EXPLORING CYBERBULLYING IN K–12 EDUCATION IN CANADA TO PROMOTE CYBERBULLYING AWARENESS AND PREVENTION MEASURES

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Abstract

In the past decades, emerging technologies and the Internet have significantly improved and spurred developments in online communication and social networking. However, this type of technology has also created more opportunities for cyberbullying and resulted in several negative consequences, including multiple cases of youth suicide worldwide. This exploratory qualitative research study focused on cyberbullying in Canadian primary and secondary education from kindergarten to grade 12 (K–12). The study aimed to identify key areas of knowledge to advance a holistic understanding of cyberbullying to help promote cyberbullying awareness and informed anti-cyberbullying resource development in Canada. Data collection involved: (a) a narrative and a systematic research review of the current empirical evidence and theoretical literature; (b) a document analysis of Canadian laws, and Canadian school regulations surrounding cyberbullying incidents; and (c) in-depth, one-on-one interviews with leading anti-cyberbullying researchers and professionals working in K–12 education on current principles and practices related to the design of anti-cyberbullying educational resources. A conceptual framework informed by systems theory and technoethical inquiry provided a broad conceptual lens to help and interpret findings. Using thematic analysis, three main thematic areas were uncovered: (1) *awareness*, (2) *governance*, and (3) *environment*, which were considered as the strategic cyberbullying mitigation approach. General findings indicated that cyberbullying had similar characteristics to conventional bullying. Advanced findings revealed complex multi-dimensional interactions of cyberbullying themes uncovered, and *systems thinking* perspective was posited to help address unwanted outcomes of emerging technologies.

Keywords: cyberbullying, responsibility, education, primary, secondary, regulations, mitigation.

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Dedication

Success is a journey, not a destination!

–Arthur Ashe

This dissertation is dedicated to the family and friends who encouraged and inspired my life-long dream to complete the highest academic achievement, a dissertation of researching cyberbullying. Thank you for accompanying me on this lengthy journey.

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Abbreviations

AIM	AOL Instant Messenger
CDC	Center for Disease Control and Prevention
ICT	Information and Communications Technology
IEEE	Institue of Electric and Electronic Engineering
IM	Instant Messages
IT	Information Technology
NIST	National Institute of Standards and Technology (USA)
OCREAC	Ottawa-Carleton Research and Evaluation Advisory Committee
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
RCMP	Royal Canadian Mounted Police
R & D	Research and Development
SLR	Systematic Literature Review
SMN	Social Media Network
SNS	Social Network Systems
UK	United Kingdom
USA	United States of America

Chapter 1: Introduction

This Introduction chapter described the background on cyberbullying and types of information and communication technologies associated with this activity. First and foremost, the statement of the problem of cyberbullying is identified along with the purpose of this study. Then the rationality of identifying gaps in the existing literature is discussed and followed by the underlying research questions for this study. Finally, the chapter summarized each of the six chapters of this dissertation.

From the industrial revolution in the 19th century to the technological revolution in the 20th century—from the use of steam power to electric power and manual to machine-driven intervention capability—technology has been a driving force in changing lifestyles worldwide. Today, in the digital age, people can communicate electronically, and send each other messages or images at any time and place, using various forms of information and communication technology (ICT) via electronic devices (e.g., radios, televisions, computers, or smartphones). Unfortunately, emerging technologies can also be used by people to target and exploit others, which results in negative technological outcomes. Nowadays, communication usually deploys social media networks (SMN's), which are complex settings where technology, users, and society interact over the Internet. These interactions may create uncontrollable circumstances that can lead to undesirable consequences, such as cyberbullying (Boyd, 2007; Hinduja & Patchin, 2011a, 2011b, 2014; Paradise & Sullivan, 2012; Raskauskas & Stoltz, 2007; Shariff & Churchill, 2009; Smith et al., 2008). According to a 2014 Government of Canada report on health and behaviour in school-aged children, 95% of Canadian students reported being on Facebook by grade 11. These students were also exposed to the potential of cyberbullying with the use of social media tools (Steeves, 2014). Thus, cyberbullying seems to be associated with a particular type of communication trend among people. Many negative outcomes of

cyberbullying were found to be related to traditional bullying (Li, 2007), but further research is needed to confirm the similarity.

Research has shown cyberbullying victimization offences against youths mostly occur in the K–12 education landscape, and the activity may take place both in schools and in the home (Tokunaga, 2010). In particular, SMN provides increasingly more channels for communication with the option of anonymous transmission for cyberbullies, which makes it challenging for authorities to identify them. This element of anonymity is not an aspect of physical bullying, and it is one of the significant differences between physical bullying and cyberbullying (Felten, Balfanz, Dean, & Wallach, 1997; Hinduja & Patchin, 2011b). Another difference between traditional bullying and cyberbullying is that the capability of cyberbullying can repeatedly transmit through the medium of technology, rather than directly and physically transmitted between perpetrators and in the vicinity of the school area.

Statement of the Problem

Statistics Canada reported that "in 2014, about 17% of the Canadian population aged 15 to 29 (representing about 1.1 million people) accessed the Internet at some point between 2009 and 2014 [and] reported they had experienced cyberbullying or cyberstalking" (Hango, 2016, p. 3; see Figure 1). This age group includes people from K–12 and higher education and then extends to people in the workforce. The report also introduces cyberstalking statistics apart from cyberbullying; these terms are discussed in Chapter 2. As Figure 1 illustrated, the occurrences of both cyberbullying and cyberstalking incidents are almost equal. Social media is also reported to be involved in both cyberbullying and cyberstalking, but the differences between these two negative outcomes need clarification by firstly defining the terms. Unfortunately, research has shown that there are no universal definitions before cyberbullying adapted CDC's definition for

bullying, which makes the topic even more complex (Bauman, 2013; Deschamps & McNutt, 2016; Espelage, Rao, & Craven, 2012; Slonje, & Smith, 2008). The report from Statistics Canada has already shown that there are two types of cyber misconduct, namely cyberbullying (83%) and cyberstalking (17%). Thus, I needed to re-evaluate the scope of cyberbullying to include or not to include cyberstalking. Consequently, I decided to stay with the current existing definition of cyberbullying from the Ontario Education Act (further illustrated below), and not to widen the scope of this study. However, there is a section in Chapter 2 discussing how cyberbullying is being defined in the USA and Canada.

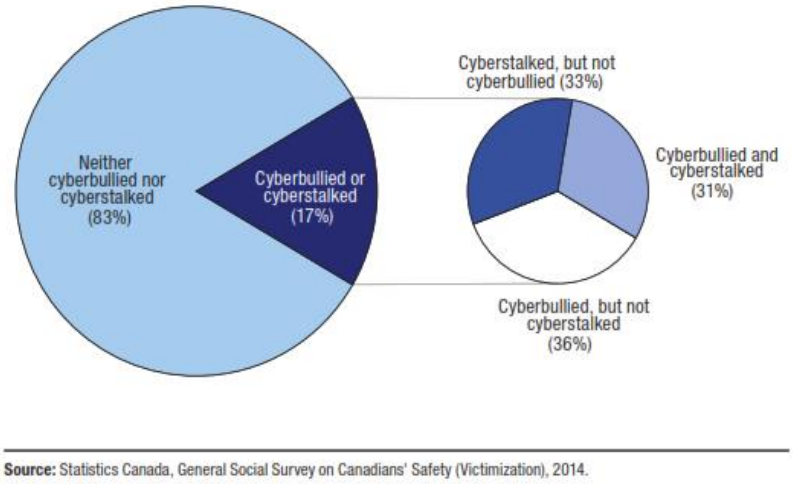

Figure 1. "Percentage of Cyberbullied Internet users aged 15 to 29 in the past five years in 2014"
Reprinted. Source: Statistics Canada. Insights on "Canadian Society Cyberbullying and cyberstalking among Internet users aged 15 to 29 in Canada," by D. Hango, 2016, p. 3. *Insights on Canadian Society*, n. pg. Reproduced and distributed on an "as is" basis with the permission of Statistics Canada.

From the same Statistics Canada report, Figure 2 illustrated that, in 2014, over 75% of Canadians under the age of 50 accessed the Internet, and that nearly 90% of the same population was under 35 years old. Hence, Canadian Internet users were mostly younger persons, and the possibility of being cyberbullied was relatively high. Shariff and Churchill (2009) found that

95% of 500 students (grade 6 to 9) from Montreal had the opportunity to access the Internet from home, and this access continues to increase in the youth community. Thus, the practice of cyberbullying seems to follow youth to their home, which confirms Li's (2007) illustration of cyberbullying as the extension of conventional bullying. Li also mentioned that victims are being harassed in schools and at homes by different means. Haltigan & Vaillancourt (2018) also stated that cyberbullying is under the bullying category because cyberbullying involves the same outcomes - "repeated, intentional humiliation and oppression of a person who has less power than his or her aggressor(s) as Olweus (1999)" defined bullying (para 2).

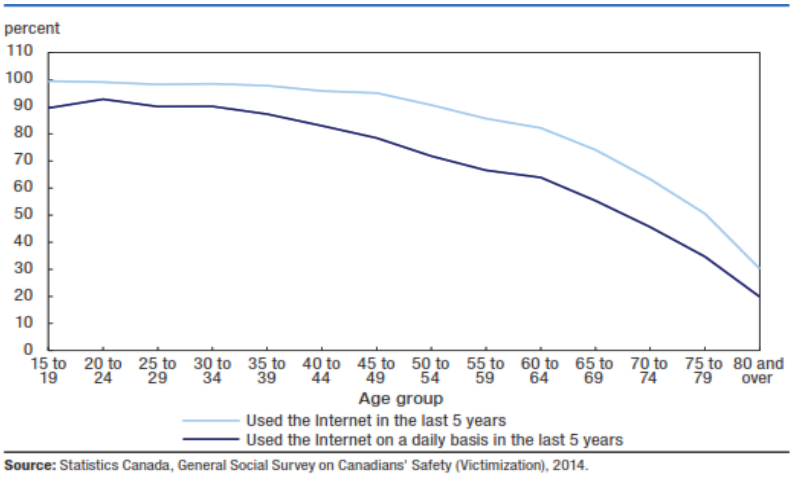

Figure 2. Internet use in Canada by age group in 2014.
Reprinted. Source: Statistics Canada. "Insights on Canadian Society Cyberbullying and cyberstalking among Internet users aged 15 to 29 in Canada," by D. Hango, 2016, p. 3. *Insights on Canadian Society*, n.pg. Reproduced and distributed on an "as is" basis with the permission of Statistics Canada.

Similarly, according to the Cyberbullying Research Center in the United States of America (USA), 33.8% of youth in the USA were victims of cyberbullying in 2016 (Hinduja & Patchin, 2016). Furthermore, between the years 2007 and 2016, the US Cyberbullying Research Center surveyed more than 20,000 US middle and high school students as part of 12 unique cyberbullying projects. The findings of this report revealed that 27.9% of the surveyed students

had been victims of cyberbullying (Hinduja & Patchin, 2016). Additionally, in 2014, the online forum NoBullying.com (from the platform YouTube), reported that 52% of youth in the USA had experienced cyberbullying. This figure dropped from 52% in 2014 to close 43% in 2015 (NoBullying.com, 2015). Although the Cyberbullying Research Center and the NoBullying.com forum reported different victim rates, the alarmingly high percentage in both years created concern in communities. Research in the USA context showed that cyberbullying could cause significant harm to targets, including outcomes like suicide (Patchin & Hinduja, 2016). Cook (2020), a data journalist from Comparitech, stated that "cyberbullying is on the rise" around the world (para. 2). He reported statistics for 2018 -2020 that

> a survey from Comparitech of over 1,000 parents of children was bullied both at school or online:
>
> - 47.7% of parents with children ages 6-10 reported their children were bullied
> - 56.4% of parents with children ages 11-13 reported their children were bullied
> - 59.9% of parents with children ages 14-18 reported their children were bullied (para. 8)

Also, a UNICEF (2019) poll reported that "one in three young people in 30 countries said they had been a victim of online bullying" (para. 1)

Within the North American context, cyberbullying research revealed that cyberbullying activity among youth is a pervasive problem in both Canada and the USA and that the body of research on cyberbullying in both countries is extensively established. This dissertation explored outcomes of cyberbullying and related cyberbullying components in the Canadian context to bring awareness and attempt to promote awareness of the practice of cyberbullying within the institutional structure of K–12 education in Canada.

In terms of cyberbullying research areas, there is a notable body of research on cyberbullying that has identified its negative consequences. Most of this research deals with the psychological aspects of cyberbullying and the identification of connected behavioural factors (Boyd, 2014). But the question arises, if cyberbullying is a type of abuse, how does established law combat this type of abuse? In society, abusive behaviour (and its consequences) is typically addressed through laws, regulations, or codes of conduct. In the case of cyberbullying, there is a small but growing effort to advance laws and regulations following significant media coverage and political perspectives of recent cyberbullying incidents in North America. Below are six cyberbullying cases that the NoBullying.com forum (2015) identified following cyberbullying incidences as the most significant to occur in North America between 1989 and 2013. Each case involved SMNs, resulted in youth and led to the adaption of existing and new laws.

1. Ryan Halligan (1989–2003), an American student from Essex Junction, Vermont, died by suicide by hanging after being cyberbullied (Flowers, n.d.). Halligan was bullied at school since the age of 10. He then spent a lot of time online, especially on AOL Instant Messenger (A.I.M.) and other instant messaging services, like ICQ and MSN, where Halligan was cyberbullied by his schoolmates, who thought that he was gay. On October 7, 2003, he died by suicide after following the advice of his online pen pal, Ryan, whom Halligan knew before Halligan moved away after his third grade.Subsequently, the state of Vermont enacted the Bullying Prevention Policy Law of May 2004 in an attempt to combat the issue of cyberbullying (No. 117. An Act Relating to Bullying Prevention Policies, 2004).
2. Megan Meier (1992–2006), an American student from Dardenne Prairie, Missouri, died by suicide by hanging herself after being cyberbullied by a fake account on MySpace, a

social network site (Zetter, 2008). Meier hanged herself on October 16, 2006, and was pronounced dead the following day. The owner of the fake account was later convicted (Steinhauer, 2008). On November 22, 2007, the city of Dardenne Prairie prohibited the use of Internet messaging services for harassment. Florissant, Missouri, also passed a cyber-harassment law and it went into effect on August 28, 2008. On May 22, 2008, Congresswoman Linda T. Sánchez introduced the House of Representatives Bill 6123 of 2008 (111th), and the new legislation was set up as the Megan Meier Cyberbullying Prevention Act (H. R. Bill 1966 of 2009, as illustrated by Thierer (2009).

3. Jessica Logan (1990–2008), an American student from Cincinnati, Ohio, died by suicide by hanging on July 3, 2008, after months of being abused and bullied by her classmates via sexting (Celizic, 2009). Logan's boyfriend also distributed her nude photo via text message after she attended the funeral service of her friend, who had died by suicide (Hastings, 2009). On February 2, 2012, Ohio governor John Kasich signed Ohio's House Bill 116 of 2012, also called the Jessica Logan Act, "to prohibit harassment by electronic means. The actions include harassment, intimidation, and bullying through computers, cell phones, or other electronic devices. The bill also requires school districts to amend their anti-bullying policies and procedures" (Crain, Ewing, & Scholler, 2012, para 1).

4. Tyler Clementi (1991–2010), an American student of Rutgers University from Fort Lee, New Jersey, died by suicide on September 22, 2010, by jumping from the George Washington Bridge (Parker, 2012). Clementi's roommate, Dharun Ravi, posted a picture on Twitter of Clementi kissing a man. Ravi was later indicted. Clementi's death raised concerns about cyberbullying from the Rutgers University community, including LGBT

students. The university changed its dormitory-room regulation regarding roommate assignments and opened a new Center for Social Justice Education and LGBT Communities. In November 2010, the general assembly of New Jersey reintroduced the Anti-Bullying Bill of Rights to the senate and house representatives as the Tyler Clementi Higher Education Anti-Harassment Act (S. 1492, 2019; Friedman, 2010).

5. Amanda Todd (1996–2012), a Canadian student from Port Coquitlam, British Columbia, died by suicide by hanging on October 10, 2012 ("Canadian teen found dead weeks after posting wrenching YouTube video detailing bullying," 2014). She was convinced by Aydin Coban, in the Netherlands, to show her breasts on camera, and a video of it went viral on YouTube with over 12 million viewers worldwide. In January 2014, Dutch police arrested Coban as the offender in Todd's case, as well as in the cases of other victims in the Netherlands and the United Kingdom (De Visser, 2017). Todd's death laid the groundwork for a Canadian cyberbullying prevention strategy. In November 2013, Justice Minister Peter Mackay introduced Bill C-13, an anti-cyberbullying and anti-revenge porn legislation (Puzic, 2015). On December 9, 2014, the Protecting Canadians from Online Crime Act received royal assent and came into effect on March 9, 2015, as the Parliament Online Crime Act of 2014 (Puzic, 2015). The main objective of Law C-13 of 2014 is to prohibit the distribution of intimate images without the consent of the person photographed.

6. Rehtaeh Parsons (1995–2013) was a Canadian student from Halifax, Nova Scotia, who was found unconscious after attempted suicide by hanging. Parsons' family decided to switch off life support machines on April 7, 2013 (Chiu, 2018). In November 2011, prior to her death, Parsons had been raped and photographed by four offenders, and the photos

of the incident were posted on Facebook without her consent (Bazelon, 2013). Cyberbullying from this incident was linked to her suicide attempt. In August 2013, the government of Nova Scotia enacted a law allowing victims to seek protection from cyberbullying and sue the perpetrator ("NS cyberbullying legislation allows victims to sue," 2013). The Royal Canadian Mounted Police (RCMP) investigation concluded that there was insufficient evidence to lay charges, and they called it a "he said, she said" case (Staff, 2014). In September 2014, more than a year later, one of the offenders pleaded guilty to the charge of making child pornography concerning distributing the photos of Parsons. The offenders were also underaged at the time of the rape incident. Later, in November 2014, a second person was charged with distributing child pornography. On March 10, 2015, Justice Minister Mackay announced that in the Protecting Canadians from Online Crime Act, an anti-cyberbullying law, the requirement of consent for the online distribution of personal images was in effect (Tomblin, 2015). Unfortunately, Law C-13 of 2014 created a controversy regarding privacy infringement (Anderson, Therrien & Ling, 2015; Southey, 2013).

The Amanda Todd and Rehtaeh Parsons cases demonstrated that youth in Canada suffer similar devastating consequences from cyberbullying as do youth in the USA. All of the above cyberbullying incidents resulted in the death of a teenager, and laws were immediately adapted to combat against such unfortunate events. The effectiveness of those laws may need to be reviewed. The commonalities of cyberbullying in these two regions may be because North American youth tend to use similar social media tools, including Facebook and Instagram, and instant messaging services like Twitter and AIM The Promoting Relationships and Eliminating Violence Network (PREVNet, 2019) listed the consequences of bullying, cyberbullying, and

being cyberbullied on the website (PREVNet. 2019). The danger for bullied children and adolescents includes the following:

- depression;
- social anxiety, loneliness, and isolation;
- stress-related health problems (e.g., headaches, stomach aches);
- low self-esteem;
- school absenteeism and academic problems;
- aggressive behaviours; and
- contemplating, attempting, or committing suicide. (PREVNet, 2019, para. 2)

The danger for children and adolescents who bully others include:

- not knowing the difference between right and wrong;
- delinquency and substance use;
- academic problems and increased school dropout rate;
- aggression;
- sexual harassment and dating aggression;
- gang involvement and criminal adulthood;
- difficulties in their relationships with others; and
- being bullied at the hands of others. (PREVNet, 2019, para. 3)

One of the major challenges in dealing with cyberbullying within the context of North American education is that public education systems in the USA and Canada are not managed at the federal level. In the USA, state governments set educational standards overall, while in Canada, provincial governments use federal laws as a basis to develop their educational regulations and unique provincial education systems. The provincial governments interpret and

follow federal guidelines to adopt institutional rules differently, and as such, each province develops different cyberbullying definitions and regulations. Similarly, new or existing laws were revised to be adopted under the existing laws for electronic communication or privacy infringement malpractices. In this case, the Minister of Justice, Peter Mackay, introduced Bill C-13, the Protecting Canadians from Online Crime Act, in 2014, naming it as "An act to amend the Criminal Act, the Canada Evidence Act, the Competition Act and the Mutual Legal Assistance in Criminal Matters Act" (Bill-C13, 2014). Then, each provincial cyberbullying law was adopted based on this Federal Law C-13. However, the federal cyberbullying law is not necessarily confined to a province, and it can be performed in a case when it involves bullying that occurs across regions. Cyberbullying laws may not apply from one nation to another unless treaties are signed between them, as each country has its perspective and definition of cyberbullying. Governmental collaboration between countries often may not be applicable or accessible.

