Cyber threats: a study of what middle and high school student know about threatening behaviours and internet safety

Stacey L. Kite* and Robert K. Gable

Johnson & Wales University,
8 Abbott Park Place,
Providence, RI 02903, USA
E-mail: skite@jwu.edu
E-mail: rgable@jwu.edu
*Corresponding author

Lawrence P. Filippelli

Scituate School Department,
Johnson & Wales University,
8 Abbott Park Place, USA
Providence, RI 02903,
E-mail: drfilippelli@cox.net

Abstract: This study assessed middle and high school students' knowledge of potential risks, appropriate use, and their behaviours on the internet and social networking sites, especially regarding behaviours that may lead to cyber bullying or contact with potential internet predators. A total of $N = 4,215$ middle and high school students were assessed in a northeast state using the 47 items and five dimensions of the 'Survey of knowledge of internet risk and behaviour' (SKIRB). The instrument assesses students' knowledge of internet safety with social media, cyberbullying, and internet predator risks. Descriptive statistics and a t-test were generated. Major findings revealed students do not recognise the risk associated with electronic forms of communication with low appropriate responses for the knowledge dimension. An alarming number of students have admitted to being bullied in school, $N = 1,200$ students, $n = 786$ middle school students and $n = 414$ high school students. Finally, parental involvement overall is low; middle school 33%, high school 17%, with regard to monitoring of internet activities.

Keywords: cyber bullying; internet behaviours; cyber threats; social media.


Biographical notes: Stacey L. Kite is currently a Professor of Research in the Educational Leadership Doctoral Programme at Johnson & Wales University. Earlier in her career, she served as the Assistant Dean of the College of Business, where she focused on satisfaction and loyalty research. Since joining the doctoral programme, her research has focused on student satisfaction,
service learning, assessment, and cyberbullying and internet risks. She was the lead author of the first two versions of the survey of internet risk and behaviour which has been used by many middle and high schools in the Northeast of the USA.

Robert K. Gable is the Director of the Centre for Research and Evaluation in the Graduate School and a Professor in the Educational Leadership Doctoral Programme at Johnson & Wales University. He taught research methods, affective instrument development and survey methodology in the Neag School of Education at the University of Connecticut. He also served as the Director of Research for the Leadership Research Institute consulting firm. He has published a textbook entitled *Instrument Development in the Affective Domain: Measuring Attitudes and Values in Corporate and School Settings*, and several journal articles on affective instrument development.

Lawrence P. Filippelli is currently the Assistant Superintendent of Schools in Scituate, RI. He has served on the Rhode Island Senate special commission on cyberbullying cyberthreats, and serves on the RIEMA School Safety Board. He is an Adjunct Professor and Research Fellow in the Centre for Research and Evaluation in the Graduate School at Johnson & Wales University and also teaches in the Graduate Programme in Education Administration at Providence College. He is the owner of the Education Consortium, LLC, a business which specialises in education consulting with a specific focus on cyberbullying, sexting, creating and maintaining crisis response plans.

1 Introduction

“Safety and security don’t just happen, they are the result of collective consensus and public investment….. We owe our children, the most vulnerable citizens in our society, a life free of violence and fear” [Mandela, (2002), p.ix]. Children are our most precious commodity. We spend time caring for and protecting our children from threats in society; threats, until recently, we thought were outside the safety of our home. The environment our children are living in today; however, is very different than even just ten years ago. Technology is prevalent in just about every home, with 86.3% of homes with children between the ages of 6–17 possessing a computer in the home (United States Census Bureau, 2010). Approximately 93% of teens (age 12–18) use the internet. This internet use is both social and academic, with many schools requiring word processing, internet searches, and online submission of assignments. This promoted the use of the internet at home, school, or the library, often with no adult supervision, is a concern for both parents and school administrators. The need to monitor children’s behaviours has become increasingly difficult with the extension of the internet and cell phones. No longer are children safe and sound in their home or school. In fact, the threats found on the internet may be more dangerous and threatening since there are often no barriers.

