) for the DASS-21 for the Total Sample, Gender, School Contexts and Grades

	Cronbach's Alpha α							
Scale	Total Sample (*N*=625)	Males (*n*=533)	Females (*n*=92)	Single-sex (*n*=442)	Co-ed (*n*=183)	Stage 4 (*n*=349)	Stage 5 (*n*=297)	No. Of Items
Depress	.92	.92	.92	.93	.91	.93	.92	7

Note. Scale factor Depress = Depression.

Hypothesis 1.5.1 was supported, as the depression factor reached excellent internal consistency values. These results confirm the DASS-21 to be a reliable one factor a priori measure that can be used with adolescent students across the total sample, gender, across school context and grade. Furthermore, these results are consistent with previous research findings testing the DASS-21 psychometric properties (Antony et al., 1998). Therefore, Hypothesis 1.5.1 was accepted.

The Factorial Structure of the Short Form Depression Scale DASS-21

Hypothesis 1.5.2: Factor structure of the Short Form Depression Scale (DASS-21). Hypothesis 1.5.2 predicted that the a priori Depression scale of the DASS-21 would be a valid screening tool of students' mental health outcomes. To test this hypothesis, a confirmatory factor analysis (CFA) was conducted to test the a priori one factor depression structure, to determine the validity of the model to be used with adolescent student samples.

As illustrated in Table 6.27, the results of the CFA showed excellent model fit, demonstrated by a CFI of .977, TLI of .966, and RMSEA of .056.

Table 6.27

Confirmatory Factor Analysis including Item Factor Loadings and Model Fit for the Short Form Depression Scale DASS-21

	Depression					
		First-Order Parameter Estimates (λ)				
Item 1	.71					
Item 2	.70					
Item 3	.82					
Item 4	.83					
Item 5	.82					
Item 6	.87					
Item 7	.81					
			Model Fit			
	N	χ^2	df	CFI	TLI	RMSEA
	625	41.719	14	.977	.966	.056

Note. Items 1-7 = Instrument items corresponding to DASS-21 factor Depression. N = total number of participants in sample, χ^2 = Chi-Square, df = degrees of freedom, CFI = comparative fit index, TLI = Tucker Lewis index; RMSEA = root mean square error of approximation.

The one factor congeneric CFA supported the unidimensional depression factor structure of the DASS-21. It was concluded that the depression factor of the DASS-21 was a valid measure of mental health in adolescents, and therefore hypothesis 1.5.2 was accepted.

Invariance Testing for the Short Form Depression Scale DASS-21

Hypothesis 1.5.3: Factorial invariance of the Short Form Depression Scale (DASS-21) across gender. Hypothesis 1.5.3 predicted that a unidimensional depression factor structure of the DASS-21 would have similar meaning for both male and female secondary students. To test this prediction, the same structural model identified in the CFA analysis was evaluated by two MIMIC invariance models. As displayed in Table 6.28 the latent factor means of the baseline model demonstrated an adequate fit to the data, supporting an equivalent factor structure for both male and female groups. Model

2, an increasingly restrictive model, indicated no changes in model fit, therefore supporting hypothesis 1.5.3 for intercept invariance.

Table 6.28

MIMIC Invariance Tests across Gender for the Short Form Depression Scale DASS-21

Model	χ^2	df	CFI	TLI	P-value	RMSEA	Description
1.	40.86	14	.982	.964	p <.01	.063	Latent Factor Means (baseline model)
2.	40.86	14	.982	.964	p <.01	.063	Factor Intercepts

Note. χ^2 = chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

Hypothesis 1.5.4: Factorial invariance of the Short Form Depression Scale (DASS-21) across school contexts. Hypothesis 1.5.4 predicted that the student responses to the DASS-21 would ascertain the same basic factor structure across the single-sex and co-educational schools. To test this hypothesis, a series of increasingly restrictive constraints were imposed, examining changes in fit statistics across models, as displayed in Table 6.29. In support of the same basic factor structure across school context, the baseline model resulted in an acceptable fitting model. Model 2, placing further equality constraints on factor loadings, showed only a slight decrease in model, not exceeding the minimum requirement CFI +/- 0.01 (Cheung & Rensvold, 2002). Model 3, testing for equality of intercepts, found a slight reduction in model fit compared to the initial baseline model, not meeting scalar invariance. Results overall indicated an acceptable model fit, satisfying the minimum requirement of metric invariance

Table 6.29

Invariance tests across school context for the Short Form Depression Scale DASS-21

Model	χ^2	df	CFI	TLI	P-value	RMSEA	Description
M1.	62.19	28	.974	.961	p <.01	.063	Configural invariance
M2.	79.49	34	.966	.958	p <.01	.065	Metric invariance
M3.	94.12	41	.960	.959	p <.01	.064	Scalar Invariance

Note. χ^2 = chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

Hypothesis 1.5.5: Factorial invariance of the Short Form Depression Scale (DASS-21) across grades. Hypothesis 1.5.5 predicted that the unidimensional depression scale of the DASS-21 would demonstrate a strong factor structure across grades (Stages 4 and 5). To test this hypothesis, a total of three models were tested with increasingly restrictive parameters analysing the identical factor structure across Stages 4 and 5. The results of the invariance tests are presented in Table 6.30. The completely free model met the requirements for good model fit, providing evidence for an identical factor structure across grades. In Model 2, constraining factor loadings produced only a slight reduction in fit. When factor intercepts were constrained, Model 3 CFI and TLI produced a slightly poorer model fit, not meeting the scalar invariance criteria. Therefore, the unidimensional model meets the minimal requirement of metric invariance.

Table 6.30

Invariance tests across Grades for the short form Depression Scale DASS-21

Model	χ^2	df	CFI	TLI	P-value	RMSEA	Description
M1.	57.90	28	.969	.954	p <.01	.060	Configural invariance
M2.	74.35	33	.959	.947	p <.01	.064	Metric invariance
M3.	88.64	41	.951	.950	p <.01	.063	Scalar Invariance

Note. χ^2 = chi-square, df = degrees of freedom, RMSEA = root mean square error of approximation, CFI = comparative fit index, TLI = Tucker Lewis index, P-value = statistical significants.

Overall the unidimensional depression scale of the DASS-21 demonstrated that the basic factor structure is equivalent across gender, school context and grade. Therefore, Hypotheses 1.5.3, 1.5.4 and 1.5.5 were accepted.

Section Summary

In summary, the results displayed above indicate that the unidimensional depression scale of the DASS-21 was shown to be a valid, reliable measure of mental

health outcome in adolescents. Tests of reliability indicate that internal consistency estimates for the depression factor are all within the acceptable range for total sample and different groups. Confirmatory factor analysis indicated excellent goodness of fit. In addition, invariance testing found the same basic factor structure across gender, across school contexts and grades. Thereby, these results provide support for the unidimensional structure of the DASS-21, validating the instrument to be psychometrically sound to measure cyberbullying and school bullying mental health correlates in this investigation.

Validating the Psychometric Properties of the Full Assessment Battery

The full battery of instruments utilised in this study were developed and selected to measure cyber and traditional bullying behaviours and their related psychosocial outcomes. Although each individual instrument has been assessed separately above, it is also important to validate the battery of instruments in its entirety, to ensure that structural integrity is retained when instrumentation is administered concurrently.

Research Question 1.6.1: Structural Integrity of the Battery of Instruments. Research question 1.6.1 assesses whether the structural integrity of the instrument battery would be upheld despite all individual instrumentation being combined into a single assessment battery. Network relations examining the pattern of correlations were assessed, ensuring factors are still logically and theoretically consistent. To evaluate these research questions, a multiple-scale confirmatory factor analysis was conducted in which all 20 factors and their collective 87 items were tested simultaneously. The CFA model was highly restrictive and all items were only allowed to load on their corresponding factors.

The restrictive CFA model indicated that the structure of the assessment battery demonstrated acceptable fit to the data with a CFI of .908, a TLI of .901, and an RMSEA of 0.034. The factor loadings indicated that all 87 items were well defined and, ranging from .55 to .91, well above the minimum requirement of .40 recommended by Bowen and Guo (2011). Since the factor loadings are similar to the individual instrument's reported findings, these results will not be repeated here.

The latent factor correlations between the 20 factors are displayed in Table 6.31. Correlation coefficients ranged from -.60 to .91, the pattern of correlations between the latent factor loadings being similar to those in the previous individual instrument findings. Both the ACBI and APRI-BT bullying scales again revealed some highly correlated latent factors. However, this issue was addressed previously by creating a second-order cyber and traditional factor structure. All other latent factor correlations do not exceed .60; this demonstrates good discriminant validity for the remaining factors. Moreover, the results are consistent with both theoretical frameworks and with logic, as most psychosocial outcomes—for example, self-concept and school belonging—are negatively related to cyber and traditional bullying factors.

Table 6.31

Latent Factor Correlations for the Battery of Instruments Utilised in the Current Investigation

Instruments	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ACBI																				
1 V-Flam	--																			
2 V-Id Theft	.75	--																		
3 V-Happy	.79	.83	--																	
4 B-Flam	.63	.58	.52	--																
5 B-Id Theft	.47	.62	.59	.85	--															
6 B-Happy	.47	.53	.66	.80	.89	--														
7 BS-Flam	.47	.47	.29	.48	.37	.25	--													
8 BS-Happy	.44	.48	.43	.48	.40	.36	.84	--												
APRI-BT																				
9 T-Verb	.51	.41	.36	.35	.27	.20	.47	.45	--											
10 T-Physical	.50	.48	.40	.39	.34	.29	.45	.48	.89	--										
11 T-Social	.56	.46	.48	.39	.28	.29	.40	.49	.91	.88	--									
12 B-Physical	.33	.40	.26	.56	.46	.37	.45	.46	.48	.53	.41	--								
13 B-Social	.34	.45	.33	.55	.52	.44	.42	.47	.39	.57	.40	.91	--							
14 B-Verbal	.40	.44	.42	.58	.50	.56	.36	.47	.39	.50	.49	.79	.85	--						
SDQII-S																				
15 Maths SC	-.09	-.10	-.08	-.12	-.05	-.12	-.03	-.04	-.01	-.03	-.02	-.06	-.09	-.11	--					
16 Appear SC	-.20	-.10	-.14	-.09	.03	-.02	-.14	-.06	-.19	-.10	-.16	.01	.04	-.01	.29	--				
17 Verbal SC	.02	-.03	-.13	-.60	-.09	-.13	.16	.04	.09	-.01	.05	-.07	-.09	-.10	.23	.19	--			
18 Parental SC	-.30	-.32	-.31	-.33	-.24	-.26	-.17	-.14	-.10	-.15	-.15	-.28	-.33	-.29	.25	.39	.22	--		

SBS																			
19 Attachment	-.14	-.12	-.14	-.17	-.10	-.14	-.05	-.11	-.09	-.13	-.12	-.18	-.21	-.18	.31	.33	.31	.40	--
DASS-21																			
20 Depression	.42	.44	.42	.42	.37	.40	.30	.35	.35	.35	.38	.25	.27	.34	-.13	-.23	-.11	-.31	-.15	--

Note. Estimates are based on a mass 20 factor CFA. χ^2 = Chi-Square, df = degrees of freedom, CFI = comparative fit index, TLI = Tucker Lewis index, RMSEA = root mean square error of approximation. χ^2 =5957.760, df = 3461, RMSEA = 0.034, CFI = 0.908, TLI = 0.901. **ACBI:** V-Flam = Victim Flaming, V-Id theft = Victim Identity Theft, V-happy = Victim Happy Slapping, B-Flam = Bully Flaming, B-Id Theft = Bully Identity Theft, B-Happy = Bully Happy Slapping, BS-Flam = Bystander Flaming, BS-Happy = Bystander Happy Slapping. **APRI-BT:** T-Verb = Target Verbal, T-Physical = Target Physical, T-Social = Target Social, B-Verb = Bully Verbal, B-Physical = Bully Physical, B-Social = Bully Social. **SDQII-S:** Maths SC = Mathematics Self-Concept, Verbal SC = Verbal Self-Concept, Appear SC = Physical Appearance Self-Concept, Parent = Parent Relations Self-Concept. **SBS:** Attachment = Attachment to School. **DASS-21:** Depression.

Overall, the multiple-scale CFA latent correlation patterns are logical and theoretically consistent in the predicted direction. The structural integrity of all measurement instruments is upheld, demonstrating acceptable convergent and discriminant validity. Each instrument retained the hypothesised factor structure indicated by excellent factor loadings and acceptable model fit when all instruments were analysed and grouped together into a single CFA. Hence, concerns in regard to participant method effects can be largely reduced.

Chapter Summary

In conclusion, this chapter has examined and evaluated the reliability and validity of each individual instrument utilised in this investigation. Most instruments were found to be psychometrically sound and conceptually similar across gender, school contexts and grades. The battery of instrumentation included the ACBI, APRI-BT, SDQII-S, attachment to school factor (SBS), and the factor depression (DASS-21). The results support the selected battery of instruments as being appropriate to use with adolescent students. The psychometrically validated ACBI creates a unique opportunity to measure the cyberbullying construct at a more accurate level, compared to previous measures that are yet to be psychometrically tested and standardised. The next chapter will examine the relations between involvement in cyberbullying behaviours and the psychosocial outcomes of students relating to self-concept, school belonging and mental health. The results in this present chapter suggest further implications and future research directions, which are then investigated in detail in Chapter 7.

CHAPTER 7: STUDY 2 EXAMINING THE PSYCHOSOCIAL CORRELATES OF STUDENT INVOLVEMENT IN CYBER AND TRADITIONAL BULLYING BEHAVIOURS

Introduction

The previous psychometric chapter evaluated the newly developed cyberbullying instrument and the established battery of scales. Now that the construct validity of the ACBI and APRI-BT has been established (see Chapter 6), multiple and interrelated dependent relationships can now be tested with some confidence, as measurement across groups has equivalent meaning (Hair et al., 2010). Any significant differences found between latent constructs can be interpreted accurately, reducing the likelihood of measurement error (Card, 2013; Tabachnick & Fidell, 2007). Study 2 sought to examine important group differences and to elucidate psychosocial correlates to uncover the psychosocial factors associated with student involvement in cyber and traditional bullying behaviours. Finally, this study explored the potential overlap between cyberbullying and traditional bullying constructs.

Investigating Gender and Grade Group Differences for Student Engagement in Cyberbullying Forms

The present investigation explores cyberbullying and traditional bullying potential group differences by conducting four multiple-indicator-multiple-indicator-cause (MIMIC) models. The first cyberbullying MIMIC model included the effects of gender and grade (Stage 4 [grades 7 and 8], Stage 5 [grades 9 and 10] and gender x grade interaction effects. The second cyberbullying MIMIC model included the effects of school context (independent single-sex and state co-educational) and grade, and school context x grade interaction effect. Subsequently, this was then repeated for two more MIMIC models on the latent traditional bullying factors of the APRI-BT investigating gender and grade, and gender x grade interaction effects. Traditional bullying school context and grade, and school context x grade interaction effects were also explored. Interaction plots are visually displayed below for each interaction effect found.

Research Question 2.1.1: Gender and grade differences for student engagement in cyberbullying forms. Research question 2.1.1 sought to explore whether there were any gender and grade differences and gender and grade interaction effects across the eight subscales of the ACBI.

The results indicate that the model fits the data well (χ^2 = 685.096; *df* = 412; CFI = .945; TLI = .934; RMSEA = .033). The Beta coefficients are displayed in Table 7.1, where gender and grade demographic variables are used to predict each of the eight cyberbullying latent factors within the ACBI. Comparisons between genders resulted in three main effects: Male students scored significantly higher than female students on bully identity theft and bully happy slapping scales. However, females reported significantly higher scores for the bystander flaming scale. Significant main

effects were also found for grade, as Stage 5 students (grades 9 and 10) reported significantly higher scores compared to Stage 4 students (grades 7 and 8) on the bully identity theft and bystander flaming scales.

Table 7.1

Standardised Beta Coefficients and Variance Explained for Gender and Grade, and Gender and Grade Interactions for ACBI First-Order factors

	Gender	Variance Explained	Grade	Variance Explained	Gender x Grade	Variance Explained
Scale						
V-Flam	.03	.1%	.04	.2%	-.07	.7%
V-Id Theft	.02	.1%	.03	.7%	-.09	1.1%
V-Happy	-.04	.2%	.03	.2%	-.07	.5%
B-Flam	-.05	.2%	.03	.3%	-.12**	1.5%
B-Id Theft	-.07**	.7%	.10*	1.3%	-.02	.2%
B-Happy	-.06**	.4%	.04	.3%	-.03	.1%
BS-Flam	.15**	2.0%	.16*	2.5%	-.05	.9%
BS-Happy	.08	.4%	.15	1.6%	.04	.4%

Note. Significant values: *$p < .05$, **$p < .01$, ***$p < .001$. ACBI factors: V-Flam = Victim Flaming, V-Id Theft = Victim Identity Theft, V-Happy = Victim Happy Slapping, B-Flam = Bully Flaming, B-Id Theft = Bully Identity Theft, B-Happy = Bully Happy Slapping, BS-Flam = Bystander Flaming, BS-Happy = Bystander Happy Slapping.

Furthermore, the results revealed a significant gender by grade interaction effect on the cyber bully flaming factor. To aid interpretation, this significant interaction effect is plotted below. As seen in Figure 7.1, Stage 4 female students than males reported engaging in flaming behaviours; however, during Stage 5 of schooling, male involvement increased, revealing higher levels of flaming in comparison to female students. It is important to note that although several significant gender and grade differences and one interaction effect are reported, the variance explained for the ACBI factors is only small and the real differences may be negligible. The most significant differences occurred for the bystander happy slapping factor, which accounted for only 2.5% of the variance explained for grade, and 2% for gender.

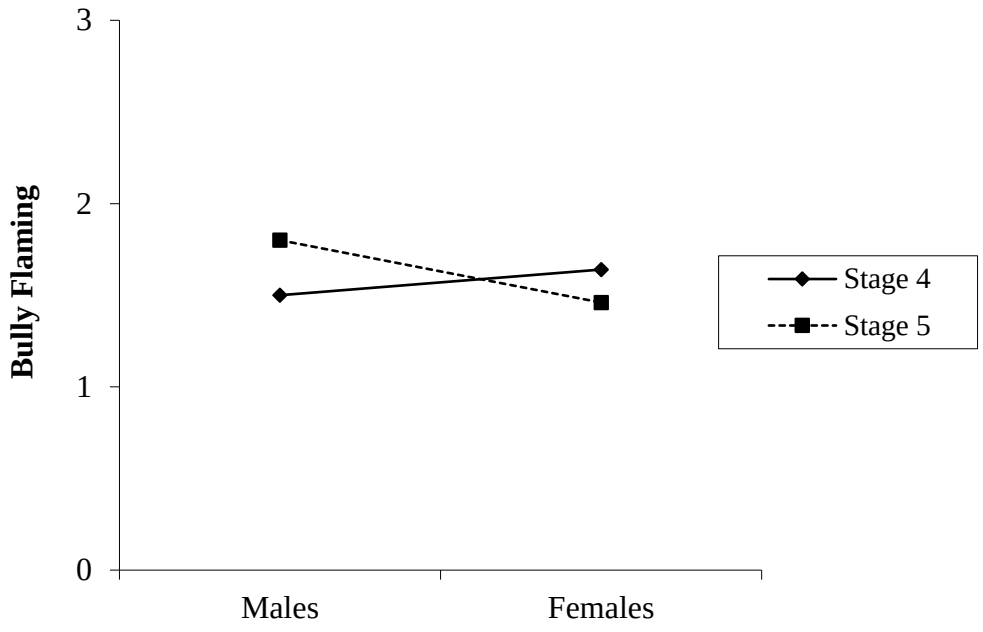


Figure 7.1. Gender by grade interaction effects for Cyber Bully Flaming

Overall, five main effects and one significant interaction effect were found for gender and grade. Males were significantly higher than females on both bully identity theft and bully happy slapping forms, meaning that in general, males were more likely to be cyber perpetrators, compared to their female counterparts. However, females reported significantly higher levels of bystander flaming behaviours. For grade, two significant main effects resulted, wherein Stage 5 students reported significantly higher scores on bully identity theft and bystander flaming forms, compared to Stage 4 students. This result suggests that cyberbullying engagement is more prevalent in Stage 5. One significant gender by grade interaction was found for the bullying flaming factor; this indicates that female students are more likely to send aggressive and nasty messages during Stage 4 of schooling, but they are overtaken in this respect by male students during Stage 5.

Research Question 2.1.2: Gender and grade differences for student engagement in traditional forms of bullying. To investigate possible gender and

grade differences, a MIMIC model was conducted on the APRI-BT six factor traditional bullying scale.

The proposed model provided acceptable goodness of fit indices (χ^2 = 1154.273; *df* = 462; CFI = .919; TLI = .908; RMSEA = .049). The Beta coefficients representing the MIMIC model results (see Table 7.3) show only one significant main effect for gender differences in verbal bully factor, with male students scoring significantly higher than females. Significant main effects for grade can be seen, as Stage 5 students reported significantly higher levels of verbal and physical bullying involvement. Although the variance-explained results are only marginal, the largest significant difference was found for the traditional verbal bullying factor, explaining less than 1% of the variance for gender and 3.6% for grade.

Table 7.2

Standardised Beta Coefficients and Variance Explained for Gender and Grade, and Gender and Grade Interactions for APRI-BT First-Order factors

	Gender	Variance Explained	Grade	Variance Explained	Gender x Grade	Variance Explained
Scale						
T-Verbal	.04	.2%	.04	.3%	-.04	.3%
T-Physical	-.05	.2%	.01	.3%	-.04	.2%
T-Social	.01	.1%	-.05	.1%	-.10*	.7%
B-Verbal	-.09*	.8%	.15**	3.6%	-.11*	2.2%
B-Physical	-.07	.6%	.13*	2.6%	-.06	.9%
B-Social	-.04	.1%	.02	.2%	-.10*	1.0%

Note. Significant values: *$p < .05$, **$p < .01$, ***$p < .001$. APRI-BT factors: T-Verbal = Target Verbal, T-Physical = Target Physical, T Social = Target Social, B-Verbal = Bully Verbal, B Physical = Bully Physical, B-Social = Bully Social.

Furthermore, three significant interaction effects were found for the social bullying (being bullied and bullying) and verbal bullying factors, which are represented pictorially below. As seen in Figure 7.2m victims of social bullying, specifically males from Stage 4, reported lower levels of being bullied, in comparison

to female students. However, during Stage 5, male involvement increased, revealing higher levels of social bullying engagement compared to their female counterparts.

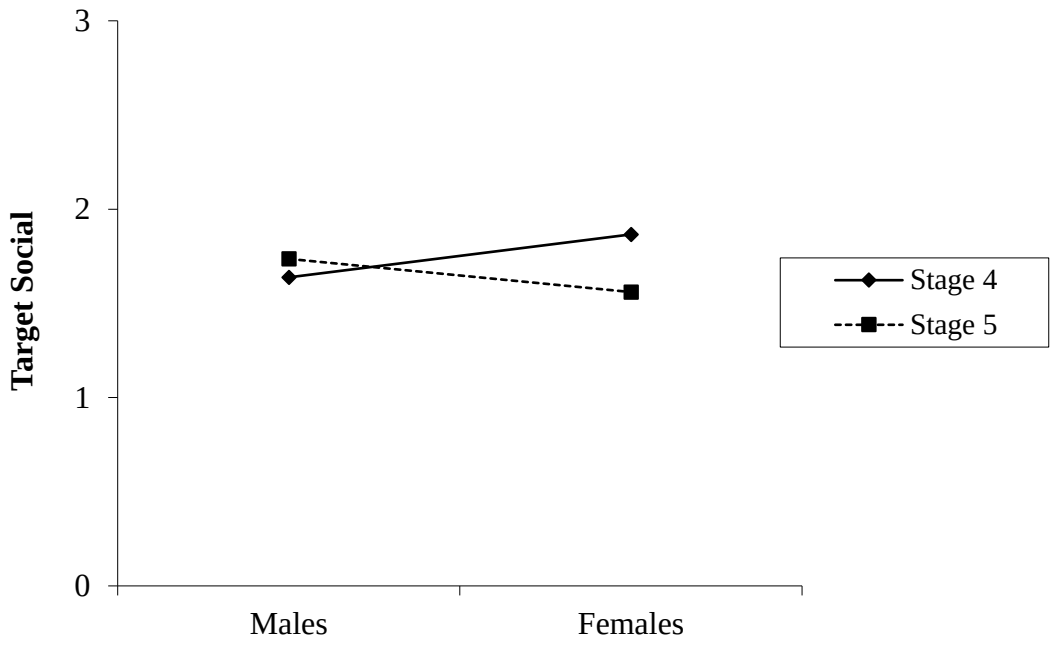


Figure 7.2. Gender by grade interaction effects for traditional Target Social

Similar interaction results were obtained for perpetrators of social bullying, as shown in Figure 7.3. Male students at Stage 4 reported lower levels of engaging in social bullying than females. However, during Stage 5, male involvement increased, revealing slightly higher levels of social bullying.

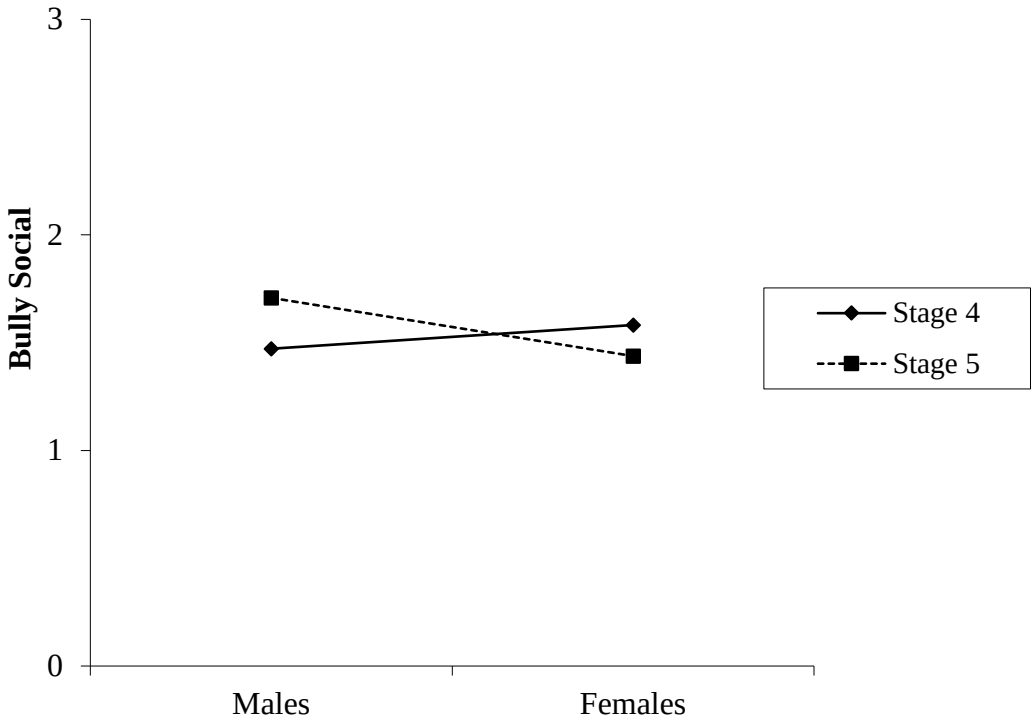


Figure 7.3. Gender by grade interaction effects for traditional Bully Social

Figure 7.4 displays the gender by grade interaction effect for the bully verbal factor. Female students engaging in verbal bullying at Stage 4 reported slightly higher levels of involvement in comparison to male students. However, during Stage 5, male involvement slightly increased, while female involvement decreased over time.

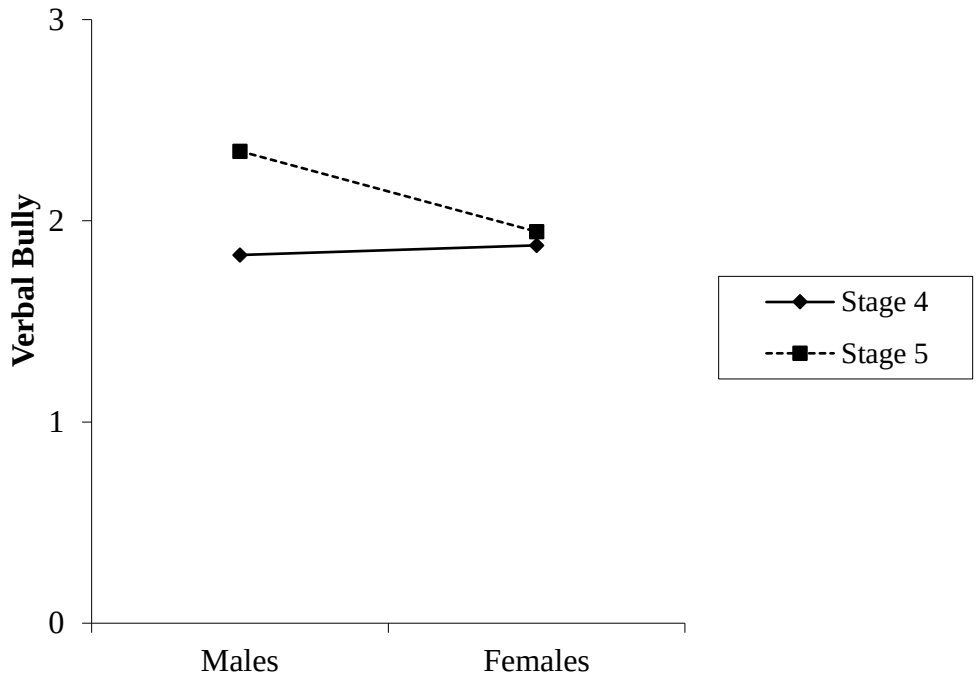


Figure 7.4. Gender by grade interaction effects for traditional Bully Social

In conclusion, three significant main effects and three interactions were found across gender and grade for the APRI-BT. Two significant interaction effects were found for the social factor for both being bullied and bullying others, indicating that females within Stage 4 of schooling engage in more social bullying, compared to their male counterparts. However this significantly changes during Stage 5, where males report higher levels of engagement in social bullying

Research Question 2.2.1: School context and grade differences for student engagement in different cyberbullying forms. On the basis of a review of the cyberbullying literature (see Chapter 2), it is not yet known whether there are any school context and grade differences for cyberbullying engagement. Research question 2.2.1 explored the group differences across school contexts and grades, and whether any significant differences emerged for the eight factor cyberbullying scale and tests

for any significant interaction effects. A MIMIC model was conducted on the eight factor cyberbullying scale, to explore possible school contexts and grade level differences.