Anti-cyberbullying experts have the difficult task of coordinating the development of educational resources and intervention measures customized to each province (Deschamps & McNutt, 2016). For example, on December 11, 2015, CyberScan, a cyber-safety protection unit in the government of Nova Scotia, ceased their investigation of cyberbullying incidents after the Supreme Court of Nova Scotia ruled that the province's Cyber-Safety Act (2013) was unconstitutional (Crouch v. Snell, 2015 NSSC 340 [CanLII]). The Supreme Court ruled that monitoring an individual may involve personal privacy infringement. Subsequently, the legislation of Nova Scotia introduced a modified version with the introduction of Bill No. 27 and adopted the Intimate Images and Cyber-Protection Act of 2017 (Yu & Rose, 2017). The government struck down and then re-enacted the Cyber-Safety Act, which demonstrated that instituting an act to combat cyberbullying cannot be a one-dimensional solution. In this case,

CyberScan lawmakers had not thoroughly considered the effects of the interconnected elements, like privacy, that are involved in anti-cyberbullying preventive measures. Unfortunately, the work of the CyberScan investigators of the Cyber-Safety Act created a dilemma regarding the enforcement of the act. Policymakers and technologists often face challenges related to overstated surveillance powers for law enforcement and privacy issues (Anderson & Christopher, 2014; Boutilier, 2014).

The focus of this study emerged in response to several important issues, including the disturbingly high rates of cyberbullying in North America. In some cases, which led to suicide. Additionally, the rapid growth of the use of emerging technologies to conduct cyberbullying; and the lack of convergence of viewpoints and collaboration within and between provincial education systems in Canada. Additionally, constant changes in ICT and differences among provincial education systems make it difficult for leaders and decision-makers in Canadian education to acquire a comprehensive understanding of cyberbullying in regards to the definition, technological impact, and characteristics from a psychological, psychiatric, and organizational behaviour perspective (Shariff & Churchill, 2009; Slonje, Smith, & Frisén, 2013). Besides, many youth blindly embrace and follow technological trends (Boyd, 2007, 2014; Li, 2006; Smith et al., 2008), and can be unaware of all the possible outcomes of cyberbullying that may harm them. Nowadays, youth might not be following the trend of new technology, but the functionality of social media tools might attract youth to communicate with each other with smart phones. Furthermore, K–12 educators may not necessarily be aware of all the changes in technology and, therefore, may not thoroughly understand the causes and effects of cyberbullying. Effectively, part of the research in this dissertation was to uncover a useful

knowledge base to guide K–12 educators of private and public schools and help them diminish cyberbullying.

Study Purpose

The main objective of this dissertation is to identify key areas of knowledge required to advance a holistic understanding of cyberbullying, promote cyberbullying awareness, and helped to inform anti-cyberbullying resource development in Canada. An exploratory, qualitative research approach was employed in this dissertation to identify cyberbullying-related constructs and the relationships between them. A systematic literature review (SLR) on cyberbullying-related themes was conducted with a multidisciplinary focus on technology, ethics, and educational governance to serve as basic empirical evidence. Consequently, one-on-one interviews were conducted with anti-cyberbullying experts, researchers, and K–12 educators to gather comprehensive information on current principles, practices, and perspectives used to develop cyberbullying resources for Canadian schools. The findings from the SLR and interview process identified themes within cyberbullying that were then categorized into final themes, which were then added to the knowledge of cyberbullying.

In the preliminary background knowledge acquisition, key variables including definition, behaviour, motivation, social media technology, and regulation were key factors linked to cyberbullying outcomes (Deschamps & McNutt, 2016; Donegan, 2012; Freeman, 2012; Hinduja & Patchin, 2010; Patchin & Hinduja, 2016; Li, 2006, 2007; Penington, n.d.; Shariff & Churchill, 2009; Smith et al., 2008; Walrave & Heirman, 2011; Workman, 2010). These specific variables primarily defined and formed the viewpoints (framework) of the research problems by helping me analyze the data collected during the study. The preliminary narrative literature review process identified the relevant social systems conceptual frameworks that facilitated the

understanding of cyberbullying, and the framed research questions used to validate the conceptual assumptions and discovered constructs of cyberbullying. As technologies evolve, cyber users adapt to the environment where activities are conducted (Heikkerö, 2012). Would the constant change of technology complicate the mitigation of cyberbullying?

Consequently, the outcome of this transformation of technologies could be an advantage or disadvantage to social interaction. This study exposed the perspectives of cyberbullying under the transformation of technologies by considering a valid social systems theory underlying the dialectical relation between the social system and the environment would be an appropriate approach. Further discussion of a social systems theory is covered in Chapter 2.

To this end, a social system conceptual framework was employed to frame research questions and helped to explain cyberbullying knowledge and its consequences. In particular, the technoethical inquiry technique was used to examine key social and ethical concerns within social subsystems (i.e., law, politics, communication, culture, and education) found to be relevant in the study of cyberbullying (Luppicini, 2009). The technique of technoethical inquiry is further discussed in Chapter 2.

Research Questions

Creswell (2013) suggests that in a qualitative research study, the research questions should use “what” or “how.” The research questions were grounded in a specific social system conceptual framework of cyberbullying intended to uncover holistic knowledge about cyberbullying and anti-cyberbullying initiatives in K–12 education in Canada and inform educational resource development to combat cyberbullying. Setting aside the USA context, I focused on the Canadian context in this study. The following research questions aimed to

uncover the current state of the knowledge on cyberbullying and anti-cyberbullying initiatives in K–12 education in Canada:

1. What is the state of research on cyberbullying and anti-cyberbullying initiatives in K–12 education in Canada?
2. How do anti-cyberbullying researchers promote cyberbullying awareness in Canadian public, private, primary, and secondary schools?
3. Considering cyberbullying is a communication system, how does a systems-oriented conceptual framework advance a holistic understanding of cyberbullying in Canada to help inform anti-cyberbullying resource development?

Rationale

I attempted to discover the core aspects of cyberbullying by interrogating the experiences encountered by the cyberbullying stakeholders of Canadian K-12 education and relevant documentation. As a result, the overall study helped to inform anti-bullying resource development efforts. However, this research is theoretically grounded in a social systems-oriented conceptual framework informed by relevant technology-oriented social system approaches, namely, technoethics (Bunge, 1977; Luppicini, 2009), systems dynamics and thinking (Forrester, 1994; Meadows, 2008), and social systems (Luhmann, 1982; Baraldi & Corsi, 2017; Lee, 2009; Mayrhofer, 2004). The overall study also helped to inform anti-bullying resource development efforts.

Dissertation Organization

This dissertation is organized into six chapters, and each chapter has significant research writing purposes. As it has been shown:

Chapter 1: Introduction provides an overview of the study of cyberbullying by presenting cyberbullying statistics provided by Statistics Canada (Figures 1 and 2) and some noteworthy cyberbullying cases in Canada and the USA as the pronounced cyberbullying problems. Following the statement of the problem, the purpose of the study is provided. Then it is followed by the set of research questions for this study. The questions are also grounded in a social system framework, as described in the rationale section and Chapter 2.

Chapter 2: Background Literature Review presents a summary of the important facts related to cyberbullying. The review also consists of several essential elements concerning cyberbullying for this study, such as definitions, social systems frameworks, technological impacts on cyberbullying, and my paradigm, which affects my role as a researcher. This chapter also reviews the approach of systematic literature review and the thematic analysis.

Chapter 3: Methodology describes the research design and method used in this study. A preliminary narrative literature review illustrated the depth of this researcher's knowledge of cyberbullying and his past work experience in information technology (IT). With the primarily empirical evidence obtained from the narrative literature review, an SLR is outlined to identify most of the cyberbullying variables/constructs through the scholarly articles by using the empirical evidence, as described in Chapter 2. Then, this chapter describes the interviews of other anti-cyberbullying stakeholders drawn on in this study to gather their perspectives on cyberbullying issues, resources, and prevention measures. Subsequently, the interview process is described and cyberbullying constructs derived from these interviews are identified. Finally, this chapter illustrated the steps of how themes emerge from the thematic data analysis process, and these themes, including behaviour, prevention measures, regulations, and technological tools, are identified.

Chapter 4: Findings provide the general findings of document analysis and interpretations of SLR and interview data by linking both studies of SLR and interviews data. I illustrated the relationships between cyberbullying constructs, the behaviour of individual cyberbullies, and the negative outcomes of social media network tools. The categories, themes, and sub-themes obtained from the interviews are listed in Tables 19 and 20. Then the emerged themes are established in Table 15, which shows the evolution of established themes during each stage of the literature review and the interviews. Table 18 depicts the final themes realized in this study. Subsequently, Table 13 lists the cyberbullying cases that were prosecuted by Law C-13 (2014), illustrating the effectiveness of the new Canadian cyberbullying law.

Chapter 5: Advanced Analysis and Discussion provide the response of the research questions with the data findings and analysis. The shortcomings of cyberbullying are illustrated via the technoethical inquiry by key perspectives within the sub-systems of an e-Society (historical, conceptual, political, legal, economic, socio-cultural, levels of influence, stakeholders, intended ends, possible side effects, and means). The summary of the result of the technoethics inquiry of cyberbullying is listed in Table 21. This chapter also includes delimitations and limitations and recommendations for future research material.

Chapter 6: Conclusion provides the final discoveries of cyberbullying, limitations impact on the study, and future research recommendations and mitigation on cyberbullying under multiple dimensional environments. This study also provides the perspective of *systems thinking* to address the multiple dimensional effects of unwanted outcomes of emerging technologies and a proposed data flow framework for future cyberbullying research.

Summary

Ultimately, this research attempted to discover cyberbullying involvement in the Canadian context and focused on uncovering most of the cyberbullying constructs amongst K-12 youth across Canada. The research was also based on the rationale that is cyberbullying can harm youth in various degrees of harm, from intimidation/harassment to suicide.

This introduction chapter has shown that there was a need to acquire more knowledge of cyberbullying in K–12 (private and public schools) education in Canada in order to promote awareness and preventive measures for cyberbullying. Various cyberbullying incidents statistical reported from the US and Canada raised the concerns of cyberbullying, especially in relation to youth suicide cases. Furthermore, cyberbullying also has broader implications, as *Public Safety Canada*, from Statistics Canada, stated that "children who bully are 37% more likely than children who do not bully to commit criminal offenses as adults" (Hango, 2018, para. 3). It was also made clear that there was a need to posit a strategic plan for promoting information on the understanding of cyberbullying and the prevention measures.

Chapter 2: Background Literature Review

In this chapter, I identify the relevant cyberbullying research to discover most of the key constructs of cyberbullying. Additionally, the essential background knowledge of crucial cyberbullying concepts and selected social systems concepts were highlighted as the guiding principles of this study. As shown in Chapter 1, the Canadian statistics illustrate that cyberbullying activities were not diminishing. Furthermore, some studies indicated that cyberbullying could lead to the ultimate result of suicide, and other health correlates as well, which needed to be addressed (Boyd, 2007, 2014; Hango, 2016). Cyberbullying also correlates to other health outcomes among youth like depression, anxiety, somatic complaints, psychosis, and substance use (Vaillancourt et al., 2017). Elbedour et al., (2020) showed that there was a pervasive social justice issue, and their cyberbullying model shows the likelihood to assist in reducing misuse of technology and harming people when browsing online. Moreover, the effects of cyberbullying in psychosocial development have been shown to be associated with parenting styles (Moreno-Ruiz, Martínez-Ferrer, & García-Bacete, 2019; Dennehy et al., 2020). Researchers have also shown that new technological factors influence ICT users and that a lack of awareness of cyberbullying is associated with an increasing rate of cyberbullying in K–12 education (Ahn, Bivona, & Discala, 2011; Barlett et al., 2019; Bolton et al., 2013; Li, 2006; Shariff & Churchill, 2009). Research findings from across multiple research domains suggested that cyberbullying is a complex issue (Holt et al., 2013; Kashy-Rosenbaum, & Aizenkot, 2020). Hence, illustrating how interconnected cyberbullying constructs assisted technologists and lawmakers in realizing the deficiencies and benefits of the technological impact on users in the context of cyberbullying.

The cyberbullying cases discussed in Chapter 1 showed that most anti-cyberbullying measures were created in a reactive mode, and most preventive measures were established without considering the interconnecting characteristic of constructs. For example, new cyberbullying laws were established after a suicide-related case, such as the adoption of Canadian law C-13 (2014). Still, the introduction of such a law had been criticized for privacy infringement of collecting *metadata* (see Rehtaeh Parsons case in Chapter 1). The following sections provided specific category knowledge on cyberbullying. The necessity of identifying an appropriate social system conceptual framework on which the research methodology and research questions were based. The rationality of choosing a proper social system conceptual framework is also discussed in this chapter.

What Is Cyberbullying and How Has it Been Defined?

There are many interpretations and definitions of cyberbullying in the research domain (Baas, De Jong, & Drossaert, 2013; Bryce & Fraser, 2013; Hinduja & Patchin, 2010; Langos, 2012; Li, 2007; Slonje & Smith, 2008; Wright & Li, 2013). The term *cyberbullying* is made up of two parts: cyber and bullying—the first term, *cyber,* related to ICTs and virtual reality technology. Technology is a pervasive force in the present digital age, and it is instrumental to many online discourses, especially in electronic messages and text communication via ICT. Clearly, communicating in real-time is no longer a significant obstacle. Today, IT has radically altered discourse habits among people, especially among youth in schools (Bolton et al., 2013; Farber et al., 2012; Hamm & Chisholm, 2015). The use of electronic technology, such as computers, tablets, and mobile devices to transmit text messages, chat, send emails, and share websites via SMNs have increased rapidly, for better or worse, across Canada and in the rest of the cyber world.

The second term, *bullying*, suggests conventional bullying in schools, where students were abused through words or actions. This type of bullying is sometimes known as face-to-face or traditional bullying (Wang et al., 2009), and it has been an ongoing concern in many cultures and countries. Olweus (1996) defined bullying as follows:

> A student is being bullied or victimized when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other students. It is a negative action when someone intentionally inflicts injury or discomfort upon another basically. What is implied in the definition of aggressive behaviour? Negative actions can be carried out by physical contact, by words, or in other ways, such as making
> faces or mean gestures and intentional exclusion from a group. (p. 265)

Many researchers have accepted Olweus' definition of bullying and used this definition as the fundamental principle of bullying (Bai, Q., Bai, S., Huang, Hsueh, & Wang, 2020; Baldry, Sorrentino, & Farrington, 2019; Luo, & Bussey, 2019; Paciello et al., 2020).

Consequently, by combining the two terms (cyber and bullying), the new name cyberbullying was adopted for online abuses. As a result, researchers considered cyberbullying could be defined as the same as conventional bullying definition except for the fact of verbal aggression were transmitted in cyberspace (Vaillancourt et al., 2008). Moreover, the outcomes of traditional bullying and cyberbullying have similar predictors and outcomes (Vaillancourt, Faris, & Mishna, 2017). The negative impact of cyberbullying with conventional, physical, or psychological bullying in the Statistics Canada report entitled *Public Safety Canada* was provided by Hango (2015, 2018). Li (2007) argued that cyberbullying is an extension of bullying based on characteristics like reoccurrence, abusive behaviour, rumour-spreading, and exclusion from social group activities. Still, the means of delivery is different—electronically versus

verbally. There were other terms used under the umbrella of cyberbullying, including, for example, cyber-harassment (in which offending messages were recurrently sent to an individual) and cyberstalking (in which continuous online messages were sent to intimidate or intention to harm to an individual).

In 2015, Patchin and Hinduja quoted the definition of cyberbullying from various sources, like the Centers for Disease Control and Prevention (CDC), the Department of Education, and the Health Resources and Services Administration worked with several experts across various fields to develop a uniform definition of bullying:

> Bullying is any unwanted aggressive behaviour(s) by another youth or group of youth who are not siblings or current dating partners that involves an observed or perceived power imbalance and is repeated multiple times or is highly likely to be repeated. Bullying may inflict harm or distress on the targeted youth, including physical, psychological, social, or educational harm. (p. 2)

The CDC also provided the types of bullying were "physical, verbal, and relational via two modes of bullying, i.e. direct and indirect" (p. 7). This dissertation considered the definitions of bullying and cyberbullying with no distinction. According to the CDC's (2014) definition, which was based on Olweus' (1993) definition, uniform bullying was defined:

Conventional bullying happens when there is an imbalance of power; it is where someone purposely and repeatedly hurts another person with the intent to cause harm (Olweus, 1996). Bullying can also occur one-on-one or in a group(s) of people. The Ontario Minister of Education defines bullying as "the use of any physical, verbal, electronic, written or other means" (Education Act, 2020, p. 17). Thereafter, Ontario's Education Act, Bill 13 (June 19,

2012; May 12, 2020) and Bill 212: Progressive Discipline and School Safety Act both used this cyberbullying definition as:

> (1.2) Without limiting the generality of the definition of 'bullying' in subsection (1), bullying includes bullying, known as cyberbullying, that is done through any form of electronic means using any technique, including, (a) creating a web page or a blog in which the creator assumes the identity of another person; (b) impersonating another person as the author of posted content or messages, and (c) communicating material to more than one person or posting material on an electronic medium that may be accessed by one or more persons. (Education Act, 2020, p. 17)

It is noteworthy that the RCMP website provides a comparison of the two terms (bullying and cyberbullying), providing a variation on the interpretation of the CDC's:

- Physical bullying (using your body or objects to cause harm): includes hitting, punching, kicking, spitting or breaking someone else's belongings.
- Verbal bullying (using words to hurt someone): includes name-calling, put-downs, threats, and teasing.
- Social bullying (using your friends and relationships to hurt someone): includes spreading rumours, gossiping, excluding others from a group or making others look foolish or unintelligent. This form of bullying is most common among girls. (Government of Canada, 2019, para. 2–3)

Within the academic literature, cyberbullying researchers had posed many definitions of cyberbullying over the last 15 years (Deschamps & McNutt, 2016; Gearhart, 2012; Slonje, Smith, & Frisén, 2013). All of those definitions were based on the original definition of bullying, defined by Olweus (1996). Thus, cyberbullying is considered by many researchers as

representing a type of bullying but a distinct form of interpersonal abuse (Cassidy, Faucher, & Jackson, 2013; Hamm & Chisholm, 2015; Hinduja & Patchin, 2014; Vaillancourt et al., 2008; Vaillancourt, Faris, & Mishna, 2017). Here are some of the examples: Smith et al. (2008) defined *cyberbullying* as an "aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over the time [,] against a victim who cannot easily defend him or herself" (p. 376). Similarly, Hinduja and Patchin (2010) defined *cyberbullying* as "willful and repeated harm inflicted through the use of computers, cell phones, and other electronic devices" (p. 5). Other definitions of cyberbullying focused on core characteristics, including repetition, intention, and power imbalances (Bauman, 2013; Boyd, 2007, 2014), or on the experience itself and how it differed from related experiences (Vandebosch and Van Cleemput, 2008).

The existence of different cyberbullying definitions created challenges to raising awareness and coordinating prevention efforts on a large scale, particularly in countries like Canada, where each provincial government currently established its own anti-cyberbullying initiatives based on provincial legislation and on their definitions and interpretations of cyberbullying (Deschamps & McNutt, 2016). For example, the province of Nova Scotia defined cyberbullying in the Cyber-Safety Act (2013), section 3(1) (b) (*Crouch v. Snell*, 2015) as:

> [a]ny electronic communication through the use of technology including, without limiting the generality of the preceding, computers, other electronic devices, social networks, text messaging, instant messaging, websites, and electronic mail, typically repeated or with continuing effect, that is intended or ought reasonably to be expected to cause fear, intimidation, humiliation, distress or other damage or harm to another person's health,

> emotional well-being, self-esteem or reputation, and includes assisting or encouraging such communication in any way. (Zinejda, 2015, para. 4)

Deschamps and McNutt (2016) also provided other cyberbullying laws and definitions in other Canadian provinces that are mostly under the name of the Education Act., like

Quebec's Bill 56 (June 15, 2012) The Prevention Plan defined cyberbullying as "any behaviour, speech, actions or gestures, including cyberbullying, expressed directly or indirectly, in particular through social media, having the aim of injuring, hurting, oppressing or ostracizing an individual." (p. 57)

British Columbia's Safe and Caring School Communities, June 2012, The Code of Conduct defined cyberbullying as "bullying behaviour which was carried out through an internet Service, such as email, chat room, blog, discussion group or instant messaging. It can also include bullying through mobile phone technologies and new internet technologies in the future." (p. 59)

Besides, Deschamps and McNutt (2016) stated that there are flaws, characteristic-wise, in Olweus' (1993) definition of cyberbullying by considering the classic bullying of intent to harm, reoccurrence of physical, verbal, and relational bullying in conjunction with the use of electronic communication and different environment. Shariff and Churchill (2010) also illustrated that the conventional schools' *Codes of Conduct* for cyberbullying is not adequate to control cyberbullying. The codes of conduct are for a school environment, but not at homes.