The internet affords us wonderful opportunities to explore and learn; however, it opens our world to be more public than ever. Many teens seem unaware of the risks of inappropriate behaviours online, viewing them as trivial, “it won’t happen to me”. This lack of understanding and frivolous interpretation often leads to them coping on their own, not informing a parent or adult in a judicious time, if at all.
The purpose of this study was to assess middle and high school students’ knowledge of potential risks, appropriate use, and their behaviours on the internet and social networking sites, especially regarding behaviours that may lead to cyberbullying or contact with potential internet predators.

2 Background of the study

Bronfenbrenner (1977) is regarded as one of the leading scholars in developmental psychology. His ecological system theory posits that development is shaped by the influence of several environmental systems. The systems, in the form of relationships and environments, surrounding an individual sculpt who they become in the future. A child’s proper development is dependent upon appropriate scaffolding of the system relationships, beginning with a strong foundation, the microsystem made up of family, friends, schools, and the neighbourhood. It is in the microsystem that most social interaction occurs. Based on this theory, if the first system relationship is not functioning properly, a child may not develop the aptitude to form relationships in other ‘system’ areas (Bronfenbrenner, 1977).

This theory was used as a basis for establishing a connection between a breakdown in relationships and the development of poor behaviours, including bullying behaviours. This theory might also explain or predict how being the victim of bullying could affect a child’s subsequent development. Bronfenbrenner (1977) believes that the presence of volatile structures in a child’s ‘ecological system’ can be the most destructive force in his/her development. This structural volatility could stem from issues at home, with family, at school, or with peers. In order for a child to develop properly, s/he needs constant interaction and companionship within the system (Addison, 1992). When this is not present from an adult, at home or school, or from peers, children may turn to bullying behaviours to compensate for these unmet needs. When the ‘ecological system’ breakdown is with peers, such as when a child is bullied by them, s/he may also suffer developmentally.

Moreover, it is believed that children do not develop their moral identity until early adulthood. They do not truly understand right from wrong in the same manner and magnitude as adults (Willard, 2007). This moral development is also linked to moral emotions. In order for a child to feel empathy or sorrow for actions, such as when they engage in bullying behaviours, they must first understand that the actions are wrong. Likewise, the moral emotions are believed to further develop “a person’s understanding of the prescriptive nature of the norms of fairness and caring” [Nussbaum, 2001 as cited in Malti and Latzko, (2010), p.1]. Moral emotions such as sympathy represent a genuine orientation towards the other’s welfare; conjointly with moral cognition, they are very important to the early development of moral action tendencies (Eisenberg, 2000; Hoffman, 2000; Keller, 1996; Tangney et al., 2007 as cited in Malti and Latzko, 2011).

When children do not have the supports in place to properly develop, their behaviours can be destructive. One such destructive behaviour is bullying and/or cyberbullying. Bullying behaviours can adversely affect school climate, creating an atmosphere of negativity and aggression. But the issue may go much deeper than that. Basile et al. (2009, p.344) found that “most of the factors associated with bullying perpetration are also associated with sexual violence perpetration”. Likewise, DeSouza and Ribeiro (2005) found that among 500 students at two high schools in Brazil, students who
self-reported bullying perpetration were more likely to commit sexual harassment. Finally, Pellegrini (2001) found that male students who bullied in the sixth grade were found likely to sexually harass others at the end of the seventh grade. These findings do suggest a causal relationship between bullying behaviours and sexual violence; the traits of the individual and reasoning for the behaviour are disturbingly similar.

Internet safety and related bullying have become major issues for school districts. Superintendents report that victims of social-media bullying feel unsafe; have trouble focusing on school work, which leads to lower classroom achievement levels; and often do not know whom to talk to about their negative experiences.

The topics of school administrators’ awareness and development of preventive plans becomes more important in light of the currently increasing discussion of bullying in the national news. For example, the Massachusetts District Attorney recently indicated that the South Hadley MA ninth grader, Phoebe Prince, suffered a nearly three-month campaign of assultative behaviour and threats of physical harm prior to walking home and hanging herself. Currently, nine students are facing criminal charges. In Connecticut, a 2008 law requires schools to report incidences and develop plans to prevent bullying behaviours. The key to these efforts is assessment of what students know about the risks of bullying and what behaviours they are currently victims of or tend to engage in themselves.