The results demonstrated that overall goodness of fit indices for the MIMIC model were good, with (χ^2 = 685.467; *df* = 412; CFI = .944; TLI = .933; RMSEA = .033). On examination of the Beta coefficient (see Table 7.2), a number of significant main effects across both school context and grade were found. Two significant school context main effects revealed that students from the state co-educational school reported significantly higher scores for bystander flaming and bystander happy slapping factors, in comparison to the students from the independent single-sex school. Furthermore, five significant main effects for grade were also found, whereby Stage 5 secondary students reported significantly higher levels of victim identity theft, bully flaming, bully identity theft, bystander flaming, and bystander happy slapping, compared to Stage 4 school students.

No significant interaction effects were found across the eight factors of the ACBI for school context and grade. Again, although there are several significant main effects reported for school context and grade, the variance-explained percentages are minimal. That is, the largest significant difference for bystander flaming only accounted for 3.2% of the variance for grade and 2.6% for school context.

Table 7.3

Standardised Beta Coefficients and Variance Explained for School Context and Grade, and School Context and Grade Interactions for ACBI First-Order factors

	School Context	Variance Explained	Grade	Variance Explained	School Context x Grade	Variance Explained
Scale						
V-Flam	.06	.2%	.09	.8%	-.03	.3%
V-Id Theft	.08	.3%	.13*	1.2%	.04	.2%
V-Happy	.01	.1%	.07	.7%	-.01	.1%
B-Flam	-.01	.1%	.11*	1.4%	-.03	.3%
B- Id Theft	-.01	.1%	.13*	1.7%	.01	.1%
B-Happy	.01	.1%	.09	.6%	.03	.1%
BS-Flam	.19***	2.6%	.20***	3.2%	-.02	.3%
BS-Happy	.02**	1.5%	.16**	1.7%	.03	.1%

Note. Significant values: *$p < .05$, **$p < .01$, ***$p < .001$. ACBI factors: V-Flam = Victim Flaming, V-Id Theft = Victim Identity Theft, V-Happy = Victim Happy Slapping, B-Flam = Bully Flaming, B-Id Theft = Bully Identity Theft, B-Happy = Bully Happy Slapping, BS-Flam = Bystander Flaming, BS-Happy = Bystander Happy Slapping.

In summary, significant main effects were found for school context and grade. No significant interaction effects were found. Stage 5 students reported significantly higher levels of victim identity theft, bully flaming, bully identity theft, bystander flaming and bystander happy slapping than did Stage 4 students. Again, the preliminary results indicate that cyberbullying forms seem to be more prevalent in Stage 5, in comparison to Stage 4. Furthermore, state co-educational students reported significantly higher levels of bystander flaming and bystander happy slapping incidents. The preliminary results suggest that the state co-educational school students were more likely to be bystanders to a cyberbullying incident, in comparison to the independent single-sex school students. It is important to note however that the amount of variance explained for the significant main effects is only small and therefore should be interpreted with caution.

Research Question 2.2.2: School context and grade differences for student engagement in different traditional bullying forms. Research question 2.2.2 asks to

what extent school context and grade differences emerge for the six factor traditional bullying scale, and whether there are any significant interaction effects. A MIMIC model was conducted on the six factor traditional bullying scale, to explore possible school contexts and grade level differences.

The MIMIC model result fit indices were good (χ^2 = 1150.988; *df* = 462; CFI = .919, a TLI = .908; RMSEA = .049). On further examination, the Beta coefficients (see Table 7.4) displayed significant main effects for both school context and grade. For school context, state co-educational students reported higher scores for verbal and physical victimisation. Grade main effects were found for all traditional bully factors, as Stage 5 students reported higher levels of engagement for bully verbal, bully physical and bully social, compared to Stage 4 students. The largest variance-explained percentage was found for the traditional bully verbal factor, which explained less than 1% of the variance for school context and 5.8% for grade. No significant interaction effects were found across the six traditional bullying factors.

Table 7.4

Standardised Beta Coefficients and Variance Explained for School Context and Grade, and School Context and Grade Interactions for APRI-BT First-Order factors

	School Context	Variance Explained	Grade	Variance Explained	School context x Grade	Variance Explained
Scale						
T-Verbal	.09*	.8%	.07	.4%	-.04	.3%
T-Physical	.11*	1.1%	.06	.3%	-.04	.3%
T-Social	.07	.7%	.01	.1%	-.08	.7%
B-Verbal	.04	.1%	.24***	5.8%	-.04	.6%
B-Physical	.05	.3%	.19***	3.7%	-.03	.4%
B-Social	-.07	.3%	.11*	1.1%	-.01	.1%

Note. Significant values: *p < .05, **p < .01, ***p < .001. APRI-BT factors: T-Verbal = Target Verbal, T-Physical = Target Physical, T Social = Target Social, B-Verbal = Bully Verbal, B Physical = Bully Physical, B-Social = Bully Social.

In conclusion, two significant main effects for school context, and three main effects for grade were found. No significant interaction effects were found. Students from the state co-educational school were significantly higher than independent single-sex private school students on target verbal and target physical factors. In addition, students from Stage 5 reported significantly higher levels of verbal, physical and social bullying, in comparison to Stage 4 students. Although the largest proportion of significant variance explained for the bully verbal factor is 5.8%, this is still relatively minimal in impact.

Section Summary

In summary, this section has presented the results of the Multiple-Indicator-Multiple Indicator-Cause (MIMIC) models, to examine the similarities and differences of gender and grade (gender x grade), and school context and grade (school context x grade) on first-order ACBI and APRI-BT factors. Overall, MIMIC models identified significant main effects and interactions. In general, the results revealed that males are significantly more likely to be involved in both cyber and traditional bullying behaviours. Only one significant main effect for female students was found, whereby female students reported significantly higher levels of cyber bystander flaming behaviours. The results revealed that cyber and traditional bullying behaviours seem to be prevalent in the state co-educational school, compared to the independent single-sex private school, as state co-educational students were more likely to be bystanders of cyberbullying behaviours and more likely to be a target of traditional bullying behaviours.

A consistent trend has indicated that both cyber and traditional bullying behaviours are higher in Stage 5 (grades 9 and 10) compared to Stage 4 students

(grades 7 and 8). Furthermore, a significant gender by grade interaction effect was found for the cyber bullying flaming factor. Stage 4 female students reported higher levels of involvement in flaming behaviours in comparison to males; subsequently, during Stage 5, male involvement increases, significantly surpassing female involvement. Two interaction effects were found for the traditional bullying factor social bullying. This is inconsistent with previous traditional bullying research and suggests that both females and males engage in direct forms of social bullying at different grade levels. This result suggests that both genders are equally involved in social bullying, whereas females are more likely to participate in Stage 4 schooling and males are more likely to participate at Stage 5.

Examining Student Engagement in Cyber and Traditional Bullying and their Related Psychosocial Correlates

Now that gender and grade, school context and grade effects have been investigated, the following section presents the SEM model results examining the traditional and cyber psychosocial correlates for involvement.

Research Question 2.3.1: Relations between cyberbullying factors and the psychosocial correlates for being bullied, bullying and witnessing others. Research question 2.3.1 explored the relations between the cyberbullying factors and their psychosocial correlates under investigation. Three separate SEM were conducted with the cyber factors (i.e., 1st model victim flaming, bully flaming, bystander flaming; 2nd model victim identity theft, bully identity theft; 3rd model victims happy slapping, bully happy slapping, bystander happy slapping) predicting self-concept, attachment to school and depression psychological outcomes.

Flaming factor of the ACBI and their psychosocial correlates. The first model examining cyber flaming revealed an acceptable fit to the data as indicated by the goodness of fit indices (χ^2 = 10991.643; *df* = 741; CFI = .941; TLI = .934; RMSEA = .038). As seen in Table 7.5, the cyber flaming factor across the perspectives of three important target groups Beta pathways predicted self-concept, attachment to school and depression psychosocial correlates. Overall, the cyber flaming factor across the three important perspectives revealed six of the 18 pathways to be statistically significant, as victim flaming revealed two significant pathways, bully flaming revealed three significant pathways and bystander flaming found one pathway was significant.

The results indicate that any involvement in cyber flaming behaviours (i.e., as a victim, bully or bystander) was associated with at least one of the following psychosocial correlates: physical appearance self-concept, verbal self-concept, parental relations, and depression. In particular, flaming bullies were more likely to report depression symptoms and to experience poorer parental relations and lower verbal self-concepts. Students who were victims of cyber flaming were more likely to perceive their physical appearance negatively, and also to suffer from higher levels of depression. However, students who were cyber flaming bystanders had higher verbal self-concepts. These preliminary findings suggest that students using flaming behaviours to bully others will put students down by picking on their physical attributes, adversely affecting the target's self-concept. The largest proportion of variance explained was found for the cyber bully flaming factor, which accounted for 9.7% of the variance for parental relations self-concept and 9.8% of the variance for the depression scale.

Table 7.5

Beta Coefficients for the ACBI Factor Flaming Predicting Self-Concept, Attachment to School and Depression, Measured by SDQII-S, SBS, and DASS-21

Scale	Math SC	% VA	Verbal SC	% VA	Appear SC	% VA	Parental SC	% VA	Attach	% VA	Depress	% VA
V-Flam	-.03	.3%	.06	5.2%	-.24**	.3%	-.12	3.4%	-.08	1.6%	.24**	9.9%
B-Flam	-.12	1.4%	-.19*	0.9%	.10	.8%	-.28**	9.7%	-.15	2.5%	.23**	9.8%
BS-Flam	.05	.1%	.24***	1.3%	-.09	3.9%	.03	.5%	.06	.3%	.07	2.0%

Note. Significant values: *$p < .05$, **$p < .01$, ***$p < .001$. Scale Factors: V-Flam = Victim Flaming, B-Flam = Bully Flaming, BS-Flam = Bystander Flaming, Math SC = Mathematics Self-Concept, Verbal SC = Verbal Self-Concept, Parent SC= Parental Relations Self-Concept, Attach = Attachment to School, Depress = Depression. Statistics: % VA= variance-explained percentage.

Identity theft factor of the ACBI and their psychosocial correlates. The second SEM investigated the association of the cyber factor identity theft and the psychosocial correlates under investigation. The goodness of fit indices revealed a good fit to the data ($\chi^2 = 1152.935$; $df = 598$; CFI = .938; TLI = .931; RMSEA = .039). As reported in Table 7.6 the identity theft cyber factor was measured across the two important target group perspectives, as the Beta pathways predicted self-concept, attachment to school, and depression psychosocial correlates. Four of the 12 pathways were found to be statistically significant, as victim identity theft revealed three significant pathways and bully identity theft revealed one significant pathway. The ACBI identity theft factor did not measure the bystander perspective, as these cyber behaviours often occur in secret and are difficult to measure with observers.

The results indicated that any involvement in identity theft behaviours (i.e., as a victim, or bully) was associated with at least one of the following psychosocial correlates: physical appearance, parental relations self-concept, and depression. In particular, identity theft bullies were more likely to report a positive physical appearance self-concept. Students who were victims of cyber identity theft were more likely to perceive their physical appearance negatively, to experience poor family

relations and report higher levels of depression. Thus, the results generally indicate that victims of cyber identity theft are associated with experiencing poorer psychosocial correlates. The largest proportion of variance explained was found for the cyber victim identity theft factor, which accounted for 6% of the variance for parental relations self-concept and 8% of the variance for the depression factor.

Table 7.6

Beta Coefficients for the ACBI Factor Identity Theft Predicting Self-Concept, Attachment to School and Depression Measured by SDQ-II-S, SBS, and DASS-21

Scale	Math SC	% VA	Verbal SC	% VA	Appear SC	% VA	Parental SC	% VA	Attach	% VA	Depress	% VA
V-Id Theft	-.11	1.1%	-.08	.1%	-.21**	2.2%	-.25**	6.0%	-.09	1.2%	.35***	8.0%
B-Id Theft	-.02	.1%	-.14	.9%	.18*	.7%	-.08	1.5%	-.04	0.4%	.15	2.9%

Note. Significant values: *$p < .05$, **$p < .01$, ***$p < .001$. Scale factors: V-Id Theft = Victim Identity Theft, B-Id Theft = Bully Identity Theft, Math SC = Mathematics Self-Concept, Verbal SC = Verbal Self-Concept, Parent SC= Parental Relations Self-Concept, Attach = Attachment to School, Depress = Depression. Statistics: % VA= variance-explained percentage.

Happy slapping factor of the ACBI and their psychosocial correlates. The third cyber SEM investigated the association with the factor happy slapping and the psychosocial correlates under investigation. The hypothesised model provided a good fit to the data ($\chi^2 = 1149.000$; $df = 590$; CFI = .940; TLI = .932; RMSEA = .039). On examination of the predictive pathways, it was revealed that eight of the 18 potential paths were statistically significant, as victim and bully happy slapping resulted in three significant pathways and bystander happy slapping revealed two significant pathways (see Table 7.7).

The results indicated that any involvement in happy slapping behaviours (i.e., as a victim, bully or bystander) was associated with at least one of the following psychosocial correlates: physical appearance self-concept, mathematics self-concept, verbal self-concept, parental relations and depression. In particular, happy slapping bullies were more likely to perceive a lower mathematics self-concept, suffer from

depression symptoms, and experience positive physical appearance self-concept. Students who were victims of cyber happy slapping were more likely to perceive their physical appearance negatively, report poorer parental relations and also suffer from higher levels of depression. However, students who were cyber happy slapping bystanders also suffered from higher levels of depression.

Overall, the results generally reveal that students from all potential perspectives, including victims, bullies and bystanders, are at risk of experiencing depression symptoms. These preliminary findings indicate that students involved in Happy Slapping behaviours may be at further risk of poorer psychosocial outcomes compared to students involved in the other types of cyber bullying, as all three audiences were negatively affected. The largest proportion of variance explained was found for the psychosocial factor depression, accounting for 8.7% for victims, 8.1% for bullies and 6.3% for bystanders involved in happy slapping.

Table 7.7

Beta Coefficients for the ACBI Factor Happy Slapping Predicting Self-Concept, Attachment to School and Depression Measure by SDQII-S, SBS, and DASS-21

Scale	Math SC	% VA	Verbal SC	% VA	Appear SC	% VA	Parent SC	% VA	Attach	% VA	Depress	% VA
V-Happy	-.003	0.2%	-.12	1.5%	-.23**	3.3%	-.24*	7.2%	-.08	1.1%	.21*	8.7%
B-Happy	-.12*	1.4%	-.10	1.3%	.14*	0.3%	-.11	2.9%	-.07	0.9%	.20*	8.1%
BS-Happy	.01	0.02%	.13*	0.5%	-.01	0.04%	-.001	0.01%	-.06	0.6%	.18**	6.3%

Note. Significant values: *$p < .05$, **$p < .01$, ***$p < .001$. Scale factors: V-Happy = Victim Happy Slapping, B-Happy = Bully Happy Slapping, BS-Happy = Bystander Happy Slapping, Math SC = Mathematics Self-Concept, Appear SC = Physical Appearance Self-Concept, Verbal SC = Verbal Self-Concept, Parent SC= Parental Relations Self-Concept, Attach = Attachment to School, Depress = Depression. Statistics: % VA = variance-explained percentage.

Section Summary

Structural equation modelling path analysis results are suggestive that students engaged in cyberbullying behaviours in any capacity are at significant risk of

experiencing negative psychosocial correlates, placing students at risk of experiencing poorer mental health outcomes. In general, cyber victims were associated with a perceived negative physical appearance self-concept and poorer parental relations, and experienced higher levels of depression. Cyber bullies were correlated with perceived poorer academic achievement outcomes and higher levels of depression. However, bullies perpetrating identify theft and happy slapping behaviours were associated with a positive perceived physical appearance self-concept. Furthermore, although bystanders perceived a positively verbal self-concept across all cyber forms, happy slapping witnesses also reported experiencing depression symptoms. These preliminary results suggest that students perpetrate cyberbullying behaviours to enhance their self-concept by gaining power and physical authority over other students (Marsh et al., 2001). Moreover, these preliminary findings reveal that students involved in happy slapping behaviours compared to other forms of cyber bullying (Flaming and Identity Theft) may be at further risk of poorer mental health outcomes, as happy slapping behaviours may be more psychologically damaging due to the combination of both visuals and text, as well as the permanency of the action once it has been committed.

Research Hypothesis 2.3.2: Relations between traditional bullying factors and the psychosocial correlates for being bullied and bullying. Research Hypothesis 2.3.2 predicted that engagement in traditional bullying forms would be associated with poorer psychosocial functioning. To answer this hypothesis, three separate SEMs were conducted with the traditional bullying factors (i.e., 1st model target verbal, bully verbal; 2nd model target physical, bully physical; 3rd model target

social, bully social) predicting self-concept, attachment to school and depression psychosocial factors.

Verbal bullying factor of the APRI-BT and their psychosocial correlates. The first model examining verbal bullying revealed an excellent fit to the data (χ^2 = 1240.490; *df* = 634; CFI = .946, TLI = .940; RMSEA = .039). On examination of the Beta coefficient pathways (see Table 7.8), seven of the 12 pathways were statistically significant, as verbal victims revealed three significant pathways and verbal bullies indicated four significant pathways.

The results indicated that any involvement in verbal bullying (i.e., as a victim or bully) was associated with at least one of the following psychosocial correlates: physical appearance self-concept, verbal self-concept, parental relations, attachment to school and depression. In particular, verbal bullies were more likely to experience a positive physical appearance self-concept, perceive a lower verbal self-concept, report poorer parental relations and a lack of attachment to school. Students who were victims of verbal bullying were more likely to perceive their physical appearance negatively, perceive a positive verbal self-concept, and suffer from higher levels of depression. Consistent with cyberbullying findings, the results indicated that bullies experienced a positive physical appearance self-concept.

The preliminary findings suggest that involvement in verbal traditional bullying for both bullying and being bullied is associated with mixed self-concept profiles. Despite some of the positive self-concept outcomes, traditional bullies were associated with negative academic self-concept outcomes, poor perceived parental relationships and a lack of connection to their school, while traditional victims were associated with a negative physical appearance and experienced significantly higher

levels of depression. The largest proportion of variance explained was found for the psychosocial factor depression, accounting for 11.5% for traditional targets only.

Table 7.8

Beta Coefficients for the APRI-BT Factor Verbal Bullying Predicting Self-Concept, Attachment to School and Depression Measure by SDQII-S, SBS, and DASS-21

Scale	Math SC	% VA	Appear SC	% VA	Verbal SC	% VA	Parent SC	% VA	Attach	% VA	Depress	% VA
T-Verbal	.03	0.6%	-.25***	4%	.16**	0.8%	.05	0.7%	-.01	0.1%	.30***	11.5%
B-Verbal	-.06	0.1%	.12*	0.04%	-.14*	1.3%	-.23***	8.4%	-.18**	3.1%	.10	3.4%

Note. Significant values: *$p < .05$, **$p < .01$, ***$p < .001$. Scale factors: T-Verbal = Target Verbal, B-Verbal = Bully Verbal, Math SC = Mathematics Self-Concept, Appear SC = Physical Appearance Self-Concept, Verbal SC = Verbal Self-Concept, Parent SC= Parental Relations Self-Concept, Attach = Attachment to School, Depress = Depression. Statistics: % VA= variance-explained percentage.

Physical bullying factor of the APRI-BT and its psychosocial correlates. The second SEM predicted a negative association with the physical bullying factor and its psychosocial correlates for engagement. The overall fit indices for the predicted path model were good ($\chi^2 = 1244.913$; $df = 634$; CFI = .943; TLI = .937; RMSEA = .039). As presented in Table 7.9, the Beta coefficients indicated that six of the 12 pathways were statistically significant, as the result highlights that two physical victim pathways and four physical bully pathways were significant.

The results indicated that any involvement in physical bullying (i.e., as a victim or bully) was associated with at least one of the following psychosocial correlates: physical appearance self-concept, mathematics self-concept, parental relations, attachment to school, and depression. In particular, physical bullies were more likely to experience a positive physical appearance self-concept, to perceive lower mathematics and poorer parental relations self-concepts, and to report a lack of attachment to school. Students who were victims of physical bullying were more likely to perceive their physical appearance negatively and to suffer from higher levels of

depression. The largest proportion of variance explained was found for parental relations self-concept, accounting for 11% for physical bullies only.

Table 7.9

Beta Coefficients for the APRI-BT Factor Physical Bullying Predicting Self-Concept, School Belonging and Depression Measure by SDQII-S, SBS, and DASS-21

Scale	Math SC	% VA	Verbal SC	% VA	Appear SC	% VA	Parent SC	% VA	Attach	% VA	Depress	% VA
T-Physical	.11	0.3%	.06	0.03%	-.18**	1.8%	.04	0.6%	-.02	0.2%	.29***	10.0%
B-Physical	-.15*	1.3%	-.12	1%	.14*	0.5%	-.34***	11%	-.20**	4.1%	.10	2.7%

Note. Significant values: *$p < .05$, **$p < .01$, ***$p < .001$. Scale factors: T-Physical = Target Physical, B-Physical = Bully Physical, Math SC = Mathematics Self-Concept, Appear SC = Physical Appearance Self-Concept, Verbal SC = Verbal Self-Concept, Parent SC= Parental Relations Self-Concept, Attach = Attachment to School, Depress = Depression. Statistics: % VA= variance-explained percentage.

Social bullying factor of the APRI-BT and its psychosocial correlates. The third traditional bullying SEM examined the prediction that social bullying would be associated with poorer psychosocial correlates. The proposed model provided an excellent fit to the data ($\chi^2 = 1186.621$; $df = 634$; CFI = .949; TLI = .943; RMSEA = .037). As presented in Table 7.10, the Beta coefficients indicated that nine of the 12 pathways were statistically significant, as the results indicated three social victim pathways were significant and six social bully pathways were statistically significant. The results indicated that any involvement in social bullying (i.e., as a victim or bully) was associated with at least one of the following psychosocial correlates: physical appearance self-concept, mathematics and verbal self-concept, parental relations, attachment to school, and depression. In particular, social bullies were more likely to experience a positive physical appearance self-concept, perceive a lower mathematics and verbal self-concept, report poorer parental relations, report a lack of attachment to school and suffer from depression. Students who were victims of social bullying were

more likely to perceive their physical appearance negatively, perceive a positive verbal self-concept and suffer from higher levels of depression.

The preliminary findings suggest that involvement in social bullying for both bullying and being bullied was associated with mixed self-concept profiles. Despite some of the positive self-concept outcomes, traditional Bullies were associated with negative academic self-concept outcomes, poor perceived parental relationships, a lack of connection to their school and suffering from depression, while traditional victims were associated with a negative physical appearance and suffered from depression. The largest proportion of variance explained was found for the mental health factor depression, accounting for 10.8% for social targets and 6.8% for Social bullies.

Table 7.10

Beta Coefficients for the APRI-BT Factor Social Bullying Predicting Self-Concept, Attachment to School and Depression Measure by SDQII-S, SBS, and DASS-21

Scale	Math SC	% VA	Verbal SC	% VA	Appear SC	% VA	Parent SC	% VA	Attach	% VA	Depress	% VA
T-Social	.04	0.1%	.13*	0.6%	-.21***	3.3%	-.01	0.07%	-.03	0.3%	.28***	10.8%
B-Social	-.13*	1.4%	-.16**	1.5%	.10*	0.3%	-.29***	8.3%	-.16**	2.8%	.20**	6.8%

Note. Significant values: *$p < .05$, **$p < .01$, ***$p < .001$. Scale factors: T-Social = Target Social, B-Social = Bully Social, Math SC = Mathematics Self-Concept, Appear SC = Physical Appearance Self-Concept, Verbal SC = Verbal Self-Concept, Parent SC= Parental Relations Self-Concept, Attach = Attachment to School, Depress = Depression. Statistics: % VA= variance-explained percentage.

In general, this form of traditional bullying behaviour may have a plethora of poorer psychosocial outcomes, due to the mental manipulation bullies inflict on their victims whilst simultaneously breaking down their victim's self-concept. Therefore, the results provided support for hypothesis 2.3.2.

Section Summary

In summary, this section conducted Structural Equation Modelling (SEM) to uncover the psychosocial correlates for engagement in traditional bullying forms. Overall, victims involved in any type of traditional bullying were more likely to experience negative physical appearance self-concept and report higher levels of depression, but they also reported higher verbal self-concept. Bullies overall were associated with poor academic achievement outcomes, both in mathematics and English, perceived negative parental relationships and a lack of attachment with their school. Similarly to cyberbullying results, traditional bullies consistently reported a positive physical appearance self-concept. The above results indicate that traditional victims and bullies are consistently associated with negative psychosocial correlates. The results overall reported a strong correlation between being a traditional victim and lower physical appearance self-concept.

Exploring the Relations between Traditional and Cyberbullying Engagement

Scholars recommend that cyberbullying should not be examined as a separate entity but rather as a connected bullying issue that has developed out of traditional bullying types and into cyber space (Kowalski, Morgan, & Limber, 2012; Perren et al., 2010; Olweus, 2012 Smith 2012; Waasdorp & Bradshaw, 2015). The next section explores the relations between cyber and traditional bullying engagement.

Research Question 2.4.1: Exploring the overlap between traditional and cyberbullying behaviours. Research question 2.4.1 explored whether there is an overlap between traditional and cyberbullying engagement. In order to explore the dynamics of this relationship, a CFA was performed on the first-order traditional

victim and bully factors of the APRI-BT, predicting a strong positive relationship with the first-order ACBI cyber victim, bully and bystander factors.

The proposed model provided a satisfactory fit to the data ($\chi^2 = 2998.329$, $df = 1601$, CFI = .912, TLI = .902, RMSEA = .041). As presented in Table 7.11, most of the correlations between traditional and cyberbullying resulted in positive, moderate to strong associations. The results revealed a moderate to strong relationship between cyber victim (flaming, identity theft and happy slapping) and traditional victims (verbal, physical and social) (r = .41 to .53), and also cyber bullies (flaming, identity theft and happy slapping) and traditional bullies (verbal, physical, social) (r = .41 to .58). Furthermore, there was a moderate relationship between victims of cyberbullying and perpetrating traditional bullying forms (r = .30 to r = .45), and also a weak to moderate correlation between cyber bullies and traditional victims (r = .26 to .40). Finally, there was a moderate relationship between witnessing cyber incidents and engaging in traditional bullying (r = .38 to .48), and also a moderate risk of becoming a victim of schoolyard bullying (r = .44 to r = .47).

Table 7.11

Latent Factor Correlations Relating ACBI factors to the APRI-BT Traditional Constructs

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. V-Flam	--													
2. V-Id Theft	.75	--												
3. V-Happy	.79	.83	--											
4. B-Flam	.63	.58	.52	--										
5. B-Theft	.47	.62	.59	.85	--									
6. B-Happy	.47	.54	.66	.80	.89	--								
7. BS-Flam	.47	.47	.29	.48	.37	.25	--							
8. BS-Happy	.43	.48	.43	.48	.40	.36	.84	--						
9. T-Verbal	.53	.45	.42	.37	.29	.26	.44	.47	--					
10. T-Physical	.52	.45	.41	.40	.29	.26	.44	.47	.89	--				
11. T-Social	.53	.45	.46	.38	.29	.26	.44	.47	.90	.90	--			
12. B-Verbal	.35	.43	.32	.55	.49	.43	.41	.46	.45	.45	.45	--		
13. B-Physical	.36	.45	.34	.58	.52	.46	.43	.48	.48	.47	.48	.91	--	
14. B-Social	.32	.40	.30	.51	.46	.41	.38	.43	.42	.42	.42	.81	.85	--

Note. Items 1-8 = Instrument items corresponding to ACBI factors: V-Flam = Victim Flaming, V-Id Theft = Victim Identity Theft, V-happy = Victim Happy Slapping, B-Flam = Bully Flaming, B-Id Theft = Bully Identity Theft, B-Happy = Bully Happy Slapping, BS-Flam = Bystander Flaming, BS-Happy = Bystander Happy Slapping. Items 9-14 = Instrument items corresponding to APRI-BT: T-Verbal = Target Verbal, T-Physical = Target Physical, T-Social = Target Social, B-Verbal = Bully Verbal, B-Physical = Bully Physical, B-Social = Bully Social.

In conclusion, a significant moderate to strong relationship was found between traditional and cyber forms of bullying for both perpetration and victimisation, and in the expected direction. These results support the theoretical literature, which indicates an overlap between these types, as students may be interchangeably involved in both traditional and cyber forms of bullying. The results revealed the strongest relationships were for cyber victims to also be targeted in the schoolyard, and for cyberbullies to also hurt others at school. Moreover, there was a moderate risk for cyber bystanders to be involved in traditional bullying behaviours, either as victim or bully. The results are suggestive that cyber and traditional bullying behaviours have a moderate to strong relationship, indicating these bullying types are related but distinct bullying behaviours (Beran & Li, 2005; Li, 2007; Kowalski, Morgan, & Limber, 2012; Perren et al., 2010; Smith et al., 2008; Olweus, 2012; Smith 2012; Waasdorp & Bradshaw, 2015).

Chapter Summary

This chapter has investigated the effects of gender, grade and school context on cyber and traditional bullying, as well as exploring key psychosocial correlates for engagement in bullying, and the relationship between cyber and traditional bullying. In general, the MIMIC model results identified that males were more likely to be a perpetrator of both cyber and traditional bullying behaviours, in comparison to female students. In addition, significant school differences revealed that the state co-educational school reported higher levels of cyber victim, bully and bystander involvement, and also higher levels of traditional victimisation, compared to the independent single-sex (male) secondary school. The MIMIC results highlighted important group differences, revealing that cyberbullying behaviours heighten during Stage 5 (grades 9 and 10); this may be due to students' ability to utilise technology in

more sophisticated and savvy ways. Inconsistent with the traditional bullying literature, however, traditional bully perpetrators heighten in engagement during Stage 5.

SEM results revealed that students involved in bullying behaviours were at risk of poorer psychosocial outcomes. In particular, cyberbullies were associated with poorly perceived academic achievement outcomes, and reported higher levels of depression. However, cyberbullies were consistently associated with a positive physical appearance self-concept. Cyber victims were at risk of experiencing negative physical appearance self-concept, poor parental relations and higher levels of depression. All potential target perspectives involved in happy slapping behaviours (victims, bullies and bystanders) experienced higher levels of depression. This result indicates that even students who are not involved, and only witness this type of incident, are at risk of experiencing higher levels of depression.

Across cyber and traditional victims, there was a similar negative association with students' physical appearance, and both cyber and traditional bullies reported positive associations with their physical appearance. Finally, the results reveal a strong association between cyber and traditional bullying, indicating an overlap between these two constructs. Therefore, cyber and traditional bullying should not be treated as separate entities, but rather as part of the same dimension of socially inappropriate aggressive behaviours, as students may participate in cyberbullying at home and continue in traditional bullying the next day at school and vice versa. There was also a moderate risk for cyber bystanders to be involved in traditional bullying forms.

