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Cyberbullying: Interpersonal Competence, Aggression, and School Identification

by

Jennifer Drummelsmith

A thesis submitted in partial
fulfillment of the requirements for the degree of
Master of Arts (MA) in Psychology

The Faculty of Graduate Studies
Laurentian University
Sudbury, Ontario, Canada

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Title of Thesis Titre de la thèse	Cyberbullying: Interpersonal Competence, Aggression, and School Identification
Name of Candidate Nom du candidat	Drummelsmith, Jennifer
Degree Diplôme	Master of Arts
Department/Program Département/Programme	Psychology (Applied)
Date of Defence Date de la soutenance	April 25, 2016

APPROVED/APPROUVÉ

Thesis Examiners/Examinateurs de thèse:

Dr. Elizabeth Levin
(Supervisor/Directeur(trice) de thèse)

Dr. Ginette Roberge
(Committee member/Membre du comité)

Dr. Cynthia Whissell
(Committee member/Membre du comité)

Dr. Tracy Vaillancourt
(External Examiner/Examinateur externe)

Approved for the Faculty of Graduate Studies
Approuvé pour la Faculté des études supérieures
Dr. David Lesbarrères
Monsieur David Lesbarrères
Dean, Faculty of Graduate Studies
Doyen, Faculté des études supérieures

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Abstract

With the development of and increased access to information and communication technologies a new form of peer to peer aggression, cyberbullying, is on the rise. Research has only started to skim the surface of this new form of bullying but, research has shown that there are numerous negative outcomes associated with cyberbullying involvement whether it is as a cyberbully, a cybervictim, both, or a witness. The current study investigated differences in aggression style, interpersonal competence and school identification based on cyberbullying involvement as a cyberbully, cybervictim, both or witness. As well the current study looked at how gender, age, and grade related to cyberbullying involvement, and the impact of computer time, supervision, and access to technology and location of home computers. One hundred twenty four students in grades six through ten completed questionnaire packages, and there were significant differences found in aggression style; cyberbully-victims had higher reactive aggression than cybervictims, and interpersonal competence, specifically on asserting and conflict resolution subscales with cyberbully-victims having lower competence scores than cybervictims. Significant results were also found for access to technology. A correlational analysis was conducted to examine the relationships between interpersonal competence, aggression, and school identification; numerous significant results were found. As well an exploratory discriminant analysis was conducted to determine if cyberbullying involvement could be predicted based on interpersonal competence, aggression style, and school identification. Implications as they apply to research and prevention are discussed.

Keywords

Cyberbullying, Aggression, Interpersonal Skills, School Identification

Acknowledgments

I would like to take this opportunity to thank numerous people who supported me throughout this process. I would first like to extend my thanks to my supervisor Dr. Elizabeth Levin for her time, aid, and support throughout the entire process. I would also like to thank my committee members Dr. Cynthia Whissell, and Dr. Ginettet Roberge, for their guidance and suggestions which shaped this thesis.

I would also like to thank my friends and family for their continued support and encouragement throughout the entire M.A. degree.

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Cyberbullying: Interpersonal Competence, Aggression, and School Identification

Bullying involves the intentional, repetitive, targeting of a peer by an individual who holds a higher power status (Olweus, 2013). Bullying is a major concern in today's school environments and beyond as bullying moves off school grounds in the form of cyberbullying. What makes bullying a concern are the numerous negative effects that are associated with being involved in bullying. Some of the many negative effects associated with being involved in bullying are poor long-term mental health and school problems; these negative impacts can last into adulthood (Jose, Kljakovic, Scheib, & Notter, 2011; Kokkinos & Kipritsi, 2012; Ybarra & Mitchell, 2004; Wolke, Copleand, Angold, & Costello, 2013). A significant amount of research has examined traditional bullying (e.g. Olweus, 2013; Wolke et al. 2013), but with the advances in information and communication technologies bullying has been pushed into a new format, cyberbullying, which to date requires more examination. Cyberbullying like traditional bullying has been linked to numerous negative impacts for example poor school performance, and increased depression (Beran & Li, 2005; Leung, & McBride-Change, 2013; Schneider, O'Donnell, Stueve, & Coulter, 2012), but whether there are individual differences depending on how an individual is involved has not been examined in depth. The current study focused on whether there are differences in aggression style, interpersonal competence, and school identification (attitudes and beliefs relating to school and the school environment) related to the way in which elementary and high school students are involved in cyberbullying, as each of these have been shown to be related to traditional bullying involvement.

This paper first discusses how cyberbullying is situated with regards to traditional or school based bullying. The definition of cyberbullying and challenges faced by researchers when defining cyberbullying is then examined. The next section focuses on cyberbullying

prevalence rates. This is followed by a discussion of the negative effects of cyberbullying involvement, and a discussion of the links between school or traditional bullying and cyberbullying. The next section focuses on school identification, interpersonal competence, and aggression. Aggression and gender are then discussed, followed by a section discussing gender and age as they relate to cyberbullying involvement. Hypotheses finish the introduction section, which is then followed by an outline of the method used in this research study. Results are then presented and discussed.

Bullying

Bullying has been the focus of extensive research (e.g. Olweus, 2013; Wolke et al., 2013). While a lot is known about school based bullying there are still questions to be answered. Traditional bullying has evolved to include cyberbullying. Before getting into cyberbullying, a short review of traditional bullying will be covered. Bullying has been defined as any behaviour that is intentionally done to cause harm against an individual or group; it is repetitive, and there is an imbalance of power between the victim and the bully (Jose et al., 2011; Kokkinos & Kipritsi, 2012; Schoffstall & Cohen, 2011). In addition, this definition of bullying, for the purposes of this research, was expanded to include an aspect of the definition of bullying from the Ontario Ministry of Education. The addition states that the perpetrator should know their behaviour would most likely cause harm (Ontario Ministry of Education, 2012). This addition is aimed at the intentional part of the definition of bullying, so that even if a perpetrator denied the intent to cause harm, they would have been aware that their behaviour would most likely cause harm thus the behaviour is viewed as intentional.

Research has shown that bullying involvement has been linked to numerous negative outcomes. Bullies have increased odds of becoming involved in the justice system (Olweus,

2013), as well as having difficulties with school, lacking problem solving skills, and increased substance use (Smokowski & Kopasz, 2005). Victims of bullying have been found to have increased depression, suicide ideation, and poor social and emotional adjustment (Smokowski & Kopasz, 2005). Bully-victims have been found to have a negative self-image, increased depression, anxiety, and substance use (Smokowski & Kopasz, 2005). The short and long term negative effects of bullying involvement overall have been repeatedly shown through research. For example, perpetrators of bullying tend to be more aggressive and have more externalizing behaviour problems which may make school difficult (Haynie et al., 2001). Longitudinal research shows that adults who were perpetrators as children have increased rates of psychiatric problems (Wolke et al., 2013). Victims of bullying tend to be more withdrawn and report increased loneliness (Haynie et al., 2001). Long term research has shown that victims of bullying have social relationship disruptions as adults compared to non-involved individuals, though these are not dissimilar to those of perpetrators of bullying and those individuals who were both perpetrator and victim of bullying (Wolke et al., 2013). Bully-victims, those individuals who have both perpetrated and been victimized by bullying have lower social acceptance which may result in decreased peer interactions as well (Haynie et al., 2001). Adults who were bully-victims as children or adolescents show elevated negative health outcome, elevated psychiatric illness, and disrupted social relationships (Wolke et al., 2013). With the development of information and communication technologies a new form of aggression has emerged: cyber aggression. Bullying is a unique form of aggression which involves intent, power, and repetition (Schoffstall & Cohen, 2011).

Defining Cyberbullying

Cyberbullying is on the rise with the continuing development of information and communication technologies (Aricak, et al. 2008; Li, 2006; Li, 2007; Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012). There is no agreed upon definition of cyberbullying and this has contributed to difficulties in research. Juvonen and Gross (2008) defined cyberbullying as: "the use of the internet or other digital communication devices to insult or threaten someone" (p. 497). Patchin and Hinduja (2006) have defined cyberbullying in a few ways. Early on they defined it as "willful and repeated harm inflicted through the medium of electronic text" (p. 152), but in more recent research they defined cyberbullying as "the intentional and repeated harm of others through the use of computers, cell phones, and other electronic devices (Hinduja & Patchin, 2009, p. 1). Even more recently they defined cyberbullying as "repeatedly makes fun of another person online or repeatedly picks on another person through email or text message, or when someone posts something online about another person that they do not like" (Hinduja & Patchin, 2012, p. 540). Looking at the various definitions used by Patchin and Hinduja it can be seen that the definition has become more expansive as what cyberbullying is becomes clearer. Cyberbullying has also been defined as "bullying through email, instant message, in a chat room, on a website, or through a text message sent to a cell phone" (Kowalski & Limber, 2007, p. S24). To add more confusion at times cyberbullying and cyber harassment are used interchangeably. Cyber harassment has been defined as an "overt, intentional act of aggression towards another person" (Ybarra & Mitchell, 2004a, p. 1308). Lenhart (2007) defined cyberbullying as:

> Someone taking a private email, instant message, or text message you sent to them and forwarding it to someone else or posting it where others can see it; someone spreading a rumor about you online; someone sending you a threatening or aggressive email, instant message, or text message; someone posting an embarrassing picture of you, one without your permission (p. 1)

There are quite a few similarities in the medium of communication, repetition, and harm in the various definitions of cyberbullying, for example Hinduja and Patchin (2005) refer to the mediums of communication as well as repetition and harm. Yet at the same time, some definitions identify specific information and communication devices and others do not, for example Kowalski and Limber (2007) refer to cell phones. All of these definitions share similarities, and the differences appear insignificant, but without a consistent definition variations in findings cannot be solidly attributed to specific studied factors. As research progresses there do seem to be more similarities in definitions. For example, definitions have moved away from specific communication modes to the more general statement of information and communication technologies. Altogether cyberbullying can be defined as the use of information and communication technology to intentionally harm another person or group (Beran & Li, 2005; Juvonen & Gross, 2008; Mason, 2008; Schoffstall & Cohen, 2011). For this study cyberbullying was defined as: the use of information and communication technologies (such as cell phones, computers, and tablets) to intentionally, or the individual should know that their actions will most likely, harm or embarrass another person or group of people. There are three key elements of bullying, intentional harm, repetition and an imbalance of power between the perpetrator and victim (Olweus, 1999). Knowing that bullying includes these three key elements it has been suggested that cyberbullying does not fit within the traditional definition of bullying behaviour (Jose et al., 2011; Kokkinos & Kipritsi, 2012; Schoffstall & Cohen, 2011; Slonje, Smith, & Frisén, 2013). With regards to these three elements, in the context of cyberbullying, intent seems to be a clear component, power and repetition though have been questioned (Slonje et al., 2013).

Repetition

When someone sends multiple text messages, e-mails or other forms of messages, there is clear repetition, but when one single act of aggression occurs, such as creating a derogatory website or posting a single mean message on a website the repetition is less clear (Dooley, Pyzalski, & Cross, 2009). However, one single act of aggression can create ongoing embarrassment and hurt. For example a single posting of a video can repeatedly embarrass an individual when they see the view count increasing (Dooley, et al. 2009). With anything posted or sent online especially in public-or semi-public domains, there is inherent repetition in that anyone can see the information, a video posted on a website can be viewed by anyone or distributed by anyone who can gain access; there is the potential for a large audience (Campbell, 2005; Mishna et al., 2012; Slonje & Smith, 2008).

Power

Whether there is an imbalance of power involved in cyberbullying is less clear. One way in which a power differential might exist is related to the fact that information online can be very difficult if not impossible for victims to remove. This allows for the possibility that the information will remain online forever. Cybervictims, have reported that not being able to remove this unwanted information has led to them feeling powerless (Runions, Shapka, Dooley, & Modecki, 2013; Slonje et al., 2013; Voelkl, 1997). Cybervictims like victims of traditional bullying feel hopeless and powerless (Dooley et al., 2009; Law, Shapka, Domene, & Gagné, 2012; Snider & Borel, 2004).

In traditional bullying power is usually a physical size difference, or a difference in status, in the cyber world it is harder to determine what might be contributing to a difference in power. Two possibilities are that the ability to use technology creates a power imbalance as

well, the anonymity of the cyber world may create a power differential (Slonje et al., 2013). There is significant debate as to whether technological ability really creates or contributes to a power differential. It is easy to take, send, receive and forward text messages, videos, pictures and e-mails. In all of these cases the medium can be used in such a way as to cyberbully someone and it is fairly easy (Dooley et al., 2009; Slonje et al., 2013; Vandebosch & Van Cleemput, 2008). Other forms of cyber communications such as a 'hate' website development do take more technological ability and this might reflect an ability that results in a power differential (Dooley et al., 2009; Slonje et al., 2013; Vandebosch & Van Cleemput, 2008). The second main argument for whether there is a power imbalance involved in cyberbullying is related to the relative anonymity associated with the cyber community. Victims of cyberbullying have reported that not knowing who has seen or sent an unwanted, for examples; image, message or video, can be very stressful (Runions et al., 2013; Slonje & Smith, 2008). As well cybervictims have reported not knowing how to react to instances of cyberbullying because they do not know who is sending the offensive material; this has reportedly contributed to feelings of powerlessness (Dooley et al., 2009; Slonje et al., 2013; Vandebosch & Van Cleemput, 2008). Anonymity therefore does seem to contribute toward a power imbalance between a cyberbully and a cybervictim. It bears keeping in mind though that not all cyberbullies attempt to be anonymous and in some cases cybervictims are able to identify who is cyberbullying them (Juvonen & Gross, 2008; Kowlaski & Limber, 2007). While it may not seem to be directly comparable to traditional bullying, cyberbullying does appear to meet the traditional requirements (repetition, power difference, and intentional harm) of bullying behaviour.