2.1 Knowledge of appropriate online behaviours

The World Wide Web affords us wonderful opportunities to explore and learn; however, it also opens our world to be more public than ever before. Many teens seem to be unaware of the risks of inappropriate behaviours online. According to Baumgartner et al. (2010), female teens reported that they had engaged in many forms of risky behaviours while online. These behaviours included sharing personal information, posting personal, sometimes sexual photos on the internet, conducting searches to find individuals to talk about sex and arranging meetings with individuals they met online. Alarmingly, in a recent Pew research study, it was found that the majority of teens who were contacted online by a predator were not scared by the experience. In fact, “in the majority of sex crimes against youth, offenders did not deceive the teens about the fact that they were older and were interested in sex. However, attackers seduced the youth by being understanding, sympathetic, and flattering, and by appealing to the teens’ interest in romance, sex and adventure” [Rainie, (2008), p.23].

Protecting students from threatening online behaviours, from both peers and strangers, is paramount. Students’ own judicious internet use and online behaviours, as well as an understanding of the consequences of their online choices, can mean the difference between safe and unsafe use of the internet. Only when students are armed with the knowledge of these risks can they begin to make smart choices. The research we report in this article will help school personnel understand deficiencies in this knowledge.

2.2 Cyberbullying victims

The threat to teens online does not only come from strangers, as is the case with most cases of predation, but it also comes from their own peers – students they have met in their neighbourhoods, in their schools or online. Peer-to-peer cyberbullying is a serious
threat to our children from grade school and beyond. Lenhart (2007) found that 32% of teens self-reported being a victim of cyberbullying activities (threatening message, photo posted, rumour spread online, etc.). According to Willard (2007), individuals who seek acceptance and attention are likely to become victims of internet bullying. Furthermore, these individuals are believed to be less likely to follow the ‘rules’ of internet safety messages.

Once victimised by cyberbullying, students tend to suffer from social and emotional problems. They often become more reserved and less likely to make and trust friends (Shariff, 2008). Hinduja and Patchin (2009) found links between cyberbullying and drops in self-esteem, increased depression and school delinquency, decreases in academic grades, and increased violence and even suicide. Bartsche and Knoff (1994) found that victims of bullying often reported having difficulty focusing on their schoolwork. This lack of concentration often leads to marginal or poor grades and achievement. In fact, DeVoe and Kaffenberger (2005) found that bullied students were less likely to report earning A’s than their non-bullied counterparts. One explanation of this may be low self-efficacy, which was found to be a mediating factor in low achievement levels. This connection suggests that low self-esteem, exacerbated by being bullied, may lead to feelings of incompetence, which, in turn, results in lower achievement (Thijis and Verkuyten, 2008).

2.3 Bullying behaviour

The causes of bullying behaviours are as diverse as the personalities of the bullies themselves. In a number of cases, cyberbullies are actually victims of traditional bullying, and they become bullies in an attempt to regain control (Digital Natives, 2010). Some cyberbullies learn the behaviour at home, copying what they see. Others may be insecure, using bullying as a coping mechanism. Yet others may be exhibiting a pattern of defiant, aggressive behaviour for no known reason. Whatever the root cause, the solution is not easy, but a key first step is to gather data regarding students’ knowledge of the risks and effects of bullying and their self-admitted internet behaviours.

Cyberbullying behaviours allow the bully to remain anonymous (Digital Natives, 2010). Individuals online engage in what has been termed ‘disinhibition’. Disinhibition is the phenomenon that people do things online that they would not do in the ‘real world’. Furthermore, many teens have admitted to typing things when online that they would not say aloud (Wolak et al., 2008); this is an issue for people of all ages, but especially during the teen years. “During teen years, in addition to developing the capacity to engage in reasoned decision making, teens develop their ‘moral identity’ – their personal, internalised values about what is safe and unsafe, responsible and irresponsible, right and wrong” [Willard, (2007), p.135]. Therefore, it is paramount that we, as a community, assess students’ internet knowledge and behaviours so that we can, in turn, develop programming focusing on these areas of weakness.
2.4 Internet usage