The next chapter aims to give students, their parents and educators a voice through semi-structured interviews, uncovering their personal perspectives and stories to provide a further contextual understanding of bullying phenomena.

CHAPTER 8: RESULTS STUDY 3 A QUALITATIVE INVESTIGATION CAPTURING THREE STAKEHOLDERS' PERSPECTIVES OF CYBERBULLYING EXPERIENCES

Introduction

Considering the complexity of the problem in its entirety, developing and providing recommendations to seed successful interventions to combat traditional and cyberbullying behaviours requires a collaborative effort, involving access to all important stakeholders involved in the bullying process. The stakeholder perspectives included in this study are secondary school students, their parents and educators (Brown, Jackson, & Cassidy, 2006). The primary purpose of this chapter is to present the voices and real life stories of all key stakeholders, extending beyond students' involvement by focusing on the social behavioural patterns that influence school bullying. Very few qualitative studies have examined how adult-child relationships and interactions between adults and children affect students' ability to deal with the bullying experience, the ability for victims to come forward and disclose such hurtful incidents, and the responsibility for adults to intervene (Mishna & Alaggia, 2005).

Past research has indicated that both educator and parental involvement is highly correlated with program success, as teachers and parents are central in implementing, intervening, supporting and sustaining school intervention programs (Mishna, 2004;

Mishna, Scarcello, Pepler, & Wiener, 2005; Sawyer, Mishna, Pepler, & Wiener, 2011). A thematic analysis was conducted on the semi-structured focus group and telephone interviews, which were framed through an ecological lens to identify and analyse patterns of meaning across all stakeholders (educators, students and parents). Specifically, this analysis focused on and highlighted shared experiences across the ecological system (peer, home, schooling contexts and virtual environments), revealing key themes that emerged in the data analysis (Bronfenbrenner, 1977).

The two schools under analysis represent culturally diverse contexts; one of the schools was a faith based single-sex, day and boarding school with pastoral care programs embedded in the curriculum. The school values tradition and strives for excellence in both academia and sporting activities. The independent school prided itself on its reputation and on the sense of belonging that was present in the school community. The state co-educational school was located in a lower socio-economic region, where many families were commuting long distances for work. Both school staff and families reported a lack of resources and feelings of being overworked.

The results are presented in the seven over-arching themes: what is cyberbullying, how it is different from traditional bullying, identifying behavioural forms of cyberbullying, messy emotions, motivations, disclosure, and recommendations. The results further explore the unique school contextual differences within the themes and subthemes by identifying key environmental similarities and distinctions present in the analysis.

The final section of this chapter examines the contradictions found across the students' contributions, and considers the uncategorised themes and outlier cases arising from the interviews. The outlier cases were important, as they made a significant contribution to the bullying literature. Although there were a number of

anomalies which emerged within stakeholder groups, these differences were not explored in Study 3, as they were outside the scope of this study, given that the research question focuses only on shared experiences across all three stakeholders involved (Silverman & Marvasti, 2008). This chapter will demonstrate the complexity of cyberbullying experiences and provide potential holistic solutions for school students, parents and educators to reduce cyber and traditional bullying incidents.

What is Cyberbullying, How is it Different from Traditional Bullying?

The stakeholders all defined cyberbullying as a new type of bullying, which was often explained in comparison to traditional bullying incidents. The stakeholders discussed a range of definition differences between traditional and cyber types of bullying. Consistently across the three stakeholders, four key definitional subthemes emerged. These included: anonymity, bullying 24/7, permanency and leaving your digital footprint, and providing evidence.

All stakeholder groups revealed that one of the key differences in defining cyberbullying is that it occurs behind the screens of ICTs, while traditional bullying occurs face to face. The most frequently reported location of cyberbullying was on social networking sites such as Facebook. A grade eight student explained, "I think 90 per cent of this school would have Facebook. You can have positive stuff out of it but a lot of it can be negative stuff" (Noah, grade 8 student, independent single-sex school). The stakeholders were in agreement that communication technologies provided youth with a new platform for students to engage in bullying behaviours.

Many participants discussed how cyberbullying escalated quite quickly, due to the broader audience, which increases the number of bystanders. This compounds the bullying issue when bystanders comment or "like" hurtful posts, adding further fuel to

the original bullying incident. Mr Brown explains how communication technologies allow a greater number of bystanders to witness a cyberbullying incident:

> The real issue I think is that you have the normal bullying happening but the escalation is caused by things like Facebook. Instead of being contained with a couple of people, it ends up involving not only the kids at school but their parents as well and stuff. So that's where the real issue is (Mr Brown, teacher, state co-educational school).

Similarly, many students reported feeling vulnerable and outnumbered to defend themselves when a cyberbullying incident occurred.

Hiding behind the cloak of anonymity. A primary theme emerged when all stakeholders discussed how cyberbullying incidents often occur under the cloak of invisibility and anonymity. Several students explained that it was easier to be continually aggressive behind the screens, as perpetrators of cyberbullying harassment are unable to see the victim's emotional response, which often acts as a buffer in traditional bullying incidents that leads to the aggressor ceasing bullying behaviours. For example Diana, a grade 8 student, identifies the critical difference between cyber and traditional bullying:

> Some people are mean enough to say it to someone's face and then some people are kind of cowardly and say it over the internet, because they don't actually have to face them and they can say what they want without seeing the other person's reaction (Diana, grade 8 student state co-educational school).

Furthermore, teachers explained that students can be "braver behind the keyboard" (Mr Thompson, a transitional behavioural teacher, state co-educational school) as they feel more powerful and comfortable being physically removed from their victims,

allowing bullies to act in more deviant ways that they may not have experienced in the real world.

Both educators and parents explain that developmentally, adolescents have a tendency to react impulsively to conflict, often by misinterpreting communication behind the screen. It is often difficult to understand and read messages where there is no body language, tone and emotional responses to help interpret the information provided. Kylie, a parent, describes the ease of being nastier behind the screen:

> I think it's probably different to the normal form of bullying where you've got actually to front up to people and I think people … might not even really mean it… I think it's something as well that people aren't often brave enough or wouldn't say to other people's faces. I think that's probably the biggest danger is people are brave behind the keyboard really (Kylie, parent).[1]

Once reactive responses are posted online, the information is captured in the public domain for many other students to view and share. Even after the fact, if the cyber bully shows remorse it can be extremely difficult, if not impossible, to permanently remove all traces of the posted content.

In line with the parents' responses, students explained that cyber aggressors' identities remained anonymous, which allows a power imbalance to develop where the aggressor asserts their authority to harass others without being caught. This enables the aggressor to take greater risks and behave in more harmful ways, under the new persona of a protected identity. Emma describes an example of cyber anonymity:

> I got called at midnight once and it was a prank call on an unknown number. They called me four times after I hung up so I called them—they pretended to be a cop called Constable Mark

[1] The parent school context labels are not reported as, during the interview, caregivers often refer to more than one child and the children concerned often attended different schools.

> so then a few minutes later I asked them who is this again. They're like, Constable Stevens. So I'm just like, you guys are idiots, but then they changed their voice and pretended that it was Constable Stevens (Emma, grade 8 student, state co-educational school).

Several students and educators expressed that although a number of cyberbullying incidents occurred anonymously, most victims experiencing cyberbullying from an anonymous source reported that they knew and interacted with this person in real life, as the perpetrators used their target's personal details against them. However, the victims of the incident were unable to pinpoint the exact person causing their distress. The cyberbully may not have the "courage" to bully them during school hours, and so may have chosen to engage from the safety of the virtual world, which allows perpetrators to mask their identity.

Mrs Smith, a teacher, explains how cyberbullying is perceived as anonymous:

> Threatening emails came through from an anonymous site from who knows who it was, but they can still track those can't they? They can track IP addresses and things like that anyway, so it's not completely anonymous. Even with that one that you were talking about, they can still track IP (Mrs Smith, grade 8 unit co-ordinator, independent single-sex school).

Several teachers mentioned that although cyber perpetrators may feel protected behind the screen, the cyber bully can still be traced through identification of the IP addresses of the communication devices used, which may subsequently lead to police involvement.

Bullying 24/7. One of the key themes captured by the cyberbullying phenomena was that students can be victimised 24 hours a day. Many students expressed fear of being a non-stop target of harassment, as they now can be subjected to bullying

behaviours in previously safe havens such as the family home. A 13 year old student explained, “They can always get to you. … You can turn the computer off, but when you’re away, they can still post stuff” (James, grade 7 student, independent single-sex school). Several teachers alluded to how cyberbullying incidents affect traditional bullying experiences at school the next day. Several teachers expressed how there are no more safe havens for students: “They used to be able to go home and deal with that again tomorrow. But it continues all night and all the next day” (Mrs Thorne, grade 10 unit co-ordinator, state co-educational school). Parents and teachers both agreed that students perceived technology as a necessity, in order to stay connected and keep in touch with their peers through social networking sites. However, adults were concerned that the more time youth spent using technologies, the more likely they were placing themselves at risk of experiencing cyberbullying incident.

Several students expressed that their phones became part of their identity and a part of themselves, as they would be lost without technology and feared missing out on important news uploaded by their friends. The downside to this almost perpetual use of technology is that the opportunities for cyberbullying increase significantly. Jennifer explains the difficulty of enforcing parental rules for technology use:

> Anybody who says to kids “right …our computer's outside”, but they've got laptops and everything. Kids can be on the computer during the night. Parents really don't know. As much as you enforce rules and hope that your kids stick to it, there’s no guarantee. They get access to this right through (Jennifer, parent).

Several parents reported that they provide their children with technology access primarily for educational and safety purposes. Many adolescents travel independently

to and from school, and when parents are working long hours they are reassured when they receive a call or text message stating they are home and safe.

Parents explained that it can be very difficult to control children's technology access, as children always find ways around the boundaries of parental ground rules. A parent gives an example of teenagers' ease of access to technology:

> So they send each other messages and it doesn't cost them anything. They don't have to have credit. If they've got an iPod touch they can just go on it and I suppose they have to access to the internet which we've got access in our house and mobile access (Jessica, parent).

Another student reported owning two phones, so if either a parent or teacher confiscated one phone they had a spare to continue contact with their friends. Several students agreed that it would be socially damaging not to have access to their social networks via communication technology.

Permanency and leaving your digital footprint. When a cyberbullying incident takes place, the event and information posted has a permanency that is extremely difficult to delete. This is due to the ease of accessing information, as many students may have already viewed the post from their live news feed via social networking sites, received a message or picture on their phones, apps or private accounts that can be stored and permanently viewed. A student explained, " … because technology is so quick, rumours get up on the wall. Everyone sees it and they're all commenting. You can take the note down, but once it's up there, people have seen it" (James, grade 7 student, single-sex school). Lucy further describes how cyberbullying is different to traditional methods, because of the evidence that remains after the incident:

> A thing that I know bothered my friend's daughter was that she was getting a lot of texts and Facebook comments about her and she was able to just keep looking at it. Like when someone says something to you face-to-face it can hurt at the time but you can't keep reading it over and over and over again and see people comment on it. It's one thing, it's said, it's done. But cyberbullying is something that you can get back on Facebook and read it over and over and prolong your agony (Lucy, parent).

As Lucy identified, even if a student later deletes the post, the damage and ramifications for such an incident may have already transpired. Victims involved in such incidents can keep reading the event over and over again, replaying the hurt and being reminded constantly of the painful experience.

Several teachers shared the importance of gently reminding students that everything posted or written on communication technologies has a digital footprint left behind which is traceable and permanent. For example, Mr Edison explains the responsibilities associated with using technology:

> I guess with the information we give the boys about their responsibilities, they understand that whatever they put online or on the net or on Facebook, it's there, so with their digital footprint I guess they're starting to think twice about posting a hate page or whatever they try and do (Mr Edison, grade 10 unit co-ordinator, single-sex school).

Technology users, as identified by Mr Edison, are required to negotiate additional responsibilities with the information they use, and to consider the impact their actions have on others.

Providing evidence. Another key difference found between cyber and traditional bullying behaviour is the ability to provide electronic evidence of the actual

cyberbullying incident. Victims can now save the content of the incident and print off the evidence to show an adult. If a student is hesitant to report the incident at the time, they can track and save the history of events until they have the courage to report the behaviour. For example, Diana reveals the importance of saving cyberbullying evidence:

> Like, if it's on certain websites you can report it, or you can save it, or you can hand it in or something. I have saved some stuff, but I haven't actually handed anything in. But online I don't think anything will happen unless you report it, or you tell someone about it and you show them (Diana, grade 8 student, state co-educational school).

Furthermore, if an incident continues and becomes more serious over time, victims can provide evidence of users and the length of time the incident occurred. Mrs Perry, a welfare teacher, describes the importance of evidence when intervening with students:

> We get them to print it off or we can look at Facebook now and have a look at what the dialogue has been and if it's of a violent nature we contact police. If not, we try and get the parties involved, contact the parents if we have to. We have to get everyone involved, sitting down and mediate (Mrs Perry, welfare teacher, state co-educational school).

Once cyberbullying incidents have been reported to schools, further evidence and statements can also be collected from bystanders who may have also witnessed or added content to these events. Depending on the severity of the incident, parents and schools can provide the evidence to police to further investigate the events that have taken place.

Behavioural Forms of Cyberbullying

As technology becomes more sophisticated, adolescents find new ways to misuse and harness the power of communication technologies, to inflict psychological hurt on others. The interviewees documented a range of different behaviours related to cyberbullying, including electronic invitations to join a real life bullying event, sexting, flaming/trolling, harassment, identity theft/impersonation, exclusion, cyber stalking, denigration and happy slapping. However, three cyberbullying methods were consistently identified across all stakeholders: flaming/trolling, identity theft/impersonation, and cyber stalking.

Flaming/trolling. Flaming or trolling typically involves sending antagonising and offensive posts on public sites such as social networking walls that are intended to emotionally provoke and offend their victims. This is often witnessed by bystanders through uploaded news feeds. Aggressive comments can also appear on group pages, discussion boards, gaming sites and online forums. A series of threads sent to a student's private inbox, instant message, or email address could also be considered flaming. One student explained that when using Facebook social networking sites, "They'll write on your wall and get heaps of people to comment on them, and they'll tag them in it so others can join in and comment too" (Rachel grade 8, co-educational student). Such exchanges can be overwhelming and quickly make the victim feel outnumbered. An example of flaming provided by a parent was: "Well, I suppose they just post nasty comments. You can get a whole heap of people posting the same thing, re-posting things about someone, that sort of thing, which can then damage the child's reputation and self-worth" (Laura, parent). These types of behaviours may affect the student's reputation upon returning to the schoolyard the next day.

Furthermore, the teachers from the independent single-sex school identified the popularity of computer gaming activities during adolescents' leisure time. The use of Massively Multiplayer Online Role-Playing Games (MMORPGs) such as World of Warcraft and other sought-after downloadable game applications (Apps) such as Clash of Clans, is gaining traction amongst male youth. Several educators reported responding to flaming incidents occurring on online gaming forums:

> I'd say many cyberbullying incidents are occurring over gaming sites, like I've probably had a few issues of boys [pause] obviously they play a lot of games online and like to talk online with each other. I've had quite a few ganging up on each other (Mrs Roberts, school psychologist, independent single-sex school).

These incidents often escalate quite quickly when multiple players add insulting and derogatory comments to the live feed, escalating the incident into a flame war. The school psychologist from the independent single-sex school explained that many students reported feeling distressed, due to the personal and sensitive nature of the content posted online which often undermined the boys' masculinity.

Identity theft and impersonation. Another common type of cyberbullying involves the perpetrator impersonating another student by stealing or gaining access to their account, whereby they can comment and post content that reflects negatively on their targets. Mrs Perry explains how students mask their true identity by impersonating other students: "They are hiding who is saying it by pretending to be someone else by logging into a friend's computer and saying something nasty by concealing their true identity" (Mrs Perry, Welfare teacher, state co-educational school). As identified by Emma, this behaviour can often mark the demise of a friendship:

> You were friends with them before and you happen to give them the password when you were friends, then they can probably go on there and start, and like, not hack your account because it's not hacking because you gave them your password, they start writing foul stuff to people pretending to be you so that you get in tonnes of trouble (Emma, grade 8 student, state co-educational school).

Such incidents often have damaging effects on a student's reputation and friendships. The students reported that it could be considered a sign of close friendship when a student divulges their passwords to a friend. However, such private information can leave students vulnerable and easily taken advantage of through identity theft and impersonation.

Students whose accounts are stolen are often unaware of the events that have taken place online until it is too late. Unknowingly, targets have to deal with the fallout of the cyber incident when returning to school the next day. Identity theft can occur when computers are not logged out properly or phones are not password protected. A parent explained how her daughter was devastated, coming home from school, when she found some students had stolen her phone and had started sending romantic texts:

> In this one instance they sent this boy all these text messages saying "oh I like you so much" and all this stuff from my daughter's phone. Then everyone started teasing my daughter…saying "you like him". Then the boy put it all on Facebook what she had supposedly sent to him, he put it on Facebook and said "look at what I got from her" (Jessica parent).

Jessica further explained that she observed her daughter's behaviour change after the incident occurred, as she was embarrassed, became more withdrawn and lost her confidence, as she often protested against attending school.

Cyber bullies also steal students' identities, to create a new account on the victim's behalf by acquiring personal information about their targets (e.g., date of birth, a school photo) to make a new, fake profile. The perpetrators add friends or acquaintances of their targets. Impersonators can subsequently post offensive information about the victim or use the account on their friend's profiles. James explained how his friend experienced impersonation on Facebook when he discovered two accounts appeared on his friendship list:

> I had two different friends and they had two different profiles, two different photos and two different lots of information, but they were the same person, spelled the exact same. I went through and I figured out which one was false and which one was the right one and deleted the false one (James, grade 7 student, independent single-sex school).

At this level, identity theft can escalate quite quickly, as friends of their targets may unknowingly be left open to possible future victimisation. Perpetrators can act out in more cruel and harsh ways as their true identity remains hidden. It is almost impossible to track down and expose the original student who set up such an account, due to the concealment of the cyberbully carrying out the impersonation.

Cyberstalking. An alarming number of dangerous cyber stalking incidents are occurring behind the veil of the virtual world through repetitive threatening communication with their targets. Cyber stalking incidents include but are not limited to, direct physical threats of harm to an individual person's safety and wellbeing, sending highly offensive or intimidating material, blackmail, and attempts to gather information about their targets to be used later for malicious purposes. Mrs Perry provides an example of a cyber stalking incident:

> You'll get a threat printed online coming from some stranger. They will say "I've never met you, I know so-and-so's cousin who lives on the coast, they're going to come around and smash you." Because they know the student's address they'll push that to scare them, which can be terrifying (Mrs Perry, Welfare teacher, state co-educational school).

Cyber stalking incidents often occur in personal communication environments, which can lead to stalking behaviours offline. Cyber stalking behaviours can also extend to harassment and threats of family members, partners and friends, to isolate their victims and make them feel powerless. Brodie explains his frightening cyber stalking experience:

> It was online, he was like, "oh I'll set your house on fire". He goes, "oh I'll kill your little brother and everything" and then…Like two kids in this school said he was going to light this kid's house on fire and was going to bring guns, he'll shoot all his family and everything (Brodie, grade 7 student, independent single-sex school).

Such distressing incidents are intended to invoke fear and terror in their victims, which warrants immediate attention from school authorities and law enforcement. Cyber bullies often specifically and aggressively attack their victims to unleash their anger, carry out revenge, to show their power, or to gain control over their victims.

One parent expressed her concerns of the potential dangers when using technologies: "You hear so often of people being stalked online and then it turns into real life, and it's a frightening situation. Just too many parents are ignoring it" (Anna, parent). It has become apparent that the boundaries between the offline and online worlds are diminishing, placing students at risk of new dangers that are often difficult to detect.

Overall, the results provided evidence for three specific behavioural forms of cyberbullying. A consistent thread of evidence emerged across all forms of cyberbullying, where bullies take advantage of the imbalance of power between aggressor and victim to intimidate, scare and humiliate their targets. This was also evident in the other subthemes raised by some stakeholders.

Messy Emotions

Many of the students, parents and educators were aware of the negative emotional effects generated by cyberbullying incidents. The results revealed that students and parents, in comparison to the educational staff, described more emotive responses. Several sub-themes emerged across stakeholders, including fear and sadness, stress, and antagonism and anger. Two key psychosocial sub-themes that emerged across all stakeholders were fear and sadness, and antagonism and anger.

Fear and Sadness. The repetitive nature of cyberbullying left students distressed and sad, and not wanting to return to school. Emma explains her emotional turmoil upon returning to school:

> I went through about two or three terms of not wanting to come to school and I dreaded going to bed at night because that led to going to school in the morning. I would cry and beg my mother not to bring me to school in the morning (Emma, grade 8 student, co-educational school).

Emma explained her emotional response also impacted her family members, as her mother was fearful to send her daughter to school.

Parents described how vulnerable a family can feel when cyberbullying enters previously safe locations such as the home, and further explained the difficulty of controlling events that invade the private space behind the screen. Kylie explains new

parental fears and challenges: “I think you feel when it's coming into your house, if you like, it's come into your home and you feel a bit more vulnerable and have a lack of control of things as well” (Kylie, parent). Many parents were fearful that their teenager would be a victim of cyberbullying and would suffer in silence.

Several parents were frightened of the psychological damage that arises from their child becoming a victim of cyberbullying. Jessica shares her fears: “My biggest concerns would be that it's just making them really unhappy and feel really sad and awful about themselves” (Jessica, parent). Such cyberbullying victimisation can be disempowering, negatively affecting a student’s self-worth and leading to depression. Jake describes his emotional sadness when experiencing cyber victimisation:

> Sometimes when I'm checking my emails I get emails from Facebook and it actually says what people have said. Sometimes I'll read them and they say really bad things about me and it just makes me feel really sad and all that (Jake, grade 7 student, single-sex school).

Further, a handful of teachers (only) from the state co-educational school explained that if a student was involved in a persistent bullying episode, the staff would notice significant changes in the student’s mood and behaviour. Mr Thompson describes some important bullying warning signs:

> The student victimised often becomes withdrawn and sad, their attendance usually drops off, which usually affects their academic performance. Other signs that are noticeable, are when students are sitting out in the playground, you notice some students are isolated and just sitting alone (Mr Thompson, a transitional behavioural teacher, state co-educational school).

Another common warning sign mentioned by teachers from the co-education school was students' lack of empathy and understanding toward pupils who had experienced a bullying incident.

Students also expressed concerns that cyberbullying incidents can escalate quite quickly, often driven by wider audiences adding additional hurtful commentary on the original thread. Jake a student, provides some examples of the bullying psychological effects: "It makes you feel depressed and if it got really bad, make you feel that you don't want to go to school and lead to suicide and stuff [pause] like in extreme cases. Not everyday people" (Jake, grade 7 student, single-sex school). Frequently, cyber related incidents occur undetected, unless the victim or bystander reports the event. Therefore, the negative psychological effects that occur as a result could also go undetected by parents or teachers. Ongoing and extreme circumstances can lead to feelings of isolation, hopelessness, suicidal ideation and, ultimately, suicide.

Antagonism and anger. When students experienced cyberbullying victimisation, their initial hurt was often followed by anger and rage. Feelings of anger can arise, due to the unfairness of the incident and the embarrassment caused by the bully. John, a student, explained his emotive experience as a result of cyber victimisation: "I feel a lot of the emotions like emotionally you just want to punch, hit them and stuff but then there's also….getting angry" (John, grade 7 student, single-sex school). These attacks often leave a digital footprint for bystanders to witness and pass judgement upon, which may affect social interactions in the offline realm. Furthermore, when bullies victimise their targets strategically, utilising both traditional and cyber methods, this increases the frequency of bullying incidents. Students explain how over time their anger builds and elevates when circumstances are often left unreported, which in turn leads to some form of retaliation. Furthermore, when victims

retaliate against their aggressors, it can often be difficult for teachers to differentiate bullies from their targets when intervening.

When cyberbullying incidents are reported, school staff from both the independent single-sex and state co-educational school request all students involved in the incident to attend a conflict resolution meeting. Teachers perceived at the start of the meetings that all parties involved were fuelled with anger toward one another. However, the initial anger response was able to dissipate through the intervention procedure, and students were able to channel their emotional responses into more constructive and positive outcomes. Mr Edison explains the importance of early detection and reporting, to reduce anger:

> Maybe one kid came up to me and said, sir this is what was posted. We had a chat and then it got a bit fiery and that, and that was dealt with but that's pretty good considering they can get pretty aggressive and cause a lot of problems.…if undetected (Mr Edison, grade 10 unit co-ordinator, single-sex school).

There was a general consensus among the educational staff that early detection for all bullying incidents was of utmost importance, to reduce the negative emotional anguish of the targets.

Furthermore, parents were often angered when they could not protect their children from dangerous and aggressive events occurring over communication technologies. In addition, adolescents find innovative ways to access online networks, such as using free Wi-Fi hot spots, even when there may be no accessibility at home. It often can anger parents when their rules concerning cyber safety are circumvented by their teenager. Lucy explains her anger and frustration due to the lack of parental control:

> You like to think that you can control what happens to your children to some extent and I don't think that can really happen in cyber space. You've got little control over it. So I think there would be feelings of helplessness and outrage and all those sorts of things that you can't protect your child from (Lucy, parent).

Due to the dynamic nature of the online environment, as new applications are readily being accessed and downloaded, the ways in which social interactions take place are revolutionising social relationships. As much as parents try to protect their children from harm during adolescence, teenagers become more autonomous and move away from the reliance and support of their caregivers. This restricts the parent's authority and power, as teenagers often seek advice from, and become closer to, their adolescent peer group.

Overall, many different emotions were experienced by all stakeholders involved. Students' and parents' emotional responses were similar, as both stakeholder groups were fearful and sad when students were subjected to bullying, as they seemed more emotionally invested. School educators were more objective with their overall emotional responses to bullying.

Students' Motivations for Engaging in Cyberbullying

It is unclear why perpetrators engage in intentional aggressive behaviours. In this investigation, all stakeholders revealed several key motivating influences on engagement in cyberbullying perpetration: these included low self-concept, peer pressure, popularity, power and authority, immaturity, safety behind anonymity, and problems at home. Stakeholder group consensus was found across the two major motivational sub-themes of low self-concept and problems at home.

Low self-concept. As adolescents developmentally progress through to adulthood they are challenged by the important task of developing a sense of self, and

forming their identity. All stakeholders explain that when students feel inadequate within themselves, they try to compensate for their lack of self-esteem by putting others down. For example, James describes a reason why perpetrators hurt others: “If they feel that they're not good at things, then they think that if they put people down it will make themselves feel better” (James, grade 7 student, single-sex school). Parents provided further evidence, explaining how personal insecurities can lead to bullying acts: “I sometimes think it's jealousy and sometimes I think it's because they're cowards. Sometimes they're actually, I suppose, subject to it themselves and they just want to do it to somebody else to make themselves feel better” (Laura, parent). Finally, education staff revealed fear of rejection from their peer group could increase the likelihood that students participate in cyberbullying. Mrs Thorne, identified how peer pressure influences bullying participation: “Sometimes it's attention-seeking and friend-building as well, like where they get on and say things and then everyone goes and comments it make them feel good about themselves” (Mrs Thorne, grade 10 unit co-ordinator co-educational school). Students who have feelings of low self-worth may be more prone to participate in cyberbully behaviours, as they can conceal their identity online, giving them the courage to engage in hurtful acts of aggression.

Engagement in such deviant behaviour may be an outlet to escape the destructive feelings associated with low global self-concept. All stakeholders explained that cyber perpetrators viewed themselves negatively, expressed damaging evaluations and acted as a coping mechanism, in an attempt to make themself feel better, as the main motivator to being involved in cyberbullying perpetration.

Problems at home. Family relationships play an integral role in adolescent development, since the family system ideally provides nurturing support, direction and stability as adolescents mature to adulthood. During focus group interviews several

students raised the prospect that one of the primary reasons why students engage in cyberbullying forms is negative experiences at home. Examples given by students included a breakdown in parent-child communication, lack of parental attachment, parental separation and divorce. Ryan links this lack of support to broken or dysfunctional family life:

> Some bullies are triggered off because their parents are not there. They get angry and they said [pause] they might get emotional at home and then they leave the anger and put it on someone else. Like, they release all their anger on someone else, because the parents are not there. Say, if the father's gone for three grades somewhere else and the mum is never there, he's always staying at his grandma's house that could trigger him sometimes (Ryan, grade 7 student, single-sex school).

Students may become confused and stressed by the lack of family support, and find it difficult to adjust to major life changes. Such emotional experiences may overwhelm the adolescent's ability to cope, leading them to react in angry and aggressive ways towards others.

Parents explain that when families suffer from a breakdown in communication, teenagers feel isolated and alone, which in turn negatively affects their self-esteem and connection to their family. As Jessica suggests, unstable family environments can be a contributing factor to bullying involvement: "They're maybe not happy at home or they're getting treated badly or nobody really cares or doesn't give them any time and attention. I think it just flows on" (Jessica, parent). Additionally, parents and educational staff explain that with the financial pressure of raising a family, and the rising number of adolescents living in single-parent families, it can often be difficult for parents to allocate time to each of their children when there is a lack of support and resources provided to families.

During interviews, educational staff from the state co-educational school discussed how many families were travelling far from their homes commuting to Sydney to gain access to employment, placing a huge burden on family time. While at times it may be perceived that the parent has a lack of interest in their child, it may be a matter of families struggling with stressful life situations (e.g., family separation) being misinterpreted as a lack of interest in their child. Mrs Perry explains the hardship and challenges present in the community: “We're dealing with a community where there's drugs, alcohol and domestic violence going on, so for them looking at a kid's activities online would not be a priority” (Mrs Perry, Welfare teacher, state co-educational school). Ultimately, family stress can affect the adolescent’s behaviour and interactions, both online and offline.

Disclosure

All stakeholders reported that the majority of students were reluctant to report and seek adult help when involved in any type of bullying incident. Some of the students sought advice from their peers about whether to report the incident to a teacher, with most students advising their friends not to disclose the incident, due to fear of retribution from the bullies. A male student explained students’ reluctance to report a bullying incident: “I remember one time I'm about to tell the teachers and then everyone stopped [pause] all the people look at you and say don't say it” (Alex, grade 8 student, single-sex school). Many of the students were adamant that reporting an incident to a teacher will only exacerbate the situation further, and the bullies will be crueller after disclosure. Alex further explains that when you report an incident to an adult, bullies often change their methods deliberately: “It's not that easy to report it sometimes because they can still find other ways to get round the school rules and stuff” (Alex, grade 8 student, single-sex school). When the school imposes discipline

on bullies, some students outlined, their cyber aggressors change their bullying tactics by adopting traditional methods, due to the lack of evidence, which limits their chances of being caught again.