Cyberbullying Involvement

Within bullying and cyberbullying there are four different ways individuals can be involved. There are bullies, victims, bully-victims, and those who are witnesses (Olweus, 2012). A bully can be defined as someone who deliberately harms another individual, a victim is someone who is targeted by another individual, and a bully-victim both deliberately harms another individual and is harmed (Farmer et al. 2012). A witness/non-involved individual is someone who may have knowledge of the behaviour but is not directly involved.

The prevalence rate of cyberbullying varies depending on the research study examined. The rate of reported cyberbullying involvement as a cyberbully, cybervictim, or a cyberbully-victim ranges between 9-35% (Beran & Li, 2005; Dehue, Bolman, & Völlink, 2008; Hinduja & Patchin, 2012; Kowalski & Limber, 2007; Mishna et al. 2012; Williams & Guerra, 2007; Wolak, Mitchell, & Finkelhor, 2007; Ybarra, Diener-West, & Leaf, 2007). Rates of cybervictimization range between 9-35% (Beran & Li, 2005; Dehue et al., 2008; Hinduja & Patchin, 2012; Kowalski & Limber, 2007; Mishna et al., 2012; Wolak et al., 2007; Ybarra et al., 2007), however in other studies prevalence of cyberbully-victims ranges between 7-25.7% (Hinduja & Patchin, 2012; Kowalski & Limber, 2007; Mishna et al., 2012), and cyberbullying rates range from 4 to 22% (Beran & Li, 2005; Dehue et al., 2008; Hinduja & Patchin, 2012; Kowalski & Limber, 2007; Mishna et al., 2012). The ranges of cyberbullying and cybervictimization vary significantly depending on the study examined and it is unclear what causes these variations but differences in definition may account for at least part of this. These rates may not seem high, especially when examined at the low end of the range.

The Young Canadians in a Wired World (Spears, Seydegart, & Zulinov, 2005) is ongoing research which looks at Canada's youth and technology. In the early 2000s this research showed

that Canadian youth accounted for 12% of the total population in Canada (Spears et al., 2005). And of those youth this research suggests that 79% have access to the internet at home, and 71% have a personal e-mail account (Spear et al., 2005). As well, 99% of youth surveyed have internet access outside of school (Steeves, 2014). Taking into account that this research is influenced by some sample bias it appears that youth do have a significant access to information and communication technologies. Given that a large number of youth have access to information and communication technology devices, and that access increases the risk of being involved in cyberbullying, even if only 9% of youth who have access to information and communication devices are involved that means there are approximately 200,000 youth are at increased risk of becoming involved in cyberbullying in some capacity. It is known that just as with traditional school based bullying, cyberbullying involvement has been associated with significant negative impacts (Campbell, 2005; Mason, 2008).

Negative effects of cyberbullying involvement

Individuals who have reported being the victims of cyberbullying have reported feeling sad, anxious and depressed, as well as having school difficulties, social difficulties, increased social anxiety and suicide ideation (Beran & Li, 2005; Campbell, Spears, Slee, Butler, & Kift, 2012; Farmer et al. 2012; Juvonen & Gross, 2008; Leung & McBride-Chang, 2013; Mishna et al. 2012; Schneider et al., 2012; Ybarra, 2004). Beran and Li (2005) administered questionnaires to 432 students in grades 7 to 9 to examine adolescents' reactions to cyberbullying. They found that of the students who participated 23% reported being cybervictims a few times, 35% had experienced it once or twice, and 42% had never experienced cybervictimization. They also found that 22% reported being perpetrators at least once or twice, 4% reported several instances or more for perpetration, and 74% reported never perpetrating. Overall Beran and Li (2005)

found that students who are involved as cybervictims, reported feeling sad, angry, and anxious about the experiences. As well they found that those involved had increased rates of self-reported poor concentration, decreased school achievement and increased absenteeism from school.

Ybarra and Mitchell (2004a) as part of a youth internet safety survey had 1501 youth complete a telephone interview. This interview included measures of online aggression, recent (within last month) psychosocial challenges, caregiver-child relationship, internet use, internet controls, and demographic information. They found that perpetrators of cyberbullying reported increased substance use, delinquency and depressive symptoms when compared to non-involved and cybervictims. Schoffstall and Cohen (2011) completed a study on 191 students in grades 3 to 6. They found that cyber aggression was associated with increased loneliness, and increased social difficulties including decreased popularity and decreased social acceptance.

Patchin and Hinduja (2010) administered questionnaires to 1963 youth and found that 30% of participants had experienced cybervictimization and 22% reported cyberbullying another individual. They also found that those who were involved in cyberbullying had lower self-esteem than non-involved individuals, with cybervictims reporting lower self-esteem than cyberbullies.

One of the most concerning subtypes of bullying and cyberbullying is the bully-victim subtype. These individuals are both bully and victim. As such they are at risk for problems associated with bullying and problems associated with being a victim. Ybarra and Mitchell (2004a) as part of the youth internet safety survey, found that participants who were both aggressor and victim had increased problem behaviours, substance use, decreased school commitment, and they also reported increased depressive symptoms, compared to non-involved

participants. Campbell et al., (2012) conducted a study in which 3112 students in grades six to twelve participated. They found that those students who were classified as a cyberbully-victim reported feeling increased anger, compared to non-involved participants.

Many individuals fail to report cyberbullying to parents or other individuals because they are afraid that their access to these information and communication technologies will be removed or limited (Juvonen & Gross, 2008). This means that cyberbullying can go undetected for long periods of time or indefinitely, increasing the negative impacts of cyberbullying, because it goes on longer without help or intervention (Juvonen & Gross, 2008).

In summary, cyberbullying is bringing bullying into all areas of an individual's life not just school life. Having no escape or no time away can increase the negative effects of cyberbullying (Campbell, 2005; Cassidy, Jackson, & Brown, 2009; Juvonen & Gross, 2000; Mason, 2008; Mishna, Saini, & Solomon, 2009; Schoffstall & Cohen, 2011; Slonje & Smith, 2008; Snider & Borel, 2004; Tokunaga, 2010). Overall there are numerous negative effects associated with involvement in cyberbullying whether it is as a cyberbully, a cybervictim, or a cyberbully-victim. Some of these negative effects include; increased anxiety, increased symptoms of depression, school difficulties, increased substance use and decreased self-esteem.

Link between traditional and cyberbullying

Given this association between school bullying and cyberbullying the question arises as to whether school bullying and cyberbullying are in fact different and whether the negative impacts, such as increased depressive symptomology, are just due to the involvement in school bullying. There is significant research to show that there is a relationship between traditional bullying and cyberbullying, but research has also shown that cyberbullying involvement in some cases is independent of school bullying. Slonje and Smith (2008) surveyed 360 adolescents (12-

20 years) to look at cyberbullying in Swedish schools. Of those surveyed 17.6% reported being a victim of cyberbullying and 11.9% reported being a cyberbully. They also found that 10% of all students reported victimization in some way, and 9% of those were also traditional victims. Slonje and Smith (2008) determined that one percent of these students had cyberbullied others.

Research has also shown that when the effects of school bullying victimization are accounted for there is still evidence of negative outcomes of cybervictimization (Fredstrom, Adams, & Gilman, 2011). Bonanno and Hymel (2013) conducted hierarchical multiple regressions to evaluate the contribution of cybervictimization and traditional victimization to depression and suicidality. They found that being a cybervictim accounted for an additional 1% of the explained variance in depressive symptomology and 5.8% of the explained variance in suicidality. Similar analyses were run to determine the contribution of cyberbullying and traditional bullying to depression and suicidality. Bonanno and Hymel (2013) also found being a cyberbully accounted for an additional 4% of the explained variance in suicide ideation, and 2% of the explained variance in depressive symptomology. They noted that these are small increases in the explained variance but state they are worth following up on. There appears to be a fair amount of overlap between cyberbullying and traditional bullying. While there are some individuals who only engage in cyberbullying, cyberbullying like any form of bullying, for example physical or verbal, appears to be a variation of the larger concept of bullying.

There also seems to be a link between cyberbullying and school when it comes to reactions or confrontations about the cyberbullying, as these reactions or confrontations tend to occur at school (Beckerman & Nocero, 2003). Smith et al. (2008) found that 57% of cyberbullying victims knew the perpetrators and 49% of those were in the same class or grade. This finding highlights how what is sent and received outside of school can be followed up at

school. This is important because it can affect the school climate, and can impact how those individuals who are involved in cyberbullying feel about school.

School Identification

School is a significant part of most adolescents' lives. Given this significance, it is possible that school may become linked to an individual's self-view (Finn, 1989; Voelkl, 1997). From a developmental point of view an individual's school adjustment develops over time as the result of numerous school experiences (Voelkl, 1997). If these experiences are repeatedly negative then students will develop negative feelings toward the school environment. Research has shown that individuals' attitudes towards school can indicate their personal adjustment, so those individuals who do not identify with school seem to be at risk for negative school behaviours (Voelkl, 1997). This identification can been seen in the adjustment of the individual to school, in their attitudes towards school such as their motivation to do well, in their personal comfort at school, and in their level of prosocial or acceptable behaviours at school (Voelkl, 1997). School attachment is thought to have two parts: first is whether an individual feels that he or she belongs in the school, the second is how he or she values school (Voelkl, 1997). When an individual who does not feel as if they belong, at or in the school, school problems become more likely (Finn, 1989; Voelkl, 1997).

In fact, research has shown that school bonding is a major part of the developmental experience of children (Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004). School bonding is part of attachment theory, control theory, and social developmental theory (Catalano et al., 2004). School bonding within attachment theory suggests that secure attachment allows for identity development and trust which in turn encourages a child to develop the ability to respond appropriately to the environment. So a strong school bond allows the children to feel

comfortable and thus they can proceed with good development (Catalano et al., 2004). Within control theory, school bonding appears to create a sense of control which results in a decrease in problem behaviours (Catalano et al., 2004). Lastly within social development theory, school bonding is fostered by the socialization process that occurs at school as well the bond tends to inhibit behaviours that go against the norm (Catalano et al., 2004). All together this has shown that school bonding is an important aspect of children's development.

Some recent research has shown that individuals who are involved in traditional bullying have lower school valuing and bonding when compared with individuals who are not involved in traditional bullying. Farmer et al., (2012) surveyed 1389 grade 5 students to look at interpersonal competence, school valuing, and school bonding. They found that for boys, bullies, bully-victims, and victims all had lower school belonging and school valuing scores than non-involved individuals. For girls they found that bully-victims and victims had lower school bonding scores than non-involved girls and bully-victims had lower school valuing scores than non-involved girls. There were no significant differences found regarding girls who were identified as bullies.

Haynie et al., (2001) conducted a study to examine what differences if any exist between bullies, victims, and bully-victims. They had 4263 middle school students (grades 6, 7, and 8) complete survey packages which included questions about bullying, victimization, problem behaviours, behaviour misconduct, self-control, deviant peer influences, deviance acceptance, social competence, school adjustment, school bonding, depressive symptoms, parental involvement, and parental support. They found among other results that there were differences in school bonding related to students' involvement in bullying. Specifically Haynie et al., (2001)

found that non-involved or comparison students had the highest school bonding scores, followed by victims, bullies, and bully-victims who had the lowest scores.

Turner, Reynolds, Bromhead, Lee, and Subasic (2014) examined bullying perpetration and peer victimization in relation to school climate and school identification. There were 492 students in grades 7 to 10 involved in their study. This was a three part longitudinal study which looked at depression, anxiety, school climate, and school identification as it related to involvement in physical and verbal bullying perpetration and peer victimization. The survey was administered annually for three years to students. Turner et al., (2014) found that a positive change in school climate resulted in a decrease in the rates of bullying. Turner et al., (2014) also found that an increase in school identification was linked to a decrease in both bullying perpetration and peer victimization.

School climate refers to a school's social environment, this climate shapes the norms, values, rules, and structure of the school (Gage, Larson, & Prykanowski, 2014). Since bullying is a social construct, it is shaped by the social environment such as school climate (Gage et al., 2014). The more positive a school climate the less likely for bullying involvement to occur.

Cunningham (2007) examined school bonding and the perception of the school environment of bullies, bully-victims, and victims. There were 51 students in grades, 6, 7, and 8 involved in this study. Cunningham (2007) found that students who reported low bullying involvement were most strongly bonded to school. For school commitment, Cunningham (2007), found that bully-victims had the lowest scores, with bullies having higher scores, and victims and comparison students having the highest scores. For school attachment Cunningham (2007) found that again bully-victims had the lowest scores, with victims having the next highest scores, and bullies and comparison students having the highest scores, higher scores reflected a

better or stronger school attachment. Hong and Espelago (2012) determined that both those who bullied others and those who were victims had low school connectedness.

School adjustment has been linked to bullying but it is unclear as to whether cyberbullies, cybervictims, cyberbully-victims and those individuals not involved have different school adjustment. Beran and Li (2007) were interested in the school functioning of students involved in both traditional bullying and cyberbullying. They had 432 students in grades seven, eight and nine complete questionnaires about bullying involvement and school. They found 58% of students had experienced cyberbullying, 26% reported cyberbullying others, and 37% reported both being victimized at school and online. As well they found that cybervictims were more likely to miss school ($r = 0.17$), obtain low grades ($r = 0.22$, $p < 0.001$), and have difficulty concentrating ($r = 0.43$). Those who bullied others were also likely to have poor concentration ($r = 0.18$). The overall rate of involvement in cyberbullying was higher than what is typically observed in research. This may reflect a definitional difference or may be a reflection of inclusion criteria of involvement: once or twice or more often. Given this, interpretations should be made with caution.