Other researchers identified different sub-categories within cyberbullying. For example, Vandebosch and Van Cleemput (2008) categorized cyberbullying targets’ experiences in three ways: (a) cyberbullying, (b) cyber-teasing, and (c) cyber-arguing. The authors noted that the two latter terms are not under the term of cyberbullying. They are "not intended to hurt, not

necessarily repetitive, and performed in an equal-power relationship" (p. 502). The authors also distinguished between cyberbullying and cyber-harassment, where cyberbullying targeted a specific person, and cyber-harassment targeted a person or a group of people. All these categories were under the family of cyberbullying that needed to be understood by researchers and lawmakers when they were addressing cyberbullying and cyberbullying related incidents.

Although the consensus on a generally accepted definition of cyberbullying is originated from bullying, understanding how cyberbullying is defined is essential in order to identify and prosecute cyber-bullies (Slonje & Smith, 2008; Wright & Li, 2013). Rivara and Le Menetrel (2016) stated that "bullying must be understood as a social problem characterized by numerous challenges to estimating its prevalence and the conditions associated with it" (p. 58). However, provincial control of cyberbullying legislation and provincial coordination of educational intervention measures is a complicated matter. When a case is inter-provincial, the federal law is applied. Thus, anti-cyberbullying challenges to Canada-wide initiatives required a comprehensive understanding of cyberbullying across Canada that aligns with holistic and cyberbullying perspectives from all the provincial vantage points.

In this dissertation, I reviewed the definition of cyberbullying from the Statistics Canada report entitled "Cyberbullying and cyberstalking among Internet users aged 15 to 29 in Canada" (Hango, 2016). Analyzing the work of cyberbullying researchers, Hango (2016) asserted a definition of *cyberstalking*, identifying it as "the repeated use of electronic communication to harass or frighten another person" (p. 4). His interpretation of the definition of cyberbullying from the Ontario Education Act was based on the CDC's definition:

> (a) receiving threatening or aggressive emails or instant messages (either as the sole recipient or as part of a group); (b) being sent or having pictures posted that were

> embarrassing or made the respondent feel threatened, and (c) having one's identity used to send out or post embarrassing or threatening information. (Hango, 2016, p. 4)

Other researchers identified slight differences between the two terms. For example, Slonje and Smith (2008) argued that a simple explanation is that cyberbullying and cyberstalking are both online activities in which perpetrators harassed victims repeatedly. Still, the latter term also included an element of trolling targets at the same time.

However, while these researchers differentiated between cyberbullying and cyberstalking, for simplicity, this dissertation used the term "cyberbullying" to represent both terms for several reasons. First, as illustrated in Figure 1, the occurrences of cyberbullying and cyberstalking are almost equal, around 35% each. Furthermore, in both cases, there is an element of fear of safety for the targets. Finally, the three components of Hango's definition of cyberbullying mostly involve computing devices using online SMNs, and this is true of cyberstalking as well by monitoring and following victims' use of SMN tools.

Cyberbullying Behaviour

The RCMP website defined cyberbullying as involving:

> the use of communication technologies such as the Internet, social networking sites, websites, email, text messaging [,] and instant messaging to repeatedly intimidate or harass others," including acts such as:

- Sending mean or threatening emails or text/instant messages
- Posting embarrassing photos of someone online
- Creating a website to make fun of others
- Pretending to be someone by using their name
- Tricking someone into revealing personal or embarrassing information and sending it to others. (Government of Canada, 2019, para. 4)

The RCMP's cyberbullying definition has been cited in various Canadian anti-cyberbullying websites as subject matter resource, like HockeyCanada (2020), PREVNet (2020a), and Public Safety Canada (2020). In general, the cyberbullying definition of RCMP is interpreted from CDC's definition of bullying.

Although results vary, some studies showed a more reliable link to suicide with cyberbullying than other forms of bullying (Vaillancourt et al., 2017). The study of Haltigan and Vaillancourt (2018) on the structure of peer victimization with Canadian school children (*N* = 700; 52.6% girls), revealed that "child sex, parent-perceived pubertal development, and internalizing symptoms influenced the probability of transitioning from the low to the elevated victimization class across time" (p. 11). The practice of cyberbullying affects targets in different ways than traditional bullying because the effect can follow a target everywhere—24 hours a day, 7 days a week—from school to the shopping mall and into the comfort of their home, which is usually a safe space from traditional forms of bullying (Government of Canada, 2019, para. 6-7). The Government of Canada report also highlighted important cyberbullying studies, like Vaillancourt, Faris, and Mishna (2017). Bullying is ultimately viewed as a preventable major public health problem (Flannery et al., 2016).

Conventional bullying practices in schools have always been problematic among young people and can affect their motivation and academic achievement (Gradinger, Strohmeier, & Spiel, 2009; Wang et al., 2009). Kowalski (2012) stated that traditional bullying is no doubt a practice that has evolved from face-to-face encounters to online communications because both practices shared the same bullying nature differing only in the means of communication (as cited in Koenig, 2012, p. 526; Pridgen, 2009, pp 344–346). Vandebosch and Van Cleemput (2008) stated that cyberbullying targets and perpetrators were mostly young people in elementary or secondary schools or even in higher education. There were also studies on gender issues and statistical results of boys and girls from various grade levels (Marcum, Higgins, Freiburger, & Ricketts, 2014; Roberto et al., 2014). The authors showed that boys and girls were cyberbullying targets and perpetrators, as opposed to physical bullying, which was mostly perpetrated by boys. In other words, both sexes send harmful messages, and non-consensual images are using Facebook and Instagram. The trend is partly due to easy access to SMN tools. Nevertheless, physical bullying is still a problematic issue, and the transformation of physical bullying into cyberbullying continue, as Li (2007) stated that cyberbullying is similar to a "new bottle but old wine" (p. 1).

Technological Aspects

In the past, most people viewed the introduction of science and technology as a positive change in their lives. In 1980, the development of microcomputers had replaced most of our daily tasks by emerging devices, such as laptops and smartphones. Computing devices can now replace human brains to process calculations, supplant routine works in our daily routine, and deliver messages to other SMN users. Wireless smartphones have replaced most landline phones in the past few years in the Western world. In the developing world, wireless phones provide

communication options for users who have no conventional landline infrastructure. Researchers have shown that youth are increasingly using modern social media technologies to communicate with each other in both positive and negative ways. However, lack the knowledge of the complete functionalities and capabilities of these technologies complicate harmful consequence prevention efforts (Ahn et al., 2011; Bolton et al., 2013). It is common for users to either misuse applications or to fail to enable security and privacy controls (Boyd, 2007 & 2014). Heikkerö (2012) stated that technology "penetrates physical, psychological, social, cultural, and all other layers and facets of modern human life" in a multi-dimensional aspect (p. 1). Heikkerö also argued that society could not continue to treat science and technology without reflecting on their social complexity and ethical implications.

Moreover, cyberbullying seems to be complex, and eliminating cyberbullying through a single-dimensional solution is increasingly difficult because cyberbullying occurs in a multi-dimensional environment that includes at minimum technology, regulations, and cyberusers. For example, when a law officer is granted the surveillance of online activities like SMN use, this may help authorities to detect cyberbullying activities. Still, it may also infringe on an individual's privacy to a certain degree. Besides, legislation that counters cyberbullying is adapted differently in individual countries according to their predetermined definitions, which is problematic because cyberbullying can be a cross-border activity. If the Canadian government accuses a foreign individual of committing cyberbullying, the foreign government is obliged to follow-up on the accusation.

For this reason, enforcing those types of preventive laws would be problematic because of the inconsistency of laws between individual countries. The same concern would occur between the Canadian provinces and the Canadian Federal cyberbullying Law C-13 (2014) if the

cyberbullying incident happened across provincial borders. Based on the initial literature review, there was a need for Canadian-focused studies on multi-dimensional components of cyberbullying in order to leverage knowledge concerning the complex interconnection between cyberbullying constructs, the side effects of cyberbullying, and how to balance mitigation, technology, security, and privacy issues related to cyberbullying in K-12 education in Canada (Anderson & Christopher, 2014; Anderson, Therrien, & Ling, 2015; Solove, 2011).

Social Media Networks

Over the last decades, cyberusers have been communicating with one another and disseminating user-generated content in real-time via the Internet (Kaplan & Haenlein, 2010). Early forms of social media included the use of electronic mailing lists and instant messages (IM) to facilitate social interaction with a group of recipients. Today, this kind of "one-to-many communication" has evolved into "many-to-many communication". With newly developed social media tools (Hogan & Quan-Haase, 2010) via social media tools, users could send messages to recipients who could retrieve them and send messages anywhere and anytime, whether they were online or offline. Nowadays, there are many interactive social networking tools, including bulletin boards, chat rooms, webcasting, instant messaging, blogs, Twitter, YouTube, Facebook, and LinkedIn. These tools mostly target youth, who enthusiastically embrace technology (Lenhart, Purcell, Smith, & Zickuhr, 2010). In 2016, the popularity of Facebook among youth fell in favour of new social media tools such as Instagram and Snapchat. The rapid growth of these social media tools adds to the complexity of anti-cyberbullying efforts in many aspects, including the immaturity of the tools and existing, but obsolete, regulations. User-generated content is displayed on social media sites, which are similar to traditional websites, except that cyberusers have editorial capabilities enabled by Web 2.0 technology. For

example, smartphones now connect users anytime, anywhere. Written and verbal communication has thus evolved from a simple, single-dimensional, and face-to-face practice to a multi-dimensional one that enabled cyberusers to use technology to converse with individuals or groups. Most tech-savvy youth used SMNs as their personal communication medium and integrate technology into their lifestyles. As a result, the use of technology was also propagating cyberbullying activities (Hinduja & Patchin, 2011b, 2014; Shariff & Churchill, 2009; Smith et al., 2008).

Lévy (2015) described how Danah Boyd, a social media scholar and advocate researcher at Microsoft Research, attempted to understand teenagers, parents, educators, journalists, legislators, and industry professionals. Those who did not take extra precautions when they "interacted with other cyberusers through social networks such as Facebook, Twitter, and Instagram" (Lévy, 2015, p. 97). Boyd showed that teenagers were attracted to social networks, which was why cyberbullies mostly use SMNs to transmit their messages to targets (Slonje et al., 2013). Youth found liberty in using their smartphones to express their opinions outside their schools and homes because of the increasingly rigid regulations imposed on them by teachers or parents. Nowadays, shopping malls, stores, and coffee shops offer free Internet (Wi-Fi), and youth can use the same medium instead of relying on the Internet from their schools or their homes. Boyd stated that the variety of rapidly available social media tools makes the implementation and enforcement of cyberbullying prevention measures a very challenging task. Thus, SMNs and related emerging technology will be explored, in-depth, over in a multi-dimensional environment in this study.

So far, SMNs have proven to be convenient tools for individual and groups of cyberbullies to conduct their antagonistic activities, as reported by most of the primary and secondary sources

used in this study. SMNs like Facebook, Twitter, and Instagram allow messaging, blogging, sharing pictures and videos between cyberusers. As discussed in Chapter 1, these tools have been used in cyberbullying incidents. SMNs also provide many communication channels and can provide anonymity for cyberbullies, making it challenging for authorities to locate the original sender of a message. More exhaustive studies were needed on strategies to prevent anonymous message transmissions via SMNs because authorities could not prosecute unknown senders even with effective cyberbullying laws. For example, one of the many anonymous social media tools that created cyberbullying concerns in schools across the USA was the social media tool Yik Yak, which allowed users to exchange messages anonymously and was launched in 2013 (Graber, 2014). On April 28, 2017, co-founders Tyler Droll and Brooks Buffington announced that Yik Yak would be shutting down in the late Spring of 2017, but there was no guarantee that similar applications will not launch in the future, which could result in the growth of cyberbullying. Moor (2005) stated that as "technological revolutions" increase, ethical problems increase (p. 111). The next section described the impact of technology on ethics, which was frequently a complicated matter to determine between acceptable and unacceptable behaviours.

Ethics Perspective

Ethics is a branch of philosophy that examined moral principles and how those principles "affect how people make decisions and lead their lives" (BBC, 2014, para. 1). Computer ethics was an equally important sub-discipline in the study and practice of moral principles concerning computer usage. Mason (1986) cited four main ethical issues of concern for the information age at that time—privacy, accuracy, property, and accessibility—and these concerns were still valid today. In an IT context, Mason's four ethical concerns were interpreted as privacy and security.

Privacy is a concern for personal information, and IT security consists of integrity, confidentiality, and availability, which are related to Mason's last three concerns.

Consequently, research showed that cyberbullying the infringement of an individual's safety in cyberspace (Aricak, Tanrikulu, Siyahhan, & Kinay, 2013; Workman, 2010; Wright & Li, 2013). In a philosophical sense, safety is an ethical issue because cyberbullying violates one's sense of well-being and affects one's lifestyle. The descriptions of the six cyberbullied victims in Chapter 1 served as good examples in this ethical discussion. Victims could be intimidated by unethical behaviours, such as the disclosure of their personal information, leading to (and engaging in) threatening situations and cyberbullying. Magnani (2006) claimed that:

> Some nonliving "things"—the Internet, for example—are more than passive objects. Such things can be said to possess a sort of moral agency even though they lack the characteristics we usually associate with human agency: free will, full intentionality, responsibility, and emotion. (p. 192)

Communication media was also an entity between the two communicators. Hence, communication media, as an aspect of social media, is included within the ethical line of thought.

Today, technology evolves so rapidly that morality is not considered an essential element when compared to functionality and profit. For example, SMN is a convenient tool for communication between cyberusers, especially young people. Functionality and easy usability of SMNs are the essential factors over the consideration of morality. Furthermore, ethics is not usually the first concern in North America in discussions of technology and its use. The notion of ethics is not keeping pace with rapid technological changes, and existing regulations are not being amended accordingly to protect consumers' security and privacy (Heikkerö, 2014; Moor,

2005). Gillam and Vartapetiance (2010) stated that computing professionals, researchers, and users of computer applications and programs must understand and explore the essential ethical values of society and comply with its laws. These authors were also concerned about existing laws and regulations. They were not kept up-to-date because of continually changing technologies and underexplored cyberlaws.

The broadcasting industry might have a better grasp of ethics than the technology industry. The BBC (2014) website provides a good description (and list) of an approach to ethics:

> Philosophers nowadays tend to divide ethical theories into three areas: meta-ethics, normative ethics, and applied ethics.
>
> - Meta-ethics deals with the nature of moral judgment. It looks at the origins and meaning of ethical principles.
> - Normative ethics is concerned with the content of moral judgments and the criteria for what is right or wrong.
> - Applied ethics looks at controversial topics like war, animal rights, and capital punishment. (para. 6–7)

There were two ethical approaches in the discussion of *normative ethics*, namely societal ethics and virtue of moral action (Fieser & Dowden, n.d.). A societal ethics solution required the entire nation to conform to the law as duty ethics (Alexander & Moore, 2012), while virtue ethics required individual people to use their morals to judge good or bad, and right or wrong (Hursthouse, 2012). Aristotle promulgated the concept of virtue ethics over 2,500 years ago; it focuses on the inherent character of a person. "In some respects, virtue ethics represents a middle ground between duty and rights. Persons have the duty to self-actualize and, therefore, should be granted the right to accomplish that self-actualization" (May, 2013, p. 26). May also asserted

that there were challenging ethical questions at the personal, organizational, and societal levels. In the case of the use of social media, preventive measures could be applied at the level of the user, by the organization providing the media, and via government regulations (Doern & Stoney, 2009). When a person interacted with SMNs, the outcome could trigger new conflicts and violence, leading to ethical consequences just as face-to-face communication can (Boyd, 2007; Crabb & Stern, 2007; Mason, 1986).

Furthermore, May (2013) showed that Kantian ethics follow the deontological concept of action with no consequence-based outcome. Similarly, Kantian ethics also opposed utilitarian ethics, which is judged by the outcomes. Deontology or applied ethics stated that one must follow the rule and code of conduct to determine an outcome is right or wrong (Fieser & Dowden, n.d.). For example, consider a case where a person found out that someone was cyberbullying his friend, and that person retaliated by hacking into the cyberbully's computer and disabling the operation. Hacking violated professional computer conduct (against deontology ethics), but the action stopped the cyberbullying. In the case of adopting a cyberbullying law, a utilitarian ethics approach could justify privacy violations if surveillance was permitted by law.

Meanwhile, a Kantian ethics approach would take the view that privacy infringement could not be justified from the perspective of individual human rights. It might argue that a better awareness campaign that denounced cyberbullying would be a more appropriate method of prevention. It was always advisable for lawmakers and technological developers to research the type of normative ethics that the new cyberbullying laws must be grounded in before remedies were applied (Anderson & Christopher, 2014; Boutilier, 2014). For example, Nova Scotia ruled out the province's Cyber-Safety Act (2013).

Technoethics and Technoethics Inquiry

With technology's escalating complexity, the substantive nature of I.T. also needed to be addressed at a deeper level—that is, "the ethical component of how and why computer systems are being deployed in daily life" (So & Lenarcic, 2016, p. 1). Since ethics were not always a core focus when technology was being developed, knowledge of the impact of technology on ethics had become more important in the study of *technoethics* (Luppicini, 2009). The term technoethics was introduced in 1977 by Mario Bunge, a philosopher who was becoming increasingly concerned about the lack of moral and social responsibility technologists and engineers seemed to have regarding their creations. More recently, Luppicini (2009) referred to the study of technoethics as the study of ethics and how new and evolving technology affected users' morality and codes of conduct within society from various ethical angles. By using "a variety of approaches from different disciplines and fields" in a social system, the introduction of technoethics leads to the necessary discovery of ethical aspects of technology (Luppicini, 2009, p. 7). Bunge used the technoethical inquiry approach to study the concept of technoethics, aimed to provide "an emphasis on [a social system's] social values and ethical aspects" (p. 7). Furthermore, Luppicini pointed out that "the complex character of our contemporary world defined by technology was perhaps the most challenging problem of the 21st century" (p. 11). And that technoethics referred to these dimensions mentioned above as social subsystems where technology played a growing role in the integration of people's everyday activities within a society.

The technoethical inquiry approach, as a technology-focused social system approach, is particularly well suited to critically examine how technology affected users' morality, codes of conduct, and quality of life within ICT environments at local, provincial, national, and

international levels of intervention in the many fields of interest within a society. By applying technoethical inquiry, researchers were able to identify ethical concerns and complex human-technological interconnections within social systems. In this study, I explored cyberbullying in the Canadian public and private, primary and secondary school contexts to provide a holistic understanding of the cyberbullying problem context via the technoethical inquiry technique.

Social Systems Theory

Social systems theory is a philosophical viewpoint on human behaviour and social environments "in terms of events and occurrences arising from observing system operations" (Luppicini, 2009, p. 8). Additionally, Baraldi and Corsi (2017) stated that:

> according to Luhmann, a general theory of society should make it possible to understand any sociological topic. Baraldi and Corsi cited that Luhmann's belief of sociology is a science, rather than a philosophy, an ideology [,] or a way of proposing values. (p. 11)

Additionally, Zhen's (2009) blog asserted that Luhmann's system theory "cannot be adequately analyzed with reference only to human social relations" (para. 2), and King (2004) stated that "the social world is a unity of difference between system and environment" (p. 8). Luhmann's proposal of values of a general theory of sociology is also relevant to the impact of technology on cyberbullying because of the differential outcomes between "positive and negative values" (Baraldi & Corsi, p. 31). As shown in the background literature review in Chapter 1, cyberbullying was believed to be a shortcoming of emerging technology. Therefore, the use of a social systems theory to assist the realization of the conceptual framework for cyberbullying might be appropriate because of the consideration of negative outcome of cyberbullying. The cyberbullying conceptual framework was further illustrated in the conceptual framework section.

Furthermore, cyberbullying also involved an "aggregation of individual behaviour/action and its intentions" (Mayrhofer, 2004, p. 190). The context of an aggressive individual referred to a cyberbully, who corresponded to one of the stakeholders in the social systems theory. Cyberbullies interact with various micro, meso, and macro levels of intervention, such as the school administration and the Canadian provincial and federal contexts, respectively. Thus, the social systems conceptual framework is essential for a comprehensive and in-depth analysis of cyberbullying. Moreover, a new theory was necessary to address the multi-dimensional relationship of cyberbullying constructs.

It is also important to note the concept of the micro and macro levels of interaction within social systems. Checkland (1981) showed that there were social systems at the micro-conceptual perspective level that involved individuals or groups (such as cyberbullies and victims) who interacted with each other and influenced each other's behaviour. Living systems, for example, interact with one another, and the flow of behavioural information dispersed in their surroundings. The term *living systems* referred to systems illustrated by Checkland (1981), which maintained themselves by developing survival measures or adapting to their environment. Living systems aligned with the technoethical inquiry focused on social subsystems (law, science, communication, culture, and education) and attention to levels of influence (Luppicini, 2009).

Here, I drew on the concept of subsystems and levels of influence in a cyberbullying system as an analogy to micro and macro levels of interaction within living systems. Checkland also stated that there were social systems at the macro-conceptual perspective level that involved the larger scale of groups or culture in a technological society, such as a set of interrelated cyberbullying activities in a province of Canada. A social systems perspective was warranted for

an argument of a cyberbullying conceptual framework because these similar micro, meso, and macro operations were connected to where and when cyberbullying was conducted.