In addition, several students reported that they would not open up to a teacher as this is considered dobbing: “A lot of the time the kids might be too scared to go and tell the teachers because the bullies are going to come up and go, you're a wussy, you're this, you're that, getting picked on a bit more” (Noah, grade 8 student, single-sex school). Similarly to students’ reports, teachers perceived that many bullying instances were underreported, due to an entrenched school culture that you do not disclose to a teacher. Mr Clark explains students’ reluctance to disclose:

> A lot of what I get is that parents tell me their son's been coming home complaining about a boy who's been bullying him but they don't want to report it. They don't report it to me or they don't want their parents to report it to me because they don't want to be branded a dobber or for the situation to get worse (Mr Clark, grade 7 unit-co-ordinator, single-sex school)

A few students indicated that they had lost trust in the system, as they felt when they had reported their incidents to teachers in the past, educators would share the student’s stories amongst other staff members. James provides an example of the lack of confidentiality between students and school staff: “The principal might blab to someone and that teacher will tell someone and it will go through the grapevine and they will keep adding things” (James, grade 7 student, single-sex school). This effectively exposed those involved to loss of anonymity, and this was a clear concern.

Parents were aware that their children were often reluctant to report cyberbullying incidents to family members, as parents would notify and report the incident to the school. Jennifer provides an explanation for students’ lack of disclosure

to parents:

> As a parent you hope to be observant and see it, but sometimes kids do try to hide it from their parents because they feel that if the parents go up to school it becomes a bigger issue. They're not experienced enough to know that you can try and nip that in the bud early, then sometimes it can stop (Jennifer, parent).

Parents explained that due to the lack of disclosure, it would be important to recognise the risk and the warning signs when their teenager had experienced cyberbullying. However, detecting such warning signs may be difficult, as teenagers can be quite adept at hiding their feelings when experiencing peer problems online. Parents also stated that it is a common student misconception that when authority figures become involved in the situation, the bullying behaviour will only worsen. However, parents stressed the importance of reporting early, as detection and intervention can prevent the issue from escalating and getting out of control.

Similarly, teachers also recognised that students often report a cyberbullying episode only when they can no longer contain and cope with the incident by themselves. Some teachers felt that the limited reporting was attributable to their own personal shame of having been involved in an initial perpetration incident, or in some retaliation to the incident:

> Sometimes it’s guilt. They may have initially started the problem with something very small and it's escalated beyond their control where they feel that it's going to be brought back to them and the fact that they may have to face consequences as well as the people who have made the problem worse (Mrs Thorne, grade 10 unit co-ordinator co-educational school).

Teachers explained that students are reluctant to disclose events in these particular circumstances, as pupils are aware they also will need to face disciplinary consequences, for their own actions.

In contrast to the parents' and students' perspectives, several teachers seem distrusting of students' reports of bullying allegations, stating that adolescent students have a tendency to exaggerate events that have occurred, to or omit important details of the events that followed. Mr Clark explains the difficulties when dealing with one-sided bullying reports: "Students don't always consider that there are two sides to the story....So we would talk to the other boys and look at the situation as a whole, not just what the boys have been reporting to their parents" (Mr Clark, grade 7 unit co-ordinator, single-sex school). Overall, most teachers reported that it is often difficult to distinguish the perpetrators from the victims, which many students revealed, led to a lack of disclosure. School staff that reported it is often difficult to unravel the narrative of student bullying. Often, students' perceptions of bullying events contain personal bias, which can make teacher involvement and disciplinary action difficult. Nevertheless, disclosure is a complex problem to disentangle, as adults and students reveal differing perspectives, with educators and parents usually urging students to report bullying incidents immediately. In direct contrast, students fear the consequences of reporting the bullying incident, both in terms of punishment for their retaliation, and also the potential escalation of further aggravating their perpetrator.

Recommendations for Prevention, and Interventions to Reduce Cyberbullying Incidents

During focus group sessions and parental telephone interviews, various suggestions were made to reduce and prevent cyberbullying across the three

stakeholder groups. Educators', parents' and students' recommendations included: the importance of self-esteem and resilience building, clear communication channels with all stakeholders, school cohesiveness and connection, the importance of cyberbullying education and parental supervision of technology. Other important recommendations and themes included a positive school culture, the level of negativity of some responses (e.g., perceived hopelessness to reduce bullying), and consistent school discipline and follow up. Five consistent themes emerged across all stakeholders interviewed: Communication (the key issue), shared interests, the importance of raising awareness about cyberbullying, parental monitoring of technology, and building student resilience.

Communication is key: We are all in this together. Several educators and parents recognised that cyberbullying is a complex and real issue that affects many students' psychological health and safety. During interviews, both school personnel and parents recommended the need to collaborate with and support each other, to reduce cyber incidents. A common recommendation expressed by both parties was the need for more open lines of communication between school staff and parents:

> …parents and teachers need to work together in teaching their children (a) not to be bullies and (b) reporting every incident that occurs….Overall communication could be better. I don't actually get much from my daughter's high school, I hardly get any correspondence about things like that (Anna, parent).

Open lines of communication will ultimately lead to more responsive adult intervention if and when a cyberbullying incident takes place, which will help minimise future cyberbullying incidents.

Furthermore, several teachers explained that most cyberbullying instances occurred outside school hours, but that once students returned to school the next day,

the incident continued. Teachers expressed the importance of parents supporting school policies and school decisions to intervene where a cyberbullying event occurs. Several educators reported that the outcomes of a cyberbullying incident are often connected to the way in which a family responds and reacts to the incident. Many educators stated that the best outcomes often occurr when parents respond in a calm manner, report the bullying incident immediately to the school, support the school's disciplinary decisions and set ground rules to ensure their children are cyber safe.

Students explained the importance of building close relationships with their teachers, as the more trust and rapport are built during the school term, the more likely a student will be open to seeking advice from a teacher about a cyberbullying incident. James expressed the importance of establishing close student and teacher relationships:

> There's some teachers that you feel you can approach and open up to. Some teachers like understand what you're talking about. Yeah they're more constructive about it and all that and then there's some that you just don't feel like opening it up to and that. So they won't do much about it (James, grade 7 student, single-sex school).

When students do not feel close to their teachers they report not feeling comfortable about divulging personal and private information, and consequently communication lines between teachers and students often shut down.

Overall, it is important that both parents and teachers create a warm and supportive environment for students, so if and when an adolescent is confronted with a cyberbullying incident they will feel comfortable and safe in disclosing sensitive information. As a result, the students will confide their cyberbullying issues to parents and school staff, with the understanding that the adults involved will listen to the

student, who will receive the reassurance and help they need.

The importance of raising awareness about cyberbullying. The majority of school staff explained that one of the key strategies to reduce cyberbullying was for schools to organise educational workshops for students. Teachers explained how cyberbullying information sessions were crucial, as they created awareness of what cyberbullying is, increased students' internet safety knowledge, and helped develop empathy towards students who were victimised. Moreover, psycho-education sessions can enhance understanding of the psychological risk of involvement, educating students about the criminal consequences of cyberbullying offending and providing coping strategies for those who encounter cyberbullying incidents. Mrs Smith demonstrates the importance of teaching students the criminal consequences of cyberbullying engagement:

> I've had the school psychologist come and speak to grade eight and nine students as a whole on cyberbullying and gave them some of the facts of what it is and what it means to put your stuff up on Facebook…..[and]…. Students learnt about the dangers of sexting, and if any students were participating in or distributing sexual photographs, students could be placed on the sexual offenders register (Mrs Smith, grade 8 unit co-ordinator, single-sex school).

Furthermore, Mrs Smith explained that it is important to implement preventative cyberbullying workshops to ensure students understand the consequences of their impulsive actions. Mrs Perry, welfare teacher from the co-educational school, was also providing cyberbullying preventative sessions with students. The preventative program provided education on the criminal consequences of involvement, and Mrs Perry questioned whether instilling fear was actually an effective approach. Teachers

asserted that a criminal record could have detrimental repercussions for students' career options.

Several parents identified the need for schools to extend their training session to include parents and caregivers. The majority of parents reported they wanted schools to run after-hours information seminars:

> I do know that both of my kids' schools have had assemblies with the students, talking about sites like Facebook and Twitter. I'm assuming they have addressed the cyber bully issue in those assemblies. I don't know, because it was only for students. Parents were not there. Yeah, it's not an easy problem to reduce, but maybe one thing I can let the school know is maybe to run seminars for the families as well (Anna, parent).

Parent information sessions could include training on how to manage potential risks associated with technology use, and the early warning signs of teenager involvement in dangerous online practices. Parents desired to learn more about the applications that place students at high risk of cyber victimisation, and how to intervene effectively. Parents explained how these sessions would be invaluable, as they provide a platform for parents to share their own personal experiences of technology use with their teenager(s), and the challenges that arise when their child uses social media. It also allows them the opportunity to discuss how challenges can be overcome.

Both schools involved in the focus group interviews stated they had previously provided parental cyberbullying evening workshops where the school arranged for an expert guest speaker to present on important cyberbullying issues. Mrs Perry reflected on the lack of parental attendance at cyberbullying evening sessions:

> We did have the Australian Federal Police come one evening to give a presentation to parents. There were 1,100 invitations and I think there were about six or eight parents that turned up.

> You've got to get to those parents and get them involved somehow, but I don't know how (Mrs Perry, Welfare teacher, state co-educational school).

There could be several reasons why parental attendance to evening workshops was lower than expected. The school psychologist from the independent single-sex school raised a possible solution to improve parental attendance, suggesting the school could embed evening educational sessions when parent teacher interviews are running, so parents can maximise their time and attend two important sessions in one time allocation.

Although both schools involved in the study were running some form of cyber training with families and students, a few pupils raised the concern that school sessions were often vague or repetitive, and did not provide enough practical information that outlined effective strategies. Ethan raised the issue of student interest and attention during preventative sessions:

> She doesn't run everything, she just brings it up when she's talking. She just goes, alright, cyberbullying is a big issue. She says that pretty much every time, and especially now it's getting to the end of the term. People are already mucking up (Ethan, grade 8 student, single-sex school).

Many students explained that typical instruction, offering one-way learning between teacher and student, frequently produced boredom, often leading to a reduction in student retention of content. During focus group discussions students raised the importance of educational sessions including more dynamic interaction. Overall, learning needs to be an active, dynamic process in which students construct new ideas and own their learning.

Parental monitoring of technology. Several stakeholders involved in this study acknowledged that cyberbullying behaviours often occur outside of school hours and that it is important for parents to closely monitor the adolescent's online activity and time spent on technology, to ensure they are cyber safe. Kylie explains parents' responsibilities to monitor teenagers' technology use:

> It's parents who decide to give them the email account, to give them access to Facebook or to give them the phone, give them access to emails and text messages. I think a lot of it does come down to how the parents monitor their online activity, I think it's just really educating kids how to use them (Kylie, parent).

Similarly, many parents and educators stated that it is the parents' responsibility to supervise their children's cyber activity and to be aware of which social networking sites their teenagers are utilising, the contacts they are adding to their accounts, and how they are managing their social interactions behind the screen.

A teacher raised the important point that not only do parents need to set ground rules in their child's physical environment, but there should also be boundaries, or a contract arranged between parent and child as to what constitutes acceptable behaviour behind the screen. For instance, Mrs Ruby suggests:

> Parents should have set ground rules not only in the real world but also in their teenagers' online interactions as well. Parents should educate their teens only have friends [pause] "real friends" and all their settings should be private and all of that stuff. They should be friends with their parents so their parents can see what's being written on their wall as well (Mrs Ruby, grade 9 unit co-ordinator, single-sex school).

A conversation between the parent and child needs to take place to set these technology boundaries in motion.

Some parents reported being actively involved in supervising their child's use of technology, such as ensuring their teenagers' privacy settings were tightened, and parents adding their child as a "friend" to their social networking accounts to monitor their interactions. Other successful strategies parents described using included ensuring their teenagers' mobiles phones were turned off at bedtime, educating their children on the importance of not sharing all personal information online (protecting passwords and home address), and setting healthy boundaries to the time spent on technology. Anna, a parent, explains the importance of ensuring your children have set strong security settings, to act as a protective safeguard against cyberbullying:

> I've made sure from the very beginning that …the security settings are very tight for my kids' accounts. That they don't turn on the location settings and they don't talk about personal things about themselves, so they can be located and identified (Anna, parent).

Similarly, a student expressed the importance of parental monitoring to reduce cyberbullying incidents: "I don't get the chance to do all of that because my parents check my stuff regularly. So if I'm doing anything bad on there or being abused on there and I don't tell them, they'll find out eventually" (Emma, grade 8 student, co-educational school). In contrast, some parents reported feeling overwhelmed and challenged by how technology was rapidly evolving. Rose provides an example of the generational gap in technology skills between parent and child:

> I don't consider myself a big tech savvy person. I can dabble around and have a bit of a look, but yeah, it is a bit daunting because you just think am I too old to start learning this stuff? Then you self-doubt yourself as well because you're thinking I should know all this stuff once again to be able to help my kids. So yeah, it can be quite daunting not knowing how to go about

> it. I suppose for some parents, they perhaps are too embarrassed to ask for the help to find out how or learn more about it (Rose, parent).

It is important to provide parents with technological educational opportunities to bridge the generation gap between parents and their tech-savvy children, as it would be beneficial for both schools and parents to support each other and understand the needs of families. An example may be how to set effective cyber safety boundaries for their children at home (e.g., limit usage spent on ICTs, turn phones off at bedtime, place desktop computer in the lounge room), which consequently would have flow on effects in helping to reduce bullying behaviours at schools.

Build student resilience. Educational stakeholders recognised that bullying incidents should not be tolerated and stated that all bullying matters reported to school staff would be taken seriously and investigated according to the school's anti-bullying policy. The vice principal explains the shared responsibility of student and teacher roles:

> I'd be confident in saying that if bullying comes to our attention we deal with it appropriately and the consequences are given out as according to our anti-bullying policy at the school. You're kidding yourself, anybody, if we think at a boy's school of 1,000 students we're not going to have instances of bullying. To a degree it's a matter of resilience on the part of the other boys to say something or be prepared with the strategies to deal with what is being said. It cuts both ways too (Mr Armstrong, vice principal, single-sex school).

Teachers explained how there will always be hurtful bullying incidents that remain undetected, due to students' under reporting of cyberbullying victimisation. Given this under reporting, it is important for all students to develop coping and conflict

resolution skills with which to respond to a cyberbullying incident in safe and appropriate ways without retaliating to the perpetrator.

Many parents were concerned that at some point during their teenager's high school life they may experience or be involved in a cyberbullying incident. Several parents expressed the importance of creating a positive warm family environment that acts as a protective factor against bullying, where their children feel safe and comfortable about opening up and discussing bullying incidents that occur, either online or offline. Parents advised that when their child discloses a cyberbullying incident, there needs to be an element of trust and confidentiality between them, to encourage future communication. A few parents discussed the importance of instilling in children a positive view of themselves, and encouraging the child to get involved with supportive peers and take up interests that build their self-confidence and make them feel good about themselves.

In addition, several students reported experiencing some form of bullying aggression and how they were able to channel their emotions and negative experiences in a positive way. For example, one student explained how he experienced anger when he was bullied and learnt how to harness his anger in constructive ways when participating in sporting activities: "If you're playing a sport and someone has called you names, you can use that as fuel in your mind. You can use it to inspire you and get you going and stuff" (James, grade 7 student, single-sex school). Diana, a student from the co-education school, explained that most perpetrators of bullying want attention and a reaction from their targets, and that if you ignore their bullying attempts and reject their negative comments, the bullying decreases and eventually the harassment declines. Diana further explained how seeking advice from the school counsellor helped her feel more confident upon returning to school:

> Draw a square on your leg and with the first side of the square take a deep breath in. On the second side of the square, hold it. The third side of the square, let it out and then start again. This breathing strategy helped me relax, and settle during class, and not worry about the negative stuff that is happening around me (Diana, grade 8 student, state co-educational school).

When students build resilience they are able to shield themselves from the perpetrator's negativity, and manifest positive and constructive outcomes. The results reveal that individual differences and the quality of relationships with their peers, parents and teachers, seem to play an important role in explaining how some students bounce back from destructive bullying experiences.

Section Summary

In this section the voices and perceptions of all the key stakeholders involved in cyberbullying have been considered through an ecological lens, to help with understanding and address cyberbullying phenomena. The analyses revealed that cyberbullying is a multifaceted and complex problem that extends beyond the realms of the adolescents who are bullying and being bullied. Effective interventions to combat cyberbullying incidents must extend to multiple levels within the school system, to include the peers, teachers and parents who may be potentially involved in a cyberbullying incident. The results overall revealed that one point of contention between stakeholders was disclosure, which students perceive as a complicated and sensitive issue, as adult intervention does not necessarily resolve or improve bullying incidents, and at times it increases the vulnerability of the victim. In contrast, parents and school personnel were in agreement that student disclosure was critical for adult intervention, as they believed that their involvement reduced the bullying. Based on their stories, these findings will help build the foundations of knowledge required to

develop effective intervention strategies for multiple systems and environments (Bronfenbrenner, 1977).

Discrimination and Biased Based Bullying

This final section draws attention to discrimination and prejudice-related bullying, identified by student stakeholders (excluding parents and educators), specific to the faith based single-sex school only. Research shows that discrimination is commonly experienced in adolescent school contexts (Ferfolja, 2013; Garnett et al., 2014; Hope, Skoog, & Jagers, 2015). However, there is limited research investigating the co-occurrence of bullying and discrimination. Recent research has identified five marginalised groups in which students are placed at further risk of prejudice-related bullying: race/ethnicity, sexual orientation, sexism, weight and disability (Elamé, 2013; Garnett et al., 2014). Researchers argue that bullying behaviours do not occur by random coincidence, and may be motivated by prejudicial beliefs that place students from marginalised communities at greater risk of bullying victimisation (Garnett et al., 2014; Minton, 2014; Mishna; 2012; Rivers, 2011).

One potential reason could be the in-group bonds formed within the school playground. In-group members share similar characteristics and beliefs by segregating and isolating out-group members, who are perceived as dissimilar or threatening (Larochette, Murphy, & Craig, 2010). Within the focus group sessions, a number of students at the single-sex school identified two forms of discrimination and interchangeably coined these actions as bullying behaviours; these included subthemes of racist bullying and homophobic bullying.

Racist bullying. When defining and discussing what constitutes bullying behaviour with students, several schoolboys from the independent school identified

they had been victims of both traditional and cyberbullying aggression, due to differences in personal characteristics such as racial background. Ryan explains his personal experiences of bullying and racial discrimination:

> Yeah I have been bullied because of my race. Like, probably one of the main things is racism. Because say I've experienced it a few times in my life, from being a different colour and being different background. I mean, even there will be names, you're dirty and that. I was young and I didn't know what it was all about. I remember I heard racism and then my friends told the teacher. I suddenly realised they were teasing me (Ryan, grade 7 student, single-sex school).

A few students shared they were more likely to be a target of bullying incidents because they were perceived as "different" to the predominantly white Anglo-Australian cultural group; however, this issue was not raised by the school's educational staff or the parents interviewed. Another student explained he was often bullied and felt excluded from other peers because of his Indian cultural background:

> Yeah. On the first day at school, when they first saw me, they were, like, what nationality are you? I'm, like, Indian. They're, like, oh, yeah. So you must be pretty curry boy. My nickname was Curry Boy for the first week. Yeah. Everyone thought I was a curry boy (Heath, grade 7, single-sex school).

These results need to be interpreted with caution, as many anti-bullying psycho-educational sessions often raise bullying, harassment and discrimination issues in the same program without providing a clear distinction between definitions by discussing their similarities and differences. Students may misinterpret and conflate bullying and discrimination. However, increasing evidence indicates an overlap between discrimination and bullying. Bullying scholars are critically re-evaluating bullying definitions, arguing for a broader framework that places increased importance on the

cultural characteristics that play a role in bullying phenomena (Elamé, 2013; Garnett et al., 2014). Bullying researchers acknowledge that children's behaviour is guided and driven by "mental patterns, social representations, images and opinions, stereotypes and prejudices that are a product of their cultural reality" (Elamé, 2013, p. 7). Therefore, bullying behaviours should not be seen as entities independent of the influences of societal factors such as rules, values and belief systems, all of which play a role in either positively or negatively influencing involvement in bullying behaviours.

Homophobic bullying. There is strong evidence to suggest that homophobic bullying is persistent, psychologically harmful and undermines a child's sexual identity (Birkett, Espelage, & Koenig, 2009; Robinson, Bansel, Denson, Ovenden, & Davies, 2014). Homophobic bullying is reported to start early in development, and has been defined as negative beliefs, attitudes, stereotypes and prejudicial acts that can be directed at any youth, but may be more prominent in the lesbian, gay, bisexual, transgender, intersex and questioning communities (LGBTIQ) (Hong & Garbarino, 2012; Mishna, Newman, Daley, & Solomon, 2009; Robinson et al., 2014). The majority of bullying research either recognises or addresses sexual orientation as a potential risk factor of prejudice-related bullying (Hong & Garbarino, 2012; Mishna et al., 2009). Research has documented the prevalence of bullying targeted towards any student who does not fit into stereotypical gender norms and the heteronormative culture. Such students are significantly more likely to encounter homophobic bullying, in comparison to those who identify as heterosexual (Williams, Connolly, Pepler, & Craig, 2005; Robinson et al., 2014). Furthermore, students who are questioning their sexuality are in a higher risk category, reporting being bullied more often, higher drug

use and suicidal ideation, in comparison to adolescents who identify as lesbian, gay or bisexual (Espelage, Aragon, Birkett & Koenig, 2008; Robinson et al., 2014).

During the focus group sessions at the single-sex male school, it was apparent that homophobic bullying was not only affecting students from sexually diverse groups, but was also impacting all boys in general, as many students frequently reported being teased, taunted and questioned about their sexual orientation. Derogatory terms such as “homo” and “you’re gay” were constantly utilised to undermine the boys’ sexuality and masculinity. Ethan describes the homophobic language commonly used at school, “Well, like it's mostly swearing and someone will say something, oh you're gay. He knows I'm joking and sometimes say I was to go up to somebody else and say, you're gay” (Ethan, grade 8 single-sex school). Many students normalise these terms because they are so commonplace in the schoolyard, and experiences were often dismissed as joking behaviour.

Although the students reported that homophobic harassment at school was inescapable, teachers often ignored the hurtful statements and were reluctant to intervene. Again, both parents and educational stakeholders did not discuss homophobic bullying as a prevalent and pervasive issue at school; this was dissimilar to the students’ perspectives. Research has shown that when educators do not intervene, but stand in silence, it reinforces students’ negative behaviours and normalises homophobic bullying in schools (Ferfolja, 2013; Mishna et al., 2009). Addition, LGBTIQ students who are coming out, exploring or questioning their sexual identity in a religious schooling context, encounter more challenging, judgemental and complex environments, as many students are often left ostracised and socially unsupported (Rivers, 2012; Robinson et al., 2014).

Furthermore, the results from the single-sex school reveal that students who do not conform to male gender stereotypes are also at risk of being victimised on the basis of their sexuality. This included boys who were different to "gender typical" boys. For example, boys who were artistic, bookworms, or musically and theatrically talented, were often picked on and subjected to victimisation that questioned their manhood. A student stated, "Everybody thinks that the musical is gay. I might do it next year but I probably won't make it. Everybody will think, you're gay, you're gay for doing that musical, and it's for girls, not for boys. Boys do footy and soccer" (Noah, grade 8 student, single-sex school). In line with the focus group responses, the homophobic literature indicates that, irrespective of the students' sexual orientation, damaging gay taunts are associated with negative psychosocial outcomes (Swearer, Turner, Givens, & Pollack, 2008).

Levi, a grade eight student, spoke of his own personal experience of homophobic cyberbullying. Students would tag his name over a picture with a girl's face, which would be posted to his Facebook account, "He'll just you know post those animated photos, and then they'll have a little title at the bottom, like girl or something" (Levi, grade 8 student, single-sex school). Levi explained he was frequently subjected to homophobic bullying incidents because he had a high-pitched voice, was from an Asian cultural background and enjoyed participating in the school musical. Levi provides an example of the discrimination he experienced:

> They tell me I'm Asian and gay because I was in a musical and dancing and stuff. I was Harry Potter in the musical and for one half of it and they were just, oh look, it's Asian Harry Potter, and just stuff like that (Levi, grade 8 student, single-sex school).

Friends of Levi's stated they would step in as bystanders if the homophobic taunts were of a serious nature and escalated to physical violence. Moreover, Levi explained that he was further subjected to homophobic aggression when he spent time at home, as his older brother and cousin would question his sexual identity:

> My cousin and my brother would maybe do it once a month and sometimes when I'm around at their house, they'll be like, oh look there's somebody in my house, there's that gay boy in the house. They'll just do it and it like really hurt" (Levi, grade 8 student, single-sex school).

Recent research has revealed that when sexuality and gender diverse youth experience rejection from school peers and family members, the lack of social support from multiple contexts increases their vulnerability and risk of engaging in self-harm behaviours (Garnett et al., 2014). Researchers, educators and practitioners need to focus on the underlining motivations and content of the bullying victimisation, as persistent forms of bullying may be motivated by underlining prejudices towards a particular minority group, fostering a culture of biased bullying behaviours.

Chapter Summary

This qualitative study uncovered seven main cyberbullying themes that emerged from the voices and shared experiences of three important stakeholder perspectives: students, parents and educators. The results afford an understanding of bullying phenomena from the individuals who perpetrate, experience, observe, prevent and intervene in cyberbullying incidents. The focus group sessions provided strong evidence that cyber bullying is a unique form of bullying behaviour: due to the incidents being carried out behind the screen, perpetrators can conceal their identity and act anonymously, with accessibility to wider audiences. On the other hand, the

cyber incident leaves a permanent digital footprint. All stakeholder groups encountered and provided examples of three forms of cyberbullying phenomena: flaming/trolling, identity theft and cyber stalking.

Due to the anonymity and repetitive nature of cyberbullying, it was evident that many of the students involved were subjected to negative psychological outcomes including fear/sadness and anger. When participants were asked what were the primary motivations for students' perpetrating cyberbullying behaviours, all groups were in agreement that low-self concept and problems at home were key contributors to cyberbullying aggression. Consistent with traditional bullying research, the majority of participants stated that adolescent students were reluctant to report cyberbullying incidents to an adult. Reasons for nondisclosure included fear of retaliation, exacerbation of the bullying episode, and possible consequences for having initiated an incident.

What was clear from the thematic analysis was the strong interconnection between cyber and traditional bullying behaviours. Cyberbullying events that occur online are most likely to return to the schoolyard the next day, and vice versa. Fostering positive relationships at school, and eliminating aggressive behaviour online, is crucial in reducing bullying incidents. Effective intervention programs must extend to multiple levels within the school community, educating all key stakeholders on how to identify and intervene in cyberbullying incidents successfully. Stakeholders' recommendations included: (a) open lines of communication between schools, parents and students; (b) provide innovative education sessions to all key stakeholders (school staff, parents and students); (c) close parental monitoring; and (d) resilience training for students.

The final main theme drew attention to the contradictory nature of the students'

responses, in comparison to the parental and educational stakeholders. A new theme emerged, underpinning students' prejudice-related bullying experiences. New research suggests that students who are motivated to bully others due to personal prejudice or actual or perceived membership of a minority group (e.g., race, religion, gender, sexual orientation and disability) can place students at further risk of victimisation. These results highlight the co-occurrence of discrimination and bullying behaviours, and the importance of understanding the underlying motivations for students perpetrating aggressive behaviour. Ultimately, a whole-of-school intervention approach is needed, to reduce bullying both offline and online, with the active involvement of all stakeholders that is inclusive of all marginalised groups.

CHAPTER 9: DISCUSSION AND IMPLICATIONS FOR THEORY, RESEARCH AND PRACTICE

Introduction

The present mixed methods investigation sought to examine the cyberbullying construct through Bronfenbrenner's (1977) ecological perspective by examining the interconnected environments (peer, schooling, home and virtual context) that can influence the psychosocial outcomes of student engagement in bullying behaviours (Bronfenbrenner, 1992, 1977). This thesis has identified and provided effective recommendations for both preventative and intervention initiatives to combat cyberbullying, aimed at the key stakeholders involved (students, their parents and educators). This chapter synthesises the findings from the three previous result chapters, with interpretations given in the context of theory, research and real world implications.

Study 1 analysed the psychometric properties of the newly developed, multidimensional Adolescent Cyber Bullying Instrument (ACBI), which measured all student cyberbullying perspectives (victim, bully and bystanders), and tested the established battery of instruments to ensure they were all psychometrically sound and invariant across the critical groups. Study 2 investigated bullying group differences

across gender, grade and school context, and examined the psychosocial effects for students involved in cyberbullying (victimisation, perpetration and bystander perspectives) and traditional bullying types (victim and bully). In addition, the study explored the relations and pattern of involvement between cyber and traditional bullying constructs.

Study 3 was designed to capture the voices of the three key stakeholders. The qualitative data provided meaning-making and contextual knowledge of cyberbullying that aligns with the quantitative studies (Bryman, 2006). Important findings that emerged included: clarity on how cyberbullying is different from traditional bullying types; uncovering the different forms of cyberbullying behaviours; emotional responses; motivations; disclosure; and key prevention/intervention strategies. Furthermore, this study illuminated the significant uncategorised student themes of discrimination and biased based bullying, in which student perspectives differed from those of parents and educational staff.

The current thesis integrates both quantitative and qualitative findings to further enrich research outcomes by capitalising on the strengths of both methodologies employed, to present an holistic understanding of bullying phenomena (Hanson et al., 2005; Jick, 1979). A mixed methods approach was undertaken to validate findings across methods, crosschecking data for internal consistency and reliability, while strengthening the results through convergent outcomes. Furthermore, mixing methods captures a more complete picture of the problem under investigation as unique variances often arise, which otherwise would have not been detected using a single method (Creswell, Plano, Clark, Gutmann, & Hanson, 2003; Greene et al., 1989; Jick, 1979). By examining and mixing the data, a deeper understanding emerges, which produces greater confidence when reporting result outcomes by counterbalancing the

strengths and weaknesses of each method. Utilising a mixed methods approach advances research by sharing new insights and generating new ideas to seed successful cyber and traditional bullying prevention strategies. These strategies were generated by the students, teachers and parents, and address bullying dynamics across peer, social, schooling, home and virtual environments (Greene et al., 1989; Jick, 1979; Mishna, Pepler, Wiener, 2006).