Ybarra et al., (2007) looked at the relationship between school bullying and cyberbullying as well as the relationship between cyberbullying and school difficulties. As part of the Growing up with Media Survey, youth between the ages of 10 to 15 years completed this study. The Growing up with Media Survey was a cross-sectional national online survey. They found that with reported psychological difficulties there were significantly elevated odds of cybervictimization. They also found that cybervictimization was significantly related to increased odds of detention, increased absenteeism, and increased occurrences of carrying a weapon to school. Cybervictimization was also related to increased alcohol and substance use.

Schneider et al., (2012) found that more girls than boys were victims of cyberbullying. They also found that cyberbullying involvement decreased slightly from grades nine to twelve, and that youth who reported lower school performance and attachment were more likely to be cybervictims.

Williams and Guerra (2007) looked at the prevalence of cyberbullying in contrast to physical and verbal bullying, as well as shared predictors. There were 3339 youth involved in this study in grades five, eight, and eleven. Students completed questionnaires of bullying perpetration and victimization, beliefs about bullying, perceptions of peer social support and perceptions of school climate. They found that the more a student identified themselves as connected to their school, the lower their self-reported involvement in bullying perpetration, including cyberbullying perpetration. Figuring out the school adjustment problems of cyberbullies, cybervictims, and cyberbully-victims might help researchers to figure out what puts an individual at risk for cyberbullying involvement and school problems allowing for more targeted and effective interventions and prevention. Better understanding factors that may put an individual at risk for involvement could help in identifying specific intervention targets. For example if school identification is related to involvement in cyberbullying then targeting interventions towards improving school climate and addressing factors which negatively impact how an individual relates to school may result in decreased risk. Another example is if aggression style is related to cyberbullying involvement then teaching effective coping or proactive solutions to interpersonal problems may also decrease the risk of cyberbullying involvement.

Interpersonal Competence

Another important area of most adolescents' lives involves friendships or social interactions. Adolescent friendships, compared to child friendships, have an increased demand for the individuals involved to have certain levels of interpersonal competence (Buhrmester, 1990). Research shows that those who do not have good relationship competencies may not develop long-term or stable friendships (Buhrmester, 1990). This lack of close friendships may increase the risk of the individual to develop various adjustment problems (Buhrmester, 1990).

Having poor interpersonal competencies may not only put an individual at risk of developing various adjustment problems, but may make them a target of their peers. Lacking interpersonal competence may also cause an individual to lash out to gain acceptance into a deviant peer group. Haynie et al., (2001) found that there are differences in social competence for bullies, bully-victims, and victims. They found that victims scored lower on social competence than a comparison group, followed by bullies, with bully-victims having the lowest scores. Hawker and Boulton (2000) found that victimization was linked to increased social anxiety. As well, they found that victims tend to have a more negative social self-concept. Nation, Vieno, Perkins, and Santinello (2008) found an age difference in social competence and bullying. They found that higher social competence was linked to more bullying perpetration in those aged 13 and 15 years, than those aged 11 years. They also found that lower social competence was related to increased overall bully-victimization involvement for those aged 13 and 15 years, than those aged 11 years, as well increased victimization was related to poor social competence.

Hong and Espelage (2012) conducted a review on bullying and peer victimization and found that peer acceptance and positive peer relationships are a protective factor against peer

victimization. If one is not able to develop positive peer relationships this can put individuals at increased risk.

Cook, Williams, Guerra, Kim, and Sadek (2010) conducted a meta-analysis looking at predictors of bullying and victimization in childhood and adolescence. These authors found that bully-victims had low social competence, and that bullies had some social competence difficulties. Dake, Price, and Telljohann (2003) found that students rated by peers as popular with high level of social acceptance were less likely to be bullied. They also found that bullies had similar level of social acceptance as non-involved students, and that bully-victims were at an increased risk of low social acceptance.

In sum the interpersonal competence of cyberbullying involved individuals is relatively unknown. While there are links between traditional and cyberbullying involvement, this does not mean that interpersonal competence patterns are the same. Given the lack of actual person to person contact, interpersonal skills, understanding what the impact of those skills are on interactions through technologies, is important in understanding the effects of such interactions. The lack of direct contact allows for individuals to act in ways they normally would not in face to face interactions. Just as the cyber environment allows for someone shy to develop relationships, it also allows for more aggressive interactions. Research has shown that electronic groups may provide a sense of belonging to youth who lack social supports in 'real' life (Markward, Cline, & Markward, 2001). Yet even with this benefit, individuals are still being targeted and involved in cyberbullying. Farmer et al., (2012) conducted a study examining the interpersonal skill of traditional bullies, bully-victims, victims, and non-involved individuals. They found that bullies had more positive interpersonal skills than victims or bully-victims. Navarro, Yubero, Larrañaga, and Martinez (2012), found that cybervictims reported more social

distress than non-victims. As well they found that cybervictims had higher means for interpersonal difficulties, and lower levels of appropriate social skills compared to non-victims. Social competence is linked to involvement in bullying. It appears that with increased social competence comes a decreased risk of involvement as victim or bully-victim but also a possible increased risk of bullying perpetration.

Aggression

When looking at any form of bullying it is important to examine the underlying aggression as bullying in any form is an aggressive act. Why certain individuals engage in aggressive acts is an ongoing area of research. Social Information Processing theory (Dodge 1986) attempts to explain why individuals engage in aggressive behaviour. Dodge (1986) has suggested that when children are faced with social situations they engage in a series of steps which shapes the social behaviour enacted. According to this model, children take in cues from the situation, they then form an interpretation of these cues. At this point the individual mentally searches for possible responses and then selects and enacts one (Dodge, 1986). Crick and Dodge (1994) reshaped this model to include six steps. The new model still involves the encoding of cues followed by an interpretation and mental representation of those cues, at this point the individual selects a goal for their behaviour, responses are assessed, a response is chosen, and then lastly it is enacted. Thus how one interprets or represents the situation and what one values as important will shape the behaviour that is chosen. Research has shown that children who engage in proactive aggression have more positive views of aggression (Crick & Dodge, 1996). Reactive aggression children on the other hand tend to interpret negative intent from cues in a social situation compared to nonaggressive peers (Crick & Dodge, 1996).

In summary if one interprets cues as hostile then aggression becomes a more likely outcome, if one views aggression positively and as the best course of action then it becomes a more likely response. This process may suggest why some individuals engage in aggressive behaviours such as bullying.

Aggression can be broken down into many forms, the most common include physical, verbal, and relational (Crick et al., 1999). Aggression though can also include indirect aggression, proactive aggression and reactive aggression (Crick et al., 1999). Physical aggression is any direct bodily harm (Crick et al., 1999), verbal aggression includes threats of bodily harm and insults (Crick et al., 1999), and relational aggression is harm or threats of harm to relationships, feelings of acceptance, friendships, and inclusion (Crick & Grotpeter, 1995). Social aggression includes acts of aggression that damage others' self-esteem and/or social status (Galen & Underwood, 1997). Proactive aggression has a point, it is done to get something or achieve a goal, such as power over another individual (Crick et al., 1999; Price & Dodge, 1989). Reactive aggression is as it sounds in reaction to something (Law et al., 2012; Price & Dodge, 1989). Individuals use the social aspects of information and communication technologies to hurt/embarrass someone while remaining, in most cases, unidentified (Björkqvist, 1994).

There appears to be a lot of overlap between different aggressive acts, for example a relational aggressive act may be socially damaging, and done with a specific goal in mind or with proactive intent. This can make it very difficult to tease apart what the relationships are. Cyberbullying seems most similar to indirect and relational forms of bullying, such as sharing or creating an embarrassing or mean story about another individual or excluding them from social situations (Dooley et al., 2009; Reid, Monson, & Rivers, 2004). Indirect and relational bullying protect the perpetrators, they act in a way that protect their identity (Björkqvist, 1994). The

cyber community is based on a lack of direct interaction. Even when sending instant messages or video-chatting the lack of physical closeness fosters a disconnect between participants (Björkqvist, 1994). Individuals use information and communication technologies to hurt or embarrass others while remaining in most cases, unidentified, or at least hidden (Björkqvist, 1994). Following on this line, relational aggression can be both reactive and proactive. An example of a reactive relational aggressive act is damaging the relationships of an individual to get even with them, and proactive relational aggression uses the friendship as leverage (Crick et al., 1999).

Figuring out the underlying aggression patterns involved in cyberbullying may allow for better understanding and prevention/intervention. Knowing the underlying aggression will inform researchers about the potential underlying motivation of aggressive cyber acts. For example if the underlying aggression is proactive in nature than an important part of intervention may include empathy training; whereas if the aggressive act is reactive, this means that instead of empathy training, teaching problem solving skills may be more beneficial. Aggression style appears to be linked to age and as children develop we see a change in how they act aggressively. Björkqvist, (1994) reviewed research looking at differences in male and female aggressive style across ages and found that young children tend to use physical aggression, such as hitting. As children get older their verbal abilities develop and they are able to quickly use these skills aggressively (Björkqvist, 1994). A similar link is seen between the development of social skills and the ability to use relational/indirect aggression. Children become more socially able as they age and they are able to use these social skills to target peers (Björkqvist, 1994). As pointed out though, the cyber world removes much of the actual person to person interaction which decreases the need for social skills. This might mean that an individual without the

necessary social skills required to use relational aggression in person, may be able to use relational aggression online because of the limited actual person to person interaction. One of the important aspects of relational or indirect aggression is that the perpetrator remains mostly unknown (Björkqvist, 1994). This being unknown or anonymity remains similar to what is seen in cyberbullying.

It is debatable though that in a cyber situation one needs to have the social skills necessary to perpetrate relational aggression in 'real' life, possibly what is necessary instead is technological ability (Björkqvist, 1994). Cyberbullying may in fact allow individuals who have poor social skills to perpetrate relational aggression in a way that minimizes the necessity of their social skills. Cyberbullying though is not always indirect, it can be very direct in that the victim may know exactly who the cyberbully is, or the cyberbully may not try to hide who they are (Tokunaga, 2010).

Anonymity seems to contribute to why some individuals, especially those who do not or are unlikely to engage in traditional bullying, engage in cyberbullying (Runions et al., 2013; Tokunaga, 2010). Vandebosch and Van Cleemput (2008) conducted a study using three focus groups composed of youth ages 10 to 18 years looking at the interpretation and experiences of involvement in cyberbullying. Participants who admitted to perpetration of cyber aggression shared that they 'hid' who they were online, but that they knew their victim. Those who were identified as victims shared that they often did not know who the perpetrator was. Smith et al., (2008) had 533 adolescents complete questionnaires, which included questions regarding demographic information and multiple choice questions about cyberbullying involvement and frequency, as well as open ended questions to allow participants to expand on answers given in the multiple choice section, which resulted in their focus group data. One main theme that arose

from these groups was that the lack of in person interaction appeared to decrease the empathy in bullies and contributed to why they (cyberbullies) engaged in these bullying behaviours. Aricak et al., (2008) surveyed 269 students (12 to 16 years) in grades six to ten regarding their involvement in cyberbullying along with their coping strategies. They found that the cyberbullying behaviour that was engaged in most was saying something online that they would not in person (23.8%), the second most engaged in behaviour was introducing oneself as someone else (16.4%). Thus it seems that the anonymity and removal from real life contributes to engaging in cyberbullying behaviours.

It is possible that the anonymity contributes to lower self-awareness allowing people to react impulsively and aggressively towards others, it also removes the cyberbully from seeing how their behaviour affects the cybervictims (McKenna & Bargh, 2000). This may allow the perpetrator to separate their self from the damage caused to the other individual, making it easier for the perpetrator to cause harm. Not all cyberbullies aim for anonymity though (Tokunaga, 2010).

The reasons why individuals engage in cyberbullying may differ from why individuals engage in traditional bullying. It may be that cyberbullying reflects a revenge or getting back at another motivation, compared to traditional bullying which is more goal oriented. Law et al., (2012) looked at the nature and purpose of online aggression by surveying 733 students (10 to 18 years) in grades five to twelve and found that when asked why they engaged in aggressive online behaviours such as posting an embarrassing photo, students believed they were doing this for reactive reasons, meaning that the students perceived they had “no choice but to retaliate (p.670)”. Mishna et al., (2012) found that 25.7% of those involved in cyberbullying shift back and forth as victim and perpetrator. This research suggests that online aggression in some cases

could reflect a revenge motivation. Understanding what the motivation factors are would help develop intervention and prevention programs. Bullying aggression has been described as an act of aggression that has clear intent to harm another person (Price & Dodge, 1989) or that the perpetrator should know their behaviour would most likely cause harm (Ontario Ministry of Education, 2012). This appears most similar to proactive aggression, in that bullying has clear intent and proactive aggression involves an aggressive behaviour to attain a goal. Both are goal oriented. This may also reflect the cyberbullies who also target their victims at school online which may be more supportive of proactive aggression.

Research does reveal some relationship between cyberbullying perpetration and offline victimization and perpetration. Ybarra and Mitchell (2004a) found that 56% of cyberbully-victims in their study reported being targeted offline and 49% of cyberbullies reported being the target of offline aggression. Hinduja and Patchin (2008) found that traditional bullies were five times more likely to engage in online bullying behaviours that those who did not bully offline. Individuals who are targeted online can immediately react and lash out at the individuals targeting them as payback, which is typical of reactive aggression (Heirman & Walrave, 2008).