Systems-Thinking Approach and System Dynamics

There was a need for researchers who were seeking to mitigate cyberbullying to examine a system from many dimensions—including behaviour, communication, education, cultural beliefs, and regulations—because of the magnitude of involvement of privacy and ethics (Forrester, 1994; Luppicini, 2009a; Monat & Gannon, 2015; Richmond, 1994; Sterman, 2000).

According to Meadows (2008), there were two groups of people who were identifiable based on how they saw things and resolved issues in the world. For the first group, each event had a cause, and concerns could be solved with a one-dimensional problem-solving approach. For example, this group would punish misbehaving people, like cyberbullies, according to rules and regulations. This group was called event-oriented thinkers. The second group was made up of system thinkers, who considered the entire structure of the system, causing misbehaviour. This group believed that understanding and changing the system structure would correct the system's misbehaviour and that punishing the person would not only not guarantee the non-occurrence of the same event, but it might even cause a negative consequence. Furthermore, Forrester (1994) and Meadows (2014) showed that systems thinking is the right approach to resolve interconnecting system components; this approach was defined as:

> [a] systems thinking is a framework that is based on the belief that the component parts of a system can best be understood in the context of relationships with each other and with other systems, rather than in isolation; and that system thinking focuses on cyclical rather than linear cause and effect. (Awofeso, 2012, p. 17)

Meadows (2008) also stated that "once [researchers] see the relationship between structure and behaviour, we can begin to understand how systems work, what makes them produce poor results, and how to shift them into better behaviour patterns" (p. 2). Additionally, as observed in the literature review, cyberbullying had the tenets of socio-economic complexity involving users, lawmakers, technology, and governance. Conventional reductionist thinking was not effective in solving complex problems in the case of cyberbullying (Monat & Gannon, 2015). The application of systems thinking to illustrate cyberbullying system interactions seemed appropriate to provide a holistic picture of a complex-rich cyberbullying context.

Forrester (1994) stated that "systems thinking implies a rather general and superficial awareness of systems" (p. 251). The author went on to explain that the systems-thinking approach was in the context of organizing and guiding group processes in society, and that "system dynamics interfaces with people in the actual systems" (p. 245). As an example, the study of sustainable ecosystems used a similar approach to observing interactions between communities of living organisms and their related environments (Meadows, 2008). Then, subsequent adjustments were applied via feedback to stabilize the ecosystem after observing the system operations. A cyberbullying system could be compared to the characteristic of an ecosystem, where emerging technology stimulated consequences, like the ease of communication, and continuously increased the favourable capability of cyberbullying, and the approach of balancing consequences with the concept of feedback loops to seek the equilibrium of preventing cyberbullying activities. Subsequently, reinforcing feedback loops amplified changes, as shown by the rapid rate of growth of emerging technologies. As a result, a conceptual framework similar to a social system, which was capable of observing system operations, was suitable in an inquiry of cyberbullying in a multi-dimensional environment.

Lastly, there were many methods of applying and approaches to systems thinking (what researchers of systems thinking call pluralism). For example, the Waters Foundation (2019) in Pittsburgh, PA stated that systems thinking was not one component but a set of habits or practices. Although the systems thinking model was not to be developed further in this study, this approach was used in the initial stage of developing a conceptual framework for testing anti-cyberbullying preventive measures and forming research questions.

Conceptual Framework

According to Imenda (2014), a research framework could be one of the two types of fundamental guidance in areas of research design: a theoretical or a conceptual framework. The theoretical framework provided a set of general ideas about cyberbullying research, like behaviour and technological impact, and these hypothetical elements were connected in a cyberbullying social system. In contrast, the conceptual framework defined the specific cyberbullying variables/constructs used in this dissertation and how they interacted with each other. Imenda further stated that "concepts reflect theoretical concerns and ideological conflicts" (p. 188) and provided an explanation or prediction of an event. For example, a conceptual framework provided a "broader understanding of the phenomenon" and the theory of cyberbullying (pp. 188–189). In this dissertation, a conceptual framework was adapted from the constructs associated with the literature reviews.

In the book *Theories of Cyberbullying*, Espelage, Rao, and Craven (2012) reviewed existing theoretical frameworks that relate mostly to communication, social norms, and social learning. The authors of the book stated that:

> self-concept has been implicated as central in the bullying and victimization equation… urban myths suggest that bullying is just part of growing up. Anti-bullying interventions

> that target individuals are largely ineffective, but interventions that target the whole school community (students, teachers, administrators, and parents) in ways that change the school ethos have been demonstrated to be effective. (p. 60)

The authors provided "several theories posit the potential powerful impact of social norms and ranking within groups in cyberspace" (p. 63). Ideally, a suitable conceptual framework for this research would address how to organize and manage the social concepts of an organizational system, like a cyberbullying social system. This social-organizational system was comparable to Mayrhofer's (2004) conceptual framework of the human resource management system, which was based on a social systems theory with similar conceptual foundations. Thus, the conceptual framework for this research was based on both the social systems theory and the systems-thinking approach. Then I could discover the relationships between independent and dependent constructs and *how* and *why* they were related.

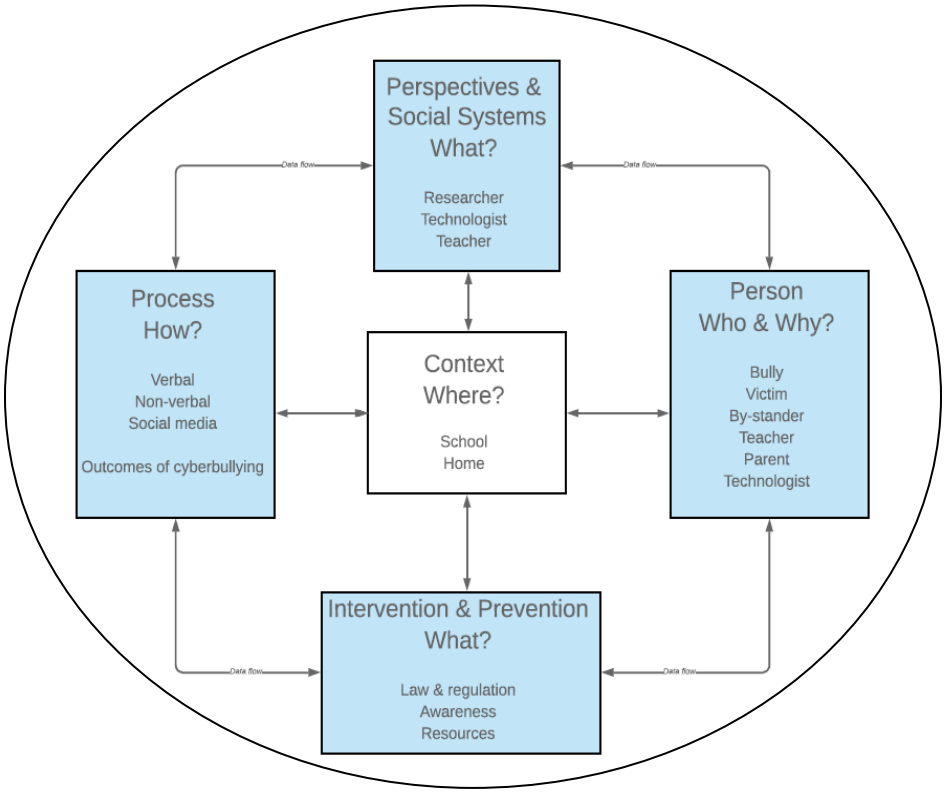

Figure 7. The Cyberbullying Social System Conceptual Framework

This study followed a similar conceptual framework like the one proposed by Swart and Bredekamp (2009), which was established to contain perspectives on non-physical social bullying. Swart and Bredekamp described social bullying as "social exclusion, revealing secrets, and hurting someone unintentionally. This [outcome] was non-physical bullying, which largely has to do with relationships amongst peers and the concept of power" (Swart & Bredekamp, 2009, p. 415). Similarly, the concept of "non-physical bullying," coincided with the description of cyberbullying, where bullying was not a face-to-face action but preferably performed via SMN tools over ICT Furthermore, both actions shared similar outcomes. Swart and Bredekamp reported that participants "indicated that if bullying were to be rated in terms of which caused the most hurt, or which type of bullying they feared the most is social exclusion" (p. 415).'

The conceptual framework in Figure 7 is enclosed in a circle representing the perimeter of society. Within the circle, the social cyberbullying-related components that were operating within the community are depicted, where cyberbullying activities could be active in any one or all of the social components. The five components were: (a) perspectives and social systems, (b) person, (c) intervention and prevention, (d) process, and (e) context. All five components are connected, as shown in Figure 7. A detailed description of each of the components in the conceptual framework follows:

(a) The "Perspectives and Social Systems" component contained the perspectives of cyberbullying. The stakeholders of this component were usually researchers, teachers, and technologists. In addition to their work experience, they explained what were considered to be the perspectives of cyberbullying. These perspectives were

typically less recognized within the talking points concerning cyberbullying, and this dissertation attempted to discover as many constructs as possible.

(b) The "Person" component included the individuals who were the actors of cyberbullying and their motives in committing this offence. In addition to the perpetrator (bully), the actors (stakeholders) of cyberbullying included the victim(s), bystanders, teachers, parents, and technologists. It is essential to identify all of the actors related to cyberbullying, including bystanders. The data from this component provided key information regarding the current state of cyberbullying, particularly in North America.

(c) The "Intervention and Prevention" component consisted of the existing laws and regulations, codes of conduct, awareness, and all other related resources that governed the restrictions and penalties of practicing cyberbullying. In particular, I reviewed the Canadian federal cyberbullying law, including its effectiveness and controversy. This component contributed to some of the cyberbullying awareness that could be disseminated to the Canadian K-12 education. Additionally, it described the middle and local tiers of cyberbullying management (provincial government and school board) of the regulation and preventive measures, if any.

(d) The "Process" component showed how cyberbullying was processed in terms of different types of verbal or non-verbal media, including images over the availability of technology, like SMN tools. This component provided one of the core contributions to cyberbullying and therefore needed to be reviewed thoroughly to acquire a holistic view of cyberbullying. My dissertation went beyond describing processes that were used in cyberbullying and attempted to provide the trend of

technology promoting cyberbullying. For example, a pattern that needed to be examined was why SMN tools were used so often instead of email. Research had identified the adverse outcomes, but researchers usually conducted less analysis of the provenance and prevention of such cyberbullying processes. Since the approach led to multiple dimensional system behaviour, this dissertation analyzed the existence of multiple dimensional outcomes of cyberbullying.

(e) The "Context" component contained the acceptable and unacceptable context used in the venue of the location, where cyberbullying was performed, such as in school or at home. The "Context" component was also connected to all the four other components, where they interacted with each other; as such, it was located in the middle of the framework. All of the cyberbullying contexts were generated in this component and then transmitted to the four components for processing.

This conceptual framework served to direct the research questions for this study. The conceptual framework also guided the type of data being collected in the data collection stage. Furthermore, this conceptual framework highlighted the themes of cyberbullying and provides a thorough analysis of the concept.

Science Perspective

Nowadays, people use computers to discover information about the world and the universe, for example, to understand the existence and to preserve and adapt to the environment. Thus, in the media of communication, computers were used as tools in e-learning to discover the nature of science, rather than conventional face-to-face learning and teaching. However, in the context of communication, the aspect of communication ethics must also always be considered (Luppicini, 2009). As discussed before, cyberbullying was one of the negative consequences of

users misusing computers in the science fields. As such, the science perspective contained both the social and health science perspective in the context of cyberbullying.

The scientific themes gained from the preliminary literature review on cyberbullying related more to the psychological and health side of the science field. These articles discussed the mental health of victims and cyberbullying pitfalls that could lead to a lack of motivation and achievement, as well as suicide (Baas et al., 2013; Hamm, 2015). Langos (2015) stated that there were different levels of harm in cyberbullying, and these definitions of harm were most often either undefined or ambiguously defined. However, Langos categorized "the harm level of the grave, serious, upper-intermediate, lower-intermediate, and marginal harm with the corresponding impact of acute, high, moderate, low, and minimal respectively" (p. 116). The levels of harm seemed to be connected to the research to the implementation of the law. These levels of harm could influence the response to the prosecution of cyberbullying. For example, Canada's cyberbullying legislation Law C-13 (the Parliament Online Crime Act of 2014) was initiated by the cyberbullying cases of the two Canadian teenagers, Todd and Parsons, who died by suicide (Department of Justice, 2013).

Along with the study of communication ethics, the level of harm, and identifying core themes of science is the essential research topic of interest and was focused on, for example, psychology and behaviour. However, these core themes were not the only causes of cyberbullying, and this study discovered other core themes.

Technology Perspective

Technology is a complementary tool in science, and some people refer to technology as *applied science* (Auyeung, 2001). Technology has become an essential part of our daily lives, including communicating with telephones and wireless devices, travelling with transportations,

and retrieving and interacting with information from the Internet. As an example, most devices used the scientific knowledge of encoding and decoding sound waves to convert information, which was transmitted into a piece of technological equipment. This was why I referred to the equipment as *applied science equipment*. Now that the relationship between science and technology had been established, ICT could refer to the part of the applied science equipment family. SMN used ICT devices to communicate, and research had already shown that SMN contributes most to cyberbullying activities. The use of technology to proactively mitigate the pitfalls of SMN and avoided cyberbullying is beneficial, particularly considering technology was continually evolving.

One of the technology articles reviewed illustrated the capability of monitoring cyberbullying on SMN sites by signalling harmful messages and preventing the transmission of them to recipients (Van Royen, Poels, Daelemans, & Vandebosch, 2015). However, the effectiveness of this technique was still unproven. Another use of technology was text detection. Research has also shown that there is an increase in research on text detection to recognize cyberbullying terms and trends (Moore, Nakano, Suda, & Enomoto. 2013; Dinakar et al., 2012; Reynold, Kontostathis, & Edwards, 2011). This text detection technology was still in its infancy because it needed to have a large volume of pre-set vocabulary to recognize all types of languages used in the SMN worldwide to be a useful detection tool. The effectiveness of the text detection application function was questionable due to the mixture of multiple languages and new Internet slang online, such as *lol (laugh out loud), omg (oh my god),* and *brb (be right back),* to mention a few. There was also a lack of appropriate laws and regulations to prosecute cyberbullying, as mentioned above (Heymann & Schnackenberg, 2011; Mann, 2008).

Innovation Perspective

How is innovation related to science and technology? In 2010, Guth presented his concepts and experiences relating to innovation policy at a European Commission (EU) workshop on innovation policy. Guth illustrated that the conventional process cycle for innovation, which led from original research to the product reaching the market, had become more complicated. The process involved new stakeholders (such as science and technology), research fields, industries, governments, and society. Guth considered innovation to be a system in which the stakeholders were interacting with each other, and he indicated that there were many venues within an innovative system. However, this dissertation only focused on themes into key innovations.

Doern and Stoney (2009) elaborated on the importance of the innovation themes, and the relationship between government agencies, universities, and research institutions supporting research and innovation in a nation such as Canada. The authors illustrated various themes, including commercialization, which was a process of introducing new products or processes into the market with variations of product rollout, creation of new firms, technology transfer, proof of principle, product or process development and testing, and business expansion. Technology transfer, or rollout, was part of the commercialization process in which technology was transferred to consumers. Technology transfer was the process by which skills and knowledge, including negative outcomes, were transferred among academia, industry, and government. The insight of negative outcomes was particularly interesting because it was equivalent to cyberbullying. This negative outcome also became a talking point of corporate social responsibility.

Additionally, corporate social responsibility was one of the valuable themes that was coined by Bauer's findings stated that tools from SMN, such as "Facebook, Twitter, and Google

had not only made clear commitments to act responsibly. They enhanced the citizenship status of their users in many ways, e.g. by offering a platform for democracy activists" (p. 260). Since research showed that most cyberbullies used SMN as the media to perform cyberbullying, integrating corporate social responsibility policy as part of the innovation policy process was practicable in terms of addressing cyberbullying. But, the implementation of corporate social responsibility had the challenge of following technology and SMN applications because technologies were advancing at a much faster pace than practitioners of corporate social responsibility. One example of corporate social responsibility was ISO 26000, which required companies to protect data and privacy, as Bauer suggested in 2014. Therefore, the innovation perspective was an important theme for the mitigation of cyberbullying with the integration of corporate social responsibility into the process of commercialization and technology transfer. In addition, Sanders and Miller (2010) were also seeking to align the academic environment by reframing the demands and priorities of commercialization (i.e., reframing norms through the work of technology transfer). The reframing norm was part of the criterion in the academic innovative commercialization research. This study reviewed how corporate social responsibility towards the innovative technologies impacted cyberbullying.

Management Perspective

What do technological designers and potential cyberbullies have in common? They both have to conform to any laws and regulations. Alternatively, the management field addressed the integration of all the three identified themes (science, technology, and innovation) from the discussion of the technoethics section in order to establish proper research criteria on cyberbullying management according to the core management key themes. Jäger et al. (2015) noted that the European Commission's *Cyber Training Project* has successfully identified most

of the sources of cyberbullying by questioning ICT experts and trainers. The overall causes of cyberbullying were in the categories of:

> (a) [e]asy access to new technologies; (b) characteristics of ICT with wider audiences, promoting anonymity and motivations factors for cyberbullies; (c) lack of knowledge and education; (d) lack of laws, control, and reporting, and (e) other factors within young people, parents, schools, media, and society. (p. 174)

All of these categories had been well-known during the past decade of cyberbullying research. Also, research showed that the rate of cyberbullying was not declining despite the knowledge gained for the causes and effects in the past (Chisholm, 2014). I questioned whether cyberbullying was "one of the diseases of the 21st Century" (p. 77). If so, the suggested remedies so far were not healing the disease of cyberbullying. There was also the fact that conventional bullying had been taking place in schools for the past centuries, and this practice was still going on around the world. Hence, I would debate whether cyberbullying was a medical or a philosophical or technological issue. However, the medical and ethical discussion was beyond the scope of this dissertation, except in terms of the technological issue's impact on cyberbullying.

There were some promising new approaches to addressing cyberbullying. Hanewald (2013) illustrated the management of student experiences of cyberbullying through a cyber-safety program by involving ICT practitioners, policymakers, educators, and parents. Additionally, Mitchell and Jones (2015) promoted studying peer victimization with a broader view by providing "parents, teachers, and other youth-serving professionals with more information on the incident and child-level factors that indicate the greatest risk of harm" (p. 474). With a thorough understanding of the relationship between victims and perpetrators, the

practice of cyberbullying was a psychological issue with the assistance of technology (Oksanen, Oksa, Savela, Kaakinen, & Ellonen, 2020). Therefore, correcting the perpetrator's intention was the right prevention initiative against cyberbullying, and technology was just a tool used in the activity.

Research Paradigms

Philosophical assumptions influenced a research methodology, and these assumptions were discussed to support my choice of methodology. I learned that one should consider various paradigms based on prior personal knowledge prior to solving a research problem with quantitative, qualitative, or mixed-method approaches. The experience and knowledge were based on these questions: *How do I know? What exists*? and *What is valuable?* Each question was based on the philosophical assumptions of epistemology, ontology, and axiology, respectively (Audi, 2003). Studying these three assumptions helped me to identify both a research strategy and a methodology that aligned with the philosophical research paradigms. The body of knowledge of the research methodology followed my own epistemological beliefs and led to his commitment to research paradigms and methodologies. Morgan (2008) described "four categories of paradigm: (1) paradigms as worldviews, (2) paradigms as epistemological stances, (3) paradigms as shared beliefs in a research field, and (4) paradigms as model examples" (p. 27).

In order to choose an appropriate methodology, I considered his philosophical position according to each of the philosophical notions: ontology, epistemology, and axiology. Ontologically, I belonged to the anti-foundationalism school, where social phenomena were technology's impacts on ethics and society. Epistemologically, I believed I am a realist: I gain technological knowledge from my senses and uses reason and logic to operate and manage

technology. Finally, I used my axiological experience to inform, transform, or enable positive change in a technological environment. I believed that a pragmatic approach was well suited for advancing the development in e-business applications by technologists and the acceptance of technology as an end-user (not as a developer).

Systematic Literature Review

A systematic literature review "aims to address problems by identifying, critically evaluating [,] and integrating the findings of all relevant, high-quality individual studies addressing one or more research questions" (Siddaway, 2014, p. 1). The SLR for this research was based on Okoli and Schabram's (2010) systematic guide to literature review development where they defined the SLR process as "a systematic, explicit, [comprehensive,] and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners" (Okoli, 2015, p. 880). Okoli and Schabram's three-step SLR process was conducted as follows: (a) selection (i.e. design and search), (b) extraction (inclusion and exclusion), and (c) execution (synthesis and written review). This three-step operation was repeated until the selection criteria were fulfilled—that is until there were no more articles to be selected. (This operation is described in detail in Chapter 4 along with the findings.) The use of the same search terms and selection process criteria in the SLR ensures consistency for other researchers conducting a similar study. If other cyberbullying researchers could use the same search terms, they should obtain similar search results (Gough, Oliver, & Thomas, 2012).