This chapter discusses the key findings in relation to previous research and theoretical frameworks by:

(a) Examining the psychometric properties of a newly developed instrument of cyberbullying and validating related psychosocial measures;

(b) Examining the psychosocial correlates of student involvement in cyber and traditional bullying behaviours;

(c) Investigating gender, grade and school context group differences in both traditional and cyberbullying;

(d) Examining the psychosocial correlates of traditional and cyberbullying;

(e) Exploring the overlap between traditional forms of bullying and cyberbullying;

(f) Providing recommendations to seed successful traditional and cyberbullying prevention and intervention;

(g) Considering the limitations of the present investigation; and

(h) Outlining the implications of these findings for future research and practice.

Examining the Psychometric Properties of a Newly Developed Instrument of Cyberbullying, and Validating Related Psychosocial Measures

Advances in technology have led to rapid changes in the ways that youth interact and communicate with each other, which blur the lines between the situated and virtual worlds (Li, Smith, & Cross, 2012). Although international research efforts have made significant progress in the area of traditional bullying, much remains to be done to advance cyberbullying research, especially in relation to definitional issues and psychometric concerns (Card & Hodges, 2008; Menesini & Nocentini, 2009). This thesis has been directed at addressing the gaps in the research by developing a theoretically driven, multidimensional, and psychometrically sound measure of cyberbullying phenomena that is further validated by three key stakeholder groups: students, parents and educators.

Operationalising cyberbullying. One of the most important results revealed in both the quantitative and qualitative was the distinctive nature of cyberbullying, and the substantial overlap in definition and practices of both traditional and cyberbullying. Adolescents bullied over communication technologies are more likely to be bullied face-to-face when returning to school the next day (Cross, Li, Smith, & Monks, 2012; Juvonen & Gross, 2008; Li, 2007a). Despite the lack of an agreed definition in the research literature, focus groups identified unique distinctive features of cyberbullying involvement in comparison to traditional bullying (Smith, Del Barrio, & Tokunaga, 2013). While the two types of bullying are distinct, adolescents bullied over ICTs are more likely to be subject to face-to-face, traditional bullying when returning to school the next day (Cross, Li, Smith, & Monks, 2012; Juvonen & Gross, 2008; Li, 2007a). Qualitative responses were consistent with operationalised definitions on students'

surveys to measure the cyberbullying construct accurately but also provided some new insights.

Unique features of cyberbullying included that incidents occur behind the screens of technology, cyberbullies do not receive any emotional feedback from their victims, and bullies often show greater "bravery" behind the keyboard. Cyberbullies can act out in more aggressive ways behind the screen, due to the anonymity associated with cyberbullying, which further creates a power imbalance between aggressor and their victim. With the bullies' newfound bravery and the capacity to reach broader audiences, bystanders can further reinforce the incident by commenting on, forwarding or "liking" the original post (Suler, 2004).

Another distinctive feature of cyberbullying is that it can arise unintentionally, due to the nature of the online environment. Educators and parents recognised that online communication does not convey tone of voice, body language and the emotions behind the response. This means that posts can be easily misinterpreted by the receiver as aggressive communication in the heat of the moment, which can provoke inflammatory responses, leading to an escalation in cyberbullying incidents (Baldasare, Bauman, Goldman, & Robie, 2012; Mishna et al., 2009; Menesini et al., 2012; Suler, 2004).

Stakeholders interviewed for this research revealed that the ability to hurt others anonymously was a distinctive feature of cyberbullying. Students explained that when cyberbullies are unidentifiable, they take greater risks and behave in more harmful ways, as they believe they will not be caught nor be directly accountable for their actions. Another important distinction raised was the fear of being subjected to non-stop online harassment. Students explained how cyberbullying is perpetuated, as it can occur on any communication technology, any time, with no limits or boundaries.

Many students explained it was often difficult to escape cyberbullying, as they could turn off their phone and computer but the bullies could still post nasty comments when they were offline (Mishna et al., 2009; Li, Smith & Cross, 2012; Suler, 2004).

The last distinctive feature of cyberbullying, which all stakeholders identified, was the permanency of the cyber related incident. Once a nasty message, picture or video post is online, it is often difficult to retrieve the information. Victims can report the incident to the website for removal, but prior to deletion multiple bystanders may have already seen the hurtful or embarrassing content and/or forwarded the content to others, which makes it difficult to contain. Furthermore, cyber victims can repeatedly view the negative content directed towards them, which may be a constant reminder of the painful past experience, and prolong the victim's anguish (Bauman, 2012). However, cyberbullying incidents leave a digital footprint that exposes the exact nature of the events, which can be traced, saved and printed either by a victim or bystander, and which provides solid evidence for adults to intervene (Mishna, 2012; Quirk & Campbell, 2015).

Validating the factor structure of ACBI. Although several instruments published since 2004 (Berne et al., 2013) have attempted to measure the cyberbullying construct, the present study is one of the few cyberbullying measures that captures three important group perspectives (victim, bully and bystander), and is analysed on a continuous total scale. Most subscale factors were further validated by the cyberbullying examples provided in focus group sessions across the three stakeholder groups.

The ACBI was designed to advance cyberbullying measurement by creating a multidimensional continuous scale that accurately assesses the frequency of three specific behavioural forms of cyberbullying. In addition, the key stakeholders

interviewed further validated the ACBI definitions and measurement factors. The ACBI extends on previous simple surveys by creating a valid and reliable measure that is grounded in a strong conceptual framework with clear operationalised definitions (e.g., repetitive intimidation, imbalance of power, can occur anonymously, across broader audiences, carried out purposively to inflict psychological harm) (Berne et al., 2013; Griezel et al., 2012; Vivolo-Kantor et al., 2014). Moreover, the multidimensional eight a priori ACBI measures three unique factors of the cyberbullying construct, which includes multiple items for each scale factor, measured across the three important perspectives of victims, bullies and bystanders. This includes measuring three distinct factors of cyber victimisation (flaming, identity theft, and happy slapping), three distinct factors for cyber perpetration (flaming, identity theft, and happy slapping), and two bystander factors (flaming and happy slapping), conducted across any type of communication technology (Kowalski et al., 2008; Smith et al., 2008; Willard, 2006).

Hypothesis 1.1.1 was accepted, as the quantitative results provide preliminary evidence supporting a consistent and reliable measure of cyberbullying engagement, except for two factors that showed low reliabilities for female students: bully identity theft and bully happy slapping. These were likely attributable to floor effects, due to self-reporting bias (i.e., fear of school punishment, which could lead to under-reporting of cyberbullying perpetration) as students may be inclined to provide more socially desirable responses (Card & Hodges, 2008; Berne et al., 2013). Chapter 6 established the structural validity, reliability and invariance of the ACBI and the pre-existing battery of measures, to ensure they were suitable for an adolescent sample. Furthermore, the qualitative findings provided convergent validation that supported two behavioural factors identified within the ACBI scale (flaming and identity theft)

across the three important stakeholder perspectives (students, parents and educators). Focus group sessions with students and educational staff confirmed incidences of happy slapping, which provides further evidence of the construct measured in the ACBI. However, parental stakeholders did not provide clear evidence substantiating this construct.

Some potential reasons why parents did not discuss happy slapping engagement (e.g., recording an embarrassing video/picture and uploading the content online) could be the lack of familiarity with the functionality and features of modern communication technologies (Dehue, Bolman, & Völlink, 2008). Furthermore, the anonymous way in which cyberbullying activities are conducted, and students' overall lack of disclosure to an adult may limit parents' awareness of their adolescent's behaviours over communication technologies (Mishna & Alaggia, 2005).

During the qualitative interviews the three stakeholder groups defined flaming as hostile and aggressive communication that can include heated and offensive language that is repetitive and intentional. A parent provides an example of flaming engagement: "Well, I suppose they just post nasty comments. You can get a whole heap of people posting the same thing, re-posting things about someone, that sort of thing…." (Laura, parent). Another common form of cyberbullying that emerged from the stakeholders was identity theft, where innocent and unaware victims are left with the burden of the fallout from their perpetrator's online activity. For example, one student describes her experience of identity theft and impersonation, "They start writing foul stuff to people pretending to be you so you get into tonnes of trouble" (Emma, grade 8 student, state co-educational school). The qualitative and quantitative results are consistent with theoretical representations proposed by previous researchers, which suggest that cyberbullying is a multidimensional construct that can

manifest as various forms of behaviours utilising communication technologies (Craven, Marsh, & Parada, 2013; Kowalski et al., 2008; Li, 2007b; Li, Smith & Cross, 2012; Willard, 2006).

Hypothesis 1.1.2 was supported, as the quantitative first-order CFA structure revealed a good fit, indicating a strong factor structure. However, upon examination, a number of the first-order factor correlations were high, which suggests that some of the factors may have been interrelated, and which reveals a hierarchical general second-order cyber victim, bully and bystander structure. Moreover, tests of invariance provide strong evidence that suggests the ACBI operates and holds an equivalent meaning across gender, school contexts and grades (Byrne, 2004; Hair et al., 2010). As a result, hypotheses 1.1.3 to 1.1.5 were confirmed. The gender, school context and grade patterns highlight the differences in degree to which important cyberbullying sub-groups engage in specific cyber behaviours (Martin, 2004).

The ACBI advances cyberbullying research by overcoming previous limitations through the development of a comprehensive instrument that measures all three possible perspectives of involvement in cyberbullying behaviours. The cyberbullying measurement was developed from a behavioural perspective that draws on multiple informants and multiple methods (Bandura, 1977; Card & Hodges, 2008; Kowalski et al., 2008; Willard, 2006; Vivolo-Kantor et al., 2014). The ACBI has provided a clearer picture regarding the complexities of the cyberbullying phenomenon in providing operational definitions and assessing the structural validity, reliability and invariance across critical groups. These results have contributed to advancement of research by addressing the measurement gaps (e.g., using single item and dichotomous instruments to measure multidimensional continuous constructs) and as a consequence, creating a stronger framework to measure cyberbullying

engagement (MacCallum et al., 2002; Vivolo-Kantor et al., 2014). Finally, it is worth noting that the ACBI is not limited by the different social media platforms and technologies where cyberbullying occurs.

Summary

A step-by-step methodological process was undertaken from scale conceptualisation to implementation, to ensure the ACBI was a continuous standardised instrument accurately measuring the cyberbullying construct in all potential groups involved (victims, bullies and bystanders) (Furr, 2011; Nunnally, 1978). Careful consideration was taken to select the appropriate battery of established scales for the purpose of later examining cyber and traditional bullying psychosocial correlates. All instruments were subjected to tests of reliability, construct validity, and factorial invariance to ensure they were psychometrically sound and conceptually similar across gender, school contexts and grades. The preliminary psychometric results suggested that the multidimensional ACBI addresses many of the measurement issues inherited from traditional bullying research (e.g., a-theoretical, single-items, unidimensional instruments and lack of operationalised definition) and makes a significant contribution to the advancement of cyberbullying measurement for researchers and practitioners.

Examining the Psychosocial Correlates of Student Involvement in Traditional and Cyberbullying Behaviours

Adolescents are more prone to engage in risky behaviours, due to their limited impulse control and increase in disinhibited behaviours compared to any other stage

of the lifespan (Ellis & Bjorklund, 2012; Heaven, 2001; Finy, Bresin, Korol, & Verona, 2014; Steinberg, 2008). Adolescent involvement in risky and antisocial behaviour has now transferred over into online environments, where the active misuse of technology has occurred, including cyberbullying. Cyberbullying is on the rise, due to the reduced cost and accessibility of communication technologies, which have become important networking tools for adolescents to connect socially with their peers. However, researchers and practitioners have raised concerns over whether adolescents are ready to employ these technologies in cyber safe ways (Cross, Shaw, Epstein, Monks, Dooley, & Hearn, 2012; Smith & Slonje, 2010).

Due to the limitations of past cyberbullying research, there has been no clear understanding of basic and important group differences, such as age, in bullying participation, or whether males or females are more likely to engage in cyberbullying behaviours (Bauman, 2013; Tokunaga, 2010; Bauman, Underwood et al., 2013). Further research is needed to uncover the group differences and psychosocial effects of involvement from all of the important target groups involved (victim, bully and bystander). From a socio-ecological standpoint, it is important to understand the gender, grade and school context patterns of both traditional (face-to-face) bullying and cyberbullying events, as previous research has clearly identified that both types of bullying phenomena are strongly linked, and influence one another (Beran & Li, 2005; Bronfenbrenner, 1979; Cross et al., 2009; Li, 2007a, 2007b; Smith et al., 2008). Furthermore, it is important for researchers to understand the psychosocial correlates for involvement, so that interventions are strategically designed to account for the complexities of bullying phenomena and target the specific at risk school stages and psychological mechanisms, to reduce the frequency and prevalence of all forms of bullying behaviour.

Investigating Gender, Grade and School Context Differences in Cyber and Traditional Bullying

Gender and grade differences in cyber and traditional bullying. The cyberbullying findings showed five significant main effects for gender and grade, as well as one gender by grade interaction effect. The traditional bullying results showed a total of three significant main effects and three interactions for gender and grade, providing little support for the research question as to whether male students would be more involved in traditional overt bullying behaviours. In relation to gender effects in both traditional forms and cyberbullying incidents, male students overall engaged in more bullying perpetration, in comparison to their female counterparts. This was for stealing an individual's online identity to impersonate them, purposely setting up their victims to be photographed or recorded in embarrassing/aggressive situations to be uploaded, and using callous words and insults to hurt other students.

However, female students were more likely to be bystanders of cyberbullying incidents. This finding is similar to the results reported by, for example, Aricak et al. (2008), Barlett & Coyne (2014), Erdur-Baker (2010) and Slonje & Smith (2008), which revealed that male students are more likely to perpetrate cyberbullying behaviours. These results highlight males' tendency to act aggressively towards others (Olweus, 1993), which contradicts the theoretical idea that females are more likely to utilise electronic methods to cyberbully others, as female students have a preference to use more covert methods (Felix & Green, 2010). Interestingly, females were more likely to witness cyberbullying activities. One possible explanation is that when males are perpetrating cyberbullying behaviours they are most likely taking place in the

presence of females online who witness these virtual acts of harm (Quirk & Campbell, 2015).

This finding suggests that the gender differences in traditional bullying perpetration are not as distinctive as other researchers have reported previously (Artz, Nicholson, & Magnuson, 2008). This could be attributed to the lack of research attention to studying female aggression due to inherit biological factors. For example, females are perceived to be not as physically strong as males and therefore are considered less likely to participate in overt aggression (Bjorkqvist, 1994; Card, Stucky, Sawalani, & Little, 2008; Tremblay, 1991).

In contrast to the research rationale presented in research question 2.1.2, no gender differences were found for student engagement in physical bullying behaviours (Craig & Pepler, 2003; Crick, Bigbee, & Howes, 1996; Nansel et al., 2001; Rigby, 2002). However, previous research findings have indicated that female students are less prone to participate in overt aggressive behaviours (Boulton & Underwood, 1992; Nansel et al., 2001; Olweus, 1993). In contrast, a limited number of researchers have found that aggressive behaviour perpetrated by females is more common than previously documented. Several researchers argue that the gap between male and female involvement in direct aggression is closing (Artz, 2004; Haapasalo & Tremblay, 1994; Odgers & Moretti, 2002).

In line with the current study, similar research findings were reported with an adolescent clinical sample, which revealed no gender differences in participation levels of overt aggression and assaultive behaviour. Overall, Moretti, Holland, & McKay (2001) found girls engaged in significantly higher rates of relational aggression in comparison to boys. They also found that girls frequently involved in relational aggression (e.g. girls that are heavily engaged in manipulative behaviour and

controlling their peers) presented as an at-risk pathway that leads to a higher likelihood of retaliation and physical overt aggression towards their social networks (Moretti, Holland, & McKay, 2001).

Agnew's general strain theory (2006) may explain some of the potential reasons why adolescents engage in aggressive behaviours. When adolescents are subjected to stress and strain (e.g., parental rejection) emotions intensify, and are often impulsively acted on, due to a lack of skill to regulate their responses. Consequently, youth often alleviate this tension through violent acts of harm. A welfare teacher explained that students might perceive their parents as having a lack of interest, due to the perceived reduction of time spent together. Many families are under resourced and are struggling with stressful life situations such as family discord, marital separation and commuting far distances for employment, and are struggling financially to keep up with the costs of living. These stressors on family life have a flow-on effect that influences their children's interactions with their peers face-to-face and online.

The results further revealed that Stage 5 secondary students (grades 9 and 10) reported significantly higher scores for both traditional forms and cyberbullying engagement compared to Stage 4 students (grades 7 and 8). Stage 5 students were more likely to take control of their victims' accounts to hurt their friends, cyber bystanders were more likely to witness rude and heated exchanges, perpetrate verbal (e.g., yelling and putting down students) or physical bullying (hitting or damaging physical property). Information-processing theory can shed light on the developmental patterns in cyber perpetration, as cyberbullying incidents are more likely to escalate with age, due to the developments in cognitive and social skills that are subsequently used in maladaptive ways to gain control over and manipulate their victims (Crick & Dodge, 1994). Furthermore, the grade findings suggest that the Stage 5 period of schooling

may be more difficult, due to the increase in direct bullying behaviour, which may consequently lead to a more stressful schooling environment and higher school absenteeism. This may therefore lead to a reduction in school connectedness and poor school ethos during Stage 5, with detrimental consequences for students' academic achievement and education outcomes, such as students choosing to leave school early.

Moreover, one significant gender by grade interaction was found for cyber flaming, which indicates that female students are more likely to be involved in heated and aggressive conversation over communication technology during Stage 4 but later are overtaken by their male counterparts, during Stage 5 of schooling. This could also be attributed to a developmental shift in behaviour: as female students mature, they realise they are more likely to be held accountable for their overt bullying. Conversely, male students start to explore more sophisticated, covert methods of bullying in Stage 5, in an attempt to avoid school discipline (Crick & Dodge, 1994; Shariff, 2008). One student explains how perpetrators deceptively change their bullying tactics to avoid punishment: "It's not that easy to report it sometimes because they can still find other ways to get round the school rules and stuff" (Alex, grade 8 student, single-sex school). When school educators discipline bullies, aggressors often change their bullying methods to divert attention away from themselves, by adopting more skilful techniques to reduce the likelihood of being caught.

Three interaction effects were found for traditional gender and grade group differences. Two interactions were found: for being bullied, and participating in bullying for social aggression—for example, damaging a student's reputation or purposely excluding a pupil from a friendship group. A trend for social aggression was found in which girls scored significantly higher in Stage 4 of schooling and presented a moderate decrease in behaviour over time, whereas males showed a steady trend of

increasing participation with age. This pattern may explain why there have been mixed reports in the social relational aggression literature, of gender involvement, as several researchers suggest that girls are more likely to engage in covert aggressive behaviours (Craig & Pepler, 2003; Crick & Grotpeter, 1995; Nansel et al., 2001; Rigby, 2002), whilst other studies have found that boys and girls are involved in similar levels of social relation aggression (Crick & Grotpeter, 1995; Rys & Bear, 1997). This study's findings suggest that bullying behaviours lie on a developmental continuum, where male and female students both participate in covert bullying behaviours, for traditional bullying forms and cyberbullying, at different school stages.

A similar pattern was found for engagement in verbal bullying. As students moved from Stage 4 to Stage 5 of high school, male involvement increased while female involvement was relatively stable over that time. This result is similar to Griezel et al. (2012), where males in grades 10 and 11 had a significant increase in verbal bullying behaviours during the senior period of schooling. Generally speaking, the pattern of results in traditional bullying forms consistently indicated that female involvement in bullying behaviours heightened in Stage 4, and stabilised or slightly decreased during Stage 5, whilst male bullying behaviours continually increased over time and were highest in Stage 5.

School context and grade differences in cyber and traditional bullying. The cyberbullying findings showed seven significant main effects for school context and grade, and traditional bullying findings revealed a total of five significant main effects for school context and grade. The adolescent socio-ecological literature has argued that school environment can indirectly influence adolescent health and safety outcomes. Research has indicated that the structure, organisation and functionality of a school can help foster a safe and positive school environment (Bronfenbrenner, 1977;

Lee, 2009; Cross et al., 2012; Waters, Cross, & Runions, 2009). This is a consideration in the present study because the schools were culturally different in terms of their structure (single-sex Catholic boarding school vs. co-educational state school) and functionality, especially since the single-sex faith based school had a strong disciplinary conduct code and inbuilt pastoral care practices. This study provides a unique opportunity to preliminarily explore whether school contextual factors are associated with involvement in cyberbullying behaviours.

The findings suggest that both traditional and cyberbullying involvement seem to be more prevalent in the state co-educational school, compared to the independent Catholic single-sex private school. Students from the state co-educational school perceived significantly higher scores on bystanders witnessing nasty messages, embarrassing visual photographs/video, experiencing verbal taunts and physical victimisation, compared to the Catholic single-sex school students. One possible reason for the higher perceived victimisation scores in the co-educational school, which arose during focus group interviews, is the lack of perceived connection to school, family, peers and teachers.

Complementary results were identified in the qualitative study. For example, a student explains her flaming experiences, where bystanders further fuelled the incident: “They'll write on your wall and get heaps of people to comment on them, and they'll tag them in it so others can join in and comment too” (Rachel, grade 8, co-educational student). Such heated exchanges can quickly attract a number of bystanders, which can overpower their victims. This finding is consistent with Cross et al.’s (2009) covert bullying prevalence study, which indicated that a higher proportion of government school students perceived experiencing both overt and covert bullying behaviours, in comparison to independent and Catholic schools.

Moreover, in that study, staff perceived witnessing more bullying behaviours and had more incidents reported to them. Government school staff also reported spending more time managing traditional and cyberbullying incidents.

One possible reason for this result could be the clear and consistent structure of the Catholic school, and its pastoral care strategies. This finding emerged during focus group interviews with educational staff, as the deputy principal of the single-sex school described the importance of a consistent structured environment and a firm adherence to school policies. The vice principal stated: "I'd be confident in saying that if bullying comes to our attention we deal with it appropriately and the consequences are given out as according to our anti-bullying policy at the school…" (Mr Armstrong, vice principal, single-sex school). Research suggests that pastoral care programs aim to help adolescents from diverse backgrounds and facilitate school connectedness by creating bonding and mentoring opportunities between peers and teachers that reduce risk in engaging in aggressive behaviours and help promote positive mental health outcomes (Osterman, 2000; Waters, Cross, & Shaw, 2010). Such recommendations are important, as they facilitate an understanding of the favourable environmental conditions that promote positive ecology and resilience in adolescents (Bronfenbrenner, 1992). The results need to be interpreted with caution however, as there are only two schools involved in this study, and the effects could be attributed to other individual school differences.

A consistent trend in the present research found that both traditional and cyberbullying behaviours are significantly higher in Stage 5 (grades 9 and 10) than Stage 4 students (grades 7 and 8). The cyberbullying results indicated five significant main effects \ for grade. In comparison to Stage 4 students, Stage 5 students perceived significantly higher levels of both experiencing and perpetrating identity

theft/impersonation activities, witnessing and participating in angry and aggressive comments, and being bystanders of non-consenting graphic/video content. Similarly, three main effects for grade were found for all traditional bully factors, as Stage 5 students reported greater levels of engagement in perpetrating physical acts of violence, calling students names and spreading rumours, in comparison to Stage 4 students. This result is consistent with Bauman's (2012) findings, which revealed that the transition to a new school (e.g. elementary to middle school) is not linked to an escalation in traditional and cyberbullying involvement, as previous research had indicated.

Although developmental researchers have considered aggression as a stable construct over time, in contrast, several bullying researchers have found that aggressive behaviour peaked in grades 6 to 8, with a decline evident during grades 9 and 10 (Nansel et al., 2001; Smith, Madsen, & Moody, 1999). However, one possible theoretical reason for the increase in bullying behaviours during Stage 5 could be the development of social and cognitive skills, and the background and characteristics of students involved. When students transition from primary to high school in an Australian schooling context, Stage 4 students are in a new school environment, where their peer hierarchy position has changed, and lowered considerably. This creates a power imbalance that facilitates these students becoming easy victims for older, more established students. As Stage 5 students increase their social information understanding and cognitive abilities, older students can use their newfound skills to deceive and manipulate younger or more vulnerable students (Crick & Dodge, 1994; Smith, Madsen, & Moody, 1999).

Another contributing factor for this trend could be associated with students grappling with their developmental transition from childhood to adulthood. In the

technology age, new, complex challenges arise when adolescents explore their identity through communication technologies. Disturbances in identity formation could be triggered by the online disinhibition effect, as students can operate under the invisibility of anonymity (which protects perpetrators), and faceless social interaction limits empathy development (Cyr, Berman, & Smith, 2015; Erikson, 1968; McGuinness & Schnur, 2015; Suler, 2004). When adolescents use anonymous online profiles, they are more likely to engage in impulsive risk taking activities through the formation of "false or extreme identities", which disconnect teens from reality. This in turn hinders positive emotional development, such as building appropriate social skills to create healthy relationships with peers (Cyr et al., 2015, p. 81; Erikson, 1968; Suler, 2004).

Although the practical significance for this study is small, the largest effects were shown for students participating in verbal bullying (e.g., name calling). Nevertheless, these results have important implications for schools: For example, understanding the patterns of engagement in both traditional and cyberbullying and how they can aid school educators to recognise the age, grades and sub-groups where students are most at risk of participating in specific bullying behaviours. Therefore, educational staff can increase vigilance over traditional and cyberbullying at risk periods, during these times, to reduce the aforementioned bullying behaviours.

Summary

In general, the results revealed that males are significantly more likely to be involved in perpetrating both traditional and cyberbullying. Only one significant main effect for female students was found, whereby female students reported significantly higher levels of witnessing inappropriate heated exchanges on communication

technologies. The results revealed that both traditional forms of bullying and cyberbullying involvement seem to be more prevalent in the state co-educational school compared to the independent Catholic single-sex school. The results indicate that state co-educational students are more likely to be a bystander of cyberbullying activities and to be a victim of traditional bullying. The qualitative results complement the quantitative data and provide a deeper insight into each individual school context and culture.

Consistently, a grade trend has indicated that both traditional and cyberbullying involvement appear to increase in Stage 5 (grades 9 and 10), as significantly more frequent levels of bullying are reported compared to Stage 4 (grades 7 and 8). This finding may indicate that older students have extended their networks and are targeting younger students to victimise, along with their weaker common age peers. Furthermore, a significant gender by grade trend was evident for cyberbullying flaming behaviours. Stage 4 female students reported higher levels of involvement in aggressive and inappropriate comments, in comparison to males. Subsequently, during Stage 5, male students' engagement increased, to the point of significantly surpassing female involvement.

Interestingly, two significant grade patterns for victims and bullies found for engagement in social aggression (e.g., spreading rumours and gossip about others), were inconsistent with the bullying literature and Research Question 2.1.2, which suggests both females and males engage in indirect forms of social bullying at different stages. This result indicates that both sexes are equally involved in relational aggression, whereas females are more likely to participate in Stage 4, with males overtaking their female counterparts during Stage 5 of schooling.

Examining the Psychosocial Correlates of Traditional and Cyberbullying

This thesis examined the psychosocial correlates for engagement in traditional and cyberbullying behaviour. These include: (a) self-concept (verbal and mathematic [English and Maths], physical appearance and family relations); (b) school belonging; and (c) mental health (depression). The results reveal that students are at risk of experiencing significant negative psychological and psychosocial effects when engaged in any form of traditional and cyberbullying behaviour, to varying degrees. Discussed below are the specific psychosocial correlates associated with involvement in each form of traditional and cyberbullying.

Traditional and cyber victims. For traditional and cyber victims, similar patterns of results were found across all forms of victimisation. This included perceiving a negative physical appearance self-concept and experiencing symptoms of depression. However, cyber victims also perceiving a disconnection in parental relations (with the exception of victims of flaming [e.g., receiving rude and aggressive taunts]) did not report negative family relations self-concept. Traditional victims differed from cyber victims as they perceived a positive verbal self-concept (with the exception of students who were attacked physically [e.g., punched, scratched or property damaged/stolen]) but did not report a positive verbal self-concept.

Convergent evidence was found in focus group discussions feelings when several male students subjected to bullying revealed feeling ashamed, angry and frustrated because of the unfair nature of the incident, due to the power imbalance between aggressors and their victims. For example, a student explained that “I feel a lot of the emotions like emotionally you just want to punch, hit them and stuff but then there's also….getting angry” (John, grade 7 student, single-sex school). Students reported bullying experiences to be repetitive and ongoing, as they were often reluctant

to report the incident, and over time, frustration and anger built: this often led to victims retaliating, either online or offline.

Social learning theory assists in understanding these results, as derogatory appearance-related comments on social media and at school send a strong message that their appearance differs from the current body ideals, leading to the perception of a poorer physical appearance self-concept and depression. In particular, adolescence is a critical period where heightened awareness of one's own body image becomes apparent, and weight-related bullying could lead to segregation from other peers, loneliness and depression (Witherspoon, Latta, Wang, & Black, 2013). Such negative comments may lead teenagers to enter into dangerous dieting practices or lead males to change their food intake by adding more protein and getting involved in muscle building activities (Bandura, 1977; Berne, Frisén, & Kling, 2014).

The recent cyber victimisation literature reveals that appearance-related cyberbullying is most prevalent on social networking sites such as Facebook and Instagram. where students can upload photos, selfies and video clips (Berne et al., 2014). Appearance-related cyberbullying may be driven by western ideals and powerful gender stereotypes that teenagers at an impressionable age often strive to attain, such that girls want to be skinny with voluptuous curves, whereas males often strive to be well toned with a masculine body image (Grogan, 2008; Ricciardelli, McCabe, Mussap, & Holt, 2009). Girls in particular often utilise social networking sites to upload their most attractive photographs, as they are motivated by trying to uphold the perfect female body image, and in doing so, are opened up to cyberbullying attacks (Berne et al., 2014).

These results are consistent with students' emotional responses, as cyberbullying victimisation can negatively affect a student's self-concept, leading to

sadness and depression symptoms. One student described his emotional feelings when experiencing cyber victimisation: “Sometimes when I'm checking my emails… I'll read them and they say really bad things about me and it just makes me feel really sad and all that” (Jake, grade 7 student, single-sex school). A similar result was found in Wang, Nansel, and Iannotti’s (2011) study, revealing that all forms of bullying were associated with depression symptoms. However, cyber victims scored higher on depression scales compared to bullies and bully-victims.

These findings are consistent with Hawker and Boulton’s (2000) meta-analytical review of peer victimisation across 20 years of published traditional bullying research, which indicated a strongly consistent trend between students being bullied and more negative effects and self-related cognitions about themselves, in comparison to non-victims. Victims typically reported feeling fearful and anxious, perceived poor social and general self-concept, feelings of loneliness, dysphoria, and also depression. Moreover, adolescent victims reported feeling stressed, anxious and depressed during the cyberbullying experience and were reluctant to return to school the next day. Students recognised that cyberbullying incidents often go undetected and underreported. Prolonged victimisation and lack of social support places students at risk of becoming reclusive and dealing with incidents on their own. Isolation and loneliness often leads to internalisation of symptoms of sadness and depression, which can lead to self-harm and suicidal ideation in severe circumstances (Hanish & Guerra, 2000; Hay & Meldrum, 2010; Menesini et al., 2009; Perren et al., 2010).