This may be a reactive aggression style. Individuals who use reactive aggression are often more disliked by their peers than those that use other forms of aggression (Price & Dodge, 1989). The nature of the cyber environment may put individuals at greater risk for being disliked or targeted in the future because the immediate nature allows for instant or reactive aggressive responses. Research also shows that individuals who cyberbully other individuals often end up being targeted by others online and individuals cyberbullied often end up cyberbullying others online which fits the reactive aggression pattern (Beran & Li, 2005; Law et al. 2012). Ybarra, Mitchell, Wolak, and Finkelhor (2007) found that the odds of being targeted online were higher

for individuals who targeted others online. The association between anonymity and cyberbullying has been proposed as a causal link between why individuals feel they are able to use reactive aggression online (Beckerman & Nocero, 2003; Campbell, 2005; Slonje & Smith, 2008). It should be noted though that not all cyberbullying instances are instigated by an unknown perpetrator.

Mishna, McLuckie, and Saini (2009) examined adolescents' posts on a web and phone based counselling and referral information service and found that cyberbully-victims were often targeted by real-life acquaintances as well as online ones. Ybarra et al., (2007) found that 12.6% of those who reported being harassed online, were targeted by the same person(s) offline. Mishna et al., (2012) found that 58% of cybervictims knew the perpetrator of cyber aggression. Mishna, Cook, Gadalla, Daciak, and Solomon (2010) found that 36% of cybervictims reported the perpetrator as being a friend, 22% reported the perpetrator as an individual from their school and 11% reported not knowing the perpetrator. Ybarra and Mitchell (2004a) found that 84% of perpetrators reported knowing their victims and 31% of victims reported knowing the perpetrator. Ybarra et al., (2006) found that 45% of cybervictims knew who the perpetrator was. Taken together, there is evidence that not all cyber aggression occurs with anonymity. The lack of face to face interaction allowed by technology may allow individuals to respond aggressively online (Dehue et al. 2008; Ybarra & Mitchell, 2004; Mishna et al. 2012).

Aggression and Gender

Another big question when it comes to aggression is whether males or females are more involved. Traditionally research shows that males are more aggressive than females (Crick & Grotpeter, 1995; Crick et al, 1999). More recent research (Card, Stucky, Sawalani, & Little, 2008) is beginning to question this belief though. When you look at specific types of aggression

the picture gets even less clear. Males do tend to use overt aggression such as hitting someone or calling them names more (Crick & Grotpeter, 1995). Card et al., (2008) conducted a review of direct and indirect aggression during childhood and adolescence, and found that overall boys use more direct aggression than girls. As well they found that the gender differences observed were more pronounced for physical aggression than verbal aggression. A small but significant difference was also seen for indirect aggression, with girls using more indirect aggression (Card et al., 2008). These findings are similar to those found by Archer (2004) which found that males used more direct aggression than females, as well males were more physically aggressive and slightly more verbally aggressive. For indirect aggression, females were more aggressive than males if a difference was seen at all (Archer, 2004). Bowie (2007) found that for relational aggression girls were more aggressive than males. Bonica, Arnold, Fisher, and Zeligo (2003) found that girls were significantly more relationally aggressive than boys but relational victimization did not reveal any gender differences in their study. Overall there does seem to be a trend for boys to be more directly aggressive than females. When looking at the subtypes though this differences is very small if seen at all. These changes may reflect a change in how we measure aggression. It could be that we are just able to better study areas of aggression which girls are more involved in. It may also reflect changes in society, maybe girls are becoming more aggressive. Further investigation into whether differences exist will help in determining how intervention strategies are targeted. If there is a differences, then shaping program to meet that difference is necessary.

Gender and Age

For cyberbullying there are mixed results when looking at the involvement of females and males. Some research has found gender differences whereas other research has not. Li

(2006) looked at whether cyberbullying experiences were affected by gender. Two hundred sixty four students in grades seven, eight, and nine completed questionnaire packages which included demographic questions, and questions related to computer use and cyberbullying behaviours. Li (2006) found that 22% of males and 11.6% of females were cyberbullies, and 25% of males and 25.6% of females were cybervictims. Li (2007) examined the nature and extent of cyberbullying experiences of 177 grade seven students. Results of this study revealed that 38.6% of males and 59.1% of females experienced cybervictimization and 52.2% of males and 43.5% of females cyberbullied others.

Gradinger, Strohmeier, and Spiel (2009) had 761 grade nine students (392 girls, 367 boys) complete questionnaire packages about bullying involvement, aggression, adjustment difficulties and depressive symptomology. They found that 7.6% of males and 3.1% of females had cyberbullied and 7.1% of males and 7.1% of females had been the victim of cyberbullying. Mishna et al., (2012) examined the prevalence of cyberbullying based on involvement as well as contributing factors to involvement. A total of 2186 students in grades six, seven, nine and ten completed questionnaire packages. They found 7.5% of females and 8.7% of males were cyberbullies, 25.1% of females and 21.7% of males were cybervictims, and 26.9% of females and 24.3% of males were both cyberbully and cybervictims. The only statistically significant difference was within the both category, with there being statistically significant more females than males involved.

Schneider et al., (2012) used the data collected as part of the MetroWest Adolescent Health Survey to examine bullying victimization. They found that 15.3% of females and 13.2% of males were involved in cyberbullying. Specific to cybervictimization they found that 7.2% of females and 5.6% of males were the victim of cyber aggression. Smith et al., (2008) had

students complete a questionnaire which examined the different media of cyberbullying and demographic questions in a two part study. Five hundred thirty three students in grades seven to eleven completed the questionnaires. They found in part one of the study that girls were more likely to be cyberbullied, but this was not confirmed in part two of the study potentially due to a smaller sample size in study one or a change in definition in study two. They also found in part one that when the cyberbully was known they were more likely to be females, this was not confirmed in part two of the study, which means it is unknown at present if there are gender differences with regards to involvement.

Wade and Beran (2011) conducted their study to look at the prevalence of cyberbullying as well as, sex and grade differences. They found that girls were more likely to be involved as victims, but no sex differences were found for cyberbullies. Ang and Goh (2008) looked at the relationship between empathy, gender and cyberbullying. They had 396 adolescents (12-18 years) surveyed and found that 23.6% of those involved as cyberbullies were males and 15.1% of those involved as cyberbullies were females. Schoffstall and Cohen (2011) examined the relationship and impacts of grade and gender on cyber aggression as well as the impact of involvement on peer social relationships. They did not find any significant gender differences. Slonje and Smith (2008) had 360 adolescents (12-20 years) surveyed to look at the nature and extent of cyberbullying in Swedish schools. They did not find any gender differences for cybervictimization, but did note a trend towards more boys than girls being cyberbullies.

Tokunaga (2010) completed a meta-synthesis to look at trends in research related to cybervictimization. This research found that the majority of findings show no age or gender effects related to cybervictimization. Females appear to be more involved in cyberbullying overall, more so as victims of cyberbullying but this is far from a clear trend and more research

is needed. It has been suggested that this trend for more girls than boys to be involved may be related to the verbal and relational aggressive nature of cyberbullying which fits with traditional female aggressive styles (Smith et al., 2008; Snell & Englander, 2010; Tokanaga, 2010; Wade & Beran, 2011). Crick and Grotpeter (1995) looked at relational aggression and whether there were gender differences. They had 491 students in grades three to six complete their study. They found that overt aggression was seen more often in boys (15.6%) than girls (0.4%), relational aggression was seen more in girls (17.4%) than boys (2%), and of those who use both there were more often boys (9.4%) than girls (3.8%). Overall boys were more aggressive (27%) than girls (21.7%). Snell and Englander (2010) looked at gender trends in cyberbullying victimization. They had 213 undergraduate students complete online questionnaires which focused on bullying and cyberbullying victimization, as well as demographic information. They found that females were more likely to experience frequent online rumors and lies than males. Taken all together whether there are gender differences in involvement in cyberbullying is unclear.

There have been some interesting findings regarding the differences in cyberbullying involvement and age. Mishna et al., (2012) found the older the student the more likely they were to bully others online or to be both bully and victim, 6.8% of students in grades six and seven compared to 9.1% of students in grades nine and ten. Of those who were identified as both bully and victim, they found that 21.4% of those were in grades six and seven compared to 29.5% in grades nine and ten. They also found that younger students were more likely to be cybervictims, 27.1% of those in grades six and seven compared to 21.1% of those in grades nine and ten. Smith et al., (2008) found that older students were more likely to cyberbully others, 8% of grade seven students, 12% of grades eight and nine students, and 23% of grade 10 and 11 students. Schneider et al., (2012) looked at students in grades nine, ten, eleven and twelve and found that

grade was not significantly related to being a victim of cyberbullying. Wade and Beran (2011) found that grade seven students were more likely to cyberbully others and to experience cyber victimization compared to students in grades six and eleven. Schoffstall and Cohen (2011), did not find any significant age differences. There appears to be trends in age differences for cyberbullying involvement, however more research is needed and careful consideration needs to be given to potential developmental differences.

Rationale for the present study and Hypotheses

Research has shown that involvement in cyberbullying, whether as a cyberbully, cybervictim, or a cyberbully-victim has numerous negative consequences such as increased symptoms of depression and anxiety, increased school and social difficulties, substance use problems and lower self-esteem. We also know that there do appear to be differences between cyberbullies, cyberbully-victims, and cybervictims, but studies are only just beginning to pull apart these differences. More research is needed to better understand the impact of involvement in cyberbullying on school interactions, as well as if there are differences in interpersonal ability for those involved in cyberbullying, and if there are differences in aggression style for those involved. The goal of this research was to better understand the differences between individuals who are cyberbullies, cyberbully-victims, cybervictims, and not involved. This research will contribute to a better understanding to the differences which will help us develop better prevention and intervention programs as well it will hopefully help us understand who is at greater risk for becoming involved and thus may help to minimize risk.

The aim of the present study was to identify the differences in interpersonal competence, aggression style, and school identification, if any, between cyberbullies, cyberbully-victims,

cybervictims and non-involved students. Gender, age, access to technology and computer supervision differences were also examined.

Past research has indicated that traditional bullies have different interpersonal competence abilities than non-involved individuals (Farmer et al., 2012). While not directly comparable, based on this research with traditional bullying it was possible to predict differences in interpersonal competence for cyberbullying involved individuals. Overall it was expected that non-involved individuals would show greater interpersonal competence than individuals involved in cyberbullying. This study used a measure which evaluated interpersonal competence on five domains: self-disclosure of personal information, providing emotional support, conflict resolution, initiation of interactions and relationships, and assertion of personal rights and displeasure with others. It was expected that cybervictims would have higher self-disclosure scores than cyberbully-victims and cyberbullies, as well, it was expected that cyberbully-victims would have higher self-disclosure scores than cyberbullies. For providing emotional support it was expected that cyberbully-victims would have higher scores than cybervictims and cyberbullies, and that cybervictims would have higher scores than cyberbullies. It was also expected that cyberbully-victims would have higher scores than cyberbullies and cybervictims on conflict resolution as well, it was expected that cyberbullies would have higher scores than cybervictims on conflict resolution. For asserting influence, it was expected that cyberbullies would have higher scores that cyberbully-victims and cybervictims, and that cyberbully-victims would have higher scores than cybervictims. For initiation it was expected that cyberbully-victims would have higher scores that cyberbullies and cybervictims, and that cyberbullies would have higher scores than cybervictims.

Research has shown that students involved in traditional bullying have lower school valuing and school bonding scores than those not involved (Farmer et al., 2012). As well students involved in cyberbullying have increased school difficulties (Beran & Li, 2007; Ybarra et al., 2007). Also it has been found that with increased school identification comes a decrease in bullying perpetration (Williams & Guerra, 2007) and that with lower school attachment comes increased risk of being a victim of cyber aggression (Schneider et al., 20120. Thus it was hypothesized that those not involved in cyberbullying would have the highest school identification scores, followed by cyberbullies, cyberbully-victims with cybervictims showing the lowest scores.

Research has shown that boys tend to be more aggressive than girls (Crick & Grotpeter, 1995). For relational aggression though females may be more involved than boys are (Crick & Grotpeter, 1995). It was hypothesized that more females would be involved in cyberbullying overall than males. It was also expected that females would be more involved as cyberbully-victims and cybervictims, with males more involved as cyberbullies.

This study also looked at whether aggression style differs based on involvement in cyberbullying as a cyberbully, a cyberbully-victim, and as a cybervictim. Non-involved individuals were expected to have lower aggression scores than cyberbullies, cyberbully-victims, and cybervictims across both proactive and reactive aggression a well as total aggression. It was also expected that cyberbullies would have higher proactive scores than both cyberbully-victims and cybervictims. Cyberbully-victims were expected to have higher reactive aggression scores than cyberbullies and cybervictims and cyberbully-victims would have higher total aggression scores than cyberbullies with cybervictims having the lowest scores.

Research is mixed as to how age and cyberbullying involvement are related. Some research shows that older individuals are more likely to cyberbully others (Mishna et al., 212) whereas conflicting research shows that younger students are more likely to be involved (Wade & Beran, 2011). It was hypothesized that younger students would be more involved overall, but that older students were more likely to be cyberbullies and younger students were expected to be cybervictims and cyberbully-victims. This pattern was also expected for grade. Age and grade were examined independently as age can vary depending on grade. Thus it was expected that students in younger grades (six and seven) would be move involved overall in cyberbullying than those in grades eight, nine and ten, as well it was expected that there would be more cyberbullies in grades eight, nine and ten and more cybervictims and cyberbully-victims in grades six and seven. With regards to gender it was expected that overall more females would be involved in cyberbullying than males. It was also expected that there would be more females than males involved as cyberbully-victims and cybervictims, whereas it was expected that more males than females would be involved as cyberbullies. It was also expected that location would be related to cyberbullying involvement, specifically that the more isolated the location of a computer in the home the more involvement in cyberbullying. Lastly it was hypothesized that increased computer time per day would increase the likelihood of being involved in cyberbullying, as well decreased supervision and having access to technology would result in more involvement in cyberbullying.