The increased use of social networking has altered the control of the privacy of communication. Lenhart (2007, p.2) found that “nearly 1 in 6 online teens said they had experienced unwanted forwarding of private communication”. Aside from the dangers of internet predators or threats of cyberbullying, the internet can affect the personal lives of all involved. Communication on the internet, through social networking sites, e-mail, IM, etc., are all public forms of communication, regardless of the parental and privacy blocks. Friends of friends, colleges and credit agencies all have access to these postings. To further complicate the issue, individuals feel invisible when online, despite the reality that every action online leaves a ‘cyber footprint’ (Willard, 2007). This feeling of invisibility lessens the concern of being caught, interfering with the rational decision of right and wrong (Willard, 2007).

Having access to the internet does not always mean trouble for students. The internet is a vast resource for many purposes, and with proper education and supervision, educational institutions, working in conjunction with parents and the community, can teach their students about the dangers of accessing the internet unsupervised. The data presented in this article will provide school administrators with information regarding the extent that students use the internet.

2.5 Adult notification/parental involvement

If a student is a cyberbully victim, s/he should contact an adult. Data gathered by the co-authors of this research gathered a sample of 468 middle school students found that only 58% of the students bullied online would contact a teacher, parent or another adult (Kite et al., 2010). Parents play a crucial role in this necessary communication. Myriad evidence supports the need for parental involvement in a child’s internet activities; from filtering access to monitoring activity, supervision is paramount (Lenhart, 2005; Rainie, 2008; Shariff, 2008). Aside from the fact that predators are seeking out youth, teens are also reporting inappropriate behaviours. In fact, Lenhart (2005) found that 81% of parents and 79% of teens agreed that “teens are not careful enough when sharing personal information online” (pii). Furthermore, when asked if “teens do things online that they wouldn’t want their parents to know about” (pii), 65% of the parents and 64% of the teens agreed with the statement.

It is clear that the wide use of the internet today can profoundly influence behaviour. Furthermore, as internet activity increases, it exposes students to risks such as internet predators and potential cyberbullying by other students. The lack of knowledge regarding risk on the internet is a clear sign that students need to be educated in this area earlier than they are currently. Only when students are armed with the knowledge of these risks can they begin to make smart choices and contact an adult when they are a victim of cyberbullying. Parents, as well as school administrators, need to be aware of these important issues and create educational opportunities to facilitate proper student knowledge and behaviours.
3 Importance of research in this area

Middle school students face many obstacles to academic achievement that their school administrators, faculty and parents did not experience as teenagers. The way a student develops and acts has not changed, *per se*; however, the world around that student has changed drastically in regard to technology access, globalisation, and adolescent behaviours (Jackson, 2009). Technology and the internet are staples in our children’s lives for both entertainment and academic purposes. In fact, in 1994, only 35% of schools had access to computers with internet access, while as of 2005, virtually every school has internet access (99%) (Parsad et al., 2005).

As noted earlier, an estimated 93% of teens (age 12–18) are online (Lenhart et al., 2010). Students utilise cell phones, personal digital assistants, home computers and laptop computers to access the internet and communicate with friends almost instantly. This increased dependence on technology, especially the internet, intensifies the importance of learning and practicing appropriate behaviours while using online tools. The consequences of inappropriate behaviour can be life threatening. For example, Hinduja and Patchin (2010) found that victims of cyberbullying in middle school were much more likely to score highly on a suicide ideation scale than students who were not victims.

The threat of internet predators and cyberbullies increases as time online with no boundaries increases. In order for schools and parents to create education programmes intended to reduce this threat and/or decrease unsupervised internet use among minors, a clearer understanding of the specific issues regarding online knowledge and behaviour is needed (Erb, 2006). The key to these efforts is assessment of both what students know about the risks of bullying and predators and how they are being victimised and/or victimising others. Presently, no survey exists that addresses the literature-based dimensions assessed by the ‘Survey of knowledge of internet risk and internet behaviour’.