Interestingly, the results of traditional victimisation were similar to the cyber victim psychosocial correlates except for two self-concept outcomes, family relations and verbal self-concept. This could be attributed to cyberbullying aggression being able to invade previously safe locations such as the family home, which in turn may

influence family relationships. In contrast, it is rare for traditional bullying issues to enter the family home. Families reported feeling vulnerable to the possibility that electronic bullying could invade their home environment, with parents expressing concern that they lacked the technological skills or were unaware of the incident taking place, which hampered their ability to protect their children.

Although there is limited research investigating how family dynamics and relationships could be a possible predictive factor of cyberbullying involvement, the current results are consistent with Brighi, Guarini, Melotti, Galli, and Genta's (2012) findings that negative perceived family self-esteem is a strong predictor of cyber victimisation. Furthermore, parental interviews unveiled some of the possible reasons why strained family relationships are a risk factor for cyber victimisation. Risk factors include a lack of parental connection, communication, and time-spent together as a family, which leads to adolescents feeling isolated and lacking an internal support system, which in turn negatively affects their self-concept. Research suggests that cyber victimisation is associated with heightened feelings of loneliness, in respect of adolescent peer group and family relations. This result could be interpreted as meaning either that students with poor family relations self-concept are more likely to be cyberbullied or that students experiencing cyberbullying withdraw from their family relationships, leading to family disconnection (Brighi et al., 2012).

Moreover, Boulton, Smith and Cowie's (2010) findings suggest that earlier perpetration of face-to-face bullying behaviour predicts positively perceived academic performance. Nevertheless, their study found support for a reciprocal relations model: that overall low self-concept contributes to traditional victimisation and a higher likelihood of later involvement in bullying perpetration. One potential reason for this thesis finding could be that scholarly students are more likely to experience face-to-

face bullying, or that students who have been bullied try to enhance their self-concept by increasing their academic achievement.

Traditional and cyberbullies. Perpetrators of traditional bullying behaviours shared similar psychosocial correlates to cyberbullies, which placed adolescents at significant risk of negative psychosocial, mental health and educational outcomes. The results showed perpetrators of all forms of traditional and cyberbullying perceived lower verbal and/or mathematics self-concept and positive physical appearance self-concept, and were associated with negative parent relations. Students who perpetrated rude and vulgar attacks over ICTs, set up victims in embarrassing photographs/videos that were uploaded online and spread rumours about others, were all associated with higher depression symptoms. Interestingly, only perpetrators that hijacked other students' devices and accounts experienced positive physical appearance self-concept, with no negative psychosocial pathways being associated with this behaviour. This finding could be attributed to the anonymity aspect of this form of bullying. Only traditional bullies perceived a lack of school attachment.

These results highlight that traditional and cyberbullies may be at further risk of poorer psychosocial outcomes, as bullies reported more significant risk correlates in comparison to the victims. This result is of particular importance, as understanding the psychosocial consequences of traditional bullies can help with development of evidence-based intervention programs that specify at risk factors to intervene with perpetrators effectively.

With the advancement of technology, students may be more motivated to engage in online aggression, rather than face-to-face bullying due to the online disinhibition effect. Cyber perpetrators can compartmentalise their behaviour by separating virtual anonymous behaviour from their offline identity, making it easier to

participate in deviant behaviour over communication technology without dealing with the consequences later (Suler, 2004). However, cyber aggressors' strategies to enhance their self-concept are not viable in the long term, because they are associated with poorer psychosocial outcomes, including lower academic achievement in school and symptoms of depression (Kowalski & Limber, 2013; Yang et al., 2013). Furthermore, Yang et al. (2013), in a two-year longitudinal follow up survey with primary school children in South Korea, found that both lower academic achievement outcomes and lower self-esteem were associated with engagement in either cyber perpetration or victimisation. However, in this thesis, only cyber perpetrators were a predictor for poorly perceived academic achievement outcomes.

The results of this thesis also showed that traditional bullies were at risk of perceived lower academic self-concept in English and/or mathematics performance. This could be attributed to the bully's engagement in disruptive classroom behaviours, which results in a reduction in attention to learning that leads to poorer academic competency and limited behaviour control. In support of this finding, Smith, Polenik, Nakasita, and Jones's (2012) study investigated risk pathways associated with cyber and traditional bullying involvement in primary school children. Teacher and self-reported data found a relationship between students' bullying others and an observed greater number of conduct and hyperactivity problems. It was noted that externalising behaviour and rule breaking tendencies were strong predictors of children asserting direct aggression (Menesini, Modena, & Tani, 2009; Smith et al., 2012). Self-research and theory (e.g., how we internally feel about ourselves) suggest that an individual's perception about their current academic aptitude is related to their actual and future achievement accomplishments (Hattie, 1992; Marsh & Shavelson, 1985; Wigfield & Eccles, 1992).

Furthermore, a strong convergent finding emerged across both methods, revealing that low self-concept and child parental disconnection were strong motivators for engaging in bullying behaviour. Students, teachers and parents agreed that perpetrators of bullying viewed themselves in damaging and destructive ways and were motivated to put other students down to feel better about themselves. Students with a low self-concept seek quick solutions to enhance this perception. Traditional and cyberbullies most likely viewed this strategy as effective, as the results indicated a positively perceived physical appearance self-concept. However, participating in aggressive behaviours creates an unhealthy state of self, elevated by false beliefs about his or her authority over others, creating a defensive ego (Erickson, 1968; Salmivalli, Kaukiainen, Kaistaniemi, & Lagerspetz, 1999).

In line with the domain specific self-concept correlations (positive physical appearance and negative verbal and/or mathematics and parental relations self-concept), all stakeholders interviewed agreed that when students presented with low self-worth, they would try to counteract this issue by hurting others, in an effort to raise their low self-concept. For example, a student describes cyberbullies motivations to hurt others: “If they feel that they're not good at things, then they think that if they put people down it will make themselves feel better” (James, grade 7 student, single-sex school). Information processing and self-theory combined, provide insight into why some students engage in aggressive behaviours. When students are consumed by poor self-evaluations, often through negative past experiences, this pattern of cognitive processing is hypothesised to be mapped onto neurological networks and schema systems. When students hold negative perceptions of themselves this is linked to the initial emotive response, which influences both our cognitive appraisal and our reaction choice to a certain situation. For example, when an event transpires at school,

the encoding and interpretation of cues is more likely to be cognitively appraised as an antagonistic/hostile situation, which triggers maladaptive, irrational interpretations to be enacted (Crick & Dodge, 1994; Hattie, 1992; Shavelson, Hubner, & Stanton, 1976).

The qualitative findings show that bullies are often motivated to be involved in bullying perpetration, as it increases their social status in the peer group by inflicting harm on others, strengthening their online identity and presence, which leads to an increase in social power and authority. Other reasons include peer pressure, fear of peer rejection, and seeking increased popularity: social reinforcement achieved by attaining as many "likes" as possible on social media sites, to enhance their self-concept and compensate for underlying poor self-concept and perceived weaknesses in other areas (Bandura, 1977; Berne, et al., 2014; Marsh et al., 2004; Staub, 1999).

Interestingly, a consistent pattern of both positive and negative self-concept results was found for both traditional and cyberbullies, given that perpetrators of aggressive behaviour have reported an elevated physical appearance self-concept. Research on self-perception highlights that not all high self-evaluations are actually positive; unhealthy, unsustainable beliefs about one's self are often created by engaging in attention-seeking and self-enhancing behaviours. This research reveals that school bullies are correlated positively with a defensive egotism, which is a defining feature of individuals who have narcissistic and self-enhancing tendencies and yet who at the same time are both fragile and vulnerable to criticism. Bullying others may be employed as an ego-defensive mechanism to "feel big" by maintaining a sense of power and authority and by establishing a sense of importance in the peer group. Adolescents with a genuinely healthy sense of self were the students who intervened for the weak and vulnerable peers (Erikson, 1968; Salmivalli et al., 1999).

Moreover, the traditional and cyberbullying result was in line with the qualitative findings, as stakeholders agreed that problems at home (e.g., lack of parental attachment, parental separation and domestic violence) might lead to engagement in bullying behaviours when teenagers felt unsupported by parents. Ryan explains how a lack of family support can lead to bullying perpetration: "Some bullies are triggered off because their parents are not there. They get angry and they said [pause] they might get emotional at home and then they leave the anger and put it on someone else…" (Ryan, grade 7 student, single-sex school). Student focus groups revealed that child-parent relationships that are strained with high conflict, often lead to a communication breakdown, which leaves teenagers feeling unsupported and neglected. Negative family experiences bring forth feelings of hurt, resentment and anger. Their anger is easily triggered and often displaced onto other innocent victims at school, to release their hurt and frustration (Akse, Hale III, Engels, Raaijmakers, & Meeus, 2004; Mishna, 2012).

However, one of the main differences reported between traditional and cyberbullying was a lack of belonging to the school. Research on traditional bullying has found that adolescents with lower levels of school connectedness are significantly more likely to be involved in being bullied and bullying others (Skues et al., 2005; Glew, Fan, Katon, Rivara, & Kernic, 2005). The current study found support for bully perpetrators only, as students engaged in bullying others were more likely to report a negative school connection. One potential reason why cyberbullies did not report lower levels of school connection could be that cyberbullying often occurs outside of school hours, whilst traditional bullying often occurs during school days (Cross et al., 2009; Slonje & Smith, 2008).

Cyber bystanders. The quantitative findings indicated that depression was not

only a unique psychosocial outcome for cyber victims and cyberbullies, but was also significantly associated with cyber bystanders. Although bystanders perceived a positive verbal self-concept across the cyberbullying forms, they also experienced depression symptoms when witnessing victims being recorded, photographed or set up in embarrassing situations where content is posted online. Viewing nasty posts on their newsfeed when accessing their social media accounts, further compounds the cyberbullying incident. Although there is scarce research investigating the psychosocial correlates for students witnessing a cyberbullying incident, this thesis finding is similar to Rivers, Poteat, Noret, and Ashurst's (2009) traditional bystander findings. The majority of students (63 percent) reported witnessing other peers being victimised during the school term. Bystanders that witnessed students being bullied by others were significantly associated with higher levels of mental health correlates, over and beyond student that directly experienced the victimisation or perpetration.

Some possible reasons why students witnessing the victimisation of other peers is negatively associated with higher levels of mental health correlates include: (a) students who have experienced victimisation previously may trigger the victimisation experience again through empathic understanding; (b) witnesses may fear the schooling environment, and that they may be targeted in the near future; and (c) lastly, students may experience some cognitive dissonance, due to their inability to help the victim when they wanted to intervene, due to fear of retribution from perpetrators (Craig & Pepler, 1998; Rivers et al., 2009).

Moreover, similar results were found in Slonje and Smith's (2008) research, which indicates that happy slapping bullying behaviour had a very strong, negative impact on teenagers, as larger audiences can view and access the malicious video/graphic material multiple times, which embarrasses the victims and damages

their reputation. The results indicate that due to the visual images and their associated permanency, when witnessing the cyber picture/video clip attack, the psychosocial correlates may be more serious, being associated with negative long-term effects for all students involved in the incident.

Summary

The present study advances bullying research by contributing to the knowledge of adolescent psychosocial correlates for involvement across three cyberbullying perspectives (i.e., victims, bullies and bystanders) and two traditional bullying perspectives (i.e., victims and bullies), using multi-dimensional and continuous measurement scales, in addition to the meaning-making elicited from the qualitative focus groups. Consistent psychosocial risk patterns emerged for students involved in traditional bullying behaviours, which were similar to outcomes reported in cyberbullying engagement. Similar risk correlates for traditional victims included experiencing perceived negative physical appearance self-concept, and high levels of depression. However, only cyber victims reported negative parental relations. These results may indicate an overlap in how students are being bullied over technology and on the school playground, with their physical appearance forming the basis of their attack (Berne et al., 2014).

Traditional and cyberbullies were at risk of poorer perceived academic school performance (verbal and maths), negative parental relations, and experiencing symptoms of depression. Consistently, traditional and cyberbullies in general were associated with a positive physical appearance self-concept. These results were both in line with previous traditional bullying self-concept research, which indicates that adolescents often act out aggressively as a strategy to enhance their low self-concept

by asserting their power and dominance over others (Marsh et al., 2004; Staub, 1999). However, bullies reported a poorer school connection, with the possible cause being traditional bullying behaviours occurring within school hours. The cyberbullying evidence suggests that students involved in happy slapping behaviours may be at further risk of psychosocial and poorer mental health correlates, compared to other forms of cyberbullying, as cyber witnesses also reported experiencing higher levels of depression. This may be due to the fact that happy slapping incidents are perceived as more damaging to students, because they have negative psychosocial consequences for all students involved. One reason why happy slapping behaviours could be considered more of a dangerous practice is that they combine both visual and verbal aggression simultaneously, and are often released on a platform to reach larger audiences (Slonje & Smith, 2008). These results signify the psychosocial commonalities for involvement in face-to-face or cyber forms of bullying, but also highlights their unique associated risk factors.

Exploring the Overlap between Traditional Bullying and Cyberbullying

An existing body of literature has theorised and examined the relationship between traditional forms of bullying and cyberbullying engagement (e.g., Beran & li, 2005; Cross et al., 2009; Kowalski, 2012; Kowalski & Limber, 2013; Li, 2007b; Perren et al., 2010 Tokunaga; 2010; Waasdorp & Bradshaw, 2015). Hypothesis 2.4.1 confirmed a conceptual overlap where students involved in traditional bullying behaviours are also at risk of being involved in cyberbullying, and vice versa. This research discusses how traditional and cyberbullying phenomena form part of the same underlying cluster of aggressive behaviours, which reveals the importance of schools

utilising holistic intervention programs that include educating adolescents on all forms of bullying behaviours (Olweus, 2012; Perren et al., 2010).

An important result in the present study was the strong positive relationship between traditional and cyberbullying, in the expected predicted direction. Traditional bully victims were more likely to be victims of cyberbullying, and also more likely to be cyberbullies. Furthermore, a relationship was found whereby cyberbullies were more likely to be traditional bullies and also more likely to be traditional victims. These results may suggest a reciprocal relationship: that when students are involved in traditional bullying, regardless of their role (victim or bully), they have a higher chance of becoming either a cyber victim or a cyberbully. Similarly, students who are bullies or victims online are at an increased risk of engagement in traditional bullying or in being bullied face-to-face.

These results were further strengthened by qualitative findings that revealed how cyber and traditional bullying incidents are interconnected, as experiences online affect experiences offline in school the next day. Several teachers expressed the relationship between these two constructs, which is illustrated in one teacher's suggestion, that: "they used to be able to go home and deal with that again tomorrow. But it continues all night and all the next day" (Mrs Thorne, grade 10 unit co-ordinator, state co-educational school). It is most likely that traditional bullying starts at school and moves beyond the realms of the physical spaces, extending into communication technologies. Additionally, cyberbullying incidents initiated over technology have a high chance of coming back to the school the next day (Beran & li, 2005; Cross et al., 2009; Hemphill et al., 2012; Li, 2007a, 2007b; Perren et al., 2010; Vandebosch & Van Cleemput, 2009). Research conducted by Juvonen and Gross (2008) revealed that there

was an 85% overlap between online and face-to-face bullying experiences. Technology seems to be used as a means to extend and prolong bullying experiences.

Moreover, the current results further show a moderate relationship between bystanders witnessing cyberbullying behaviour, and being involved in traditional bullying behaviour in any role. This is in contrast to previous research which suggests that bystanders often maintain their roles across bullying contexts and are more likely to witness bullying incidents both offline and online (Quirk & Campbell, 2015). The current research investigation found that bystanders are moderately at risk of being involved in bullying behaviours. Possible reasons for this could be that students intervening during a cyberbullying incident, place themselves at risk of being bullied at school the next day or of being exposed to aggressive behaviours, which reinforces the likelihood of participation in and modelling of the behaviour (Bandura, 1973). Furthermore, social learning theory explains when students are observing the aggressive cyberbullying episodes over ICTs this direct learning experience consequently affects students future engagement in traditional bullying involvement when returning to school (Bandura, 1973)..

Summary

The results of this study suggest a strong positive relationship between schoolyard bullying and cyberbullying engagement. This important finding reveals that face-to-face bullying occurring on school grounds continues and extends into virtual spaces, whereas cyberbullying incidents come back to the schoolyard the next day. The results highlight both the complexity and the multifaceted nature of the cycle of aggressive behaviour. Cyberbullying intervention programs need be developed in

conjunction with traditional anti-bullying programs, to reduce the cycle of violence, as they are mutually reinforcing constructs.

Providing Recommendations to Seed Successful Traditional and Cyberbullying Prevention and Intervention

The qualitative focus groups and interviews enriched the research findings by uncovering the lived experiences of the students, their educators and their parents, to offer additional insights that could have remained underrepresented using a single method approach (Creswell, Shope, Plano Clark, & Green, 2006; Hanson et al., 2005; Jick, 1979). Grounded in theory, the present research has captured the voices of the multiple perspectives in order to understand the complexities and dynamics of cyberbullying phenomena, so as to recommend effective prevention and early intervention strategies. The new insights discussed below, provide knowledge on disclosure, biased based bullying and recommendations to reduce all forms of bullying, and were generated by the students who have experienced it and the educators and parents who intervene.

Disclosure. All stakeholders agreed that the majority of students involved in any form of bullying were reluctant to report the incident to an adult. Students perceived that disclosing to an adult would result in retribution from the bullies. Students were adamant that reporting an incident to a teacher will only lead to further bullying attempts. Furthermore, students reporting a bullying incident to the school are often branded weak and vulnerable in the schoolyard, and fear being shunned by their peers. Parents understood that their children feared disclosure because of the belief that teachers would not intervene effectively on their behalf. Similarly, teaching staff recognised that students would only report an incident when a bullying episode

escalated out of control and the students could no longer cope with the event. However, parents stressed the importance of early detection and adult intervention before bullying incidents escalated out of control.

The students' focus group interviews illustrated many clear examples of student lack of confidence in the effectiveness of teachers' involvement: "The principal might blab to someone and that teacher will tell someone and it will go through the grapevine and they will keep adding things" (James, grade 7 student, single-sex school). On the other hand, some teachers reported that the lack of bullying disclosure was due to students being ashamed of their initial involvement in the event, or their retaliatory response toward the perpetrator, which would result in all students facing disciplinary action. Many students indicated that socialisation effects and male stereotypes played a role in reinforcing student retaliation against bullies, often in overtly aggressive ways, to uphold their masculinity and stand their ground, rather than report the incident to a parent or teacher (Broidy & Agnew, 1997).

The qualitative findings explored in research question 3.4.1 found an inconsistency between how students and teachers perceive bullying incidents, which may provide some insight into why intervention programs had only limited success (Smith, 2011; Vreeman & Carroll, 2007). Students often distrusted school staff and thought them ineffective, while teachers had difficulty in disentangling victims' from perpetrators' bullying reports. Research reveals that bullying disclosure is a complex phenomenon, where teachers and parents play an integral role in identifying the signs of traditional and cyberbullying victimisation and providing a safe supporting environment that encourages student disclosure and validates their experiences (Mishna & Alaggia, 2005). Education staff would benefit from specialised intervention training to increase their knowledge and their confidence in encouraging

students and bystanders to disclose bullying incidents. Schools could increase student disclosure by developing an anonymous safe haven where students can report bullying problems and receive effective advice.

Biased based bullying. Qualitative focus group interviews with students from the Catholic independent single-sex school revealed an alternative motivation for some students' cyber and school bullying experiences. These focus groups brought to light that few acts of aggressive behaviour occur randomly. A few instances were disclosed where bullying was motivated by underlying prejudicial beliefs against a student's racial/ethnic background, perceived sexuality, weight and/or disability. Interestingly, within focus group sessions, several students described incidents interchangeably as discrimination or bullying. Real life stories provided evidence that, for some students, discrimination and bullying were experienced similarly, which indicates an overlap in the definition (Élame, 2013; Garnett et al., 2014; Greene, 2007).

Children from marginalised communities may be at greater risk of victimisation because they are perceived as outsiders in the school environment, with the balance of power shifting to the majority group (Allport, 1954). Prejudicial bullying is often motivated by intolerance towards minority group members, where students become marginalised and excluded from in-group membership. This creates an "us against them" mentality where violence against minority groups becomes tolerated and acceptable (Allport, 1954; Mishna et al., 2009). The focus group findings indicate that cultural factors need to be considered as an important component of a bullying definition, as existing definitions have been created from the perspective of the dominant culture. It is clear that we need to consider how belief systems, values and societal attitudes shared by teachers, school staff, families, community and media outlets may fuel prejudicial bullying (Élame, 2013).

The research indicates that long-term prejudicial racial bullying can cause serious psychological harm, leading to cultural damage, alienation and feelings of shame about one's origin. Such aversive effects may also remain with the student into adulthood (Élame, 2013). Furthermore, focus group sessions provided examples of students from multiple marginalised identities experiencing bullying. An Asian-Australian student was creatively talented, and the combination of ethnicity and hobbies led to questions about both his cultural heritage and his sexuality. At school, home and online, he was labelled as "Asian and gay" (Levi, grade 8 student, single-sex school). Intersectionality theory (and the recent research stemming from this approach) indicates that youth from multiple marginalised identities who are prejudicially victimised, are significantly more likely to report higher levels of depression, experience self-harm attempts and suicidal ideation (Garnett et al., 2014; Cho, Crenshaw, & McCall, 2013).

Moreover, sexually diverse youth can experience rejection from peers, silence from teachers who do not intervene, and rejection from family members, which places this group at a heightened psychological risk (Espelage et al., 2008; Garnett et al., 2014; Low & Espelage, 2013; Mishna et al., 2009). When sexually diverse youth feel over exposed or "outed" on social media platforms, teenagers may need to deal with the fallout and stress that follow from peers, family members and friendship groups questioning their sexual identity (Cénat, Blais, Hébert, Lavoie, & Guerrier, 2015).

The focus group sessions further revealed that vulnerable at risk groups are not static across schools, and will alter according to the demographics of the school population, along with the attitudes of the school staff, parents and societal factors of the local community. Bullying prevention programs need therefore to be tailored to

individual school contexts, and must address the unique motivational drivers that underpin bullying incidents (Greene, 2006).

Intervention and prevention strategies. Bullying is a complex problem, and it is vital that anti-bullying programs incorporate an ecological framework encompassing all levels of the system and all elements that contribute to the perpetuation of the bullying. Anti-bullying programs need to be sustainable and inclusive of the diversity of all students, creating a more open and accepting environment for all. By involving individual students, teaching staff, the school and the local community, bullying programs will foster positive outcomes in all environments (Bronfenbrenner; 1977; Cross, Barnes et al., 2015; Greene, 2006; Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012).

All stakeholders recognised that effective treatment of bullying is a relationship issue that is contingent on creating open lines of communication channels between students, school staff, families and the greater community. Creating strong bonds and close relations between teachers, parents and youth will help promote disclosure to adults and mimimise future traditional and cyberbullying incidents. Disclosure and open communication channels were found to be stronger protective factors against cyberbullying incidents than just monitoring and controlling online behaviour (Law, Shapka, & Olson, 2010; Mishna, 2012).

Teachers explained that most cyberbullying incidents occurred after school hours, and it was important for parents to support school policies at home, to set ground rules and safeguard technology use. If a parent became aware that their child was involved in a cyberbullying incident, parents needed to respond in a calm manner by blocking the cyberbully, taking a screenshot or printing the evidence, to be immediately reported to the school. It is essential for parents to be supportive of school

action, when the school intervenes, so that students receive a united, zero tolerance to cyberbullying message that is strongly communicated across all levels of the ecological system (Bronfenbrenner, 1979; Pearce et al., 2011). In addition, when schools adopt a whole-school preventative approach it is important to encourage management to explicitly train teachers, parents and school students how to implement the anti-bullying policy to support positive behavioural changes (Cross, Shaw et al., 2015).

Students further explained the importance of building a cohesive school culture, creating trust and a close school community bond between students and teaching staff. When teachers are open, warm and approachable to students, communication lines are easier to establish, and the probability of students reporting and confiding sensitive cyberbullying experiences increases. Overall, it is important for parents and teachers to listen to students' experiences, validate their concerns and emotions, ensure the student is safe and that every report of bullying is taken seriously and responded to according to school policy (Mishna & Alaggia, 2005; Pearce et al., 2011).

Promoting educational workshops with school staff, students and parents was a key prevention strategy raised by all stakeholders interviewed. Teachers explained how education is a powerful medium to create awareness through understanding of what cyberbullying is, providing an explanation of mental health consequences arising from involvement, explaining maintenance and motivation factors, increasing students' internet safety knowledge, and helping to encourage empathy for students who are victimised. Moreover, it is important to encourage bystanders to intervene and report the incident to adults, to reduce social reinforcement, which perpetuates cyberbullying incidents (Shetgiri, Espelage, & Carroll, 2015). Increasing a school's

awareness and knowledge base has been identified as a key strategy to reduce and combat bullying behaviours (Ttofi & Farrington, 2011).

Moreover, strengthening students' social and emotional development, in conjunction with mindfulness strategies (e.g., promoting thoughtful awareness and being present in the moment) can help develop resilience skills within students. Mindfulness skills teach students to self-regulate their emotions and to not act on impulsive needs and desires, ultimately leading to a reduction in aggressive behaviour (Huppert & Johnson, 2010; Schonert-Reichl et al., 2015). Increasingly, schools need to teach their students social responsibility skills that include connecting students to the wider schooling community (e.g., engaging students in larger school initiatives/projects), to value the diversity of the student cohort and to focus on individuals' strengths, to teach students peaceful problem solving skills and to create a culture that values a human rights perspective (e.g., demonstrating ethical actions). Research has shown that social emotional programs successfully promote a positive student self-concept, improve academic achievement outcomes and foster pro-social skills (Schonert-Reichl et al., 2015).

Parents and teachers also identified the need for after-hours educational sessions to extend to parents and caregivers. A whole-of-school preventative approach provides the opportunity for community members to present on current challenges and social issues. For example, police officers and researchers can explain the legal and criminal consequences of cyberbullying involvement. Educational sessions have the potential to reach all levels of the ecological system, training staff and teaching families how to detect warning signs and risk factors of cyberbullying, and to respond effectively when incidents occur. Workshop sessions create the opportunity for parents and teachers to collaborate and share valuable strategies and insights when dealing

with challenging behaviours that arise using technology (Newman-Carlson & Horne, 2004).

Both parents and teachers recognised it is important to pinpoint and build protective factors that act as a buffer and shield against stressful bullying events (Cross et al., 2009; McGuinness & Schnur, 2015). An important protective strategy adopted by parents was to create a warm and safe supportive home environment where families promote emotional and behavioural resilience by instilling a positive sense of identity and building their children's confidence (Bowes et al., 2010; van Hoof, Raaijmakers, van Beek, Hale, & Aleva, 2008).

Parents can put safeguards into place at home by managing the amount of time their child spends on communication technologies and monitoring online activities. This could include no cellular phones/computers in the child's bedroom, switching off mobile devices at bedtime, and technology detoxing (e.g., time out from technology) when spending quality family time. Parents can place the laptop/personal computer in the lounge room, which allows for supervision of social networking sites that their teenagers are utilising and the contacts they are adding to their account, and managing their social interactions behind the screen. Parents can teach their children the importance of "netiquette" and how to protect their online privacy and reputation. Many parents suggested that as a condition of social networking use, their child befriends their parent's social profile, which allows them access to their online conversations and friends list. Furthermore, parents have the opportunity to ask their teenagers if they have permission to upload photographs of themselves and their friends online (Agatston, Kowalski, & Limber, 2012).

Moreover, focusing on youth strengths and having a positive child-parent relationship can help alleviate some of the stressful experiences. Prevention programs

can be tailored to build resilience in youth by teaching children important life skills. This includes: (a) self-reflection; (b) development of empathy and perspective taking; (c) learning coping skills when children are faced with adversity; (d) promoting healthy life choices; (e) teaching children how to regulate their emotions; and (f) training youth in conflict resolution skills. For example, one student explained how breathing techniques help reduce tension and anxiety: "Draw a square on your leg and with the first side of the square take a deep breath in. On the second side of the square, hold it. The third side of the square, let it out and then start again" (Diana, grade 8 student, state co-educational school). When adolescents are taught resilience, students reported a feeling of empowerment, as it provides them with the tools to bounce back in the face of adversity (McGuinness & Schnur, 2015; Wölfer et al., 2014).

Ultimately, when students are taught and practise a range of pro-social behaviours, and limit their impulsive reactions to cyberbullying perpetration, which the bully thrives upon, this will largely reduce cyberbullying experiences and buffer the negative impact (McGuinness & Schnur, 2015; Shetgiri, Espelage & Carroll, 2015).

Summary

The research uncovered key definitional differences and psychological effects of student involvement, and showed why peers are motivated to hurt others and how students respond to bullying experiences. Qualitative interviews provided rich insights that highlighted different perceptions of disclosure and the co-occurrence of discrimination and bullying behaviours reported in the single-sex school, where masculine values, stereotypical gender roles and religious judgement promoted the perpetration and acceptance of homophobic and racist bullying. All stakeholders

agreed that a whole-of-school ecological intervention and prevention strategy to reduce all forms of bullying behaviour would improve communication across peers, school educators and parents. Qualitative research provided a safe space for listening to the voices and real life stories of all key stakeholders. The stakeholders' contributions help foster a positive school culture and virtual social environment (Bronfenbrenner, 1979; Mishna & Van Wert, 2013).

The Limitations of the Present Investigation

This study identified critical insights into bullying behaviour. However, as with all research, some limitations that need to be considered when interpreting and generalising the findings. The methodological shortcomings of this thesis are explained below, in discussion of some of the practical challenges researchers are often faced with when collecting data in school settings. In this study, limitations included: the inability to obtain an equally distributed sample of male and female students, possible floor effects in obtaining sample variation in cyberbullying data, obstacles in obtaining acceptable group comparison reliabilities and the exclusion of a traditional bullying bystander scale. The ACBI bystander factors could be strengthened by adding specific participant roles, under-reporting of cyberbullying engagement by participants due to social response bias, the reliance on self-report data and cross-sectional research designs. Moreover, although some of the research findings in this study only report a small proportion of the variance explained, which often indicates a minimal practical effect, these results should not be underestimated, and need to be interpreted with caution.