Thematic Data Analysis

The thematic data analysis approach was used to obtain themes of insight and knowledge from the articles selected from the SLR process and qualitative data through the interviews

process. Braun and Clarke (2006; 2012) defined this analytical method as "identifying, analyzing, and reporting patterns (themes) within data" (p. 82). The authors also stated that a theme "captures something important about the data concerning the research question and represents some level of patterned response or meaning within the data set" (p. 82). Themes were induced by coding and grouping the data. This study used the six phases established by Braun and Clarke that were quoted in the phases below. The phases were "Familiarization, Coding, Searching for Themes, Reviewing Themes, Defining and Naming Themes, and Producing the Report" (p. 87). Each phase was completed before advancing to the next phase:

1. *Familiarization* with the data was a recursive process of interpreting the data by "reading and re-reading" the articles selected through the S.L.R. process and interview data (Braun & Clarke, 2006, p. 80). Dedoose, the data analytics software, used the qualitative data as a repository of data inputs. Nodes identified were stored in Dedoose, representing data categories such as concepts, stakeholders, tangible and intangible constructs, and components.
2. *Coding* involved examining the selected articles and looking for similarities and differences between the selected comments (or key codes) and ideas (Saldaña, 2012), as well as "captur[ing] both the diversity of perspectives evident in the dataset and the patterning of meaning" (Braun & Clarke, 2006, p. 88). These key codes were considered as core ideas or concepts. They were narrowed down to categories or groups in the main coding scheme (e.g., definition, trend, behaviour, technology, ethics, regulations, and awareness processes). Then, "the codes were validated for their integrity and properly interpreted through repeated readings for consistency" (Braun &

Clarke, 2006, p. 88). The Dedoose tool was used to calculate the frequency in which key codes for analysis occurred and determined the association of the dataset.

3. *Searching for themes* involved finding a coherent and meaningful pattern (or patterns) in the data by comparing foundational groups such as user-related groups, social media software, cyberbullying awareness, implication, and resources. The groups were then assigned to a small set of themes based on patterns and occurrences. Subsequently, the themes were formed by the comprehensive characteristic of cyberbullying, providing all the concepts for forming a final definition of cyberbullying and the constructs for the repository.
4. *Reviewing themes* involved validating the themes in terms of their nature and the relationships between them. Through the validation process, I merged two types of themes, split one theme into several themes, or eliminated irrelevant themes.
5. *Defining and naming themes* involved further analysis of the way the themes were accepted into this research. The accepted names of the themes conveyed the essence of each theme.
6. *Writing a report* involved integrating the findings of the analytic narrative and vivid data into the report to provide a coherent contextualization of cyberbullying. The report "needed to go beyond description to make an argument that answers your research question." (Braun & Clarke, 2012, p. 69)

Summary

In this chapter, I described the knowledge that I acquired from the preliminary literature review. Cyberbullying was one of the negative outcomes resulting from the misuse and misunderstanding of technology. The preliminary literature review showed that cyberbullying

was influenced by various factors, such as emerging technology and lack of adequate definition. Deschamps and McNutt (2016) stated that "a number of the [Canadian] provinces still lack a definition of cyberbullying or define it in the context of traditional bullying" (p. 56). Nevertheless, the CDC's definition is used by most researchers as the standard because cyberbullying is under the bullying category (Rivara & Le Menetrel, 2016). In addition, a full understanding of cyberbullying modules and components in a cyberbullying environment helped in solving a complex cyberbullying system.

Without a doubt, cyberbullying has the potential to harm cyberusers and, in particular, youth who are the generation who embrace technologies the most. Additionally, there were research studies conducted on psychology and technology about the deviation of behaviour from physical bullying to cyberbullying as technology emerges. Hence, the variation needed to be triangulated by the data collected in this study.

Cyberbullying does not seem to be affected by either laws or research studies. That is, despite the introduction of new cyber-related laws in the USA and Canada, as well as the increase in cyberbullying research, cyberbullying incidents do not seem to have decreased (see the Statistics Canada report in Chapter 1). For example, there are several cyberbullying descriptive studies conducted by psychology, psychiatry, and behaviour researchers (Cassidy, Faucher, & Jackson, 2013; Li, 2006; Saldaña, 2012; Smith et al., 2008), and most of the cyberbullying studies raised concerns about the negative impact of technology on society and the inadequacy of reductionist approaches. Research has shown that one-dimensional initiatives are not feasible to address multi-faceted and complex cyberbullying problem contexts.

Consequently, the realization of the conceptual framework is informed by the combined philosophical underlining of the social systems theory, systems thinking, and system dynamics

in conjunction with technoethical inquiry to various identified social subsystems. These concepts also frame the research questions for this research on cyberbullying in the context of Canadian K-12 education in private and public schools.

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Chapter 3: Methodology

The research methodology is grounded in the research design proposed by Saunders, Lewis, and Thornhill (2012) and the qualitative research methods suggested by Bhattacherjee (2012). This chapter described the research design and its rationale, the role of the researcher, the recruiting and sampling of participants, instrumentation, data collection methods (document analysis and interview), research analysis methods and techniques, and the means used to establish the data validity in this research. Each of the approaches mentioned above and methods as described in the following sub-sections.

Research Design and Rationale

Creswell (2013) stated that qualitative methodology enriches researchers by providing them with a deeper understanding of the behaviours of individuals and groups of people within their own spaces or communities through the lens of conceptual, social system frameworks. In this study, I referred to cyberusers as individuals and groups of people within their cyberbullying environments or communities. The research conducted a closer review of data collected from places like cyberbullying researchers, schools or homes, where technologies were deployed and IT security was not necessarily well established (Boyd, 2014; Crabb & Stern, 2007; Gradinger et al., 2009). Consequently, the data analysis confirmed inductive patterns or themes concerning cyberbullying. Sometimes, the collection of secondary sources, like unstructured data from Web pages, blogs, and SMNs (including Twitter feeds), was required in the data collection process in this study. The data from secondary sources was needed since the topic of cyberbullying is a relatively new topic. So, there might not be a sufficient number of scholarly research studies for this study. Cyberbullying using new technologies is a relatively recent phenomenon (over the past decades) that affects users in this cyber world.

Role of the Researcher

I have acquired technical knowledge of computers and social media networking tools used in cyberspace from his experience working in the IT domain for over 20 years before joining the Electronic eBusiness Technologies doctoral program at the University of Ottawa. I gained extensive knowledge and awareness of existing cyberbullying laws, regulations, and technological innovation in social media and IT. During my studies in two master's degree programs (Education and eBusiness Technologies, respectively), I acquired the knowledge of how to conduct qualitative and quantitative research and background proficiency on the role of ethics and morality in research. Thus, my experience has provided a broad understanding of the interviewees' perceptions of academics and technology. I might also be considered bias on technology due to my expertise. However, I kept the bias, personal feelings, and impressions to a minimum as much as possible, as guided by Creswell (2013). I was able to recognize most technological shortcomings and was able to address cyberbullying-related bias in other scholarly articles and interviewees. I also ensured the integrity of the codes identified in the thematic analysis process by re-examining the data intensively and by double-checking with anti-cyberbullying experts/researchers to ensure consistency. To guard against further possible biases, I kept an ongoing research journal to account for personal reactions and reflections during data collection and the analysis of this inductive qualitative research. Simon (2011) stated that a competent qualitative researcher should try to seek "a picture using ideas and theories from a wide variety of sources" (p. 1).

For this reason, my experience and knowledge were considered to be a valuable initial source of knowledge in this research. The data collected in this research were then used in conjunction with the knowledge acquired from the background literature reviews that were

conducted on cyberbullying. After that, themes and sub-themes emerged from the findings via the thematic analysis and followed by a more in-depth ethical analysis of impacts on youth in K-12 education through the technoethical inquiry approach.

Ethics Considerations

Conserving and protecting participants' anonymity and confidentiality is my responsibility (Bhattacherjee, 2012). I followed proper procedure by obtaining permission from the University of Ottawa's Research Ethics Board before conducting interviews with participants. In order to interview personnel (i.e. teachers, administrators, and IT support staff) from the public schools in the Ottawa region (i.e., both of the Ottawa Catholic School Board and the Ottawa–Carlton District School Board), I required additional permission from the Ottawa-Carleton Research and Evaluation Advisory Committee (OCREAC). Unfortunately, after two request attempts, OCREAC rejected my interview application. The committee's reasons were the request had insufficient research contribution information, and the research questions were too vague for the schoolboards' criteria. Re-adjusting the research questions for the OCREAC application would have required re-applying for ethics approval from the University of Ottawa research ethics board, and added a further delay to the study. As such, this study went ahead without the interviews from the Ottawa public and catholic schools as planned.

Meanwhile, the researcher interviewed K–12 private school teachers from Ottawa and Quebec City, and cyberbullying researchers from different Canadian universities using a semi-structured interview format. Before the interviews, the participants were given a consent form (see Appendix C) in both the official languages of Canada, English and French. The form also contained information about this study, such as the purpose of the study, the role of participants, and the risks to the participants, including confidentiality and the right to terminate their

participation at any time. The participants answered the interview questions (Appendix B), and they provided insights on common remedies and perspectives for cyberbullying in K–12 education in Canada. Eventually, participants were presented with the overall identified themes and concepts for their final validation. The participants had the option of disclosing their identity, as requested in the letter of consent. If the participants chose to disclose their identity, the credibility of this cyberbullying research for K–12 educators in Canada would have increased because some of the participants were well-known researchers conducting studies on cyberbullying. Five researchers agreed to disclose their identities and their names mentioned in the data findings section instead of just naming "Participant x," where x denotes the number of the participant (see Table 3).

Instrumentation

The research instrument followed Stake's (2005) essential approach to conducting face-to-face, semi-structured interviews. The interview questions were composed of eight semi-structured, open-ended questions for cyberbullying experts/researchers, teaching, and school IT staff. The interview questions were based on the stated research questions in Chapter 1. The term "one-on-one" is used interchangeably with "face-to-face" in this dissertation because participants were either interviewed in person, on the phone, or via Skype. The goal of the interviews was to obtain real-life knowledge and perceptions from different anti-cyberbullying individuals, groups, and organizations on cyberbullying perspectives and prevention measures and other resources related to K–12 education in Canada. The data collected from the interviews also served to triangulate findings obtained from the document analysis data. The data collection process would try to identify all possible cyberbullying themes and provided perspectives on cyberbullying prevention measures and resources. Each participant was interviewed for less than

one hour and, with the interviewee's permission. The interview sessions were recorded with a voice recorder as well as another digital recording application in the laptop, which was used as the backup recorder. If the participant did not authorize the recording, the researcher recorded the answers by noting the key points during the interview. I also took field notes during the interviews. Recorded interview conversations were later transcribed verbatim into Microsoft Word via the voice capture software, Dragon. All electronic files of the conversations were password-protected, and physical data were stored in digitalized devices that were kept in a locked filing cabinet. There was a follow-up (by emails) after the interviews to clarify whether points were adequately understood by me, and confirmation of specific feedback that the researcher needed to validate.

Sampling Criteria and Recruitment

By following the two recommended participation-sampling approaches called "expert and snowball sampling" from Bhattacherjee (2012, p. 70), domain experts were chosen as participants in a non-random manner based on their anti-cyberbullying expertise and research experience on the subject. Following the technoethical inquiry approach (Luppicini, 2009), interview data were collected accordingly from the participants, who were working on subsystems, such as "law, politics, economy, science, communication, culture, and education" (p. 11). Most participants came from the members of PREVNet (cyberbullying researchers) and other similar anti-cyberbullying domains recommended by the experts as snowball sampling (additional concerning researchers). Teachers from the private schools in Ottawa and Quebec City were chosen from the recommendation of fellow researchers and family friends.

Data Collection

I used the multi-methods approach by gathering multiple forms of data, such as documents and interviews, rather than a single data source (Creswell, 2013). The data collection involved the following: (a) a document analysis via the narrative and systematic research review of the current empirical evidence articles, theoretical and conceptual literature, Canadian laws, and Canadian school regulations surrounding cyberbullying incidents involving students enrolled in K–12 education; and (b) in-depth, one-on-one interviews with leading anti-cyberbullying researchers and professionals working in K–12 education on current principles and practices in the design of anti-cyberbullying educational resources. The following sub-sections described each of the method and how the data were being collected.

A narrative literature review is an essential conventional research process used initially to obtain a comprehensive and critical analysis of a research topic, like cyberbullying (Grant & Booth, 2009; Machi, 2016). The narrative literature review formed the preliminary findings of the initial comprehension and various research conducted on cyberbullying as I acquired. My interest in this subject matter started because of my own experience being physically bullied when I was in a boarding school.

Moreover, the initial literature review was necessary because I worked in IT security, another field of interest under the umbellar of cybersecurity. Cybersecurity is the framework developed by NIST, US Department of Commerce, for the governance of IT security, policies, processes, and standards in terms of preventing, detecting, and responding to cyber-attacks (NIST, n.d.). Cyberbullying is considered as a cyberattack and can follow the NIST's mitigation approach of identifying, protecting, detecting, responding, and recovering from cyberbullying. Furthermore, the identified insights or themes of cyberbullying from the narrative literature

review became key search concepts in the next SLR process. The creation of the research questions was grounded in conjunction with the social systems' conceptual approach and the concerning sub-systems of the technoethical inquiry approach.

I conducted a consistent search operation resulting in a collection of relevant cyberbullying-related articles by critically examining their contents. Table 1 contained the bibliographic databases from the library of the University of Ottawa.

Table 1
Bibliographic Databases

Database Platform	**Database Name**	**Remark**
Elsevier	Scopus	Articles mostly on multidisciplinary topics of scientific, technical and medical domains
Clarivat Analytics	Web of Science	Articles span most of the academic discipline, like science, engineering, medicine, social sciences, and humanities
EBSCO Publishing Information Services	Academic Search Complete	Journals, periodicals, reports, books for academic research
Institute of Education Sciences of the USA Department of Education	ERIC (Education Resources Information Center)	Articles mostly on educational topics
ProQuest	ABI/INFORM Collection	Providing latest business, trade, and industry journals and management techniques
	Sociological Abstracts	Providing the field of sociology and sociological abstracts indexes
	ProQuest Digitized Recent Newspapers, The New York Times with recent information	Providing secondary resources
	ProQuest Dissertations & Theses Global	Providing some dissertations in science and technology concerning cyberbullying
IEEE	Xplore Digital Library	Providing technical magazines, conferences, and proceedings in computer science and electrical and electronic engineering
RELX Group	Lexis Nexis	Providing legal solutions, news, and business insights

American Psychological Association (APA)	PsycINFO	Providing literature in the behavioural and social sciences

Additionally, I deployed my initial experience and knowledge of cyberbullying by providing key concepts of cyberbullying obtained from the initial narrative literature review.

Then the data collection step was followed by the SLR search process, which was based on the cyberbullying components that were associated with the research questions.

The Selection Step. The three-step SLR process is described here in detail. First, the selection step proceeded in the order of the three types of search strategies: *manual searches, snowballing searches,* and *automated searches* (Phelps, Fisher, & Ellis, 2007; Vassar, Atakpo, & Kash, 2016; Wohlin, 2014). The manual search terms were first comprised of cyberbullying knowledge known by the researcher and the keywords obtained from the cyberbullying concepts listed in Table 2. The manual search was used to develop further the key concepts and terminology used in the automated search query of the SLR process. Then the snowballing searches were used from a particular article that the researcher required more details in a concept or method mentioned. More search terms or concepts were further identified by browsing a dictionary, synonyms**,** and thesaurus for similar words. The automated searches were not used in this study. Then the researcher formed search terms from Table 2 and browsed through the University of Ottawa library electronic resources of bibliographic databases for technology, business, social sciences, and Lexis Nexis law resources (see Table 1). The search for articles was terminated when the search exhausted all the required articles in each of the listed bibliographic databases with the same search terms, i.e. encountered duplicate articles. The number of manageable (i.e., reviewable) articles were also noticed to ensure the search operations were conducted properly.

The search criteria were guided by the known empirical evidence identified in the preliminary literature review and questions posed in the research questions section in Chapter 1. The concepts were grouped in Table 2, which included Canada, K–12, schools, governance, technology, SMN, definition, behaviour, controllability, preventability, responsibility, accountability of cyberbullying, victims, ethics, awareness, rates of technological growth, Canada and its provinces, new anti-cyberbullying federal laws and provincial regulations, cyberbullying conceptual models, and noted past potential solutions suggested by authors from selected articles or past proof of success for deploying cyberbullying solutions.

Table 2
Synonyms and Search Strings

Concepts	**Cyberbullying**	**Canada & Regions**	**K–12 Education**	**Governance & Technology**
Synonyms or related terms	Cyberbullying Intimidation, Online harassment, Victim, Level of harm	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Newfoundland, Prince Edward Island, Northwest Territories Nunavut, and Yukon	(Primary OR secondary) school* Curriculum, Schoolboard, Teacher, Student, Pupil, Parent	Ethics, Technology, Society, Law or Regulation, Privacy
Sample search strings	((cyberbull* OR (online NEAR/2 bull*)) OR intimidation OR “harness level”) OR Victim* OR bystander*)	(Canad* OR province* OR Alberta OR Saskatchewan OR Manitoba OR Ontari* OR Quebec* OR “New Brunswick” OR “Nova Scotia” OR Newfoundland OR “Prince Edward Island” OR “Northwest Territories” OR Nunavut OR Yukon)	(school* OR Education OR (Teacher* OR student* OR pupil* OR parent* OR professor* OR curriculum OR syllabus)	((regulation* OR law*) AND Canad* OR definition* OR ethic* OR technolog*) OR (“Social Media*” OR anonym*) AND “Innovation polic*” OR prosecution*)

The Extraction Step. Second, the extraction step was based on the inclusion and exclusion criteria refined to eliminate irrelevant articles by examining the year of publication and the topic that appeared in the abstract, title, and the types of literature. The search query was performed on the following metadata fields: (a) title, (b) subject headings, (c) abstract, and (d) keywords (such as author, publisher, and year of publication).

During this inclusion and exclusion extraction step, the context of each selected article was examined through a review of the abstract to determine if the article could be used in the execution step. Articles were excluded (a) if the studies were published in languages other than English because this dissertation targets English readers, and the researcher is also an English speaker, and (b) if the SLR search period started before 2012. This limitation was established because the study was more focused on the aftermath of the known Canadian youth suicide caused by cyberbullying, which began in 2012. In 2012, Amanda Todd was cyberbullied and completed suicide. The following year, in 2013, there was another cyberbullying incident involving Rehtaeh Parsons. These two Canadian cyberbullying incidents were discussed in Chapter 1, and the events doubtless encouraged the development of Canada's anti-cyberbullying law, C-13 (2014), also referred to as the *Protecting Canadians from Online Crime Act*, which was focused on the attribution of consent online distribution of personal images. Hence, the search period was justified for this cyberbullying study in Canada to be started in 2012. The eliminated articles were added to an exclusion folder for future recuperation if the assessment later focused on a new concept of this study. The chosen articles were extracted from bibliographical databases and imported into Mendeley, a reference management tool, in a semi-automated process. Then the final articles selected were exported into a Microsoft Excel .csv file after removing the duplicates. Once the de-duplication process was completed, the interview

data (transcripts) were imported into Dedoose, and a qualitative research software deployed to the thematic coding process. The identified themes were stored in a database of Dedoose instead of manually stored in a location. The tool enabled easy retrieval of the data.

The Execution Step. Third, the execution step entailed reviewing the content of each selected article to determine if the article could be used in the thematic analysis process. The annotated materials from this step were also used to identify most of the relevant cyberbullying components in the cyberbullying studies. The themes that emerged from the synthesis process were vindicated against the research questions (Chapter 1). The results and discussion of this execution step were mainly described in Chapter 4.

Preliminary Narrative Literature Review Method. A preliminary literature review process was conducted to obtain a general understanding of cyberbullying prior to the study. A general understanding of the implications and consequences of cyberbullying was acquired as the vantage point for this study and not only followed by my biases. The selection process involved strategically, including literature that might not relate to the proposed research questions. The preliminary narrative literature review was necessary to confirm my insights since the research of cyberbullying was not previously my major work, and my passion for experience with cyberbullying might contribute biases. The preliminary literature review findings were then used for comparison, and gaps in the following cyberbullying SLR process were analyzed. Some of the literature selected from the search processes was eliminated if the article titles and abstracts did not correlate with the subject matter being studied or if the publication year was earlier than 2012 (i.e., before Amanda Todd's case). Unwanted literature from the scan was then moved to a separate folder (exclusion) in EndNote. If necessary, these rejected articles could be easily retrieved for later reassessment..

The evaluation factors for inclusion were established according to predefined criteria, such as relevance to the research topic, publication year, language, and appearance in specific prominent journals. In addition, the social systems theory, the theory of Cyberbullying, and conceptual frameworks described in Chapter 2 contributed part of the search criteria in the narrative literature review, as statted by Luhmann (1982) and Espelage, Rao, and Craven (2012).