4 Methodology

This quantitative study investigated the knowledge of risks and behaviours of middle and high school students on the internet. Moreover, parental involvement, as reported by the student, and willingness to notify an adult were investigated.

4.1 Research questions

1. What is the knowledge level of middle and high school students’ regarding potential risks, appropriate use, and their behaviours on the internet and social networking sites with regard to cyberbullying and internet predators?
2. Do students feel parents/adults are monitoring their online behaviours?
3. Is there a significant difference in parental involvement and adult notification between middle and high school students?
4.2 Sample

Middle and high school students from $N = 6$ school districts in a Southern New England state participated in this study. A total of $N = 4,215$ students, $n = 1,594$ high school students and $n = 2,621$ middle school students, participated in the study. The sample consisted of typical aged middle and high school students (ages 11–18) from urban, suburban, and urban ring schools, and represented an equal proportion of male and female students (male 50.3%, female 49.7%).

4.3 Instrumentation

A questionnaire developed by the researchers entitled ‘Survey of internet risk and internet behaviour’ is described below.

4.3.1 Scales and scoring technique

The instrument contains 7 literature derived demographic items (Franek, 2005/2006; Lenhart, 2007; Ma, 2001; McKenna, 2007; Shariff, 2008) and 26 statements constructed to describe students’ knowledge of risks and behaviours associated with using the internet, as well as their experiencing or exhibiting specified attributes associated with internet use.

4.3.2 Response format

Students were asked to ‘agree’ or ‘disagree’ with each statement. While this binary response format can result in less response variability than a traditional five-point agreement scale, pilot administrations of the survey supported the researchers’ intent to create a non-threatening version of a ‘true/false’ format familiar to students’ other assessment measures. In the section below, the validity/reliability evidence presented by Gable et al. (2011) indicated that the categorical response format was psychometrically successful. Responses were scored ‘1’ or ‘0’ to reflect a high level of the attribute measured by the scale (e.g., knowledge) or higher levels of having experienced the attribute (e.g., bully victim, adult notification, and parental involvement) or exhibited the attribute (e.g., bully behaviour; internet behaviour).

Appropriate agreeing or disagreeing with a statement received a score of ‘1’ (e.g., agree with the statement: Making threats online can get me into trouble with the police or disagreeing with the statement: I have posted mean or threatening statements about another student online.); an inappropriate agree or disagree response was scored ‘0’. This scoring technique was designed to produce scores where high scoring students had higher levels of knowledge, were more often bullied, tended not to participate in bullying, had parents who were aware of their child’s internet activities, used the internet more often, and/or were willing to contact an adult if they were threatened by a peer or stranger on the internet.

The ‘knowledge’ scale was composed of seven items describing the students’ knowledge of appropriate behaviour on social networks and potential risk of internet predators (Franek, 2005/2006; McKenna, 2007). The remaining 19 items on the instrument were designed to identify whether or not students had experienced (e.g., Bully
Victim, Parental Involvement) or exhibited specified attributes (e.g., Bully Behaviour, Adult Notification, internet Behaviour).

4.3.3 Validity

Content validity of the items was supported through the literature (Franek, 2005/2006; McKenna, 2007; Shariff, 2008; Weaver, 2007) and judgmental review by \( N = 5 \) middle school teachers and \( N = 2 \) principals. For prior data gathered on \( N = 1366 \) middle school students construct validity was supported using confirmatory factor analysis, Rasch model analysis, and latent class analysis (Gable et al., 2011).

4.4 Data analysis

Descriptive data, using response percentages for the agree and disagree options, were calculated along with dimension and item-level mean correct percents for both high school and middle school grade levels. Additionally, differences among and between grade levels at the dimension level are reported.

5 Findings

Table 1 reveals that the greater majority of middle and high school students do not believe a predator could contact them based on information they, or their friends, post online. The risk associated with electronic forms of communication is clearly not understood. This ignorance is yet one example of how predators can contact our children.