Methodological shortcomings. The sample size utilised in this investigation was drawn from two secondary NSW schools, which included a male single-sex independent Catholic school and a state co-educational government school. This resulted in a disproportionate male to female ratio. This may affect the generalisability of the results to the wider population, as gender and grade patterns need to be interpreted with caution, due to at least three unique individual school factors: (a) single-sex vs. co-educational school; (b) Catholic vs. state school; and (c) boarding vs. non-boarding school.

A second potential measurement limitation of the ACBI is the low reliabilities found for the female cyberbully factors. The reliability alphas for the female students' bullying scales fell just below the traditional acceptable levels, and this may be attributable to the small female sample size (Cohen, 1988; Nunnally, 1978). Other potential limitations of the current study include the exclusion of a measurement scale to report bystander involvement for traditional bullying behaviours. As a result, comparisons between cyber and traditional bystander involvement could not be made. In addition, the ACBI bystander factors could have been strengthened by adding additional participant roles: For example, extending the scales to include bystander active reinforcers (peers that further contribute the cyberbullying perpetration) and bystander defenders (peers that intervene and aid the victim against the cyber attacks) (Salmivalli et al., 1996).

Furthermore, there was a reliance on students' self-report scales for the collection of the quantitative data. Although self-report measures are the most widely used method to collect bullying data, they are based on the underlying assumption that adolescent students can be objective when reporting their own involvement. This can create potential problems of response bias even when confidentiality is assured, as

students may still be inclined to underreport participation in socially inappropriate behaviours or to mislabel bullying engagement (Card & Hodges, 2008; Pellegrini & Bartini, 2000). However, it is important to recognise that some of these self-report limitations were overcome by adopting a mixed-methods approach.

Lastly, due to financial and time constraints, this research was a cross-sectional correlational design. Although this study was an important first step, cross-sectional studies prevent conclusions being drawn about the causal nature of cyber and traditional bullying relationships and their correlates.

Cautions to be considered when interpreting variance explained. In the field of social sciences, researchers and practitioners are becoming increasingly concerned with the size and strength of the effects reported (proportion of variance explained), rather than just relying on their statistical significance alone (Stocks, 1988). However, there are some commonly held misconceptions that variance explained determines the size and importance of the actual findings. For example, small values are considered negligible and larger values are suggestive of the result being more meaningful and worthy of discussion. While explained variance is worthwhile reporting, it has been argued that such values need to be interpreted with caution when estimating the potential magnitude of the findings. One important reason underpinning this argument is that in psychology, most behaviour is multifaceted in nature, and it is often determined by multiple antecedents and causes (O'Grady, 1982).

When collecting behavioural data, whether through self-report questionnaires or rating scales and observations, the results can often be attributed to several underlying factors. Researchers need to consider the possibilities of "moderator effects" and "the third variable problem", as such effects are common occurrences in studying human behaviour (O'Grady, 1982, p. 774): When two variables reveal a

strong relationship (X influences Y; and Y influences X) an unknown third variable may be producing or affecting the end result. Moderator effects could be difficult for non-experimental researchers to identify, due to theoretical constraints. However, these variables can affect the strength and direction of the indicator(s) on the outcome variable. For example, time spent online could moderate the relationship between cyberbullying engagement and depression (Mcclelland & Judd, 1993; O'Grady, 1982).

Most researchers limit their study to variables of interest, whether it be elucidating a gap within the literature, or providing further evidence to support a certain finding. There may be many other influential factors operating that had not been considered as within the bounds of the current investigation, due to theoretical and time constraints and the high costs involved (Cook & Campbell, 1979). It is therefore, near impossible to include all factors that influence a particular behaviour and hence, the variance explained is limited to the actual constructs under investigation. In many research investigations, the proportion of variance would be expected to be small, and such recommendations should be taken under consideration when interpreting the current research result findings (Cohen, 1988; Nunnally, 1978; O'Grady, 1982). Hence, although several gender, grade and school context variance-explained percentages were small, these findings are important in increasing our understanding of the bullying construct by aiding and addressing substantive research gaps that have significant theoretical and practical implications (O'Grady, 1982).

Implications for Future Research and Practice

The next section identifies important future research directions to help overcome the aforementioned limitations. The future research directions identified

include: encapsulating a wider Australian representative sample to better generalise results, further development and refinement of the ACBI measurement scales, and more longitudinal research, to examine the reciprocal effects of cyber and traditional bullying and the overlap between discrimination and bullying constructs. Furthermore, clear evidence-based practical implications are provided as to how schools, educators, parents and peers can identify, prevent and respond to all forms of bullying incidents through an ecological theoretical underpinning (Bronfenbrenner, 1979).

Future Research

Future research would benefit from the inclusion of a larger cohort of students and extending to a wider representation of schools, so as to confidently generalise results to Australian secondary schools and internationally. The ACBI scales could be further extended by adding new scale factors to measure cyberstalking, sexting (i.e. sending sexually suggestive content) and prejudicial bullying.

More research studies are needed, to investigate the unique school contextual factors that may affect bullying involvement. These include: (a) single-sex vs. state school; (b) catholic vs. state school; and (c) boarding school vs. non boarding school. These factors need to be investigated independently, as they were all conflated in this study. Future research can strengthen its validity by incorporating a broad range of assessments from multiple sources, such as introducing teacher and parental reports, which can be cross checked against school records to compare student, school and adult perspectives (Card & Hodges, 2008).

While the present study offers preliminary insights into the possible reciprocal relations between cyber and traditional bullying involvement, future research should explore these relationships longitudinally (Li, 2007b; Marsh et al., 2004; Perren et al.,

2010). Longitudinal research could clarify the ordering of cyberbullying psychosocial correlates. For example, whether students with poorer mental health are vulnerable populations that are more likely to be targets of cyberbullying, or whether cyberbullying victimisation ultimately leads to poorer mental health outcomes. This in turn would provide a better understanding of the long-term psychosocial effects of involvement in cyberbullying incidents, and would enable educators and practitioners to better identify at-risk populations.

Further longitudinal research is needed to investigate the overlap between cyber and traditional bullying engagement, as the current results provide preliminary support for a reciprocal relationship. For example, students who are bullied are more likely to bully, students who are perpetrating bullying are more likely to be victimised, and students witnessing cyberbullying are at risk of involvement in face-to-face bullying. Longitudinal research would help shed light on the cumulative effects, and on the ordering, for students, of being bullied both online and by traditional means. The preliminary evidence signifies that both traditional and cyberbullying constructs are complex aggressive behavioural forms that need to be further investigated with continuous variables (Marsh et al., 2004; Parada, 2006; Perren et al., 2010). More research is needed to investigate why perpetrators have mixed self-concept profiles, and how low self-concept increases students' vulnerability to being involved in bullying behaviour.

Furthermore, future research needs also to explore the relationships and potential overlap between discrimination and bullying constructs, as this new area is currently under-represented in literature. Currently there is no longitudinal evidence to determine the long term psychological effects and mental health outcomes of involvement (Garnett et al., 2014). These new insights need to be captured in holistic

bullying intervention and prevention programs in schools, to protect all children from diverse backgrounds.

Implications for Practice

The fundamental principles of any anti-bullying program are to reduce existing bullying problems, prevent the development of new bullying issues, foster an environment of pro-social behaviours, support positive peer relations, and achieve a friendly and safe school climate (Cross, Epstein, Hearn, Slee, Shaw, & Monks, 2011; Olweus & Limber, 2010). Whole-of-school programs need to be evidence based and multidisciplinary, and need to incorporate both prevention and intervention efforts, to reduce school bullying behaviours (Pearce et al., 2011; Ryan & Smith, 2009; Ttofi & Farrington, 2011).

Furthermore, anti-bullying programs need to ensure they are well grounded in a strong ecological framework that includes all important stakeholders (students, parents, educators and wider community members) and considers multiple causes of bullying behaviour throughout the different layers of the ecological system (Bronfenbrenner, 1979). The current thesis findings indicate that intervention programs need to work closely with perpetrators, to create bonds of attachment with peers, educators and the school community, to reconnect students with positive support networks (Bronfenbrenner, 1977).

Furthermore, new programs need to consider the demographics of schooling communities to ensure that prevention programs are inclusive and accessible to all students from marginalised communities (characterised by, for example, ethnicity, disability and gender and sexuality diversity). Providing psycho-education sessions that define and explain how discrimination and bullying engagement can co-occur and

can place students' psychological well being and safety at further risk. Psycho-educational sessions can help students to develop empathy and understanding, to reduce bullying incidence with marginalised groups (Greene, 2006; Garnett et al., 2014). Whole-of-school intervention initiatives should aim to be inclusive of all students, to educate in and promote positive uses of technology, and to encourage school, family and community connections, which ultimately will promote positive relationships (Mishna, 2012; Pearce et al., 2011; Swearer, Espelage, Vaillancourt, & Hymel, 2010).

Schools and practitioners need to consider the overlap between cyber and traditional bullying engagement, as a reduction in face-to-face bullying will help counteract cyberbullying perpetration. Prevention programs need to develop a curriculum that embeds the theoretical overlap of both cyber and traditional bullying. It is important that school management, teachers and school psychologist are aware that students witnessing cyberbullying incidents is associated with negative mental health correlates (i.e., depression) and also moderately associated with an increased likelihood of involvement in traditional bullying. To implement an effective intervention program, it is important to take into account multiple perspectives, to fully understand the complexities of bullying phenomena so as to minimise both online and offline risks.

Bystanders can play a key role in reducing bullying incidents, as they can be taught effective methods to intervene when witnessing victimisation, and can also support students who have been victimised. Recent research indicates that when bystanders intervene, this can buffer the negative psychosocial effects of victimisation (DeSmet et al., 2014; Quirk & Campbell, 2015; Rivers et al., 2009). Therefore, a reduction in cyberbullying leads to a reduction in face-to-face bullying, and vice versa.

Schools need to develop clear policies on traditional and cyberbullying that are highly visible and easily accessible to parents, students and school staff. All school staff need to be uniformly trained to implement school policy guidelines, enforcing strong zero tolerance of all forms of bullying, both online and offline (Cross et al., 2009; Pearce, et al., 2011). Schools may need to diversify their training sessions to be inclusive of all educational staff, parents and community members, and to provide after-hour sessions. This includes educational topics on: defining the different forms of bullying, the warning signs of student involvement, the psychological effects of engagement, how to appropriately respond to either cyber or traditional bullying incidents, and how to set ground rules to ensure students are cyber safe at home. Furthermore, schools could establish trained peer support mentoring programs that provide empowerment to school leaders, where students can actively seek bullying advice and support from peer mentors (Cross, Shaw et al., 2015; Pearce et al., 2011).

It was discovered during parental interviews that caregivers found it a challenge to attend after-hour cyberbullying prevention sessions on school campus, due to time constraints (e.g., work commitments and other children to care for), although they expressed a willingness to attend. To disseminate learning knowledge more effectively, after-hour school sessions could be recorded and viewed on a school webpage, where parents could watch the content in their own time. Furthermore, teaching staff could create an online information hub of valuable educational content, for ease of access to e-learning platforms, webinars and important cyberbullying information. This could include fact sheets and safety tips (e.g., listing steps of action on how to respond to and report a cyberbullying incident, how bystanders can safely intervene online, and understanding risk signs of involvement). Other online resources could include a contractual agreement, with a list of cyber safety ground rules that

parents could print off, discuss and enter into with their teenager (Walker, 2012). Additionally, short education videos could demonstrate examples of cyberbullying incidents, followed by appropriate steps of action. Schools could encourage further dialogue by providing a discussion board to support communication between parents and educational staff about current workshops and current cyberbullying issues and challenges.

Bruner's constructive learning theory indicates that learning should be an active process, constructing new ideas based on previous knowledge, and allowing students to own their own knowledge through educational discovery (Bruner 2006; Takaya, 2013). Educators need to take on the role of facilitator of learning, by leading interactive and creative prevention sessions with students. This could include activities such as brainstorming preventative strategies to reduce cyberbullying engagement, the creation of anti-bullying posters, and/or student participation in bullying role-plays, to facilitate more meaningful learning (Wölfer et al., 2014).

Moreover, parents, school staff and students recommended more open lines of communication between stakeholders, to promote a positive school culture. This recommendation highlights the important role teachers play in establishing a relationship of trust to build academic achievement and social relationships, and to foster positive health outcomes. Many students agreed that establishing close relationships with their teachers is key, as the more trust and support that is experienced, the more likely a student will be to seek advice from their teacher about a bullying incident. Supportive teacher and student relationships can work as a protective factor against bullying victimisation (McNeely & Falci, 2004; Waters et al., 2010). Irrespective of the school sector (i.e., attending a government, independent or

Catholic school) strong family, teacher and peer bonds foster school connection (Waters et al., 2010).

Chapter Summary

The current study has made a positive contribution to the advancement of bullying research by investigating cyber and traditional bullying phenomena in a mixed methods approach. This study investigated cyberbullying phenomena and developed and provided recommendations to seed successful interventions by providing a platform to voice multiple perspectives, in order to foster positive social, cultural and school changes. It aimed to overcome pressing measurement, definition and methodological issues by addressing current research gaps within the cyberbullying literature. The strengths of this study included developing a psychometrically sound instrument, to measure cyberbullying forms across three perspectives (victims, bullies and bystanders). This study has provided further clarification on adolescent group differences in both traditional forms and cyberbullying across gender, grade and school contexts.

An important finding revealed that students engaged in happy slapping incidents may place themselves at further psychological risk, as all possible groups involved in bullying (victims, bullies and bystanders) reported poor psychosocial outcomes from this behaviour. Both qualitative and quantitative results supported and contributed to theoretical and empirical evidence revealing a strong continuity of involvement in traditional and cyberbullying incidents: this reveals a potential theoretical overlap between behaviours.

Overall, the quantitative and qualitative findings in the current research revealed consistent and converging results that strengthen the validity of findings.

Qualitative focus groups captured three important stakeholder perspectives, illuminating new insights that may have remained underrepresented in single method research. The overall consensus arising from these perspectives was the need to create evidence-based prevention programs that are grounded in an ecological framework, that target the various levels of the ecosystem that may indirectly or directly influence cyberbullying engagement.

CHAPTER 10: CONCLUSION AND GENERAL RECOMMENDATIONS

Bullying affects the psychosocial wellbeing of many children around the world, and has been widely recognised as the most prevalent form of aggressive behaviour in young children and youth (Greene, 2000; Greene, 2006; Nansel et al., 2001; Smith, 2012). As the children of today have growing accessibility to new ICTs, bullying techniques have expanded into online environments that extend beyond the traditional boundaries of the school context. These new, aggressive, online peer interactions present new and complex challenges to students, families, educators and the wider community, associated with the need to understand, combat and prevent bullying in the digital age (Cross, Barnes et al., 2015; Pearce et al., 2011; Smith, 2012).

This thesis extends our knowledge and advances cyber and traditional bullying research by identifying and addressing the research gaps of the major conceptual and methodological limitations plaguing research in this field. Many of the methodological issues experienced previously were overcome by adopting a mixed methods approach, to gain a more comprehensive and holistic understanding of bullying phenomena (Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Johnson, 2006; Jick, 1979).Traditional and cyberbullying has been investigated from a social-ecological framework to understand how the different levels of the ecosystem interact, and how

this may contribute to the active or passive reinforcement of the cycle of violence in adolescents. The ecological framework can help practitioners understand how to appropriately target the interrelated ecological systems to include adolescent peers, family relationships, educators and community members to be trained to help protect against potential online dangers such as cyberbullying with the ultimate goal of reducing prevalence of cyberbullying incidents and promote bystanders to intervene (Cross, Barnes et al., 2015). Drawing on the strengths of both quantitative and qualitative methods, and counterbalancing their weaknesses, this thesis has produced meta-inferences of legitimisation to inform research and practice (Bronfenbrenner, 1979; Onwuegbuzie & Johnson, 2006).

This thesis contributes to the bullying literature by carefully defining cyberbullying and traditional bullying concepts, as well as developing a new, continuous multi-dimensional cyberbullying instrument (ACBI) that is grounded in a strong theoretical framework with clear operationalization of definitions, to accurately measure adolescent cyberbullying behaviours from all perspectives (victims, bullies and bystanders) (Bandura, 1977; Kowalski et al., 2008; Smith et al., 2008; Willard, 2006). Focus groups and interviews with key stakeholders (students, school educators and their parents) revealed qualitative cyber definitions and dimensions consistent with quantitative findings, providing further validation of the ACBI factor structure utilised in this investigation. This research supports the conceptual framework in which bullying behaviours fall on a continuum, where students can participate in one or potentially multiple roles, and can be victims, bullies and/or bystanders (Espelage & Swearer, 2003; MacCallum et al., 2002).

This study has investigated the important group differences of involvement in cyber and traditional bullying in relation to gender, grade level and school context, as

well as unveiling psychosocial correlates for involvement in all forms of bullying using continuous measurement scales. These results provide a cross-sectional snapshot of the complexity of, and the multiple factors associated with bullying behaviour, and reveal a strong conceptual overlap between cyber and traditional forms of bullying (Brighi et al., 2012; Cross et al., 2009; Li, 2007b; Perren et al., 2010; Olweus, 2012). These results have important implications, in demonstrating the need for anti-bullying programs to incorporate strategies that reduce both cyber and face-to-face bullying, as both forms are mutually reinforcing and strongly interconnected. The results provide further insight into the importance of cultivating school connectedness by fostering a positive school culture and ethos that can potentially help prevent and reduce bullying behaviours.

Furthermore, these research findings provide a unique contribution to the field, as currently there are only a handful of qualitative studies which have investigated cyberbullying phenomena. The aim of this study was to move beyond student involvement by extending and exploring the complexities of bullying phenomena through the shared experiences of all stakeholders, and to capture a deeper and more complex understanding of the problem under investigation. Additionally, qualitative methods were employed to examine the outlier cases that arose, which could have been missed in quantitative approaches, and to expand the knowledge required to inform future research (Mishna & Van Wert, 2013).

By diversifying the methodology and triangulating the findings, important theoretical contributions have been made. These include the need for a broader definition of bullying that acknowledges that children's behaviours do not develop in a vacuum. They are influenced by and contingent upon many social, cultural and familial factors that play direct or indirect roles in the maintenance of bullying

behaviours. The research suggests that a whole-school approach prevention program involving all key stakeholders is critical to the goal of discontinuing the maintenance factors that perpetuate bullying behaviour. More specifically, the co-occurrence of discrimination and bullying directed at marginalised youth should be considered in the development of inclusive programs that foster a safe and protective online and offline environment, and employ language that protects children in all vulnerable and marginalised populations.

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APPENDICES

Appendix A: Information Letters—Schools

Information Letter for School Principal

Educational Excellence and Equity (E^3)
Research Program
Centre for Educational Research
University of Western Sydney
Locked Bag 1797
Penrith South DC, NSW, 1797

Dear Principal,

Seeding Successful Cyberbullying Intervention Strategies:

Elucidating the Nature and Psychosocial Determinants of Cyberbullying on Adolescent Student Wellbeing, Pro-Social Behaviour, and Academic Engagement

Purpose

We would like to invite your school to participate in a research study being conducted by the Educational Excellence and Equity (E^3) Research Program, Centre for Educational Research, University of Western Sydney. The purpose of the study is to:

- Elucidate students', parents', principals', and teachers' perceptions of the nature and impact of cyberbullying and strategies for seeding successful cyberbullying intervention strategies;
- Measure and identify the nature and impact of cyberbullying for participating NSW secondary school students, in order to create reliable measures to assist schools to combat and prevent cyberbullying in schools;
- Explicate gender, grade and school context group differences for involvement in traditional and cyberbullying forms; and
- Report to participating schools the incidence rates of different cyber and traditional bullying forms and test their relation to psychosocial drivers (Self-Concept, School Belonging and Mental Health) to provide participating schools with information that can inform intervention strategies.

Participation

The participation of your school would involve:

- Students in Years 7-10 completing a 1 hour survey administered by trained research assistants to year groups of students with parental permission in your school hall or online (Term 2-2012);

- Students (5-6 from each of the Years 7-10) with parental permission participating in a 45 minute focus group discussion with a researcher;

- Parents, teachers, and yourself as Principal who volunteer to participate undertaking a 45 minute focus group interview with a researcher;

- Year coordinators/roll call teachers distributing and collecting parental permission slips to students in Years 7 to 10 and being present for the administration of surveys to year groups; and

- School counsellor to be available by request if students need further debriefing after any survey or focus group session participation.

The information obtained from this study will help us find out the best methods and strategies to combat bullying using research endorsed methods. The information provided for this study will not be identifiable to anyone apart from the researchers and all information obtained for this study will be stored in a locked and secure location with all identifiable information (e.g., consent forms) kept separately from the data. The overall summary results will then be distributed via research reports and publications to the schools, the educational organisations, and publishers. All published information will only be reported in group form that neither identifies schools or individual students. The data may be further analysed by other university researchers aiming to improve educational practice, but once again, no personal information will be included that may aid in the identification of any participant.

Your school's participation in this study is voluntary, and there will be no adverse consequences if you wish to not participate and/or withdraw participation after giving consent to be in the study.

If you consent to your school participating in this study please complete the attached consent form below and return the form to:
Katrina Newey (Fax): 9772 6432
This research is being conducted by Professor Rhonda Craven (9772-6557; r.craven@uws.edu.au), Dr Nida Denson (9772 6849; n.denson@uws.edu.au), and PhD candidate Katrina Newey (9772 6246; k.newey@uws.edu.au). Please do not hesitate to contact the researchers if you have any questions relating to the study.

Thank you for your time in your consideration of this important study.

Yours sincerely,

Professor Rhonda Craven
Head

Educational Excellence and Equity (E^3) Research Program
Centre for Educational Research, College of Arts
University of Western Sydney
Bankstown Campus
Locked Bag 1797
Penrith South DC NSW 1797 Australia
Email: r.craven@uws.edu.au
Telephone: + 61 2 97726557

NOTE: This study has been approved by the University of Western Sydney Research Ethics Committee. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Office of Research Services on telephone (02) 4736 0083, fax (02) 4736 0013, or email humanethics@uws.edu.au. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Information Letter for Teachers and Year Co-ordinators

Educational Excellence and Equity (E^3)
Research Program
Centre for Educational Research
University of Western Sydney
Locked Bag 1797
Penrith South DC, NSW, 1797

Dear Teacher,

Seeding Successful Cyberbullying Intervention:

Elucidating the Nature and Psychosocial Determinants of Cyberbullying on Adolescent Student Wellbeing, Pro-Social Behaviour, and Academic Engagement

Purpose

We would like to invite you to participate in a research study being conducted by the Educational Excellence and Equity (E^3) Research Program, Centre for Educational Research, University of Western Sydney. The purpose of the study is to:

- Elucidate students', parents', principals', and teachers' perceptions of the nature and impact of cyberbullying and strategies for seeding successful cyberbullying intervention strategies;
- Measure and identify the nature and impact of cyberbullying for participating NSW secondary school students, in order to create reliable measures to assist schools to combat and prevent cyberbullying in schools;
- Explicate gender, grade and school context group differences for involvement in traditional and cyberbullying forms; and
- Report to participating schools the incidence rates of different cyber and traditional bullying forms and test their relation to psychosocial drivers (Self-Concept, School Belonging and Mental Health) to provide participating schools with information that can inform intervention.

Participation

Your participation would involve:

- Voluntarily participating in a recorded, 45 minute focus group interview session with a researcher on school premises; and

- Distributing and collecting parental permission slips to students in Years 7 to 10 and being present for the administration of surveys to year groups.

The information obtain from this study will help us find out the best methods and strategies to combat bullying using research endorsed methods. The information provided for this study will not be identifiable to anyone apart from the researchers and all information obtained for this study will be stored in a locked and secure location with all identifiable (e.g., consent forms) kept separately from the data. The overall summary results will then be distributed via research reports and publications to the schools, the educational organisations and publishers. All published information will only be reported in group form that neither identifies schools or individual participants. The data may be further analysed by other university researchers aiming to improve educational practise, but once again, no personal information will be included that may aid in the identification of any participant.

Your participation in this study is voluntary, and there will be no adverse consequences if I wish not to participate and/or withdraw participation after giving consent to be in the study.

If you consent to participating in this study please complete the attached permission form below and return the form to:
Katrina Newey (Fax): 9772 6432
This research is being conducted by Professor Rhonda Craven (9772-6557; r.craven@uws.edu.au), Dr Nida Denson (9772 6849; n.denson@uws.edu.au), and PhD candidate Katrina Newey (9772 6246; k.newey@uws.edu.au). Please do not hesitate to contact the researchers if you have any questions relating to the study.

Thank you for your time in your consideration of this important study.

Yours sincerely,

Professor Rhonda Craven
Head
Educational Excellence and Equity (E^3) Research Program
Centre for Educational Research, College of Arts
University of Western Sydney
Bankstown Campus
Locked Bag 1797
Penrith South DC NSW 1797 Australia
Email: r.craven@uws.edu.au
Telephone: + 61 2 97726557

NOTE: This study has been approved by the University of Western Sydney Research Ethics Committee. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Office of

Research Services on telephone (02) 4736 0083, fax (02) 4736 0013, or email humanethics@uws.edu.au. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Appendix B: Consent Forms—Schools

Consent Form for the Principal

Please return your consent form as soon as possible to
Katrina Newey (Fax): 9772 6432

Educational Excellence and Equity (E^3)
Research Program
Centre for Educational Research
University of Western Sydney
Locked Bag 1797
Penrith South DC, NSW, 1797

Seeding Successful Cyberbullying Intervention Strategies:

Elucidating the Nature and Psychosocial Determinants of Cyberbullying on Adolescent Student Wellbeing, Pro-Social Behaviour, and Academic Engagement

I wish to advise that my school will:
(*Please tick your response*)

☐ Participate in the Seeding Successful Cyberbullying Intervention study

☐ Not be able to participate in the Seeding Successful Cyberbullying Intervention study

Principal's Name _____ (please print)

School: _____

Principal's signature _____Date_____

Consent Form for Teachers and Year Co-ordinators

Please return your consent form as soon as possible to
Katrina Newey (Fax): 9772 6432

Educational Excellence and Equity (E^3)
Research Program
Centre for Educational Research
University of Western Sydney
Locked Bag 1797
Penrith South DC, NSW, 1797

Seeding Successful Cyberbullying Intervention Strategies:

Elucidating the Nature and Psychosocial Determinants of Cyberbullying on Adolescent Student Wellbeing, Pro-Social Behaviour, and Academic Engagement

I wish to advise that I will:
(*Please tick your response*)

☐ Participate in the Seeding Successful Cyberbullying Intervention study

☐ Not be able to participate in the Seeding Successful Cyberbullying Intervention study

Teacher's Name: _____ (please print)

School: _____

Contact number: _____

Teacher's signature _____Date_____

Appendix C: Information Letter—Parents

Information letter for Parents/Guardians (Including Student and Parent Participation)

Educational Excellence and Equity (E^3)
Research Program
Centre for Educational Research
University of Western Sydney
Locked Bag 1797
Penrith South DC, NSW, 1797

Dear Parent/Guardian,

Seeding Successful Cyberbullying Intervention Strategies:

Elucidating the Nature and Psychosocial Determinants of Cyberbullying on Adolescent Student Wellbeing, Pro-Social Behaviour, and Academic Engagement

Purpose

We would like to invite your son/daughter and yourself to participate in a research study being conducted by the Educational Excellence and Equity (E^3) Research Program, Centre for Educational Research, University of Western Sydney. The purpose of the study is to:

- Investigate students', parents', principals', and teachers' perceptions of the nature and impact of cyberbullying and strategies for seeding successful cyberbullying interventions;

- Measure and identify the nature and impact of cyberbullying for participating NSW secondary school students, in order to create reliable measures to assist schools to combat and prevent cyberbullying in schools;

- Explore students' experiences and perspectives about traditional and cyber bullying, to ask students. Focus groups will be run as an open forum of discussion about students own personal bullying experiences. All information of focus group will be confidential and student participants will be kept anonymous.

- Explore parents'/guardians' experiences and perspectives about the nature, extent, motivations for student involvement and affects of the bully/victim cycle for both traditional and cyber bullying types. Furthermore, to find out how cyberbullying impacts families, and the overall community.

- Explicate psychosocial determinants of cyberbullying drivers of life potential to identify tangible drivers to seed intervention success.

Participation

The participation of your child involves:

- Completing a 1 hour survey administered by trained research assistants to year groups of students in the school hall or online (Term 2-2013); and

- Participating in a recorded 45 minute focus group discussion with a researcher in a classroom with 5-6 students per group.

Your participation in this study would involve:

- Participating in a 30 minute recorded telephone interview during Term 4-2013. Phone interviews will be conducted at convenient times requested by parent/guardian.

The information obtain from this study will help us find out the best methods and strategies to combat bullying using research endorsed methods. The information provided for this study will not be identifiable to anyone apart from the researchers and all information obtained for this study will be stored in a locked and secure location with all identifiable (e.g., consent forms) kept separately from the data. The overall summary results will then be distributed via research reports and publications to the schools, the educational organisations and publishers. All published information will only be reported in group form that neither identifies schools or individual participants. The data may be further analysed by other university researchers aiming to improve educational practise, but once again, no personal information will be included that may aid in the identification of any participant.

Your child's and your participation in this study is voluntary, and there will be no adverse consequences if I or my child wish not to participate and/or withdraw participation after giving consent to be in the study.

If you consent to you and your child participating in this study please complete the attached permission form below and return the form to your child's roll call teacher.

This research is being conducted by Professor Rhonda Craven (9772-6557; r.craven@uws.edu.au), Dr Nida Denson (9772 6849; n.denson@uws.edu.au), and PhD candidate Katrina Newey (9772 6246; k.newey@uws.edu.au). Please do not hesitate to contact the researchers if you have any questions relating to the study.

Thank you for your time in your consideration of this important study.

Yours sincerely,

Professor Rhonda Craven
Head
Educational Excellence and Equity (E^3) Research Program
Centre for Educational Research, College of Arts
University of Western Sydney
Bankstown Campus
Locked Bag 1797
Penrith South DC NSW 1797 Australia
Email: r.craven@uws.edu.au
Telephone: + 61 2 97726557

NOTE: This study has been approved by the University of Western Sydney Research Ethics Committee. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Office of Research Services on telephone (02) 4736 0083, fax (02) 4736 0013, or email humanethics@uws.edu.au. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Appendix D: Consent Form —Parents

Consent form for Parents/Guardians (Child & Parent/Guardian Participation)

Please return your consent form as soon as possible to your child's roll call teacher

Educational Excellence and Equity (E^3)
Research Program
Centre for Educational Research
University of Western Sydney
Locked Bag 1797
Penrith South DC, NSW, 1797

Seeding Successful Cyberbullying Intervention Strategies:

Elucidating the Nature and Psychosocial Determinants of CyberBullying on Adolescent Student Wellbeing, Pro-Social Behaviour, and Academic Engagement

I have discussed the purpose of the research study with my child. I have read and understood the above and agree for my child to participate in this study.