Moreover, these evaluation factors framed the keywords for this narrative literature search criteria. The primary search term *cyberbullying* and similar words such as *virtual bullying, online bullying, harassment,* and *the Internet* were used in five bibliographic databases accessible by university subscription, such as ABI/Inform Global (ABI), Business Source Complete (BSC), Scopus, Web of Science (WofS), and Sociological Abstracts (SA). These databases were used as primary sources and were listed in Table 1. Other keywords like technology, social media, prevention, regulations, and ethics were also used. The researcher also used the University of Ottawa library's Search+ search engine to go through the university's library catalogue as a secondary database source and search for book chapters, conference papers, newspaper articles excerpts, and book reviews. eTheses and uOResearch repositories were also used to select relevant articles. Lexis Nexis, an online legal repository, was also used to review cases of cyberbullying prosecuting with the Federal law C-13 (2014) in Canada.

The main scope of this search for the narrative literature review focused on book reviews, scholarly articles, and book reviews from the past seven years (2012 to 2019) and preferably Canadian studies. In Table 4, the first column, Search+, shows that the first scan found 3,709 hits and 316 hits in the title option search. Then for ABI/Inform Global (ABI), the first scan obtained 228 runs, and the final title-search result was 214 runs. Subsequently, the Business Source Complete (BSC) database was searched with the same search procedures as the ABI

database. The search results were 242 and 22 articles, respectively. For the two first runs in the Scopus database, the results were 187 and 180 hits. The rest of the search results following the same steps. For Web of Science (WofS) and Sociological Abstracts (SA), there were 173 and 103 hits, and 41 and 26 runs respectively, as listed in Table 4. There was a total of 861 articles selected from the chosen databases, and they were then verified to eliminate duplicates, resulting in 419 articles. Then the final step left 172 articles for review. The next step, a full-text screening review, left 64 articles. The final selected articles reviewed were 24 and they were listed in Appendix D.

Table 4
Selection Statistics from Consulted Databases

Search Criteria Step	Search+	ABI	BSC	Scopus	WofS	SA
First search term	3,709	228	242	187	173	41
First + title option search	316	214	22	180	103	26
Total articles were chosen	861					
After duplicates were eliminated	419					
Selected articles reviewed	172					
Full-Text Screening reviewed	64					
Final articles selected	24					

The 64 full-text articles selected were reviewed and included in EndNote (the inclusion process), a bibliographic management tool for later review. The inclusion process was to keep research studies based on the outcomes of cyberbullying among youths, preferably technological impacts, related regulations, and ethics across North America and the rest of the world (Table 14 in Appendix E). Subsequently, these remaining articles were reviewed for their relevance to the research subject matter through their titles and abstract reviews, using the criteria established and focusing on the existing themes concerning cyberbullying extracted from the fields of science, technology, innovation policy, and management. Most of the cyberbullying studies (78%) were from the USA (Table 16 in Appendix E), and there were hardly any Canadian cyberbullying

studies (12.50%) nor international studies (15.64%) during the same period of the study. All North American studies were included in the research instead of just the articles from the Canadian context. Hence, the analysis of the characteristics of cyberbullying under the North American context. Additionally, the primary and secondary school education systems were also similar in the USA and Canada, as discussed in Chapter 1.

Systematic Literature Review Method. A further continuous study of cyberbullying tenets was required with the initial identified empirical evidence as part of the multiple methods of research. I have chosen the SLR process, which would also be an appropriate approach for future similar analysis with the same search terms. The plan of the second literature review was done according to the social systems theory with a suitable cyberbullying conceptual framework. Then, the technoethical inquiry on the social subsystems assisted this study to pose a variety of fields in the subsystem with which cyberbullying interacts. The study of technoethics identifies the impact of technology on the subsystems in a society. Therefore, the combination of the use of social systems theory and technoethical inquiry assisted this study in answering the research questions to uncover a holistic understanding of cyberbullying. The bibliographic databases remained the same as they were listed in Table 1, except the option of Search+ were removed and replaced by ERIC and IEEE Xplore to explore the two subsystems, education and engineering, respectively. Moreover, establishing a proactive detection and correction system for cyberbullying that depends on the effective management of anti-cyberbullying perspectives assisted in answering research questions 3.

The entire SLR process and article search procedures were documented in the Chapter. The documentation of the SLR process strategy permits other researchers to follow the same procedure and produce consistent search results. Secondary sources, such as newspapers, public

magazines, and commentaries, were also included in the SLR search process. Typically, scholarly studies do not address shortcomings fast enough to combat the rapid growth of technologies. Moreover, technology is spreading across all disciplines, such as social science, science, engineering, and education, as well as business applications such as the use of industrial robotics in engineering, online learning in school, and online banking in business (Galvan, December 2003; Kaplan, & Haenlein, 2010). Cyberbullies could take advantage of shortcomings within the newly developed technologies, like SMN tools (Hogan & Quan-Haase, 2010; Mann, 2008; Whittaker & Kowalski, 2015). ICT technology also intertwines across different academic disciplines, and the study of technological impacts becomes more complicated when laws are adopted to persecute cyberbullying perpetrators (Hinduja & Patchin, 2011a; Shariff & Churchill, 2009; Luppicini, 2009a). Additionally, secondary sources were more likely to contain up-to-date feedback and outcomes of emerging technologies on cyberbullying. Secondary source contents might not be qualified, from a scholarly point of view, but the data highlighted potential anomalies that led to a thorough examination of cyberbullying in this study.

Table 5 identified four preliminary cyberbullying concepts from the narrative literature review: cyberbullying-related components, Canadian regions, K–12 education, and regulations. The search terms for the SLR were established according to the four themes and the corresponding research questions. In addition, an academic dictionary and thesaurus were used to help identify any missing key terms, which identified more related articles.

There were four parts (S1, S2, S3, and S4) to the search terms used to search on the topic by using key databases and journals available through the search terms from S1 to S4:

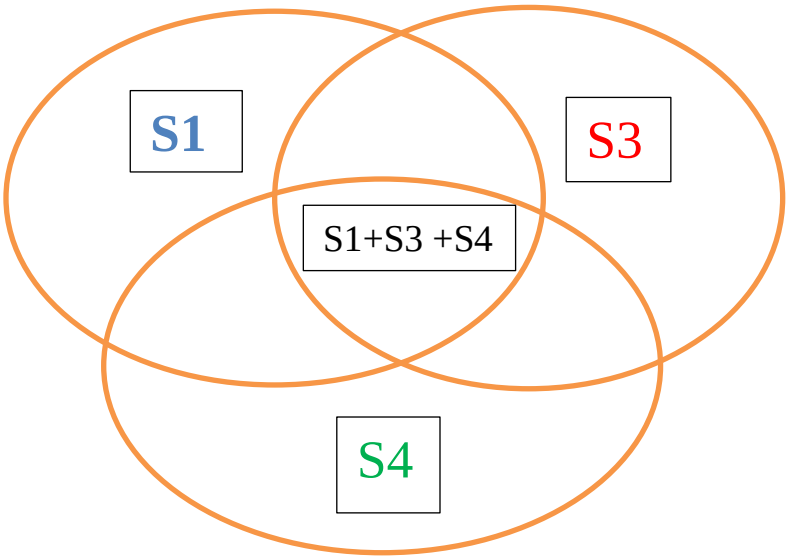
1. (cyberbull* OR “online bull*” OR intimidation OR "harness level" OR victim* OR bystander*)

2. AND (Canad* OR province* OR Alberta OR Saskatchewan OR Manitoba OR Ontari* OR Quebe* OR "New Brunswick" OR "Nova Scotia" OR Newfoundland OR "Prince Edward Island" OR "Northwest Territories" OR Nunavut OR Yukon OR “British Columbia”)

3. AND ((school* OR Education OR Teacher* OR student* OR pupil* OR parent* OR professor* OR curriculum OR syllabus) AND (regulation* OR law*) AND (Primary OR Secondary OR elementary OR high school))

4. AND ((definition* OR ethic* OR technolog* OR "Social Media*" OR anonym*) AND (canad* OR "Innovation polic*" OR prosecution*))

Figure 3. This diagram illustrates the intersection of the search terms (S1, S3, and S4).



A *manual search technique* was deployed to identify related articles by using the combination of the three above search queries. When the four search terms (S1, S2, S3, and S4) were used in the Scopus database, there were only 17 articles to be retrieved; this was not adequate as the first search run result (too few). After further examination of the search terms, the limited search result was due to the search of the Canadian context. As there were not enough studies concerning Canada to answer the research questions, the S2 search term was removed. As a result, the result obtained a much larger number of articles by using only the

search terms S1, S3, and S4 (S1+S3+S4) on the databases. There was another limitation. The IEEE Xplore search was limited to the search query with a maximum of five wide-cards in one search pass. Hence, the search coverage might not be as large as the other databases, like Scopus.

In the fall of 2018, the researcher was introduced to the Covidence platform by a librarian at the University of Ottawa. Started by a non-profit team in 2013 in Melbourne, Australia, Covidence is a "relatively new Web-based systematic review program that aims to make evidence synthesis a more proficient process" (Babineau, 2014, p. 68). The Covidence platform illustrated a more efficient procedure to conduct SLR. Hence, Covidence was used to continue in this SLR process. In other words, Covidence replaced the manual operation with a controlled systematic operation. All of the selected articles were imported to Mendeley (a bibliographical database equivalent to EndNote). Next, these articles (301) were imported to the Covidence database via a Research Information System (*RIS)* format. Subsequently, Covidence provided the "title and abstract screening" and "full-text screening" steps for the selection of the articles accordingly. The application automatically removed fifteen duplicate articles. The remaining 286 articles were reviewed according to the research period (2012 to present), and the relevant title and abstract of the article in the English version only. Table 16 in Appendix E contained the country of research of the chosen 64 articles listed in Table 14 in Appendix E. There were three groups, namely the USA, Canada, and international (all other countries). Some of the articles were studies of multiple countries, such as cyberbullying research of the USA, Canada, and the UK for comparison. The majority of the articles were about cyberbullying research of the USA (71.88%), followed by international countries (15.63%) and then Canada (12.50%). Thus, this study of understanding cyberbullying in Canada was relevant because the Canadian context was

not as many as the USA's, and the evolvement of technology in North America includes Canada and the USA. Are the technological impacts on cyberbullying similar for both countries?

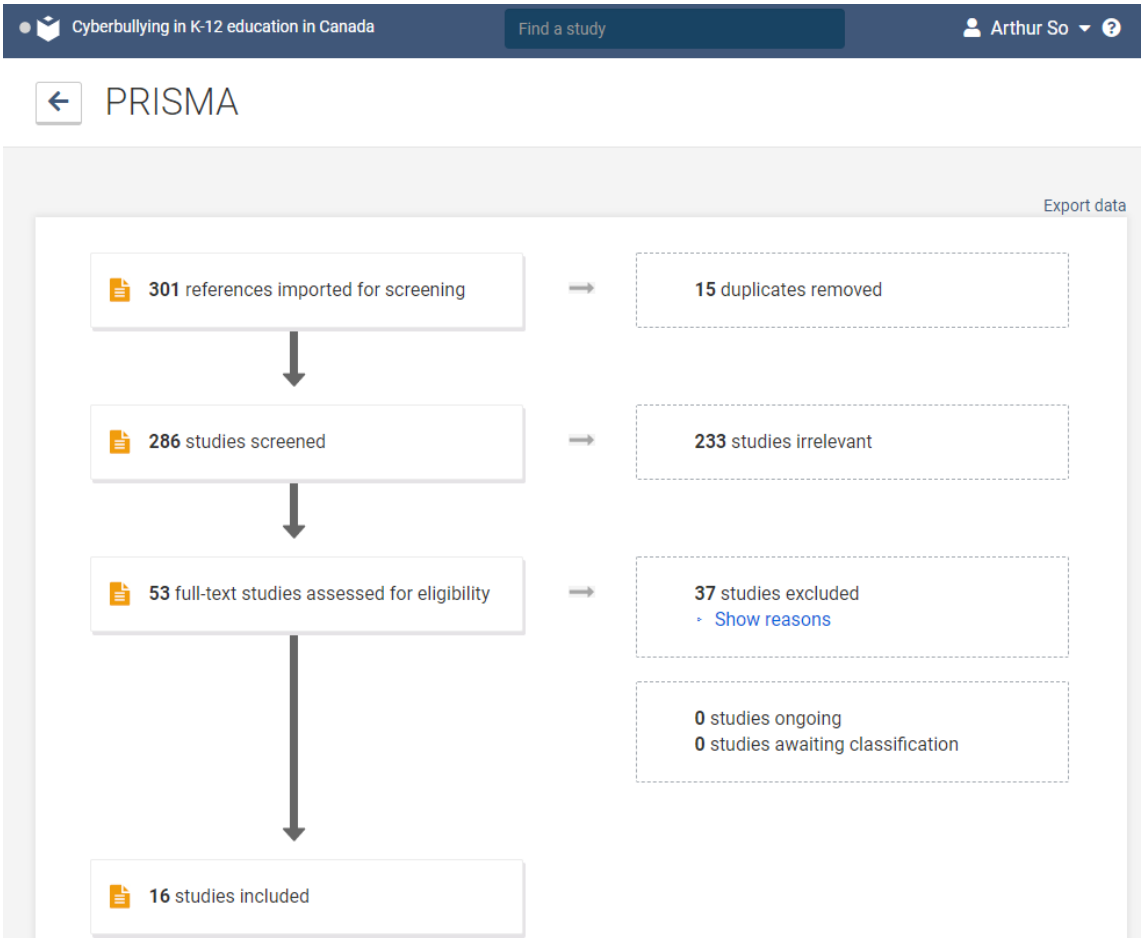
Eventually, there were 53 articles selected out of the 64 articles from the preliminary literature review. I followed a further in-depth selection of the articles by reviewing them in the full-text mode. All of the included and excluded criteria were kept the same as the narrative literature review in the Covidence application. The researcher processed the SLR selection steps as the narrative literature review, but all steps were treated in the Covidence application instead of manually managing the articles.

The search query was performed on the following metadata fields:

- keyword (both from author-supplied and publisher-supplied)
- subject headings
- title
- abstract
- year of publication (2012 to present)

Ultimately, 16 articles were selected for this SLR process, and their research findings were used to contribute responses to the research questions. The selection results stored in Covidence were listed in Figure 4 after the full-text screening process. Figure 4 illustrated the preferred reporting items for the systematic reviews and meta-analyses (PRISMA) approach that was provided by Covidence. Described by Moreton (n.d.), from the University of North Carolina, Health Science Library at Chapel Hill, PRISMA is defined as an "evidence-based minimum set of items for reporting in systematic reviews and meta-analyses" (para. 1).

Figure 4. Summary of the selection process from the Covidence app.



To sum up, Figure 4 was the PRISMA diagram provided by Covidence summarizing the SLR process. There were 301 articles imported to the Covidence apps after the search process conducted on the bibliographical databases. There were 15 duplicate articles, which were automatically eliminated during the import process. Their relevance was examining the remaining 286 articles to this study in terms of the period of publication (2012 to present), English language only, article titles, abstract, and peer-reviewed only articles. There were only 53 articles qualified to answer the research questions. Since the SLR selection was made over 12 months ago before the dissertation was drafted, I have conducted a second SLR scan with the same search terms as the first run. There were 11 more articles chosen. A total of 64 articles for

review were listed in Table 14 in Appendix E. At the final step of the detailed assessment review process in the Covidence apps, 16 articles remained eligible for this study (see Table 8). Table 14 also listed details of the 16 articles by the lead author, year and country of publication, corresponding theme, limitations and gaps, and significant outcomes. The selected 16 articles were then sorted and summarized in their categories, as shown in Table 8.

Moreover, the findings from the SLR process, in conjunction with the findings from the one-on-one interview data (the second data source), were used to establish themes. The criteria were not limited to the above concepts, and this process helped the researcher to find additional cyberbullying-related concepts and constructs. The identified concepts became the empirical evidence that served as the primary source to discuss components of cyberbullying and subject matter for the repository.

All the results of the data collection were illustrated in Chapter 4. The SLR operation process changed from the initial manual documentation to being software-assisted using *Covidence* to streamline the SLR process. Thus, the SLR operation was simply animated by Covidence, instead of manually driven, and the articles were all imported from the reference management tool and stored in the Covidence database (see details in Chapter 4). Covidence has made the SLR process more efficient; for example, comments from each SLR step were recorded in a centralized location. Subsequently, cyberbullying-related secondary source documents and cases (for example, newspapers and blogs) were also be considered to cover more of the characteristics of cyberbullying among youth in primary and secondary education in Canada. There was a lack of research concerning a thorough understanding of cyberbullying activity as this study attempted to discover all possible tenets of cyberbullying.

Lastly, to illuminate the threat of limitation and validity of the data from the SLR protocol, a librarian and a peer-researcher (who were both familiar with the SLR process) vindicated the search terms in Table 2. Limiting the period of the publication search was justified by the earliest publicly known cyberbullying incident in Canada, as described in Chapter 1. The deadly cyberbullying-related event triggered the adoption of the new Canadian cyberbullying law (C-13 of 2014). Finally, the objective of this SLR process was to identify as many constructs, concepts, and perspectives related to cyberbullying. Unfortunately, some unreported cyberbullying incidents may exist before 2012 that would not possibly be available in the scope of this study.

Interviews Sampling and Recruitment Method. As previously mentioned, a one-dimensional approach to eliminating cyberbullying is not appropriate because the answers to "How did cyberbullying come about?" and "Why does bullying extend to cyberbullying?" were not enough to mitigate the complex problems of cyberbullying due to the interconnected constructs within the environment of cyberbullying. In this study, the researcher's goal was to understand a unique phenomenon (cyberbullying) rather than providing a general approach to cyberbullying case studies. Interviewing cyberbullying subject matter experts, researchers, and key stakeholders, can produce sophisticated knowledge of cyberbullying and their perspectives on cyberbullying, including other stakeholders on intervention measures (Bhattacherjee, 2012). The findings from the interview data were used to triangulate the results from the SLR.

The participants signed the consent form before their interview, and they have informed the purpose of the study and provided a brief description of the letter of consent and the interview details. The participants then joined in one-on-one interviews (either face-to-face, over the landline phone, or Skype). The interview sessions were recorded and progressed, as described in Chapter 3. The participants provided their perspectives on cyberbullying, its

prevention measures, and resources to help the researcher answer research questions and achieve a holistic view of cyberbullying in K–12 education in Canada. All these concepts were collected and considered as input categories and themes. There was always the concern about whether sufficient data were collected for this research because of the continuous growth of technology that impacts on SMNs.

Interview Data Collection Method

Familiarization. The first step was to transcribe verbatim each participant's interview with physical files. Transcriptions of three interviews required translation from French to English. The interviewees sent in the answers to the interview questions by electronic mail. The transcripts were in writing and not in recorded speech format. These three participants signified good knowledge of the cyberbullying landscape in the province of Quebec, which could be compared to the data from Ontario, i.e. public schools from Quebec as opposed to private schools in Ontario. The researcher also tried to familiarize the characteristics of the interview data and prepared the transcripts (either in WORDS or PDF formats) to be imported to Dedoose, a Web application for data analysis software. Since this research followed an inductive research approach, the generated themes were not tied to a pre-existing cyberbullying framework. However, the induced framework was grounded on Luhmann's social systems theory, technoethical inquiry, and systems-thinking approach, as discussed in Chapter 2. In addition, the epistemological belief of the researcher acquired from his experience was triangulated by the participants' points of view and perspectives related to cyberbullying.

Coding. The second step was to identify key codes from words, phrases, or statements obtained from the transcripts. Khandkar (2009) illustrated that qualitative data analysis consists

of three parts: “noticing, collecting, and thinking about interesting things” (p. 1). He further elaborated that:

> [i]n general, noticing means were taking notes based on observation, recording events or interviews, gathering documents, etc. In the analysis phase, when you are going through the data that often mark relevant sections and add a descriptive name or *code* to it. (Khandkar, 2009, p. 1)

According to Bhattacherjee (2012) that there are three phases of open coding techniques: (1) open, (2) axial, and (3) selective. *Open Coding* was performed by asking the interviewees questions, making comparisons, and looking for similarities and differences between the comments (Saldaña, 2012.) The codes were critical phenomena that were interpreted by me as significant matters or actions and associated with the research—i.e., the impact of technology on cyberusers. A further detailed description of the codes being assorted to relevant themes was listed in the below section. I recorded the generated themes in Dedoose.

Emerging Themes. The third step was to identify similar themes from the categories. The themes represented the meaning of the data, which were to be associated with the research questions. For example, key codes like *behaviour*, *motivation*, and *control* were in the *cause and effect category,* which was grouped as a theme for governance (Table 9). Hence, themes were the outcomes of the identified key codes. The high frequency of a theme did not necessarily indicate the importance of that particular theme. On the contrary, the low frequency of occurrences might need to be addressed, or it might suggest that those themes were irrelevant or gap to this research. There were two themes established from the key codes: governance and awareness.

Themes Validation. The fourth step was to validate the themes if they supported the data and were relevant to the research questions and the conceptual frameworks. This step was reviewing and refining the themes. The review ensured that the themes corresponded to coherent patterns of cyberbullying according to the social systems conceptual framework (see Figure 7). Otherwise, more new themes were created, or some themes were amended. The refining process ensured that there was an accurate representation of the themes among the participants' perspectives and the research questions. Then the refining process terminated and progressed to the next step.