<table>
<thead>
<tr>
<th>Item</th>
<th>Response</th>
<th>Middle school</th>
<th>High school</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. With the contact information I put on MySpace or Facebook, it would be easy for an internet predator to contact me.</td>
<td>Agree</td>
<td>30%</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>70%</td>
<td>74%</td>
</tr>
<tr>
<td>17. An internet predator could make contact with me based on the information I have posted online.</td>
<td>Agree</td>
<td>31%</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>69%</td>
<td>73%</td>
</tr>
<tr>
<td>25. An internet predator could contact me based on what my friends have posted about me.</td>
<td>Agree</td>
<td>28%</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>72%</td>
<td>81%</td>
</tr>
</tbody>
</table>

Note: Italics percents indicate 'appropriate' response.

Table 2 reports the responses to questions regarding identifying as being a bully victim, or having participated in bullying behaviours. Although the percentages of student being bullied may look low, they represent 414 high school students and 786 middle school students in just six school districts. This represents approximately 200 bully victims per district. Likewise, those who participated in bully behaviours represent far too many students.
Table 2  Bullying behaviours and victims by middle school and high school students

<table>
<thead>
<tr>
<th>Item</th>
<th>Response</th>
<th>Middle school</th>
<th>High school</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Bully victim</td>
<td>Agree</td>
<td>30%</td>
<td>26%</td>
</tr>
<tr>
<td>I have been bullied by another student while online.</td>
<td>Disagree</td>
<td>70%</td>
<td>74%</td>
</tr>
<tr>
<td>18. Bullying behaviour</td>
<td>Agree</td>
<td>30%</td>
<td>26%</td>
</tr>
<tr>
<td>Online, I sometimes say hurtful things to others that I would not say in person.</td>
<td>Disagree</td>
<td>70%</td>
<td>74%</td>
</tr>
<tr>
<td>6. I have posted mean or threatening statements about another student online.</td>
<td>Agree</td>
<td>31%</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>69%</td>
<td>73%</td>
</tr>
<tr>
<td>3. I have logged onto my friend’s social networking site and pretended to be them.</td>
<td>Agree</td>
<td>28%</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>72%</td>
<td>81%</td>
</tr>
</tbody>
</table>

Note: Italics percents indicate 'appropriate' response.

The data in Table 3 indicates that parental involvement in their child’s internet activities is believed to be low. A mere 30% of the middle school students responded that their parents have access to their password and 33% believe their parents check their internet activity regularly. This number becomes more disturbing as students move from middle school to high school, with only 10% responded that their parents have access to their password and 17% believing that their parents check their internet activity regularly.

Table 3  Parental involvement and adult notification

<table>
<thead>
<tr>
<th>Item</th>
<th>Response</th>
<th>Middle school</th>
<th>High school</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Parental involvement</td>
<td>Agree</td>
<td>30%</td>
<td>10%</td>
</tr>
<tr>
<td>My parents have access to all of my passwords.</td>
<td>Disagree</td>
<td>70%</td>
<td>90%</td>
</tr>
<tr>
<td>18. My parents regularly check my activity on the internet.</td>
<td>Agree</td>
<td>33%</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>67%</td>
<td>83%</td>
</tr>
<tr>
<td>6. Adult notification</td>
<td>Agree</td>
<td>64%</td>
<td>42%</td>
</tr>
<tr>
<td>If I had been bullied online, I would tell a parent or another adult.</td>
<td>Disagree</td>
<td>36%</td>
<td>58%</td>
</tr>
<tr>
<td>3. If I were contacted by someone I did not know on instant messenger, I would tell an adult.</td>
<td>Agree</td>
<td>56%</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>Disagree</td>
<td>44%</td>
<td>74%</td>
</tr>
</tbody>
</table>

Note: Italics percents indicate 'appropriate' response.

Likewise, the responses to the Adult Notification items were unsettling. Just over half, 56%, of the middle school students responded that they would notify a parent or adult if they were contacted by someone they did not know on instant messenger, a bit higher, at 64% if they were bullied. Conversely, high school students plummet to only 26% responding that they would notify a parent or adult if they were contacted by someone they did not know on instant messenger and 26% would tell and adult or parent if they were bullied.
Table 4 contains the results of a t-test comparing the middle school and high school students on Parental Involvement and Adult Notification. The findings revealed that, while the scores on both dimensions were low, there was a significant difference between the grade levels on both dimensions. The students’ knowledge of Parental Involvement reduces dramatically from middle school \( (t = 16.36, p = .001, M = .27, d = .50) \) to high school \( (M = .12) \). Likewise, there is a drop off in responses to Adult Notification from middle school \( (t = 20.23, p = .001, M = .59, d = .64) \) and high school \( (M = .34) \).