I wish to advise that I give my child permission to:
(*Please tick your response*)

☐ Participate in the traditional and cyberbullying surveys

☐ Not be able to participate in traditional and cyberbullying surveys

☐ Participate in the Seeding Successful Cyberbullying Intervention focus group interview

☐ Not be able to participate in the Seeding Successful Cyberbullying Intervention focus group interview

I wish to advise that I will:
(*Please tick your response*)

☐ Participate in the Seeding Successful Cyberbullying Intervention interviews

☐ Not be able to participate in the Seeding Successful Cyberbullying Intervention interviews

Parent/Guardian's Name: _____ (please print)

Child's Name: _____ (please print)

School: _____

Parent/Guardian's Contact number: _____

Best time to call to discuss interview times: _____

Parent/Guardian's signature _____Date_____

Appendix E: Student Survey

(Information Form & Student Consent)

Educational Excellence and Equity (E^3)
Research Program
Centre for Educational Research
University of Western Sydney
Locked Bag 1797
Penrith South DC, NSW, 1797

Dear Student,

We would like to invite you to participate in a research study being conducted by the Educational Excellence and Equity (E^3) Research Program, Centre for Educational Research, University of Western Sydney.

Seeding Successful Cyberbullying Intervention Strategies:

Elucidating the Nature and Psychosocial Determinants of Cyberbullying on Adolescent Student Wellbeing, Pro-Social Behaviour, and Academic Engagement

The purpose of this survey is to help us find out:

- What you think about your school and your abilities;
- How you think and feel about your peers at school;
- What types of interactions are you experiencing both online and offline;
- How have you been affected by other students during and after school hours in the past;
- What do you think and feel about your peer relationships (offline and online); and
- Generally how you feel about yourself.

Your participation is important because it has the potential to help us help other students and other schools in NSW.

Your participation in the study is voluntary. You can withdraw from the study at any time. Not participating will not affect your relationship with your school.

This is NOT a test. **There are NO right or wrong answers**. Everyone will have different responses to the questions. I will read the questions aloud to you and explain how to answer each one. Throughout survey administration, if you have a question, please put your hand up. You will be able to ask questions as we go along. If you would like to speak to someone about how you feel about the questions, the school counsellor will be available to talk with you if further debriefing is required.

Your answers will only be seen by the researchers and will not be shown to anyone in your school or your parents, so please answer **each question honestly**. The researchers will remove the front pages that have your name on them so that only the pages without your name will be looked at. The research team will not identify you, your school or any other student that participates in this study.

Thank you for taking the time to participate. Your participation is much appreciated.

NOTE: This study has been approved by the University of Western Sydney Research Ethics Committee. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Office of Research Services on telephone (02) 4736 0083, fax (02) 4736 0013, or email humanethics@uws.edu.au. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Student Consent Form to Participate in Research Study

Student's Name and Last Name: _____ (please print)

School Year (*Please tick your response*): 7☐ 8 ☐ 9 ☐ 10 ☐

School: _____

Student's Signature _____Date_____

Section 1: About You

1	Are you male or female?	1☐ Male 2☐ Female	
2	Date of birth	1☐ ___/___/___ (day/month/year)	
3	How old are you now?	1☐ _____	
4	Which year of schooling are you currently in? (*please tick)*	1☐ Year 7 2☐ Year 8	3☐ Year 9 4☐ Year 10
5	Your school (*please tick the number I tell you*)	1☐ 2☐	
6	Do you own or have access at home to a computer?	1☐ Yes 2☐ No	
7	Do you own a mobile telephone?	1☐ Yes 2☐ No	
8	If you own a mobile phone, how much do your parents spend per month on your mobile account?	_____	

9 Please indicate below how many hours per week you use the following technology. If you don't use something at all, please write 0.

a. Computer with internet access _____
b. Laptop with internet access _____
c. Mobile phone _____
d. Mobile phone with internet access _____
e. Digital camera _____
f. Video recorder _____
g. Web cam _____
h. Camera on mobile phone _____
i. Video recorder on mobile phone _____

Section 2: Using Technology and Cyberbullying

Cyberbullying can include nasty and hurtful content sent via any form of communication technology. For example: email, mobile phone, chat rooms, instant messaging, websites, blog pages and social networking pages (such as Twitter, Instagram, and Facebook); phone calls; text messages; picture posts; and video clips. Such behaviours are intended to be hurtful to an individual or group, involves a power imbalance between the aggressor and their target and are often repeated.

Please indicate how many hours per week you use the following technology. If you don't spend any time on an item listed, please write 0.

		Hours per week
1	Facebook account	_____
2	Instagram account	_____
3	MySpace account	_____
4	Twitter page	_____
5	MSN groups account	_____
6	Other account (*please print*)_____	_____
7	Text message(s) on mobile	_____
8	Picture message(s) on mobile	_____
9	Video(s) on mobile	_____
10	Yahoo Chat	_____
11	Gmail Chat	_____
12	MSN Messenger	_____
13	Massively multiplayer online role playing game (MMORPG)	_____
14	Blog pages	_____
15	Discussion Forums	_____

Please indicate how often you have **received hurtful** content on each of the following. *Please circle your response.*

		Never	Yearly	Every 6 months	Monthly	Fortnightly	Weekly	Daily
1	Facebook account	1	2	3	4	5	6	7
2	Instagram account	1	2	3	4	5	6	7
3	MySpace account	1	2	3	4	5	6	7
4	Twitter page	1	2	3	4	5	6	7
5	MSN groups account	1	2	3	4	5	6	7
6	Other account (*please print*)_____ _____	1	2	3	4	5	6	7
7	Text message(s) on mobile	1	2	3	4	5	6	7
8	Picture message(s) on mobile	1	2	3	4	5	6	7
9	Video(s) on mobile	1	2	3	4	5	6	7
10	Yahoo Chat	1	2	3	4	5	6	7
11	Gmail Chat	1	2	3	4	5	6	7
12	MSN Messenger	1	2	3	4	5	6	7
13	Massively Multiplayer online role playing game (MMORPG)	1	2	3	4	5	6	7
14	Blog pages	1	2	3	4	5	6	7
15	Discussion Forums	1	2	3	4	5	6	7

Please indicate how often you have **sent hurtful** content on the following. *Please circle your response.*

		Never	Yearly	Every 6 months	Monthly	Fortnightly	Weekly	Daily
1	Facebook account	1	2	3	4	5	6	7
2	Instagram account	1	2	3	4	5	6	7
3	MySpace account	1	2	3	4	5	6	7
4	Twitter page	1	2	3	4	5	6	7
5	MSN groups account	1	2	3	4	5	6	7
6	Other account (*please print*)_____ _____	1	2	3	4	5	6	7
7	Text message(s) on mobile	1	2	3	4	5	6	7
8	Picture message(s) on mobile	1	2	3	4	5	6	7
9	Video(s) on mobile	1	2	3	4	5	6	7
10	Yahoo Chat	1	2	3	4	5	6	7
11	Gmail Chat	1	2	3	4	5	6	7
12	MSN Messenger	1	2	3	4	5	6	7
13	Massively Multiplayer online role playing game (MMORPG)	1	2	3	4	5	6	7
14	Blog pages	1	2	3	4	5	6	7
15	Discussion Forums	1	2	3	4	5	6	7

Section 3 How I feel about other people's comments and/or hurtful content via information communication technologies

To what extent this school year have you experienced the following when you are communicating to other people using information communication technologies (i.e., a desktop computer, mobile phone, tablet, ipod)? *Please circle your response.*

		Never	Some-times	Once or twice a month	Once a week	Several times a week	Daily
1	Other users have teased me on public websites, which made me upset	1	2	3	4	5	6
2	Individuals have taken my mobile phone to send nasty messages to my friends	1	2	3	4	5	6
3	Individuals have recorded me in an embarrassing situation that was uploaded later	1	2	3	4	5	6
4	Individuals have been spiteful to me on public websites	1	2	3	4	5	6
5	Individuals have viewed my messages on my phone without my permission to find private information to hurt me	1	2	3	4	5	6
6	Individuals have "set me up" by creating and recording an embarrassing situation that was later uploaded	1	2	3	4	5	6
7	Individuals have hacked into my account to impersonate me	1	2	3	4	5	6
8	When using some public websites there have been users who have been hostile towards me	1	2	3	4	5	6

9	People have pretended to be me online to get me into trouble	1	2	3	4	5	6
10	I have been hurt when individuals pulled a prank on me which was recorded and uploaded to make fun of me	1	2	3	4	5	6
11	Individuals have asked my friends for my passwords to find secrets about me	1	2	3	4	5	6

What I do when I am online

The following questions relate to behaviours occurring via communication technologies (e.g., on your mobile phone, on the internet). To what extent have you done the following this school year? *Please circle your response.*

		Never	Some-times	Once or twice a month	Once a week	Several times a week	Every day
1	On some public websites I've been involved in writing nasty comments about another user	1	2	3	4	5	6
2	I have pretended to be "someone else" to send/post information to make them look bad	1	2	3	4	5	6
3	I have posted embarrassing photos of individuals without their permission to expose them	1	2	3	4	5	6
4	On a public forum I have teased a certain person for fun	1	2	3	4	5	6
5	I have taken an individual's mobile phone to send nasty messages to their friends	1	2	3	4	5	6
6	I have used my mobile phone to record an embarrassing incident of an individual and uploaded it	1	2	3	4	5	6
7	I have been known to be spiteful to others on public websites	1	2	3	4	5	6
8	I have viewed a person's phone without their permission to spy or find private information to hurt them	1	2	3	4	5	6
9	I have participated in intentionally "setting up" unsuspecting individuals by creating and recording an embarrassing situation	1	2	3	4	5	6

10	I have hacked into peoples' online accounts to impersonate them	1	2	3	4	5	6
11	On public websites I've used offensive language directed at certain individuals	1	2	3	4	5	6

Witness to Online Behaviours

The following questions relate to behaviours occurring via communication technologies (e.g., on your mobile phone, on the internet). To what extent have you witnessed the following this school year? *Please circle your response.*

		Never	Some-times	Once or twice a month	Once a week	Several times a week	Every day
1	When using public websites I have seen nasty messages written about others	1	2	3	4	5	6
2	I have viewed a video online, which makes fun of other individuals	1	2	3	4	5	6
3	I have observed individuals being spiteful towards others on public websites	1	2	3	4	5	6
4	I have seen a video where someone was "set up" by others to be involved in an embarrassing situation	1	2	3	4	5	6
5	I have viewed a video where individuals have been ganged up on and physically attacked by others	1	2	3	4	5	6
6	When I'm using some public websites I have observed users who have been hostile to others	1	2	3	4	5	6
7	On some public websites I have witnessed individuals using offensive language directed towards others	1	2	3	4	5	6

Section 4: How I communicate with others

Since you have been at school this year how often have you done any of the following things to a student at your school. **Circle the number that is closest to your answer.**

In the past year at this school I ....

		Never	Some-times	Once or twice a month	Once a week	Several times a week	Every -day
1	Teased them by saying things to them	1	2	3	4	5	6
2	Pushed or shoved a student	1	2	3	4	5	6
3	Made rude remarks at a student	1	2	3	4	5	6
4	Got my friends to turn against a student	1	2	3	4	5	6
5	Made jokes about a student	1	2	3	4	5	6
6	Crashed into a student on purpose as they walked by	1	2	3	4	5	6
7	Picked on a student by swearing at them	1	2	3	4	5	6
8	Told my friends things about a student to get them into trouble	1	2	3	4	5	6
9	Got into a physical fight with a student because I did not like them	1	2	3	4	5	6
10	Said things about their looks they didn't like	1	2	3	4	5	6
11	Got other students to start a rumour about another student	1	2	3	4	5	6
12	I slapped or punched a student	1	2	3	4	5	6
13	Got other students to ignore a student	1	2	3	4	5	6
14	Made fun of a student by calling then names	1	2	3	4	5	6
15	Threw something at a student to hit them	1	2	3	4	5	6
16	Threatened to be physically hurt or harm a student	1	2	3	4	5	6
17	Left them out of activities, games on purpose	1	2	3	4	5	6
18	Kept a student away from me by given them mean looks	1	2	3	4	5	6

Section 5: Adolescent Peers Relations

Please indicate how often the following things have been done to you since you have been at this school this year (2013), by a student at this school. **Circle the number that is closest to your answer.**

In the past year at this school…

		Never	Some-times	Once or twice a month	Once a week	Several times a week	Every -day
1	I was teased by students saying things to me	1	2	3	4	5	6
2	I was pushed or shoved	1	2	3	4	5	6
3	A student wouldn't be friends with me because other people didn't like me	1	2	3	4	5	6
4	A student made rude remarks at me	1	2	3	4	5	6
5	I was hit or kicked hard	1	2	3	4	5	6
6	A student ignored me when they were with their friends	1	2	3	4	5	6
7	Jokes were made up about me	1	2	3	4	5	6
8	Students crashed into me on purpose as they walked by	1	2	3	4	5	6
9	A student got their friends to turn against me	1	2	3	4	5	6
10	My property was damaged on purpose	1	2	3	4	5	6
11	Things were said about my looks I didn't like	1	2	3	4	5	6
12	I wasn't invited to a student's place because other people didn't like me	1	2	3	4	5	6
13	I was ridiculed by students saying things to me	1	2	3	4	5	6
14	A student got students to start a rumour about me	1	2	3	4	5	6
15	Something was thrown at me to hit me	1	2	3	4	5	6
16	I was threatened to be physically hurt or harmed	1	2	3	4	5	6

17	I was left out of activities, games on purpose	1	2	3	4	5	6
18	I was called names I didn't like	1	2	3	4	5	6

Section 6: How You Think and Feel about Yourself

This is a chance for you to look at how you think and feel about yourself. It is important that you are honest and give your own views about yourself right now. There are six possible answers for each question – "True", "False", and four answers in between.

For example:

1= False	2= Mostly false	3= More false than true	4= More true than false	5= Mostly true	6= True

Example	**I worry about a lot of things**	**1**	**2**	**3**	**4**	**⑤**	**6**

		False	Mostly false	More false than true	More true than false	Mostly true	True
1	**MATHEMATICS** is one of my best subjects	1	2	3	4	5	6
2	I have a nice looking face	1	2	3	4	5	6
3	I am hopeless in **ENGLISH** classes	1	2	3	4	5	6
4	I get along well with my parents	1	2	3	4	5	6
5	I get good marks in **MATHEMATICS**	1	2	3	4	5	6
6	I am good looking	1	2	3	4	5	6
7	I learn things quickly in **ENGLISH** classes	1	2	3	4	5	6
8	I do not like my parents very much	1	2	3	4	5	6
9	I do badly in tests in **MATHEMATICS**	1	2	3	4	5	6

10	Other people think I am good looking	1	2	3	4	5	6
11	I get good marks in **ENGLISH**	1	2	3	4	5	6
12	My parents understand me	1	2	3	4	5	6
13	I have always done well in **MATHEMATICS**	1	2	3	4	5	6
14	I have a good looking body	1	2	3	4	5	6
15	Work in **ENGLISH** classes is easy for me	1	2	3	4	5	6
16	My parents treat me fairly	1	2	3	4	5	6
17	**ENGLISH** is one of my best subjects	1	2	3	4	5	6

Section 7: You and Your School

The next section asks you some questions about the way you feel about this school. Answer each question by CIRCLING the number that is closest to how you feel about this school **AT THIS PRESENT TIME NOT** how you felt last year.

		Strongly Disagree	Disagree	Mostly Disagree	Mostly Agree	Agree	Strongly Agree
1	I can get good support from my school	1	2	3	4	5	6
2	I accept the rules and procedures set by my school	1	2	3	4	5	6
3	I feel good about being in my school	1	2	3	4	5	6
4	I can count on help and support, if I need it, from my school	1	2	3	4	5	6
5	I agree that there are useful rules and procedures set by my school	1	2	3	4	5	6
6	I feel the best when I am at my school	1	2	3	4	5	6
7	I get lots of support from my school	1	2	3	4	5	6
8	I accept the rules of my school	1	2	3	4	5	6
9	I feel that I have a good relationship with my school	1	2	3	4	5	6
10	I am confident that I am well supported by my school	1	2	3	4	5	6
11	Our school rules and procedures are sensible	1	2	3	4	5	6
12	I feel like I belong at my school	1	2	3	4	5	6

Section 8: How You are Feeling

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

		Did not apply to me at all	Applied to me to some degree, or some of the time	Applied to me to a considerable degree, or a good part of time	Applied to me very much, or most of the time
1	I found myself getting upset by quite trivial things	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion	0	1	2	3
5	I just couldn't seem to get going	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I had a feeling of shakiness (eg, legs going to give way)	0	1	2	3
8	I found it difficult to relax	0	1	2	3
9	I found myself in situations that made me so anxious I was most relieved when they ended	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting upset rather easily	0	1	2	3
12	I felt that I was using a lot of nervous energy	0	1	2	3
13	I felt sad and depressed	0	1	2	3
14	I found myself getting impatient when I was delayed in any way (eg, lifts, traffic lights, being kept waiting)	0	1	2	3
15	I had a feeling of faintness	0	1	2	3
16	I felt that I had lost interest in just about everything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3

19	I perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life wasn't worthwhile	0	1	2	3
22	I found it hard to wind down	0	1	2	3
23	I had difficulty in swallowing	0	1	2	3
24	I couldn't seem to get any enjoyment out of the things I did	0	1	2	3

		Did not apply to me at all	Applied to me to some degree, or some of the time	Applied to me to a considerable degree, or a good part of time	Applied to me very much, or most of the time
25	I found myself getting upset by quite trivial things	0	1	2	3
26	I was aware of dryness of my mouth	0	1	2	3
27	I couldn't seem to experience any positive feeling at all	0	1	2	3
28	I felt I was close to panic	0	1	2	3
29	I found it hard to calm down after something upset me	0	1	2	3
30	I feared that I would be "thrown" by some trivial but unfamiliar task	0	1	2	3
31	I was unable to become enthusiastic about anything	0	1	2	3
32	I found it difficult to tolerate interruptions to what I was doing	0	1	2	3
33	I was in a state of nervous tension	0	1	2	3
34	I felt I was pretty worthless	0	1	2	3
35	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
36	I felt terrified	0	1	2	3
37	I could see nothing in the future to be hopeful about	0	1	2	3
38	I felt that life was meaningless	0	1	2	3
39	I found myself getting agitated	0	1	2	3
40	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
41	I experienced trembling (eg, in the hands)	0	1	2	3
42	I found it difficult to work up the initiative to do things	0	1	2	3

Thank you for your participation in this survey.

Appendix F: Adolescent Cyber Bullying Instrument (ACBI) Breakdown

Section 3 of the Student Survey

Cyber Victims

Flaming

1 Other users have teased me on public websites
4 Individuals have been spiteful to me on public websites
8 When using some public websites there have been users who have been hostile towards me

Identity Theft

2 Individuals have taken my mobile phone to send nasty messages to my friends
5 Individuals have viewed messages on my phone to find private information
7 Individuals have hacked into my account to impersonate me
9 People have pretended to be me online to get me into trouble
11 Individuals have asked my friends for my passwords to find secrets about me

Happy Slapping

3 Individuals have recorded me in an embarrassing situation that was uploaded later
6 Individuals have "set me up" by creating and recording an embarrassing situation that was later uploaded
10 I have been hurt when individuals pulled a prank on me which was recorded and uploaded

Cyberbully

Flaming

1 On some public websites I've been involved in writing nasty comments about another user
4 On a public forum I have teased a certain person for fun
7 I have been known to be spiteful to others on public websites
11 On public websites I've used offensive language directed at certain individuals

Identity Theft

2 I have pretended to be "someone else" to send/post information to make them look bad
5 I have taken an individual's mobile phone to send nasty messages to their friends
8 I have viewed a person's phone without their permission to spy or find private information
10 I have hacked into peoples' online accounts to impersonate them

Happy Slapping

3 I have posted embarrassing photos of individuals without their permission to expose them
6 I have used my mobile phone to record an embarrassing incident of an individual and uploaded it
9 I have participated in intentionally "setting up" unsuspecting individuals by creating and recording an embarrassing situation

Cyber Bystanders

Flaming

1 When using public websites I have seen nasty messages written about others
3 I have observed individuals being spiteful towards others on public websites
6 When I'm using some public websites I have observed users who have been hostile to others
7 On some public websites I have witnessed individual using offensive language towards others

Happy Slapping

2. I have viewed a video online, which makes fun of other individuals
4. I have seen a video where someone was "set up" by others to be involved in an embarrassing situation
5 I have viewed a video where individuals have been ganged up on and physically attacked by others

Appendix G: Qualitative Semi-structured Interview Questions

Aims	Research Question	Student	Parent	School Staff
1. Nature and incident of cyberbullying	3.1.1 Stakeholders' perceptions on how they define traditional and cyberbullying forms: (a) How do stakeholders descriptions of cyber and traditional bullying differ? (b) Can stakeholders give some examples of the different forms of bullying encountered? (c) Can stakeholders give some examples of bullying incidents that have occurred (personal involvement e.g., as a bystander or adult intervening)? 3.1.2 Where and when do cyberbullying incidents most likely take place, do they occur more frequently in school or out of school hours?	Q1) What does bullying mean to you? How would you define bullying? Q2) Can you give some examples of different forms of bullying? Q3) How often do these occur at your school? Q4) Do students use cyberbullying? What different cyberbullying forms have you experienced, been involved in or witnessed? Q6) When do you think cyberbullying happens? (Prompts during school/ after school hours)? Q7) How do cyberbullying and traditional bullying differ?	Q1) Are parents aware of the emerging cyberbullying problem? Q2) How would you define cyberbullying? Q3) What are your primarily concerns as a parent surrounding cyberbullying and your teenager(s)? Q4) How do you think students cyber bully? Q5) When do cyberbullying incidents most likely to take place? (Prompts during school/ after school)? Q6) How do traditional and cyberbullying types differ?	Q1) In your opinion, what is the most common bullying type being used by students today? Q2) What does cyber bullying mean to you? Q3) Are teachers/staff aware of the emergent cyber bully issue? Q4) What age groups do you think are more prone to be involved in cyberbullying behaviours? Q5) How do students cyber bully? Q6) How often do you think cyberbullying occurs with your students? Q7) Where do you think cyberbullying happens (Prompt i.e., during/ after school)

				Q8) How do traditional and cyberbullying types differ?
2. What are the characteristics, motivations, and goals of traditional and cyberbullies?	3.2.1 Students', parents' and school staffs' counsellors' perceptions what motivates students to participate in bullying others.	Q1) Why do you think some students are involved in bullying? Q2) What motivates students to cyberbully others? Q3) Are some students more likely to be involved in cyberbullying and why?	Q1) Why do you think students are involved in bullying? Q2) What motivates students to cyberbully others? Q3) Are some students more likely to be involved in cyberbullying and why?	Q1) Why do you think students are involved in bullying? Q2) What motivates students to cyberbully others? Q3) Are some students more likely to be involved in cyberbullying and why?
3. The impact of traditional and cyberbullying on bullies, victims, bystanders, and families?	3.3.1 What are the psychological effects of bullying involvement: (a) How does a bullying incident affect the bullies, victims, bystanders, schools and families? (b) When a bullying incident take places, how do students, school educators and parents cope and feel?	Q1) Have you ever experienced cyberbullying? Can you give us some examples? Q2) How would you deal with being cyberbullied (Do you have any coping strategies)? Q3) In your opinion what are some of the most hurtful or harmful ways students' cyberbully one another? Q4) How did you feel when you were involved in a bullying	Q1) Do you know if your child has been involved in a cyberbullying incident (can you give an example)? Q2) If so, what was the behaviours/ affect you noticed of your child around the bullying incident? Q3) When students get cyberbullied how do you think they react? For example, do they cry? What else might they do?	Q1) When students get cyberbullied how do you think they react? Q2) What are some of the behaviours/affect of the students'? Q3) How does cyber bullying effect schools and families?

		incident as a witness, perpetrator or bystander? For example, do they feel sad? What else might they do?	4) How does cyberbullying affect families?	
4. How adults respond to a bullying incident and the willingness for student disclose the incident?	3.4.1 Students', Parents' and school staffs', perceptions of who students disclose to and how adults respond?	Q1) If you have experienced cyberbullying, would you feel comfortable talking about it to an adult? Q2) Have you ever witnessed or heard of cyberbullying at school, and if so, did you take any action? Why or why not? (Q3) How do students disclose a bullying incident? (Q4) Who are they most likely to disclose to?	Q1) How does a parent know when cyberbullying incidents are occurring with their child(ren)? Q2) How does a parent respond when a child(ren) disclose a bullying incident? Q3) How do teenagers disclose a bullying incident? Q4) Who are they most likely to disclose to?	Q1) How does a teacher know when cyberbullying incidents are occurring with their students? Q2) How do teachers respond to a bullying incident? Q3) How do students disclose a bullying incident? Q4) Who are they most likely to disclose to
5. The relations between cyber bullying and traditional bullying types?	3.5.1 What are students', parents and school staff's perceptions of the connection between cyber and traditional bullying?	Q1) Are students who are involved in traditional bullying also involved in cyberbullying? Q2) How does traditional bullying different from cyberbullying types?	Q1) Are students who are involved in traditional bullying also involved in cyberbullying? Q2) How does traditional bullying different from cyberbullying types?	Q1) Are students who are involved in traditional bullying also involved in cyberbullying ? Q2) How does traditional bullying different from cyberbullying types?

6. What are the Characteristics of seeding successful traditional and cyberbullying prevention/ intervention strategies?	3.6.1 Students', parents' and school staffs' perceptions of how to seed successful intervention and prevention efforts for school, families and communities: (a) Are students aware of any safety measure that prevent a bullying incident? (b) Do students know of any strategies to prevent bullying incidents occurrences? (c) Are students and parents aware of the school procedures in place to prevent bullying (i.e., prevention programs) and are these procedures effective? (d) What procedures/ policies are school using to prevent traditional and cyberbullying? (e) How do school staff members intervene when a bullying incident has occurred? (f) Can key stakeholders provide recommendations to reduce bullying? (g) How can schools deal with cyberbullying that can occur anytime, anywhere? (h) What can schools do when	Q1) What could schools do to reduce cyberbullying at school? Q2) Do you know of any intervention strategies your school has used to reduce cyber bullying? Q3) Are theses intervention/ prevention strategies helpful? Q4) Do you know of any strategies to prevent bullying incidents occurrences? Q5) Are you aware of any school procedures/ rules in place to prevent bullying (i.e., prevention programs) and are these procedures effective? Q6) How do school staff members intervene when a bullying incident has occurred? Q7) What can schools do when cyberbullying happens beyond school?	Q1) What could schools do to reduce cyberbullying with students? Q2) Do you know of any strategies or intervention programs your school has used and are they successful? Q3) How can families help in reducing cyber bullying at school and home? Q4) Do you know of any procedures/ policies schools are using to prevent traditional and cyberbullying? Q5) How do school staff members intervene when a bullying incident has occurred? Q6) How do school staff members intervene when a bullying incident has occurred? Q7) How can schools deal with cyberbullying	Q1) What policies or prevention programs are in place at school to prevent traditional and cyberbullying? Q2) What intervention strategies have been effective in reducing traditional and cyberbullying? Q3) Do you think students are aware of the preventative or safety measures to prevent a cyberbullying? Q4) What else could be done to further reduce cyber bullying incident? Q5) How do school staff members intervene when a bullying incident has occurred? Q6) How can schools deal with cyberbullying

	cyberbullying happens beyond school? (i) What do parents think when cyberbullying has the potential to occur in their home?		that can occur anytime, anywhere? Q8) What can schools do when cyberbullying happens beyond school? Q9) Are you concerned that bullying now has the potential to occur in your home?	that can occur anytime, anywhere? Q7) What can schools do when cyberbullying happens beyond school? Q8) What do parents think when cyberbullying has the potential to occur in their home?

Appendix H: Media

Sun Herald, Sydney
01 Feb 2015, by Amy Mcneilage

General News, page 9 - 272.00 cm²
Capital City Daily - circulation 257,630 (------S)

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Schoolyard aggression: are boys meaner than girls?

» AMY MCNEILAGE

In anecdotal tales of schoolyard bullying, young girls spread rumours and alienate their victims, while boys push and shove.

But new research is challenging these cliches, which experts say are shaped by gender stereotypes rather than evidence.

The preliminary findings of a study conducted in Sydney high schools suggests female students are more likely to engage in social and relational aggression – rumour spreading and manipulation – in the junior years. But, by years 9 and 10, the boys overtake them.

Researcher Katrina Newey, a developmental psychologist and PhD candidate at the University of Western Sydney, also found male students were more commonly the perpetrators of cyberbullying, particularly when it comes to hacking social media accounts or spreading embarrassing videos and photos online.

The research follows the recent publication of a major longitudinal study from the University of Georgia in the United States that found boys were more likely to indulge in rumour spreading and social exclusion than girls.

Jennifer Germon, a gender studies academic at The University of Sydney, says there is mounting evidence to debunk the myth that boys use their fists as weapons and girls use words.

"It seems very clear to me that, when boys bully, social exclusion, gossiping and name-calling are crucial to their arsenal," she says. "It's really a misnomer to just attribute the language-based forms of bullying to girls."

Dr Germon says ignoring the nuances of anti-social behaviour means interventions risk overlooking crucial aspects of bullying, particularly among boys.

"Those old arguments just don't hold," she says. "They're counterproductive and they get in the way of effective interventions."

Helen McGrath, from Deakin University, is a psychologist and leading education academic in the area of bullying. She says myths around the ways boys and girls bully emerged to fill a research vacuum.

"There was a lack of good research in this area, so people made the assumption that it was more consistent with socialisation for girls to use rumours and social exclusion and for boys to use direct aggression," she says.

Professor McGrath says while studies suggest there may be some differences, they are not as great as once thought. She says girls might focus more on subtle ways of excluding their peers, while boys have been shown to prefer direct attacks.

The Australian Covert Bullying Prevalence Study published in 2009, for example, found girls were more likely than boys to bully in covert ways, with the behaviour beginning as early as year 3.

Girls were also more likely to have been sent mean messages over the internet, while boys in junior high school were more afraid that they would be physically hurt by bullies.

'Those old arguments just don't hold.'

Jennifer Germon
University of Sydney

How to cope

- Avoid doing nothing or walking away; don't say "stop bullying me".
- Don't show fear, anger. It is giving the bully what they want.
- Block criticism with neutral comments like "that's interesting." Saying "I don't care" shows that you do.
- Talk to friends, teachers, parents; the longer bullying goes on for the more detrimental it can be later.
- Maintaining good posture, eye contact and calm body language means you're not an obvious target for bullies.

Source: Evelyn Field, Take a Stand Together