Defining and Naming Themes. The fifth step was a final analysis of the themes. I analyzed each of the themes and gave it a name according to its property. Each theme presented the aspects of the interview data; thus, the name of the theme provided a significant representation of the data for answering the research questions, like a consequence, represented motivation, misconduct, and respect. The thematic analysis process was terminated once the researcher was satisfied with all the codes identified, and all the themes were ultimately generated. A report was produced in the final step with the aid of Dedoose. I accounted for the occurrence of the codes and their correspondence with the participants. The statistical data were stored in Dedoose software so that I could use the analysis tool provided to analyse the data.

Following the above interview data collection steps, I reviewed the 17 transcripts of the interview data by following the steps of thematic analysis, in which the coding steps were illustrated in the above Code sections. Following Costa et al. (2016) thematic analysis, the *Open Coding* technique was used to identify the codes from sentence-by-sentence, and the properties were selected from the 17 transcripts, which were in Words format. Each excerpt was segmented from interview transcripts. The data was examined and by making comparisons, and looking for

similarities and differences between the comments (Saldaña, 2012). Then the data were grouped into a meaningful concept and a corresponding code represented them.

Subsequently, the *Axial Coding* technique was used to create categories, sub-categories, and main categories by grouping the relationship of the codes and making connections between the codes. The main categories were then selected as themes. This manual code generation was replaced and recorded by Dedoose, which allowed the researcher to review and analyze all 17 transcripts online, and key codes were identified and stored in its database. The key codes were extracted as excerpts from each of the transcripts of the participants.

The results from the data sources obtained from the interview processes were listed in Chapter 4, where the thematic analysis was conducted to identify categories and themes for cyberbullying.

Data Analysis Method

I used interpretive techniques that organized the data by codes associated with data segments related to research objectives.

In sum, the thematic analysis process was executed as follows: first, direct quotes were collected from the articles used in the SLR and interview process by the thematic data coding method, which involved making comparisons between selected comments or key codes (Saldaña, 2012). Braun & Clarke (2006; 2012) state that the coding process "capture[s] both the diversity of perspectives evident in the dataset and the patterning of meaning" (p. 101). This step was used to identify "recognizable characteristics of each concept [of cyberbullying characteristics]" (p. 114) and narrowed down to categories or groups in the main coding scheme (e.g., definition, trend, behaviour, technology, ethics, regulations, and awareness in the aspect of cyberbullying). These codes were validated for their integrity and adequately interpreted by

repeatedly reading and re-reading the selected literature for consistency. The foundational groups were then assigned to a small set of themes, which emerged from pattern and occurrence. The themes then formed a comprehensive representation of cyberbullying characteristics, which provided all the tenets for a final illustration of the characteristic of cyberbullying and the constructs for the repository. However, "there is another point of view [in the thematic analysis], concerned with how much flexibility can lead to inconsistency and a lack of coherence" (Holloway & Todres, 2003, p. 346). Thus, I engaged a more thoughtful process in the coding step and provided coherent codes to the research questions.

Finally, Bhattacherjee (2012) shows that there are possibly unidimensional and multi-dimensional constructs in qualitative research. Examples of unidimensional constructs are the bullies' and victims' demographic data, technology, and regulations. Multi-dimensional constructs consist of more than one underlying dimension that is yet to be discovered. These constructs needed to be analyzed separately to determine their substantial mutual value and interconnection factors, such as the impact (both positive and negative) of technology on cyberusers, innovation policy and regulations on technological manufacturers, and technical implication on the lifestyle of cyberusers. The influential factors of cyberbullying were discussed further in Chapter 4.

Validity and Trustworthiness

Data sources were often obtained from biased diversity studies, which were generally conducted by researchers in anti-cyberbullying, behavioural, technological, and educational fields. Thus, I might have difficulty establishing the validity of the studies or the reliability of the findings. For this reason, there were multiple checkpoints to help me to determine the accuracy and trustworthiness of the data and findings. First, I identified biases and personal experiences to

avoid interfering with the interpretation of the research findings (dependability). Second, I allowed participants to review the final transcripts of their interviews to validate the accuracy of the results (confirmability). Third, I established a standard protocol for data collection through the SLR process and interviews (credibility). Finally, the findings from various source types (e.g., academic research and interview data) were triangulated to corroborate the results and ensure the trustworthiness and generalizability of the study (transferability). All of these approaches of research validation followed Creswell's (2013) and Bhattacherjee's (2012) rigorous research paradigms.

Summary

This chapter illustrated the methodology of the study. The first data source from the narrative literature review emerged the core themes as empirical evidence that were used as the input concepts for the SLR process. The identified empirical evidence also confirmed my initial understanding of cyberbullying. The second data source from the SLR process obtained the key codes for cyberbullying. The key codes from Dedoose were analyzed by the thematic analysis to yield themes of cyberbullying. Next, the final data source from the interview process also identified the key codes from the excerpts of the 17 participants. The key codes were then processed by the thematic analysis to yield more themes. The themes corresponded to either the second data source or newly emerged themes from the third data source.

Unfortunately, there was a setback in the one-on-one interview because OCREAC rejected the request of interviewing their staff in public Catholic and Protestant school boards in Ottawa. The other chosen participants were interviewed either by phone, Skype video, or voice only, or answered the same interview questions (Appendix B) in writing.

The thematic analysis was used in the data analysis. There were codes identified and followed by the identification of general emerged themes and sub-themes representing cyberbullying. Then the identification of the codes and themes were discussed in Chapter 4, leading to the identified categories coherent to the research questions. The next chapter also contained the summary table of the data collection and analytical approach with the assistance of the tool Covidence for storing selected and rejected articles from the literature reviews.

Chapter 4: Findings

There were three data collection sections in this chapter: a preliminary narrative literature review, a systematic literature review, and the transcribed interview data. This chapter described how the emerged constructs from the three data sources. They were also used to triangulate with each data source if any. Gaps of cyberbullying research were also identified from the least found constructs. The first two data collections are from the document analysis, and the third one is from the interview participants—the document analysis used quantitative discrete data analysis. The interview data were analyzed as qualitative analysis, and their findings were linked with the analyzed document findings in the advanced analysis section. A general description of each of the 17 participants was listed in Appendix A; their cyberbullying experience, qualifications, and location were also included. The information was primarily derived from their biographies on their institution websites.

Demographic Data Attribution

The following section is the demographic data of the participants. The purpose of conducting the one-on-one interview was to identify as many as cyberbullying constructs as possible from cyberbullying researchers, school teachers, and IT school support personnel. Table 3 lists the 17 persons who participated in one-on-one interviews and the type of participants. The details of each of the participants' backgrounds were listed in Appendix A. There were four types of participants, namely cyberbullying researchers (N = 9), private school teachers from Ontario (N = 2) and Quebec (N = 3), and school IT-resource technologists who worked in the ICT and social media fields (N = 3); the breakdown of the interviewees can be found in Table 3. As for the demographic distribution of the participants, there were 11 females (64.7%) and 6 males (35.2%). The attribution of females and males was chosen in random mode.

The participants remained anonymous unless they permitted the disclosure of their names in the signed consent form. All the participating cyberbullying researchers agreed to disclose their names in the dissertation. Most of these participants were the subject matter experts in cyberbullying that PREVNet recommended. Some of the participants are renowned researchers on cyberbullying in Canadian universities, and their contributions reinforce the authenticity of the findings. If the participants agreed to disclose their names as specified in the consent form, their names were specified as Participant [Name] in this dissertation. Otherwise, they were identified as Participant [x], where x is the number of the participant on the list in Appendix A. The interview data were insightful and corresponded to the research questions exploiting the participants' experiences and perspectives.

Table 3
Breakdown by Participant Type and Location

	Type of Participants	**Location**	**Number**
1	Subject-Matter Experts and Researchers	Canadian University	8
2	K–12 Teaching Staff	Ottawa, Private school	2
3	K–12 ICT Staff	Ottawa, Private school	1
4	K–12 Educational Resources Related	Ottawa area	2
5	Industrial–IT Related	Ottawa area	1
6	K–12 Teaching Staff	Quebec City, Public school	3
	11 females (64.7%) & 6 males (35.2%)	Total:	17

Since there was no permission from OCREAC to interview any teaching staff in the public and Catholic school boards in the Ottawa region, I only had 17 participants, as described in Table 3. There were 2 participants in face-to-face interviews, 5 participants in voice recording with Skype interview, 2 participants with Skype video and voice interview, 1 participant with the phone interview, and the other 7 participants answered the eight open-ended questions in writing (see Appendix B). The open-ended questions were the same questions used in one-on-one interviews.

General Findings

This section provided the general findings of the study of the documents and the interview data collection, as well as their data analysis. The first part of the findings was from the document (qualitative) analysis using discrete quantitative data as guidelines. The second part of the data source was from interviewing participants. Then, the emerged themes and categories were listed in tables and discussed in detail for each of the types of data sources. Finally, the evolution of the identified themes and categories were presented in the final Table 15. The further detailed discussion of the categories, themes, and sub-themes was listed in Table 18.

Document Findings

To acquire an initial understanding of cyberbullying in conjunction with the experience, the researcher conducted a narrative literature review and identified some themes and gaps in cyberbullying studies. In addition, the literature review examined the perspective of leading anti-cyberbullying experts probed issues of behaviour and motivation (Boyd, 2007, 2014; Li, 2007; Shariff & Churchill, 2009). Some of the gaps were difficult to apply in a cyberbullying environment before integrating them into the four fields (Table 6 and Table 7), and remain challenging to correct without further investigation, because of the multi-dimensional factors of the connecting elements of cyberbullying (see Chapter 2).

Narrative Literature Review Themes. Four types of preliminary themes emerged from the synthesis process of the articles, which listed in Table 5. These themes were used as the empirical evidence and as search inputs in the SLR process in the second data collection phase. The four core themes were synthesized as:

- Science included psychological behaviour, cyberbullying definition, mental health, characteristics, causes and effects of SMNs, and ethics
- Technology included ICT communication, responsibility, monitoring tools, privacy, and users' perceptions
- Innovation policy included commercialization, technology transfer, industry, and governmental and academic research and development; see Research & Development (R & D) (see Doern & Stoney, 2009)
- Management included rules and regulations, legislation, awareness programs, implementation, enforcement, and mitigation methodology

These emerged themes obtained from the narrative literature review illustrated that there were four areas of cyberbullying research.

Table 5
Preliminary Core Themes

Preliminary Themes Category	Description of the Category
Science, Psychology	Research from science, psychology, psychiatry, and organizational behaviour domains
Technology, Social Media	Technology-related; especially in the social media tools environment
Innovation Policy, Legality	Innovation, knowledge transfer, and regulation- and law-related incidents and their amendments
Management, Definition, Theory, Ethics	Awareness program and precaution measures, existing definitions, conceptual framework, ethics, and privacy concerns

The protocol search strategy provided the search results in each of the bibliographical databases for the themes (Table 6). All of these core themes also led to the recognition of key gaps that formed an appropriate research theme for this study. As shown in Table 6, there was a large amount of cyberbullying research focused on the four fields, namely behaviour-related issues (*Science, Psychology*), the causes and effects on users and technologies (*Technology,*

Social Media), policy and legality (*Innovation Policy, Legality*), and cyberbullying management including theories and definitions (*Management, Definition, Theory, Ethics*). Among the 172 chosen articles, 22.09% (38 hits) were behavioural and scientific studies, while the majority among the other reviews was 19.77% (34 hits) in corrective (laws amendment) and legal actions on cyberbullying. There were a majority of articles of 41.86% (72 hits) in preventive (awareness programs) and management in cyberbullying. The lowest research studies were the effects of technology and SMN tools, with 16.28% (28 hits). These identified preliminary themes corresponded to the researcher's insights into cyberbullying according to his experience working in technology. Hence, these core themes triangulated the belief of the researcher and enriched the understanding of cyberbullying.

Table 6
Distribution of Each Theme by Database

Database	Hits	Science, Psychology	Technology, Social Media	Innovation Policy, Legality	Management, Definition, Theory, Ethics
ABI	94	16	16	29	33
ASC	14	4	0	2	8
SA	8	4	1	0	3
SCO	38	11	10	2	15
WofS	18	3	1	1	13
Total / Percentage (%)	172/100	38/22.09	28/16.28	34/19.77	72/41.86

Note. **Database List**
ABI = ABI/INFORM
ASC = Academic Search Complete
SA = Sociological Abstracts
SCO = Scopus
WofS = Web of Science

Subsequently, there were 24 articles chosen from the narrative literature review for synthesis (see Appendix D). Further analysis and synthesis of these articles have produced themes about cyberbullying that were integrated into the four core fields of this study (see Table 6).

According to Doern and Stoney (2009), the technology field focuses on three themes: commercialization, technology transfer, and corporate social responsibility (CSR). Similarly, Table 5 illustrated that the themes were under the four core fields of research domains. Subsequently, Table 7 demonstrated the social subsystems and the related topics that discussed further in Chapter 5: Advanced Analysis. The social subsystems corresponded to the technoethical inquiry guidelines that were discussed in Chapter 2. The subsystems were identified from the research fields emerging from the selected articles, as listed in Table 7; they interacted with each other within the society where cyberbullying activities were found. Finally, the core themes served as the initial empirical evidence for the next SLR data collection phase.

Table 7
Themes Extracted from the Sample Narrative Literature Review

Themes	**Research**		**Gaps**	
Social Subsystems	Lead Author	Themes Discussed	Key Gaps	More Research Needed
Science e.g., Psychology, Sociology	Baas, N. et al. (2013) Hamm, M. P. (2015) Langos, C. (2015)	Various modes of cyberbullying; social media network; mental health	Defining cyberbullying harm principles	Psychology or social science study of phenomena in the gap
Technology, Social Media	Bolton, R. N. (2013) Van Royen, K. (2015)	Use of technology by youth (generation Y); corporate social responsibility; automated monitoring	Safety and ethical use of technology	Research to develop technical means to fill the gap

Innovation Policies, Legality	Bauer, T. (2014) Doern, G. B. (2009) Sanders, C. B. (2010)	Commercialization process (government, industry, and academia); technology transfer	Identification of drawbacks; readiness for production	Research to develop innovative approaches to address the gap
Management e.g. Standards, laws, regulations	Chisholm, J. F. (2014) Hanewald, R. (2013) Mitchell, K. J (2015) Jäger, T. (2015)	Trainers and expert perspectives; a broader view of victimization; prevention	Victimization and bystander identification framework	Research to develop specific policies to address the gap
Note. Selected Major Articles from the narrative literature review				

The narrative literature review resulted in the identification of the core themes of cyberbullying. The next section further described the core themes and how they were implied and used in the SLR process.

Preliminary Core Themes. The core themes concerning cyberbullying from the narrative literature review have been summarized in the four fields of interest in Table 5. No doubt, cyberbullying is particularly harmful to youth, as illustrated by the significant cyberbullying cases in Chapter 1. In the early days, cyberbullies tended to have embraced technologies the most without understanding the negative consequences of technology (Bauer (2014; Boyd, 2007, 2014; Jäger et al., 2015). Although there is increasing knowledge of the cause and effects of cyberbullying through research focused on psychology, technology, and the transition from physical bullying to cyberbullying, cyberbullying rates have not diminished, as can be seen in the discussion in Chapter 1, Chisholm (2014), Hinduja and Patchin (2016), and Cook (2020). Chisholm further asks whether cyberbullying is “one of the diseases of the 21st century” (p. 77). If so, the remedies suggested thus far have not cured the disease of cyberbullying. Hence, I wondered if cyberbullying should be understood as a medical, philosophical, or technological

issue under different circumstances. Preventive measures of cyberbullying either might not be effective as researchers once thought, or their focus may have been on the wrong domain. The technoethical inquiry could further be illustrated other influential factors of cyberbullying. Unfortunately, the study of medical and philosophical ethics did not fall within the scope of this dissertation, and these topics were not explored. Instead, the focus was on technology-related issues, and they were analyzed in this study. In future cyberbullying research, it would be advantageous to review both types of problems together.

The findings in Table 7 highlighted some major themes and key gaps for future research. The gaps identified from the narrative literature review discovered the lack of (a) a proper definition and determination of levels of harm; (b) technological developments to minimize cyberbullying; (c) the identification of appropriate innovation policy for technical tools, such as SMNs; and (d) the development of strategies to address bullies, bystanders, and victimization.

Nonetheless, while the identified themes assisted in improving daily safety usage of computing devices over the Internet, adverse cyberbullying outcomes still need to be diminished, as cases of cyberbullying were again occurring in Canada and around the world (UNICEF, 2019). The core themes identified in Table 7 included, but were not limited to, questioning how the rapid growth of technologies created shortcomings that gave rise to the increases in cyberbullying. Thus, the narrative literature review was necessary to conduct at the beginning of a primary research methodology to explore cyberbullying in K–12 education in Canada. The second part of the data collection was the SLR process, which was then followed by one-on-one interviews. The findings contributed more answers for the rest of the research questions, and further analysis will occur in Chapter 5.

Systematic Literature Review Themes. Cyberbullying constructs (themes) were extracted from the 64 articles (Table 14). The constructs were categorized similarly as the same four previously-identified preliminary themes that were established in Table 5, namely: (1) science and psychology, (2) technology and SMN, (3) innovation policy and legality, and (4) management, definition, theory, and ethics respectively related to cyberbullying. The final selection obtained from the 16 articles (Table 14 in Appendix E) were reviewed in detail. The last three columns of Table 14 contain the themes, limitations, and significant outcomes synthesized from the 64 articles. The themes column indicated the themes identified in each of the articles. Then the themes were grouped according to the categories in Table 5. Occasionally, the theme was identified more than once within an article. In the limitations and gaps column, there was a brief description of the shortcomings of the articles. Finally, the outcomes of each of the research studies were highlighted, providing significant constructs of cyberbullying. These constructs contributed a further understanding of cyberbullying and the interconnection of its constructs with each other. The relevant points of discussion from this SLR process responded to the research questions, like the current state of cyberbullying and the existing interventions of cyberbullying.

There were 16 articles selected in the final SLR process. After the research articles were thoroughly reviewed from the full-text copy, eight themes emerged (see Table 8). They were listed in eight columns as-synthesized constructs, which were developed from the careful examination of the articles. There were five types of constructs that had almost equal amounts of articles mentioning them. These constructs were science and psychology (16.22%), social science research (14.86%), trends and IT-related (17.57%), theory and definition (13.51%), and standard and legality (16.22%). The almost equal number of constructs from the selected articles

of a diverse set of cyberbullying research indicates that cyberbullying researchers were in individual cyberbullying research silos. The various research interests showed that cyberbullying has different impacts on stakeholders. Hence, the discovering of cyberbullying constructs and the identification of its stakeholders is essential. Besides, there was hardly any indication of multidisciplinary studies or how each of the constructs interacted with each other. The lack of interdisciplinary studies may be due to cyberbullying research is still in the exploratory stage.

Table 8
Number of Articles Associated with the Different Categories of Criteria

Article	Science & Psychology	Social Science Research	Cause & Effect	Control & Procedures	Trend & IT Related	Awareness Program	Theory & Definition	Standard & Legality
1		✓			✓			✓
2			✓	✓	✓			✓
3		✓					✓	✓
4	✓		✓	✓	✓	✓	✓	✓
5			✓		✓		✓	
6	✓		✓			✓	✓	✓
7	✓	✓		✓	✓	✓	✓	✓
8	✓	✓			✓		✓	
9	✓	✓		✓	✓			
10	✓	✓	✓		✓		✓	
11	✓	✓		✓	✓		✓	✓
12	✓	✓			✓		✓	✓
13	✓	✓	✓					✓
14	✓		✓		✓			✓
15	✓	✓		✓	✓		✓	✓
16	✓	✓			✓			✓
Total	12	11	7	6	13	3	10	12
%	16.22	14.86	9.46	8.11	17.57	4.05	13.51	16.22

Furthermore, cyberbullying researchers have shown that cyberbullying is not a single-dimensional activity (see Chapter 2). Instead, cyberbullying event is a multi-dimensional activity, as demonstrated in Meadows' (2008) systems thinking concept. The themes were

named to an appropriate group for cyberbullying, and then the themes were sorted into categories. The themes were considered as constructs and triangulated with the interview data. I attempted to address the unification of the silos of cyberbullying research by identifying the interconnection of each of the constructs. The least study area was an awareness program (4.05%), and cyberbullying researchers should spend more resources on this domain.