Method

Participants

Participants were six, seventh, eighth, ninth and tenth grade students from seven schools from a school board in Northern Ontario. A total of 124 students completed the questionnaire packages. Students ranged in age from 11 years to 15 years (M = 12.94 years, SD = 0.83). There were 51 males (41.2%) and 69 females (55.6%) in this study, four participants (3.2%) chose not to identify as male or female. There were five students aged eleven years in this study, four in grade six and one in grade seven. A total of 30 students aged 12 years participated in this study, all were in grade seven. Fifty-nine students aged thirteen years participated in this study, nine in grade seven, and fifty in grade eight. There were 28 students aged 14 years in the current study, 17 in grade eight, and 10 in grade nine. Two students aged 15 years participated, one in grade nine and one in grade 10.

Measures

Demographic information: Students were asked to fill out a demographic questionnaire (Appendix A) that was developed for this study regarding internet use, and access as well as gender, age, grade and number of best friends.

Identification with School Questionnaire (ISQ): the ISQ measures students' identification with school (Voelkl, 1996). It consists of 16 statements such as; *I am treated with as much respect as other students in my class*, on which students are asked to rate how much they agree. Students' rate their level of agreement from strongly agree (1) to strongly disagree (4). The score reflects how much a student feels a sense of belonging at school and valuing of school outcomes, scores can range from 16 to 64 points. Higher scores reflect higher identification.

The coefficient-alpha reliability for the scale is 0.84. Normative mean scores are, females (50.66) and males (48.38).

Proactive/Reactive Aggression Questionnaire (PRQ): the PRQ is used to determine an individual's proactive (instrumental aggression, done in an effort to gain or achieve something), reactive (aggression that occurs in reaction to an event or situation) and total aggression (Rain et al., 2006). The internal reliabilities are: proactive $\alpha = 0.86$, reactive $\alpha = 0.84$, and total $\alpha = 0.90$. The PRQ has 23 items on which individuals rate their self on a zero to two scale for how often they engage in the behavior. Scores are determined by summing subscale scores for reactive (11 questions) and proactive (12 questions) aggression, as well as total aggression by summing all 23 questions. Normative mean scores are; reactive (7.14), proactive (2.79), and total aggression (9.93). The possible total aggression score maximum is 46, and the possible minimum score is zero.

Interpersonal Competence Questionnaire-Revised: the ICQ-R measures adolescent self-perception of interpersonal skills; it is a modified version of the ICQ developed by Buhrmester, Furman, Wittenberg, and Reis (1998). It consists of 40 statements on which adolescents are asked to rate their self on their level of competence/comfortableness on a five point Likert scale of one to five, one being poor at this to five being extremely good at this. The scales yield a measure of interpersonal competence on the subscales of Self Disclosure, Providing Emotional Support, Conflict Resolution, Asserting Influence, and Relationship Initiation. Each subscale is determined by averaging the responses indicated, scores can range on each subscale from zero to five. A higher score corresponds to a higher level of self-perceived competence/comfortableness. Test re-test reliability coefficients range from 0.69 to 0.89.

Cyberbully and Victimization Questionnaire: This questionnaire (Campfield, 2006) was used to determine whether and how an individual is involved in cyberbullying. For example, a yes response to item nine; *I have left someone out of things that my friends and I were doing on the internet*; would classify this as a cyberbully action. Item 10; *Kids have sent hurtful e-mails, text messages, or instant message to me (such as calling me a bad name, said something mean, or made fun of me)*; would put this as a cybervictim action. Cyberbully-victims had at least one yes answer to a cyberbully item and one yes answer to a cybervictim item. Frequency to be classified as a cyberbully or cybervictim was 1-2 times or more or more frequently. There are 14 cyberbully items and 14 cybervictims items. This is a modified version of the Bullying/Victimization assessment (Campfield, 2006). A total of 15 questions were removed from the original questionnaire developed by Campfield (2006). The questions removed dealt with non-cyber based bullying behaviours, for example: *I have given someone the silent treatment at school to be mean*, and *Kids have thrown things at me*. As the current research focused only on cyberbullying, only those questions asking about cyberbullying perpetration and victimization were used, while questions referring to traditional bullying were removed.

Procedure

Ethics approval was obtained from both Laurentian University (Appendix B) and the Rainbow District School Board (Appendix C). School principals were contacted and once permission was given, teachers in grades six, seven, eight nine and ten at the school were contacted regarding their class participation. Teachers selected two dates for the primary researcher to attend their class. During the first meeting, the purpose of the research was explained to all students in the class. After a short discussion students and teachers were given time to ask questions. Permission forms (Appendix D) were then handed out to students. They

were instructed to return the forms by a given date with parental signatures if they were interested in participating.

At the second meeting, students with permission completed the questionnaires. The test area varied depending on the school, each area was set to accommodate a group of students with enough space to keep answers private. Group sizes ranged from 6 to 15 students. Prior to the student assent forms (Appendix E) being handed out, students were reminded that participation was voluntary and their answers were anonymous. Once assent forms were completed, questionnaire packages, which included the demographic, identification with school, proactive/reactive aggression, interpersonal competence, and cyberbullying/victimization questionnaires were handed out. Students were instructed to think about the previous three months when answering the cyberbullying questionnaire. Students completed the questionnaires independently. Debriefing occurred individually with each student upon completion of the questionnaire package. During this debriefing students were reminded what the study was looking at, given time to ask questions and were given a written explanation (Appendix F) of the research with a list of local resources they could contact if they were upset by anything asked during the research. Questionnaires were organized first by asking demographic information, then the identification with school questionnaire, the proactive/reactive questionnaire, the interpersonal competence questionnaire, and lastly the cyberbully and victimization questionnaire. Participants required between 20 and 30 minutes to complete the questionnaire packages.

Results

The purpose of this research was to examine group differences between cyberbullies, cyberbully-victims, cybervictims, and non-involved individuals. To begin participants were coded into cyberbullying categories. All questionnaires were scored according to author instructions and the data was analysed using SPSS. The results are presented first for characteristics of the sample, followed by chi-square tests regarding gender, grade, age, access to technology, computer location, supervision, and time spent on a computer with regards to cyberbullying involvement. Next interpersonal competence with regards to cyberbullying involvement is examined, followed by cyberbullying and school identification, and cyberbullying and aggression. Results of the discriminant analysis and correlation of relationships between school identification, aggression, and interpersonal competence are then examined.

Characteristics of the sample

A total of 124 students participated in this study, of those 81.5% were involved in cyberbullying as a bully, victim or both, 4% were cyberbullies, 55.6% were cyberbully-victims, and 21.8% were cybervictims. A participant was coded as cyberbullying if they had engaged in a cyberbullying activity at least once, a cyberbully-victim had at least once engaged in a cyberbully behaviour as well had been the victim of cyberbullying, a cybervictim had been at least once a victim of cyberbullying, and a non-involved individual did not endorse any cyberbullying or cybervictimization occurrences. Cyberbullying involvement, grade, age, and gender breakdowns can be seen in Table 1.

Table 1. *Cyberbullying involvement by gender, age and grade in percent (N = 124).*

	Cyberbullying Involvement				
	Cyberbully	Cyberbully-victim	Cybervictim	Non-involved	Totals
Gender					
Male	1.6%	18.5%	8%	12.9%	51
Female	2.4%	34.7%	12.9%	5.6%	69
Unidentified	0	2.4%	0.8%	0	4
Age (years)					
11	0	1.6%	0.8%	1.6%	5
12	1.6%	12%	3.2%	7.3%	30
13	2.4%	27.4%	12.9%	5.6%	59
14	0.8%	12.9%	4.8%	4%	28
15	0	1.6%	0	0	2
Grade					
6	0	1.6%	0	1.6%	4
7	1.6%	16.1%	6.5%	8.9%	41
8	1.6%	32.2%	13.7%	6.4%	67
9	0.8%	4.8%	1.6%	1.6%	11
10	0	0.8%	0	0	1

Cyberbullying involvement and demographic information

A series of chi-square tests were conducted to examine relationships of gender, grade, age, access to technology, computer location, supervision and time spent on a computer to cyberbullying involvement. Cyberbullying involvement was examined as involved as cyberbully, cyberbully-victim, cybervictim, or not-involved and as overall involvement; yes involvement, or no involvement. There was a relationship between gender and overall cyberbullying involvement $\chi^2(2) = 9.69$, $p = 0.008$, Cramer's $V = 28$. There were more females (61.4%) than males (34.6%) involved in cyberbullying, 3.9% chose not to identify as male or female but were also involved. No other significant differences were found for gender.

Chi-square tests were also run to explore the relationship between grade and cyberbullying. It was expected that as grade went up so would cyberbullying involvement. For overall involvement there was a significant relationship, $\chi^2(1) = 4.99$, $p = 0.02$, Cramer's $V = -0.20$. More students in grades eight, nine, and ten (67/79) were involved than those in grades six and seven (32/45).

In addition to grade, age in years was also examined. As with grade it was expected that overall older students would be more involved in cyberbullying, but that younger students would be more involved as cybervictims and cyberbully-victims. For overall involvement there was a trend, $\chi^2(2) = 5.66$, $p = 0.09$, Cramer's $V = 0.21$. Of those students involved in cyberbullying, 24% were 11 or 12 years of age, 51% were 13 years of age and 25% were 14 or 15 years of age. There were no significant differences for cybervictims or cyberbully-victims.

Access to technology has been implicated in cyberbullying involvement. Chi-square tests were conducted to look at how owning a cell phone, tablet, or having access to a computer at home was related to cyberbullying involvement. For overall involvement owning a cell phone

revealed a significant relationship, $\chi^2(1) = 5.22$, $p = 0.02$, Cramer's $V = 0.21$. Of those involved in cyberbullying 65% owned a cell phone and 35% did not. Owning a tablet was not related to overall cyberbullying involvement, $\chi^2(1) = 0.19$, $p = 0.67$. No significant relationship was found between overall involvement and having a computer in the home, $\chi^2(1) = 0.01$, $p = 0.93$. The breakdown of cyberbullying involvement and access to technology can be seen in Table 2. For overall involvement and location, no significant difference was found, $\chi^2(2) = 4.67$, $p = 0.09$.

The next series of chi-square tests considered supervision and time spent online. For overall involvement no significant relationship was found between time spent online and cyberbullying involvement, $\chi^2(3) = 4.64$, $p = 0.20$. When time spent on a computer was expanded into groups (a) being those students who spent less than one hour or one to two hours on a computer daily, and (b) being those students who spend three to four and four plus hours on a computer daily, there remained no significant difference, $\chi^2(1) = 0.02$, $p = 0.88$. For overall cyberbullying involvement and supervision, unlike what was expected, no significant relationship was found, $\chi^2(3) = 5.16$, $p = 0.16$.

Cyberbullying and Interpersonal Competence

Analyses of variance were conducted to examine the differences among cyberbullying groups for aggression style, school identification, and interpersonal competence. A one-way ANOVA was conducted to determine if there were differences in interpersonal competence across cyberbullying involvement type. Significant differences were found between groups for Asserting Influence; $F_{3,199} = 4.35$, $p = 0.006$, $\eta^2 = 0.10$, and Conflict Resolution; $F_{3,119} = 5.66$, p 0.001, $\eta^2 = 0.13$. Mean differences can be seen in Table 3. Bonferonni post hoc tests revealed significant differences for Asserting Influence between cyberbully-victims and non-involved individuals ($p = 0.01$) and between cybervictims and non-involved individuals ($p = 0.08$).

Table 2. *Cyberbullying involvement and access to technology*

Cyberbullying involvement	**Phone**		**Tablet**		**Computer in the house**	
	Yes (N=74)	**No (N=49)**	**Yes (N=75)**	**No (N=49)**	**Yes (N= 119)**	**No (N= 5)**
Cyberbully	3	2	4	1	5	0
Cyberbully-victim	43	25	39	30	66	3
Cybervictims	19	8	19	8	26	1
Non-involved/witness	9	14	13	10	22	1

Cyberbully-victims had higher Asserting scores than non-involved individuals. Cybervictims scored higher than non-involved individuals. Bonferonni post hoc tests for Conflict Resolution showed significant differences between cyberbully-victims and cybervictims ($p = 0.01$).

Cyberbully-victims scores lower on Conflict Resolution than cybervictims. It was expected that cyberbullying involvement types would have different interpersonal competence profiles. While significant differences were found for Asserting Influence and Conflict Resolution scores, not all groups showed differences, contrary to what was expected.

Cyberbullying and School Identification

Another ANOVA was conducted to examine if there were significant differences in school identification depending on involvement in cyberbullying. No significant relationship was found.

Cyberbullying and Aggression

An ANOVA was conducted to examine if there was a significant differences in aggression across cyberbullying involvement, which revealed significant findings for reactive; $F_{3,120} = 8.19$, $p < 0.01$, $\eta^2 = 0.17$, proactive; $F_{3,120} = 5.13$, $p = 0.002$, $\eta^2 = 0.11$, and total aggression; $F_{3,120} = 9.78$, $p < 0.0$, $\eta^2 = 0.19$ (see Table 4). Bonferonni post hoc tests revealed significant differences in reactive aggression between cyberbully-victims and cybervictims ($p = 0.003$) and between cyberbully-victims and non-involved individuals ($p = 0.001$). Cyberbully-victims had on average higher reactive scores than both cybervictims and non-involved individuals. Bonferonni post hoc tests revealed significant differences in proactive aggression between cyberbully-victims and cybervictims ($p = 0.019$) and between cyberbully-victims and non-involved individuals ($p = 0.014$). Cyberbully-victims had on average higher proactive scores than cybervictims and non-involved individuals. Lastly Bonferonni post hoc tests

revealed significant differences in total aggression between cyberbully-victims and cybervictims ($p = 0.001$) and between cyberbully-victims and non-involved individual ($p = 0.000$).