<table>
<thead>
<tr>
<th>Dimension/item</th>
<th>Grade level</th>
<th>M</th>
<th>t</th>
<th>P</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental involvement</td>
<td>Middle school</td>
<td>.27</td>
<td>16.33</td>
<td>.001</td>
<td>.50</td>
</tr>
<tr>
<td></td>
<td>High school</td>
<td>.12</td>
<td></td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td>Adult notification</td>
<td>Middle school</td>
<td>.59</td>
<td>20.23</td>
<td>.001</td>
<td>.64</td>
</tr>
<tr>
<td></td>
<td>High school</td>
<td>.34</td>
<td></td>
<td></td>
<td>Large</td>
</tr>
</tbody>
</table>

6 Conclusions and recommendations

The internet introduces new issues for school administrators, parents, and the community at large. Research suggests that teens do not understand the consequences or risk of online behaviours. They feel invisible; therefore, invincible. They are able to hide behind the technology, oftentimes allowing them to act in ways they would not if they were speaking in person.

The results of this study revealed the following:

1. Students do not recognise the risk associated with electronic forms of communication. They fail to realise that anything placed online is, in fact, public communication.

2. For the 4,215 students in this study, an alarming number of students have admitted to being bullied in school, \( N = 1,200 \) students, \( n = 786 \) middle school students and \( n = 414 \) high school students.

3. There is an increase from middle school to high school for students who reported being bullied, and participating in bullying behaviours.

4. Parental involvement, overall, is low; middle school 33%, high school 17%, with regard to monitoring of internet activities.

5. Parental involvement decreases as students move from middle school to high school.

6. A low percent of students reported that they would tell an adult if they were bullied; middle school 64%, high school 42%, or contacted by a stranger; middle school 56%, high school 26%.

Based on the ecological systems theory, the interaction and education of appropriate behaviour needs to occur earlier and occurrences of bullying need to be dealt with swiftly. The theory posits that a breakdown in one system (relationships) relates to the individual’s inability to properly develop. The microsystem, composed of family, friends,
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schools, and neighbourhoods, is the first systems in the scaffolding of the developmental process. It is here that most social interaction occurs (Bronfenbrenner, 1977). Moreover, Willard (2007) stresses the development of the moral identity in the early years.

The knowledge that the development of an individual in social settings (Bronfenbrenner, 1977), the development of moral identity (Willard, 2007), links to adult behaviours such as sexual violence (Basile et al., 2009) and the lack of appropriate knowledge in the risks and behaviours on the internet make it clear that it is paramount that we address these issues in a proactive manner.

6.1 Supervision

Parents are not as aware of technology as their digitally savvy children. An example of this is a visual on two cars, both are Shelby Mustangs. One is a 1968 and the other is a 2008 – same genes – very different speeds. This illustrates the technology divide between children and their parents when it comes to technology. Unfortunately, this occurs even when the parents feel that they are proficient users of technology. The children will almost ALWAYS have the edge. In fact, this edge is occurring earlier in life. According to Knowles (2012) infants and toddlers are using technology to play games, watch shows, and Skype with family members. At an early age, they learn how to navigate these technology devices.

It is evident from this study that students do not feel their parents are monitoring their activities online. Although the number of parents monitoring in silence may mitigate the high numbers reported in this study, this remains a serious issue.

Parents need to increase their awareness on children’s use of technology and social media and/or at the very least make themselves aware of what it out there and how they should be making their children more socially responsible using social media.

Once armed with knowledge, it is recommended that parents speak with their children regarding appropriate behaviours online. They need to understand their cyber footprint (everything posted online is there in some format forever). They need to discuss the lack of privacy of their activities.