Table 3. *Cyberbullying involvement and Interpersonal Mean differences.*

	Group			
Interpersonal Competence	Cyberbully	Cyberbully-victim	Cybervictim	Non-involved
Initiating	3.41	3.09	3.23	2.97
Asserting	3.97	3.86[a]	3.98[a]	3.26[b]
Self-Disclosure	3.60	3.35	3.40	2.97
Emotion	3.13	2.89	2.85	2.47
Conflict Resolution	3.69	3.27[a]	3.88[b]	3.51

Note: a, b indicate significant differences found between groups using Bonferonni post hoc test at the p = 0.001 level

Table 4. *Cyberbullying Involvement and Aggression Mean Differences*

	Group			
Aggression	Cyberbully	Cyberbully-victims	Cybervictim	Non-Involved
Reactive	3.40	6.49[a]	3.93[b]	3.39[b]
Proactive	0.40	1.55[a]	0.29[b]	0.17[b]
Total	3.80	8.04[a]	4.22[b]	3.57[b]

Note: a, b indicate significant differences found between groups using Bonferonni post hoc test at the p = 0.001 level

Cyberbully-victims on average had higher total aggression scores than cybervictims and non-involved individuals.

Predicting cyberbullying involvement

A step-wise discriminant analysis was conducted to explore whether overall cyberbullying involvement could be predicted based on school identification, aggression scores, and interpersonal competence. Results of the analysis show the overall chi-square test was significant (Wilks $\lambda = 0.76$, chi-square = 32.14, df = 3, Canonical correlation = 0.49, $p < 0.001$). The functions extracted accounted for 76% of the variance explained. The standardized discriminant function coefficients were; school identification (0.50), total aggression (0.62), and asserting influence (0.91). The group centroids were: yes involvement in cyberbullying (0.28), and no involvement in cyberbullying (-1.15). Classification of cases indicated that 75.6% of original cases were correctly classified.

Relationships between school identification, aggression, and interpersonal competence.

A Pearson correlational analysis was conducted to explore the relationships between school identification, aggression and interpersonal competence (Table. 5). The results revealed numerous significant relationships. For example there was a negative relationship between conflict resolution and reactive aggression ($r = -0.49$) meaning that as conflict resolution scores increased reactive aggression scores decreased or vice versa, as well as a negative relationship between asserting influence and proactive aggression ($r = -0.26$), meaning that as asserting influence scores increased proactive aggression scores decreased or vice versa. As well, of note is the negative relationship between school identification and all interpersonal competence

scales, meaning that as school identification scores increase scores of interpersonal competence decrease or vice versa. It was expected that this would be a positive relationship.

Table 5. *Correlational relationships of school identification, aggression, and interpersonal competence*

	School	Reactive	Proactive	Total	Initiating	Asserting	Self-disclosure	Emotion	Conflict resolution
School	1	-	-	-	-	-	-	-	-
Reactive	.083	1	-	-	-	-	-	-	-
Proactive	.27*	.47*	1	-	-	-	-	-	-
Total	.17	.93*	.76*	1	-	-	-	-	-
Initiating	-.43*	-.07	-.13	-.11	1	-	-	-	-
Asserting	-.27*	-.01	-.26*	-.12	.59*	1	-	-	-
Self-disclosure	-.34*	.09	-.07	-.04	.57*	.50*	1	-	-
Emotion	-.34*	-.02	-.026	-.03	.54*	.56*	.48*	1	-
Conflict resolution	-.44*	-.49*	-.32*	-.49*	.41*	.36*	.31*	.38*	1

* = sig at p = 0.001 level

Discussion

The main purpose of this study was to gain a better understanding of differences in aggression, school adjustment and interpersonal competence between cyberbullies, cyberbully-victims, cybervictims and non-involved individuals. Differences in cyberbullying involvement depending on gender, supervision, age, access to information communication technologies, and time spent online were also examined.

Prevalence Rates

Prevalence rates (81.5%) for overall cyberbullying involvement for this study were higher than what has been found in past research (9-35%). Compared to the prevalence rates (69%) found in Campfield (2006) the overall prevalence rates of the current study remain elevated (81.5%). Broken down by involvement type: 4% were identified as cyberbullies, 55.6% were identified as cyberbully-victims, and 21.8% were identified as cybervictims. This compares to Campfield (2006) who found prevalence rates of: 12% were cyberbullies, 19% were cybervictims, and 37% were cyberbully-victims. Past research has found that cyberbullying perpetration ranges between 4-22% (Beran & Li, 2005; Dehue et al., 2008; Hinduja & Patchin, 2012; Kowalski & Limber, 2007; Mishna et al., 2012). Research has also shown that rates of cybervictimization range between 9-35% (Beran & Li, 2005; Dehue et al., 2008; Hinduja & Patchin, 2012; Kowalski & Limber 2007; Mishna et al., 2012; Wolak et al., 2007). As well past research shows rates of cyberbullying-victimization range between 7-35% (Hinduja & Patchin, 2012; Kowalski & Limber, 2007; Mishna et al., 2012).

This elevated prevalence rate is most likely related to how students were classified. After initial classification was completed adjustments had to be made to allow for individuals to be classified as cyberbullies only. Initially participants had to indicate two instances of

cyberbullying (minimum) perpetration to be classified as a cyberbully, one cyberbullying perpetration and one victimization (minimum) to be classified as a cyberbully-victim, and two instances of cybervictimization (minimum) to be classified as a cybervictim. Reclassification required one perpetration (minimum) to be classified as a cyberbullying, one victimization (minimum) to be classified as a cybervictim, and one perpetration and one victimization (minimum) to be classified as a cyberbully-victim. Examining the prevalence rates based on the original identification criteria of two cyberbullying acts to be classified as a cyberbully, one cyberbully act and one cybervictimization to be classified as a cyberbully-victim, and two cybervictimization to be classified as a cybervictim lowers the prevalence rate to 67.7% which is comparable to the prevalence rate found in Campfield (2006). This stringent classification though resulted in no cyberbullies being identified which is why reclassification was undertaken. The prevalence rates using the original classification guidelines resulted in 12.9% being classified as cybervictims and 54.8% being classified as cyberbully-victims. The occurrence of cyberbullying and cybervictimization acts ranged depending on involvement type. For cyberbullies the number of reported cyberbullying acts was limited to one act per cyberbully, using the original classification criteria there were no cyberbullies identified. For cyberbully-victims the number of reported cyberbullying acts ranged from one to thirteen, and the number of cybervictimizations also ranged between one and thirteen. Cybervictims reported being victimized from one to seven times. Using the original coding for classification the range of cyberbullying and cybervictimization occurrences remained the same for cyberbully-victims, but the range of cybervictimizations ranged between two and seven occurrences for cybervictims.

The less stringent classification criteria influenced the prevalence rates in the current study, for example it increased the number of bullies identified. Though the numbers were

similar the change did result in a difference in those identified in the various categories. As well it is possible that this less stringent classification criteria forced individuals into a category that they did not belong to. Another influence may be the heightened attention currently given to cyberbullying, resulting in those touched by cyberbullying to take part which could have contributed to the increased prevalence rates. In comparison to other studies this current study looked beyond self-identification for classification which may have increased the prevalence rates.

The wide range of actions examined in the scale being used may have increased the prevalence rates by classifying behaviours that may not reflect social or students' ideas of cyberbullying. For example, *leaving someone out of a cyber situation, was identified as a cyberbullying behaviour.* It could be argued that this is not actually a cyberbullying acts as it does not actively attack another individual or group. Given though that if in 'real' life an individual is intentionally left out of an activity it has been identified as a bullying situation with a base in relational aggression. Past research has also debated whether cyber aggression even falls into the bullying domain. Traditional bullying definitions include: intent, repetition, and power imbalance (Schoffstall & Cohen, 2011). The main areas of argument are repetition and power imbalance with regards to cyberbullying. The current study did not focus on the frequency of involvement in cyberbullying which relates to the repetitive nature of bullying. Given that once something is in the cyber world it can be almost impossible to remove one single occurrence can become repetitive just on the basis that anyone can get it. If frequency had been examined, it is possible the prevalence rate of the current study would have changed.

The way cyberbullying is defined can also impact prevalence rates. For instance if students were asked only about behaviours on a computer they may not report activities on their

cell phones. The current study attempted to use a broad definition in order to capture any electronic activity. This broad approach may have resulted in an increased prevalence rate. Past research has used both specific (e.g. Hinduja & Patchin, 2012), as well as broad (e.g. Juvonen & Gross, 2008) definitions of cyberbullying and until a more global definition is determined and utilized across studies prevalence rates will be impacted.

Gender

It was expected that girls would be more involved as cybervictims and cyberbully-victims, with males more involved as cyberbullies. Results did not show a difference in gender for involvement as a cyberbully, cyberbully-victim, or a cybervictim. Past research has shown some gender differences for cyberbullies and cybervictims. Li (2006) found that males were more likely than females to be cyberbullies; this was also seen in Li (2007), which also showed that females were more likely to be cybervictims. Schneider et al., (2012) found that more females than males were cybervictims as did Smith et al., (2008). As expected results support the hypothesis that more girls (61.4%) are involved in cyberbullying than boys (34.7%) when looking at overall involvement in cyberbullying. This adds to previous research (e.g. Snell & Englander, 2010), which suggests that girls are more involved in cyberbullying than boys. It is important to note though that not all research suggests this pattern of involvement. Given this trend in the research though, future research examining this area should focus on the relationship between relational aggression and cyberbullying. As research in the past suggests girls tend to be more relationally aggressive than boys (Crick & Grotpeter, 1995), this might explain why girls are more involved in cyberbullying but future research is needed to investigate this further.

Grade

Based on past research it was expected that students in grades six and seven would be more involved as cybervictims than those in grades eight, nine and ten. Also expected was that students in grades eight, nine, and ten would be more likely to be cyberbullies than those in grades six and seven. Overall it was expected that students in younger grades would be more involved than students in older grades. Unlike past research, no significant relationship was found between grade and cyberbullying involvement. As well contrary to what was expected, older students (grades eight, nine, and ten) were more involved overall (63%) than those in grades six and seven (36.3%). Mishna et al., (2012) found that students in grades six and seven reported being victimized more than students in grades ten and eleven. Schneider et al., (2012) found from grade nine to twelve there was a decrease in cyberbullying involvement, which suggests that as individuals get older there is less involvement in cyberbullying. Wade and Beran (2011) found that grade seven students experienced more involvement in cyberbullying that those in grade eleven. Ybarra et al., (2012) found that cyberbullying involvement increased from grade five to eight, which was then followed by a decrease from grade eight to eleven. These findings suggest that older students may be more involved than past research suggests. Given this potential, research into cyberbullying in older populations such as university aged students is needed. It is also possible that the results from the current study reflect a change in the use of technology. Meaning that grade trends found in previous research were reflective of technology use and understanding, and as children use technology at younger ages, the use is more pervasive and changing earlier trends. It is also possible that grade trends reflect uneven distribution in participation. If there had been exactly the same number of participants in each grade then grade trend may have emerged.

Age

There was no relationship between age and cyberbullying involvement. This was contrary to expectations. It was expected that younger students would be more involved as cyberbully-victims and cybervictims while older students would be more likely to be cyberbullies. There was a trend toward significance with those students aged 13 years more likely to be involved (47%) that students aged 14 and 15 years (24.2%). Schoffstall and Cohen (2011) found no significant relationship between age and cyberbullying involvement.

Grade and Age Summary

Given the significant findings associated with grade: that there was no significant relationship between cyberbullying involvement and each grade and that it was found that older students (grades eight, nine, and ten) were overall more involved than younger students (grades six and seven), similar trends were expected to be seen with age but these were not found. It may be that overall involvement when age is measured in years which can be more diverse than grade may blur the differences and this is why grade but not age trends are seen. There were also large group differences when it came to grade which may have contributed to the non-significant findings. Given that within a grade the age range of students (in years) can vary significantly, for example in grade six a student may be 10, 11, or 12 years, depending on a variety of factors such as birth date, and academic achievement, it may be that the range resulted in increased variance that mitigated trends seen in the grade and cyberbullying involvement results. As students are segregated in schools based on grade, focusing on differences based on this may be more beneficial.

Time spent on a computer and access to technology

It was expected that increased time spent on a computer would be related to increased involvement in cyberbullying. No such relationship was found. Increased time spent on a computer comes with increased potential exposure and opportunity to be involved in cyberbullying. Given that past research has shown that the most common acts of cyber aggression occur by phone calls and text messages (Smith et al., 2008), asking about time spent on a phone or tablet may have revealed a significant finding. This is supported by findings from this study in relation to access to technology. While no significant relationship was found for access and cyberbullying involvement type (cyberbully, cyberbully-victims, cybervictims) via a phone, tablet or computer, a significant relationship was found between owning a phone and overall involvement (yes or no). Of those involved in cyberbullying 65% owned a cell phone and 35% did not. Access does seem to have a relationship with cyberbullying involvement at this level. Knowing this emphasizes the need to develop prevention programs aimed at educating adolescents regarding safe online behaviours. This also ties into research which suggests that adolescents may look at ethical and legal behaviour as the same in online interactions (Berson, Berson, & Ferron, 2002). This is an important factor to note as it should be taken into consideration when developing programs. Educating around both being safe and legal or ethical will hopefully help shape a safe and less hostile environment.

With regards to time spent on a computer, there was no significant relationship associated with cyberbullying involvement. It was expected that increased time spent on a computer would be linked to increased involvement. Past research has found that those who rely more on the internet, those who spend more time online, and those who use social media online more are all more likely to be involved in cyberbullying whether as a cyberbully or as a cybervictims (Bal

Krishnan, 2015; Li, 2007; Schoffstall & Cohen, 2011; Twyman, Saylor, Taylor, & Comeaux, 2010; Vandebosch & Van Cleemput, 2009). The findings from this research may suggest that as long as there is access the risk for involvement is similar, but more likely is that the wording of the question contributed to these results. Future research should change the phrasing of this question. Instead of asking about how much time is spent on a computer, asking the amount of time spent online, or sending and/or receiving messages through social media or text may have resulted in different findings more in line with other research. This may be because using the internet on non-computer devices, such as cell phone, or tablets may be more common and asking about computer time specifically may have impacted this finding.

Supervision

No significant relationship was found between computer supervision and cyberbullying involvement. This is contrary to what was expected. It was expected that more supervision would result in decreased involvement. Given that even now younger adults and adolescents are often more tech able than parents and guardians this might impact on the ability of guardians to monitor what is going on in the cyber world. As those individuals who have grown up with technology have children we may see a shift in the impact supervision has on cyberbullying involvement as they are more tech able and aware which may allow for more supervision.

It was expected that with a more isolated computer there would be more involvement in cyberbullying. Results failed to reveal any significant findings. While contrary to what was expected, these findings are consistent with past research which failed to find significant relationships between cyberbullying involvement and computer location (Navarro et al., 2014). It was expected that if a computer was more removed from a family or public area in a home, there would be more involvement because of decreased risk of being caught sending/posting

something aggressive, as well as, decreased risk of someone overseeing an aggressive message that was received. Further research is needed to determine if there really is no relationship between the location of a computer and cyberbullying involvement. It could be that with the ability to monitor cyber activity from other devices using parental control software, or by having access to social media accounts, e-mail accounts, and cell phones that the location really does not matter. It is possible though that with the mobility of devices as well, that asking where the computer is used versus where it is located may result in different findings.

Interpersonal competence

It was expected that cyberbullies, cyberbully-victims, cybervictims and non-involved individuals would have different interpersonal profiles. It was expected that non-involved individuals would have the highest average scores on all five of the interpersonal domains measures. For Self-Disclosure it was expected that cybervictims would have higher average sores than cyberbully-victims, and cyberbullies, with cyberbully-victims having higher scores than cyberbullies. For providing Emotional Support it was expected that cyberbully-victims would have higher average scores than cybervictims, and cyberbullies with cybervictims having higher scores than cyberbullies. For Conflict Resolution it was expected that cyberbully-victims would have higher scores than cyberbullies and cybervictims, with cyberbullies having higher scores than cybervictims. For Asserting Influence it was expected that cyberbullies would have higher scores than cyberbully-victims, and cybervictims, with cyberbully-victims having higher sores than cybervictims. For Initiation it was expected that cyberbully-victims would have higher scores than cyberbullies and cybervictims with cyberbullies having higher scores than cybervictims. Past research has shown that in traditional bullying there does appear to be a difference in interpersonal competence relating to bullying involvement. Farmer et al., (2012)

found differences between traditional bullies and non-involved individuals as well as between bully-victims and bullies in interpersonal skills. Results from the current study revealed a significant difference in interpersonal competence for Asserting Influence and Conflict Resolution. Cyberbully-victims scored higher than non-involved individuals and cybervictims also scored higher than non-involved individuals for Asserting Influence. Cyberbully-victims scored lower than cybervictims on Conflict Resolution. Unequal group sizes may have contributed to the lack of significant findings on the other examined interpersonal competence factors. Having even groups would allow for increased validity in the results found. Navarro, Yubero, Larrañaga, and Martinez (2012) looked at social competence and found that cybervictims had higher scores on average for interpersonal difficulties and lower levels of social skill compared to non-victim individuals. What this research suggests, along with other research findings is that there likely are differences in interpersonal competence and that it plays a role in cyberbullying involvement. If these differences can be determined then specific risk and strength areas can be utilized to create better programs, for example knowing that cyberbully-victims score higher on asserting influence means that these individuals are able to stand up for their self so interventions can use this ability and instead of just targeting increased self-esteem teach proactive ways to be asserting and to stand up for their self.

School Identification

No significant relationship was found for school identification and cyberbullying involvement. This is contrary to what was expected. It was hypothesized that non-involved individuals would have the highest school identification scores, followed by cyberbullies, cyberbully-victims, with cybervictims having the lowest scores. It may be that by the time students reach grade six their school identification is set and no longer is influenced by daily

encounters. This seems unlikely though as past research has shown that for traditional bullying there does appear to be a difference. Farmer et al., (2012) found that for traditional bullying both bullies and victims had lower school valuing than non-involved individuals, as well, bullies, bully-victims, and victims all had lower school belonging scores than non-involved individuals with bully-victims scoring the lowest. Beran and Li (2007) found that cybervictims were likely to miss school, obtain low marks and have poor concentration, as well, cyberbullies reported increased poor concentration. Ybarra et al., (2007) found that cybervictims were significantly more likely to skip school and reported an increased number of detentions and suspensions. Ybarra et al., (2007) also found that as self-perception of positive school connection increased there was a corresponding decrease in involvement in cyberbullying. This past research suggests that involvement in cyberbullying is related to negative views around school. It is also possible that there is less impact on the school environment in relation to cyberbullying involvement. Further investigation as to the relationship between students views of school and cyberbullying involvement is needed.

Aggression

As expected there were significant differences found in aggression across cyberbullying involvement. Significant differences were found between cyberbullying-victims and cybervictims for reactive aggression as well as between cyberbully-victims and cybervictims. This same pattern of significant differences was seen for proactive and total aggression as well. Average scores showed that for reactive aggression; cyberbully-victims had the highest average scores, followed by cybervictims, then cyberbullies, and non-involved individuals had the lowest scores. Proactive aggression had cyberbully-victims with the highest average scores, followed by cyberbullies, cybervictims and non-involved individuals had the lowest scores. Total

aggression had cyberbully-victims with the highest average scores, followed by cybervictims, cyberbullies, and non-involved individuals. Individuals involved in cyberbullying were more aggressive than those not involved in cyberbullying. It might be that those individuals who are involved in cyberbullying are overall more aggressive in nature as the findings suggest with non-involved individuals overall scoring lower than those involved in cyberbullying. Comparing proactive and reactive scores the findings from this study suggest that cyberbullying may be more reactive in nature, which may reflect a revenge nature to cyberbullying involvement. This helps to clarify why individuals get involved in cyberbullying and can allow for more targeted interventions, for example knowing that the general nature of cyberbullying appears to be reactive teaching students about how to respond to negative situations in a proactive manner may be through anonymous reporting, or leaving the cyber situation (similar to walking away) the reactive pattern can be disrupted and fewer individuals will be involved. Examining the means of all the groups it is possible that no significant difference were found for involvement as cyberbullies due to the small group size. These findings are similar to research by Shapka and Law (2013) who found positive relationships between cyber aggression and both proactive and reactive aggression.

Relationships among Variables

A surprising negative correlation was measured between school identification and interpersonal competence. A significant negative correlation was found where a positive relationship had been predicted, specifically it was expected that as school identification increased so would interpersonal competence. Social interactions and relationships are at an increased demand during the adolescent years, and without social competencies these relationships are unlikely to form (Buhrmester, 1990). Having poor interpersonal competencies

puts individuals at risk for being targeted by peers. Research also shows that repetitive negative experiences at school can lead to negative feelings toward the school environment (Voelkl, 1997). These two aspects together suggest a positive relationship, as school identification goes up so should interpersonal competencies. This was not found in this research. This may indicate that the fallout of cyber-aggression does not impact the school environment as anticipated or that the school identification questionnaire did not target the areas impacted by involvement in cyberbullying.

A significant positive correlation was found between proactive aggression and school identification. This is consistent with past research which shown that proactive aggression has been linked to more positive peer interactions (Price & Dodge, 1989). Having positive peer interactions at school may foster a positive sense of school identification resulting in this positive relationship.

There was a significant negative relationship found between reactive aggression scores, proactive aggression score, total aggression scores, and conflict resolution. This means that as scores on reactive aggression, proactive aggression, or total aggression increase scores on conflict resolution decrease or vice versa. This relationship make sense, as one's ability to resolve conflicts increases the fewer aggressive acts occur. A significant negative relationship was also found between proactive aggression and asserting influence. This means that as scores on proactive aggression decrease scores on asserting influence increase, or vice versa. Asserting influence measures one's ability to make decisions, take charge, and getting people to agree with you. If these are skills one possesses the need to use aggression to get what you want (i.e. proactive aggression) is not necessary, thus as one increases the other decreases. Identifying and

increasing these interpersonal abilities which are linked to decreased involvement in cyberbullying is one way to intervene with cyberbullying behaviours.

Predicting cyberbullying involvement

A discriminant analysis was conducted to determine if cyberbullying involvement could be predicted based on school identification, aggression, and interpersonal competence. Results showed that 75.6% of cases were correctly classified. This tells us that understanding how these factors influence and are influenced by involvement in cyberbullying is important. If we are able to identify these factors researchers can use that knowledge to shape better programs, with better targeting of behaviours and areas of intervention, and to possibly identify those at risk before involvement occurs.

Limitations and Future Directions

One limit of the current study was the uneven group sizes. After coding the data to identify at what numbers were students involved in cyberbullying as cyberbullies, cyberbully-victims, cybervictims, and not-involved there were significant group size differences. The real limit was in identifying cyberbullies. After initial coping participants had to be reclassified using a less stringent classification criteria to allow for there to be cyberbullies identified. This may have contributed to non-significant findings due to a lack of power, and future research should take steps to have equal groupings. Though as this and past research shows that this may be very difficult. Attaining these even group sizes though may be difficult. The current research suggests that cyberbullying behaviour is reactive in nature, as evidenced by the significant findings discussed earlier. If this is the case then identifying individuals who only engage in cyberbullying perpetration may be very difficult. Given the close ties between school based bullying and cyberbullying (e.g. Slonje & Smith, 2008), it may be that even those identified as

cyberbullies only may be acting in a reactive manner in response to a school setting based difficulty. The impacts of these uneven group sizes can impact the validity of results found, there is less power behind the findings in these cases. Non-parametric tests were conducted with similar results found for the current study, but best practice moving forward would attempt at even group sizes. A related limit is that of forcing individuals into a grouping, for example identifying bullies when it may not have been best. Sticking to the original classification would have resulted in a clearer picture of what is going on with regards to cyberbullying today.

While it was highlighted to the students participating in this study that all their responses would be anonymous, given the focus on cyberbullying currently in schools and the media students may have felt they could not be completely honest in their responses. The prevalence rates was elevated though at 81.5%. This elevation though is directly related to the classification of students regarding their involvement in cyberbullying. A more stringent classification criteria lowered this as discussed previously. The reason for the reclassification process was the difficulty in identifying cyberbullies. It may have been that those individual who only engage in cyberbullying perpetration felt they could not answer honestly, because of a fear of getting into trouble. It may also indicate intervention programs are working and bullying (in any form) is decreasing. Taking into consideration this possibility online questionnaires may be more beneficial in this sense. The cyber environment encourages a sense of anonymity. This anonymity has been suggested as one reason why students engage in cyberbullying behaviours (Runions et al., 2013; Tokunaga, 2010), and it has been suggested this relates to the feelings of being able to protect their identity online (Vandebosch & Van Cleemput, 2008) as well as decreasing their self-awareness (McKenna & Bargh, 2000). Given this, providing the questionnaires online may allow students to respond more honestly.

Future research should also investigate what students think about and believe about cyberbullying. Using qualitative methods may help us understand what students believe to be and not be cyberbullying. This can help us shape better intervention, prevention, and education programs because researchers and program developers will be better equipped to focus on issues that are directly impacting those involved rather than what is thought to be impacting them. What researchers believe is cyberbullying and what is perceived as cyberbullying may be very different. Long-term effects of cyberbullying involvement are still unknown as well, we are just moving into the time frame where these long-term effects can be examined in depth and longitudinal students are needed.

Past research has shown that involvement in cyberbullying has resulted in difficulties concentrating at school, and increased missed school (Beran & Li, 2007). Given this, more research into the school identification differences of those involved in cyberbullying should be examined in more detail. As well the fallout of cyberbullying involvement has been noted to occur during and at school (e.g. Beckerman & Nocero, 2003), thus knowing what the impact on the school environment cyberbullying involvement has is necessary research.

The link between relational aggression and cyberbullying involvement should also be examined in more detail with future research. Cyberbullying shares many similarities with traditional relational aggression and indirect aggression, such as spreading rumours, and protecting the perpetrator. As such it is possible that cyberbullying is just an extension of these types of aggression. Teasing apart or determining that cyberbullying is or is not a unique form of aggression will help us to develop better programs to prevent and intervene with cyberbullying. For example, if cyberbullying is just anew domain of relational aggression then implementing interventions developed to prevent and intervene with relational aggression would be expected to

help with cyberbullying prevention and intervention. If it is not just a new domain though, implementing these established interventions would be a waste of time and resources as they would be targeting behaviours and motivations that are unrelated to cyberbullying.

Interpersonal competence does appear to be linked to cyberbullying involvement. It had been expected that the interpersonal profiles of cyberbullies, cyberbully-victims, cybervictims, and non-involved individuals would different and while some differences were found they did not match with expectations. Given the relationships found between interpersonal competence and school bullying this is an areas where future research should attempt to examine in more detailed to look for specific risk factors which can then be used to develop better intervention and prevention programs.

Conclusions

The main areas of focus of the current study were whether there are differences in interpersonal competence, aggression style, and school identification for cyberbullies, cyberbully-victims, cybervictims, and non-involved individuals. Regarding interpersonal competence there were significant differences found on the asserting influence and conflict resolution subscales. What this means is that interpersonal competence does play some role in who becomes involved in cyberbullying. Identifying these areas of strength and weakness can lead to better intervention programs such as ones that build skills that are related to asserting influence (ability to take charge) and conflict resolution (ability to resolve conflict proactively) as they are related to decreased involvement in cyberbullying.