In addition to privacy issues, parents need to talk with their children regarding risky behaviours such as posting personal information, not properly blocking their FaceBook profile, have the ‘check-in’ function turned on, etc. It is a natural discussion to stress the importance of not speaking with strangers or going in the car or somewhere private with someone you do not know. This discussion of internet risk and behaviour needs to become just as natural as standard conversation with our youth.

Parents also need to discuss the negative consequences of bullying and/or saying mean or threatening things through technology. Students need to understand the moral implications of their actions and how they can negatively influence others. It is difficult enough to explain to a child how their actions in the school yard or classroom may be hurtful to others. It is vastly different and much more difficult to explain these consequences when the child does not see the actual effects because the action was conducted through technology.

Finally, the literature clearly states that students who are bullied relentlessly exhibit the same types of social withdrawal symptoms as adolescents/young adults who are under the influence of drugs and alcohol (Batsche and Knoff, 1994; DeSousa and Ribeiro; Erb, 2006; Hinduja and Patchin, 2009). These include, but are not limited to social...
withdrawal, a decrease in academic performance, hanging out with a new crowd of kids, and also withdrawal from communication with their parents. Parents should watch for these signs in their child if they suspect they are or have been the victims of bullying/cyberbullying and/or being harassed by an internet predator.

6.2 Education

There are many educational programmes available to schools and parents to assist in the development of informed students. Netsmartz is sponsored by the National Centre for Missing and Exploited Children. The site provides resources on cybersafety and cyberbullying. Moreover, it contains different portals for parents, educators, law enforcement, teens, tweens, and younger children. It is content rich and allows access to free informational videos for all age groups.

The parent portal of the site contains various informational pages on current trends with technology such as blogging, cell phones, predators, sexting, social networking, gaming, file sharing, webcams, and children as victims. The educator portal provides free access to online safety education kits, teaching materials based on the latest standards, free multimedia presentations that teachers can deliver to parents in large settings, and promotional items such has handouts, prizes, etc.

Common sense media goes beyond just helping parents with cybersafety. This website has five major components: reviews and advice, videos, educators, research, and policy. The reviews and advice portion provides access to top age appropriate picks for movies, games, apps, websites, TV, books, and music. Under the videos portal of the site, the user can choose various clips which talk about how to use social media, text messaging, safe online talk, online privacy and improving research skills just to name a few. The site offers numerous resources for educators and parents alike. There are links to K-12 curricula on internet safety, cyberbullying, and appropriate online behaviour.

The policy and advocacy portal brings the user to public advocacy sites as well as current state and federal news pertaining to protecting kids online.

Finally, one of the most unique components of this site is the research portal. This portion of the site brings the user to current and unique research on the topics of social media, and children’s use of media in America.

Stomp out bullying is another site that is useful to parents and educators. This site, as its name implies, provides a heavy focus on preventing the many types of bullying that occur. It is useful to parents and educators because there is a narrow focus as to what is cyberbullying, and what it can lead to. The site also explores the issue of teen dating violence, anti-gay bullying, and what can be done to ‘stomp’ bullying out. While there is a limited amount of information on the cyber component of bullying, it does not take the reader long to make the connection between cyberbullying and more conventional types of bullying.

7 Limitations and recommendation of future research

This study was limited to students in a northeast state. The results are self-reported from the students view. It does not measure the degree of participation, merely their self-reported knowledge and actives.
The sample consisted of traditional age 6–12th grade students in a Southern New England state. The sample included schools in urban, urban ring, and suburban area. It would be advantageous to conduct the study at a single school in order to assess the issues and needs specific to that site. Professional development could then be developed to address the specific needs of that site.

Participants may not be totally honest out of fear of repercussion. To minimise this, students were informed that their responses were confidential and that there was no way to identify an individual student’s responses.

Youth may describe/define bullying behaviours differently than adults. Although the definitions used in this study are supported by the literature, it is recommended that further investigation into the definitions be explored.

This study was a quantitative study and measured if a student participated in activities or had knowledge of risk and appropriate behaviours on the internet. A follow-up qualitative study would allow investigation into the reasons for their responses and possible disconnects in the definitions of appropriate.

References