Aggression style was also found to be related to cyberbullying involvement. Reactive, proactive, and total aggression were found to be higher in cyberbully-victims than cybervictims, and non-involved individuals. It also appears that cyberbullying may be more reactive in nature

rather than proactive. Given this information it can help researchers to better understanding why individuals become involved. Cyberbullying involvement may be more revenge focused than other forms of bullying. If this is the case designing intervention programs that teach skills regarding how to better or more proactively response to others who are aggressive, or by teaching anger management skills, and problem solving skills or by providing other ways of reporting behaviours may help to decrease involvement.

No significant relationships were found between school identification and cyberbullying involvement. This was contrary to what was expected because of the relationships shown in past research between involvement in traditional bullying and lower school identification (e.g. Farmer et al., 2012), along with the relationship between cyberbullying and confrontations regarding the cyberbullying at school (e.g. Beckerman & Nocero, 2003). It may be that the school environment is not impacted by cyberbullying involvement because of no cell phone policies widely in place, or the questions asked about the school environment did not touch on the impacted or affected areas. It is also possible the relationship just does not exist, but further investigation is needed. Given though that the majority of time for adolescents is spent in school, the importance of the impact cyberbullying may have on student's feelings and views about school should not be discounted. As schools become increasingly technologically based with online homework assignments and the use of technology in class the impact of aggression via these same online tools will be important to understand.

Gender does seem to have a relationship with cyberbullying involvement, with females being more involved than males. This suggest that if more females are involved than males it may be related to the type of aggression involved in cyberbullying, which appears to be relational in nature, and research shows that this type of aggression is typically used more be

females (Bonica et al., 2003). Using techniques beneficial in combating relational aggression there may be helpful in combating cyberbullying.

In summary, aggressive style and interpersonal competence appear to be related to cyberbullying involvement. This research provides some target areas to build on to develop better intervention programs (e.g. reactively aggressive, and asserting influence). It also builds on the foundation of what is known regarding cyberbullying. As access and the reliance on technology continue to develop especially in social and school contexts it is important to understand the how and why individuals become involved with cyberbullying as knowing this is the only way to intervene and prevent.

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Appendix A

Demographics

1. **Age: _____**
2. **Gender:** Male Female
3. **Grade:** 7 8 9 10
4. **Number of best friends: _____**
5. **Do you own your own computer (desktop or laptop)?** Yes No
6. **Do you own a cell phone or smart phone?** Yes No
7. **Do you own a tablet or ipad?** Yes No
8. **Is there is a computer in your house?** Yes No
9. **If there is a computer in your house where is it located?**

   _____

10. **When you use a computer are you supervised?**

    _____

11. **About how many hours a day do you spend on a computer?**

    Less than 1 hour 1-2 hours 3-4 hours 4+ hours

Appendix B

APPROVAL FOR CONDUCTING RESEARCH INVOLVING HUMAN SUBJECTS

Research Ethics Board – Laurentian University

This letter confirms that the research project identified below has successfully passed the ethics review by the Laurentian University Research Ethics Board (REB). Your ethics approval date, other milestone dates, and any special conditions for your project are indicated below.

TYPE OF APPROVAL / New X / Modifications to project / Time extension

Name of Principal Investigator and school/department	Jennifer Drummelsmith
Title of Project	Cyberbullying: Interpersonal competence, aggression style, school adjustment, gender and age differences
REB file number	2013-07-05
Date of original approval of project	September 20, 2013
Date of approval of project modifications or extension *(if applicable)*	
Final/Interim report due on	September 20, 2014
Conditions placed on project	Final report due on September 20, 2014

During the course of your research, no deviations from, or changes to, the protocol, recruitment or consent forms may be initiated without prior written approval from the REB. If you wish to modify your research project, please refer to the Research Ethics website to complete the appropriate REB form.

All projects must submit a report to REB at least once per year. If involvement with human participants continues for longer than one year (e.g. you have not completed the objectives of the study and have not yet terminated contact with the participants, except for feedback of final results to participants), you must request an extension using the appropriate REB form.

In all cases, please ensure that your research complies with Tri-Council Policy Statement (TCPS). Also please quote your REB file number on all future correspondence with the REB office.

Congratulations and best of luck in conducting your research.

Susan James, Chair

Laurentian University Research Ethics Board

Appendix C

Rainbow
District School Board
69 Young Street, Sudbury, Ontario P3E 3G5 | Tel: 705.674.3171 | Toll Free: 1.888.421.2661 | rainbowschools.ca

December 4, 2013

Jennifer Drummelsmith
Laurentian University
c/o 1310-A Nesbitt Drive, Unit 103
Sudbury, ON
P3E 6A8

Dear Jennifer Drummelsmith:

The purpose of this letter is to inform you that your Research Project Proposal entitled **"Cyberbullying: Interpersonal competence, aggression school adjustment, age and gender"** has been approved.

Rainbow District School Board permits you to contact the school principal in order to present your proposal. The principal has the final authority to allow research in his/her school.

All on-site data collectors/facilitators need a current criminal record check on file with my office prior to entry to any school.

Sincerely,

Dr. Sharon Speir
Superintendent of Schools
speirs@rainbowschools.ca

Encl. (1)

Appendix D

LaurentianUniversity
UniversitéLaurentienne

Parental/Guardian's Consent for Child to Participate in Research Project:
Cyberbullying: Interpersonal competence, school adjustment, aggression style, gender and age differences

My name is Jennifer Drummelsmith. I am a graduate student in the M.A Psychology program at Laurentian University. I am currently working towards completing my Master's degree; part of the program involves a research project. The purpose of my research project is to examine potential risk factors for individual's involvement in cyberbullying. I am asking your permission for your child to participate in this project, your child will also be given the opportunity to choose whether he or she wants to participate on the day of testing.

Project Description –

If your child participates in the study I will be asking them to complete four different questionnaires. The testing will take place in your child's school in groups. The questionnaires will take about 40 minutes to complete and will be completed so that only they are aware of their own answers. The questionnaires being used will ask questions about cyberbullying involvement and include questions about cyberbullying, and being the victim of cyberbullying, they will also ask questions about their age, gender, access to technology (such as owning a computer), aggression, school adjustment, and interpersonal competence. An example of a cyberbullying involvement question is: *Kids have sent hurtful e-mail to me (such as called me a bad name, said something mean, or made fun of me).*

Definition of Cyberbullying: for this research cyberbullying is defined as: the use of information and communication technologies (such as cell phones, computers and tablets) to intentionally, or the individual should know that their actions will most likely harm, or embarrass another person or group of people.

Benefits/Risks –

This research will benefit students by helping identify potential predictive and risk factors for cyberbullying involvement, which will allow for better intervention and anti-cyberbullying programs to be developed. I also believe that there is little to no risk to your child in participating in this research. IF however your child becomes uncomfortable or stressed by answering any of the questions they can choose to stop participating, to skip the question or to take a break. Each student will also be given a list of community and school resources to help them if they are upset by something that came up in the questions, they will also have access to my e-mail which will allow them to have any future concerns or questions answered.

Confidentiality/Privacy –

During the research process all data will be kept in a locked file cabinet with the consent forms kept in a separate locked file cabinet so that each individual's forms cannot be linked to a questionnaire package. The only individuals who will have access to the data are myself and my Laurentian University supervisor. All data will be stored for analysis on a flash drive which will

be encrypted and will have passwords to ensure the data remains secure. When I report by findings no names will be used. A summary of what we find in this study will be given to each student who participates; as well a copy will be given to each school.

Voluntary Participation –

Participation in this research is voluntary, your child (and you) can choose to participate or not participate. In addition at any point during the project you can withdraw your permission, and your child can stop participating without any penalty.

If you have any questions about this project please contact me, Jennifer Drummelsmith at jdrummelsmith@laurentian.ca. You can also contact my Laurentian University supervisor Dr. Levin at 705-675-1151 ext 4242. If you have any questions or ethical concerns you can contact the Laurentian University Research Officer at: 705-675-1151 ext 2436 or toll free at 1-800-461-4030 or email ethics@laurentian.ca

I have included a list of community and school resources for you or your child if needed.
Kids Help Phone: 1-800-668-6868
Health Sciences North (HSN): Crisis intervention program: 1-877-336-2433
Mental Health Helpline: 1-866-531-2600
You can also contact me at jdrummelsmith@laurentian.ca if you have any questions or concerns.

Please keep the above consent form for your records.

If you consent for your child to participate in this research project, please sign the following signature portion of this consent form and return it.

This study has received clearance by the Laurentain University Psychology Research Ethics Board (2013-07-05)

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cut or tear here

Signature(s) for Consent:

I give permission for my child to participate in the research project entitled: *Cyberbullying: Interpersonal competence, school adjustment, aggression style, gender and age differences*. I understand that, in order to participate in this project, my child will also agree to participate. I understand that my child/or I can change our minds about participating, at any time, by notifying the researcher of our decision to end participation in this project.

Name of Child (Print):_____

Name of Parent/Guardian (Print):_____

Parent/Guardian's Signature:_____

Date:_____

Appendix E

Informed Consent Form

The point of an informed consent is to make sure that you understand the point of the study and what you are going to be asked to do. The informed consent must have all the information you need to decide if you would like to participate in the study.

Present study: *Cyberbullying: Interpersonal competence, school adjustment, aggression style, gender and age differences*

Definition of Cyberbullying: for this research cyberbullying is defined as: the use of information and communication technologies (such as cell phones, computers and tablets) to intentionally, or the individual should know that their actions will most likely harm, or embarrass another person or group of people.

Research personnel: The following people will be involved in this research project and may be contacted at any time: Jennifer Drummelsmith (Principle Investigator, jdrummelsmith@laurentian.ca). If you should have any ethical concerns about this study please contact, the Laurentian University Research Officer at: 705-675-1151 ext 2436 or toll free at 1-800-461-4030 or email ethics@laurentian.ca or Dr. Elizabeth Levin (Faculty Advisor, 705-675-1151 ext 4242)

Purpose: The point of this study is to look at what might be putting individuals your age at risk for involvement in cyberbullying, and what might predict why someone is involved in cyberbullying.

Task requirements: You will be asked to answer four different questionnaires.

Duration and locale: Testing will take place in your school, in groups, with enough space for your answers to remain private to you. This study will be completed all at once, which will last approximately 40 minutes.

Potential benefits and risks/discomfort: There are no direct benefits of participating in this research, but with your participation we will better understand cyberbullying and what might predict involvement in cyberbullying, this research may also help researchers help people who are involved in cyberbullying. The risks of being stressed or upset by this study are minimal but just in case, a list of resources will be provided at the end of this experiment to you, if you do feel upset by this research, or if you choose not to finish the experiment the resources will be provided at that time also.

Anonymity/Confidentiality: All the information you provide will be kept confidential. Your name and your answers to the questions will be kept separate so no one can match them up. This data will only be used for research at Laurentian University. Your answers will be coded in such a way that you cannot be identified. Your consent form and questionnaire packages will be kept

in different locked file cabinets; data from the questionnaires will be stored on encrypted flash drives.

Right to withdraw: Being part of this study is voluntary. At any time during the study you can choose to stop or to not answer certain questions there is no penalty for stopping.

This study has received clearance by the Laurentain University Psychology Research Ethics Board (2013-07-05)

Signatures: I have read the above form and consent to participate in this study about cyberbullying involvement. The data in this study will be used for research publications and/or teaching purposes. I am aware that the data collected in this study will be kept strictly confidential and anonymous. My signature indicates that I understand the above and wish to participate in this study:

Participant's Name (print): _____

Participant's Signature: _____

Date: _____

Appendix F

LaurentianUniversity
UniversitéLaurentienne

Debriefing Form

This experiment is about cyberbullying involvement and looked at potential risk factors. Each participant answered four different questionnaires about cyberbullying, gender, age, school adjustment, aggression and interpersonal competence. Cyberbullying is on the rise and the negative impacts of being involved as a cyberbully, a cyberbully-victim, or as a victim of cyberbullying are just being realized. What puts an individual at risk is relatively unknown and better understanding this will help researchers and clinicians to better identify and help individuals who are involved or at risk for involvement. It will also help develop better intervention and anti-cyberbullying programs.

Where can I learn more?

Beckerman, L., & Nocero, J. (2003). High-tech students hate mail. *The Education Digest,* 37-40

Beran, Y., & Li, Q. (2007). The relationship between cyberbullying and school bullying. *Journal of Student Wellbeing, 1*(2), 15-33

Cassidy, W., Jackson, M., & Brown, K. N. (2009). Sticks and stones can break my bones, but how can pixels hurt me? *School Psychology International, 30*(4), 383-402. doi: 10.1177/0143034309106948

At this time I would like to thank you for taking the time to be part of this study. Your participation is greatly appreciated.

If you wish to talk about this research any further fell free to contact any one of the following people: Jennifer Drummelsmith (Principle Investigator, jdrummelsmith@laurentian.ca) or Dr. Elizabeth Levin (Faculty Advisor, 705-675-1151 ext 4242). If you should have any ethical concerns about this study please contact the Laurentian University Research Officer at: 705-675-1151 ext 2436 or toll free at 1-800-461-4030 or email ethics@laurentian.ca

Is there anything that I can do if I found this experiment to be upsetting?
Given the nature of this experiment you may feel uncomfortable. It is important that if you feel this way you can contact: Health Sciences North (HSN): Crisis Intervention Program at: 1-877-336-2433, the Mental Health Helpline at: 1-866-531-2600, Kids Help Phone at: 1-800-668-6868 (Crisis Line). Or you can also visit your school counselor or talk to any teacher at your school.