The summary of the number of hits (in percentage) of the concerning constructs extracted from the selected articles was listed in Figure 8. The fewest hits were the *awareness program* constructs (4.05%), and the most significant hits were in the *IT-related* (17.57%) construct. There were a large number of studies related to IT and technology, which is typical since, for any cyberbullying to happen, it must involve the technology of some sort. The second most hits were the *science and psychology* and *control and pr*ocedures constructs, with 16.22%. Both of the constructs illustrated that studies or remedies were conducted after a cyberbullying incident happened. Follow-up studies might be useful after any suggested remediations. The *theory and definition* construct scored 13.51%, which indicated that there was a relatively high discussion of a theoretical framework and an appropriate definition for cyberbullying. As mentioned in Chapter 2, the definition of cyberbullying was originated from the definition of bullying. Still, the literature review showed the discussion of the need for a proper definition of cyberbullying in Deschamps and McNutt's (2016) study. The *cause & effect* and *control & procedure* scored 9.46%, and 8.11%, respectively, could be categorized into the same group of governance. The most important is to be proactive rather than reactive to mitigate cyberbullying.

Interview Findings

Interview Themes. This section provided a detailed description and representation of the identified open and axial coding from the interview data to explore the best perspectives from

the participants. The codes were analyzed and stored in the computer software Dedoose. The occurrences of the same code signified by the participants, and they were accumulated in Dedoose. There were 17 codes identified with 339 excerpts extracted from the interview transcripts of the 17 participants. Next, the defined codes were organized adequately, as shown in Table 22, 23, and 24 (in Appendix F), corresponding to the research questions 1, 2, and 3, respectively.

Consequently, axial coding was used to group common words or phrases, as shown in Table 25 (Appendix F). There were 20 axial codes categorized into three groups of categories, namely *environment of execution*, *consequence*, *awareness and mitigation*. The interview excerpts were further analyzed in the axial code process, and 20 codes were induced in Table 25 (Appendix F). The final groups were renamed according to their properties. The groups were finally named *environment*, *consequence*, and *awareness*, as shown in Table 9. These groups were considered as the categories of cyberbullying.

Appendix F contained some sample context from the participants and the generation of the codes as emerged from the participants. This process of accumulating similar settings and their properties was conducted by following Stake's (1995) recognization of "the similarities of the data and issues that are in and out of context" (p. 69). The similarities were stored in Dedoose and were calculated in percentages. The high occurrences indicated that the codes were in agreement with most participants, such as the codes *cooperation* (8.82%), *definition* (11.76%), *laws* (12.65%), and *control* (14.12). The lesser occurrences indicated that the codes were either not significant or that they needed to be carefully examined, such as the codes *anonymity* (1.18%), *challenges* (2.06%), *misconduct* (2.65%), *outcomes* (2.65%), *privacy* (2.35%), *provenance* (1.18%), *respect* (0.88%), *technology* (0%), and *SMN* (2.35%). Not more than three

participants only mentioned the code technology and code SMN. Some of the codes could be combined, forming themes and sub-themes. For instance, anonymity might be in the theme *challenges*. Then the sub-themes, like misconduct, outcomes, respect, and privacy, could be in the *cause and effect* theme. Lastly, technology could join in the SMN theme. The lesser occurrences might also be considered as gaps in the research of cyberbullying.

The categories, themes, and sub-themes were included the substantial terms of cyberbullying obtained from the transcripts, as well as cyberbullying entities, like parent and child, internet providers, lawmakers, and concepts of privacy and ethics. These themes then served as the essential elements to generate the sub-themes. Codes with weighing features represented their importance or priority within a category implicating cyberbullying. For example, there were codes that can assist in identifying abusive users on Twitter from normal users with machine learning algorithms (Binghamton University, 2019). Then, the machine learning capacity used the weight of that particular feature to identify the abusive users' code, which was considered higher than a pre-determined normal code.

Table 9
Final Codes Distribution from the Interview Data

Codes	Hits %	Environment / Consequence /Awareness		
Anonymity	1.18	A		
Awareness	7.35			C
Behaviour	3.24		B	
Cause & Effect	6.18		B	
Challenges	2.06		B	
Control	14.12			C
Cooperation	8.82		B	
Define Cyberbullying	11.76	A		
Environment	3.24	A		
Laws and Regulations	12.65	A		
Misconduct	2.65		B	
Motivation	5.29		B	
Outcomes	2.65			C

Privacy	2.35			C
Provenance	1.18	A		
Public Policy	4.12		B	
Resources	4.12			C
Respect	0.88			C
Science	3.82	A		
Technology & SMN	2.35	A		
Total Count	**100%**	**7**	**7**	**6**

Note. The codes were categorized into three groups: A = Environment; B = Consequence, and C = Awareness

Table 9 shows all the codes generated manually from the 17 transcripts of the interview data. The codes were then grouped into three main theme categories (A = *Environment*, B = *Consequence*, and C = *Awareness*). The *environment* category represented where and how cyberbullying was conducted; *consequence* described how and why cyberbullying was defined, including outcomes, behaviour, cooperation, victims, and bystanders; and *awareness* described how cyberbullying activities were controlled and prevented by laws and regulations, the user's code of conduct, and awareness across the primary and secondary schools in Canada. The category awareness also included how R & D and innovation that industries contributed to the technological advancements of SMNs.

The interview data were interpreted using the thematic analysis approach and following the six steps of thematic analysis. There were 33 critical codes generated, which produced 13 categories. Finally, 20 codes and three main themes were named after the final validation was completed (see Table 9). These induced themes were *environment*, *consequence*, and *awareness*, which were then considered to be the main themes of cyberbullying. The identified themes served to triangulate the results found in the SLR process and responded to the research questions. Finally, the themes were the main content of the proposed and continuously evolving recommendations.

Figure 6 showed the frequency of occurrences of codes stored in Dedoose. The font used for the codes was displayed graphically according to the frequency of occurrences: the higher the repetition of the code, the bigger the font. For example, there was more discussion of the codes for *laws and regulations,* and *define cyberbullying* than of the codes for *privacy* and *challenges*. The following codes were displayed in Figure 6 in smaller font sizes. Similarly, the code's *outcomes* and *misconduct* were shown in smaller font, which indicated that the participants hardly discussed those topics. In this way, the font size of the data point in Figure 6 became a visual guideline for the discussion points of the perspectives of cyberbullying, according to the participants. These perspectives provided input data for the proposed repository.

Figure 6. Graphical representation of codes extracted from Dedoose software.

The centralized ideas were enclosed by four main categories: (a) Canadian K–12 education, (b) social responsibility, (c) governance, and (d) technology. These categories were

also illustrated by sample elements that were mentioned by the participants of the one-on-one interviews and constructs identified in selected scholarly articles in the SLR process. All of the themes that emerged from this study were extracted from the data sources, according to the Canadian K-12 education context. The theme of social responsibility relates to motivation, culture, and ethics. The theme of K-12 education refers to teachers, administrators, youth, technologies, and resources. The theme of governance includes regulations, innovation, and laws. The theme of technology denotes software and hardware, which are used for cyberbullying in a specific environment.

The frequency rate of the codes attributed to each of the participants (in the last row of Table 10) were stored in the Dedoose software database. The colours in Table 10 indicate the four types of frequency—low, medium, high, and very high—represented by the colours blue, green, yellow, and red (low to high, respectively). From the total counts of the 329 interview excerpts collected, the participants discussed mostly similar codes. Finally, the codes were grouped into categories, themes and sub-themes.

Table 10
Dedoose Code Distribution Statistics

Partipants	Anonymity	Awareness	Behaviour	Cause & Effect	Challenges	Cooperation	Define Cyberbullying	Environment	Laws and Regulations	Control	Misconduct	Motivation	Outcomes	Privacy	Provenance	Public Policy	Resources	Respect	Science	Social Media	Technology	Totals
17	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	3
5	0	1	1	7	0	5	15	4	12	4	5	4	3	4	0	4	5	1	2	0	0	77
8	2	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	5
16	0	3	0	1	0	3	1	0	1	3	0	0	0	0	0	1	1	0	0	0	0	14
14	0	0	0	0	1	0	2	0	1	1	0	1	0	1	0	0	1	0	0	0	0	8
13	0	2	0	0	0	1	1	0	0	6	1	0	2	1	0	0	0	0	3	0	0	17
12	0	1	0	1	1	1	1	0	0	1	0	1	0	0	0	0	0	0	1	0	0	8
11	0	1	0	0	2	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	5
3	0	2	0	1	0	3	3	2	3	2	0	4	0	0	0	3	3	0	4	0	0	30

6	0	0	1	2	0	1	2	0	2	2	0	0	1	0	0	1	0	0	0	0	0	12
4	0	7	5	4	0	7	2	0	9	6	0	0	1	0	3	4	0	0	0	2	0	50
7	0	1	0	1	0	1	1	1	0	1	0	0	0	0	0	1	1	0	0	0	0	8
1	0	4	4	1	0	6	4	2	7	7	1	2	0	0	0	0	1	1	2	3	0	45
10	1	0	0	2	3	1	0	1	2	1	0	2	2	2	0	0	1	0	0	2	0	20
15	0	0	0	1	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4
9	1	3	0	0	0	0	1	0	2	3	0	0	0	0	0	0	0	0	1	0	0	11
2	0	0	0	0	0	1	4	0	3	7	2	2	0	0	1	0	1	1	0	1	0	23
Totals	4	25	11	21	7	30	40	11	43	48	9	18	9	8	4	14	14	3	13	8	0	0

The two discussion topics with the highest frequency were *control* and *laws and regulations*. The two issues that were discussed the least were associated with *anonymity* and *challenge codes*. As a discussion point, this kind of high frequency might be expected because many participants discussed remedies that attempted to correct a particular situation, particularly the specific issue of suicide. The response to a problem of suicide was always in a single-dimensional mode. The single and multiple characteristics were already highlighted in the systems thinking section in Chapter 2, and cyberbullying is believed to be a multi-dimensional issue. The shortcomings of cyberbullying encountered by the participants confirmed that there are negative social values, as partly illustrated in Luhmann's social systems theory. The negative value ranges from intimidation to suicide. Some of the codes from the interview data could be identical to the codes found in the SLR process. However, the identified codes from the interview data ascertained the SLR findings and strengthened the understanding of cyberbullying,

Themes and Categories

Table 18 shows the emerged themes and sub-themes. The hits (in %) represent the occurrences of similar subjects that were extracted from the participants. Each theme was carefully examined and named according to its property. The sub-themes were considered using the same evaluation but within a more significant theme. For example, the theme of *laws and*

regulations was considered to be under the theme *environment*, where cyberbullying was committed. Subsequently, the recognition of the categories was realized according to the three research questions, such as (1) The first research question inquired about the current state of cyberbullying; (2) The second research question regarded the promotion and available resources of anti-cyberbullying, and (3) The third research question examined the social perspectives of cyberbullying. Thus, the two categories were named: (1) The current state of cyberbullying, including the promotion of cyberbullying, and (2) the social context linked with cyberbullying. The discussion of the themes and sub-themes was also triangulated with the results from the document analysis.

Table 18
Empirical Evidence: Final Themes, and Sub-Themes

No.	Themes	Sub-themes	Hits %
1	Environment of Execution	Anonymity Define Cyberbullying Environment Laws and Regulations Provenance Science Technology & SMN	1.18 11.76 3.24 12.65 1.18 3.82 2.35
2	Consequences & Results	Behaviour Cause & Effect Challenges Cooperation Misconduct Motivation Public Policy	3.24 6.18 2.06 8.82 2.65 5.29 4.12
3	Awareness & Mitigation	Awareness Control Outcomes Privacy Resources Respect	7.35 14.12 2.65 2.35 4.12 0.88

Category 1: The Current State of Cyberbullying

This category illustrated the current state of the scholarly studies and researchers' knowledge level of cyberbullying in conjunction with significant cyberbullying incidents that happened in North America.

Theme 1. The theme *environment of execution* was based on the landscape where cyberbullying activities were committed, such as location (school, home, province) and on the features available for cyberbullies, including the existing laws, regulations, and tools. All of these cyberbullying enablers were considered to be sub-themes, which are illustrated in Table 19 and discussed below.

Table 19
Category 1: The Current State of Cyberbullying

Category 1: The Current State			
No	Theme	Sub-Themes	Hits %
1	Environment of Execution	Anonymity	1.18
		Define Cyberbullying	11.76
		Environment	3.24
		Laws and Regulations	12.65
		Provenance	1.18
		Science	3.82
		Technology & SMN	2.35
2	Consequence & Results	Behaviour	3.24
		Cause & Effect	6.18
		Challenges	2.06
		Cooperation	8.82
		Misconduct	2.65
		Motivation	5.29
		Public Policy	4.12

Anonymity. A proactive technological solution to combat cyberbullying is on the horizon, and more technological research is needed especially in the aspect of anonymity of cyberbullies; the sender of the message is difficult to trace if their identity is hidden and they can remain

anonymous (Felten et al., 1997; Hinduja, & Patchin, 2014). Since cyberbullies use technology, perhaps the issue of anonymity could be solved by technological determinism instead of efforts to address and correct cyberbullying behaviour. As Hango noted, "there are certain risks associated with the anonymity and widespread exposure to many unknown factors while online" (p. 10). Moreover, the ability to send electronic messages anonymously could cause difficulty in locating perpetrators and prosecution issues of presenting witnesses in court cases. One of the participants mentioned the anonymity of sending undesired messages:

> In old fashioned telephony, when one received an obscene phone call, there was the option of dialling a special three-digit number that would cause the telephone company to lock down the call details so that the police can trace the caller. The provision of this service helped reduce obscene phone-calls to a negligible level. (Participant 8)

As a similar message identification protocol could be implemented by technology, Participant 8 asked: "Why does it make sense that this hasn't been implemented yet?" Further study of this regard may mitigate the origin of anonymous cyberbullying messages.

Define cyberbullying. Al Mazari (2013) has provided the taxonomies of the four areas of interest for cyberbullying, which identified the consequences in four areas of influential elements. These areas are: "(a) social and cultural, (b) psychological, (c) technical, and (d) financial" (p. 129). Al Mazari elaborated on the details of the four areas of cyberbullying that were illustrated in his study. There are four areas of interest in the study, namely, child cyberbullying tools, cyber-grooming tools, adult cyberstalking tools, and workspace cyberbullying tools. The first two areas coincided with the concerns of this study regarding cyberbullying in K–12 education. Evidently, technologies and social media were the main actors

influencing cyberbullying, and the definition of cyberbullying should include the mention of Al Mazari's four areas. Al Mazari's study outlined the taxonomies of cyberbullying with a clear definition and boundaries of the issue and consequences by classifying types of victims, like children, adults, and co-workers under similar types of technology, like email and SMN.

As Al Asam and Samara (2016) and Campbell and Zavrsnik (2013) highlighted the behavioural consequences of cyberbullying, they also demonstrated challenges in providing mitigation for cyberbullying. Al Asam and Samara indicated "to pass legislation; there needs to be a consistent and clear definition; different studies have defined or referred to it differently (e.g., cyberbullying, cyberstalking, cyber-harassment, and cyber-victimization)" (Al Asam & Samara, 2016, p. 134). Henceforth, a universal definition of cyberbullying is needed if policymakers are going to be able to establish effective laws and regulations. This inadequate cyberbullying definition occurs in the context of Canadian K–12 education as well. Currently, each of the Canadian provinces has its provincial cyberbullying laws based on different definitions (Deschamps & McNutt, 2016). The Canadian federal government should create a universal cyberbullying definition for all the provinces, and regulations would be adapted accordingly. Cyberbullying prosecution would then be much more effective if the lawsuit involved cyberbullies and victims across regions.

Most of the participants dealt with similar issues in their discussions. For example, participants recognized the absence of a universal definition of cyberbullying (Deschamps, Participant 5), appropriate Canadian laws addressing cyberbullying (Shapka, Participant 1), proper control mechanisms mitigating cyberbullying activities (Shariff, Participant 15), cooperation within different levels of the social systems (Mackay, Participant 4), and diversity of

awareness that were conducted in the Canadian educational environment (Shapka & Bailey, Participant 1 & Participant 2).

Environment. The literature review showed that cyberbullying activities evolved with the presence of technology, especially in the environment of SMN, like Facebook and Twitter. Cyberbullies used those tools to transmit their messages to victims. One of the participants, Dallaire, notes that the digital environment is comprised of "social media platforms, [which means] bullying has moved to the cybersphere" (Participant 10). As Shapka indicated, there is a need for "more education for teachers [because] […] [they] are scared [of] technology […] They don't think that they know much about technology, so they [the parents] feel on the outside" (Participant 1).

Laws and regulations. Anti-cyberbullying laws in the USA and Canada were established following the deaths of cyberbullied social media users, and new laws were frequently adopted when the tolerance of the negative effects of cyberbullying has reached its limit, as discussed previously. These laws are usually not considered to involve societal ethics, which is the ethical standard that most citizens should follow. Anti-cyberbullying laws have not typically conformed to ethically unacceptable behaviours dictated by individual (virtue) ethics, or other cultural ethics. Instead, this approach is a utilitarian approach to ethics, and it is similar to security policies in the IT domain that imply that all cyberusers must conform to the policies. Nevertheless, a law is not necessary 100% foolproof, even with a substantial penalty. Cyberusers will still break laws in the future, and at least they would be prosecuted by a legal process.

Although both the USA and Canada have similar lifestyles and education systems, they have established their cyberbullying laws using different approaches; nevertheless, both proceed with the intent to create a safe online environment for youth. The USA cyberbullying bill aims

for a societal ethics solution where the entire population must conform to the new law. In the meantime, the U.S. government allocates funding for awareness programs and research as sub-components of the same law. The literature review shows that more research is taking place in the USA than in Canada. In contrast, Canada's new law is an individual ethical approach that requires each individual to agree to their images being available online. Canada's cyberbullying law aims at a virtue ethics solution. Each method has advantages and disadvantages. As Shapka (Participant 1) stated, "[i]t's difficult to come up with the one best prevention measure." She continued, "I feel that we cannot really do [it] without really understanding the beast." Hence, careful consideration is required when adopting cyberbullying laws in a multi-dimensional approach, and when the intent is to create a safe online environment for youth. Cantin also commented that:

> Laws must allow for intervention with cyberbullies to deter them from doing it again. Beyond the fact of being able to arrest a guilty person, it is necessary to be able to accuse and condemn them, and for that to happen, virtual evidence of their crime must be accessible to the justice system and recognized by it. (Participant 9)

The evidence obtained from the crime would help ICT innovators to improve their products against the activities of cyberbullying. As one participant suggested, "we need to have [other] kind[s] of policies in place that are not only law, justice and punishment in that way (Mishna, Participant 3). On the contrary, Shapka questioned: "Do we have enough laws about cyberbullying? The answer is yes" (Participant 1). This participant hinted that more laws might not stop cyberbullying, and there are other anti-cyberbullying factors that researchers should look for. Furthermore, Deschamps cautioned that "we should be careful when we create policy, you know, it is because if […] not, it opens the door kind of petty use of the policy", adding

further that there is also the "issue of freedom of speech" (Participant 5). Thus, Deschamps indicated the importance of differentiating SMN messages from cyberbullying activities and cautioned that it would be a challenge to adopt cyberbullying laws.

In order to assess the merits of ethics in deploying technologies and ICT applications, multiple technological and ethical perspectives need to be assessed (Luppicini & So, 2016). The recommended social and ethical perspectives in consideration when technologies are deployed within a society are as follows.

First, questions would arise if a large number of preventive measures mitigated the problem, or if new problems surfaced because of the multi-dimensional properties of the original problem. Thus, the statistic of cyberbullying remained at an unacceptable level in the Canada Statistics Cyberbullying report, as discussed in Chapter 1. The fewest number of studies focused on positive and negative technological impacts, especially in terms of the impact of SMN on ethics, at 16.28% (Table 6). Additionally, research has shown technology changed lifestyles positively in society, but the study of negative technological impacts on society was hardly covered in comparison to studies focused on improving technologies. Thus, the controversies and gaps in emerging technologies have contributed to one of the factors in triggering cyberbullying.

Provenance. There have been many explanations of cyberbullying from researchers and policymakers. El Asam and Samara (2016) illustrated a review of the psychological and legal challenges of cyberbullying. They articulated the context in which cyberbullying occurs as: [P]eople often pose the question, "what did we do before we had the Internet and mobile phones?" Technology is rapidly developing and enhancing education, employment and social interactions. It is part of our daily lives allowing us to connect with people around the world and

keep in contact with friends and family. However, technology such as the Internet and electronic devices are being used more frequently to cause emotional harm and distress to others in the form of online harassment, stalking and bullying. (p. 128)

The authors further provided the types of cyberbullying that were similar to in-person bullying, noting, “there were different types of cyberbullying which include flaming, harassment, impersonation, outing and trickery, exclusion and ostracism, denigration, defamation, and cyberstalking” (p. 129). According to the same authors, cyberbullying activities were considered under the umbrella of many illegal online behaviours.

Apart from the undesirable rhetorical actions resulting from cyberbullying activities, there were other unwanted consequences, like the bullying of specific groups. Gilden (2013) identified a minority group (gay teens) that were subjected to bullying and harassment more than heterosexual teens. The author stated that “a wide range of legal initiatives to combat bullying have prefigured vulnerable and innocent victims in need of the state, school, and family protection, and have largely overlooked more nuanced, complex, or empowered accounts of teenage sexuality” (p. 358). In addition, Al Mazari (2013) developed taxonomies of cyberbullying and illustrated the definition of cyberbullying under the category of victims basing on available social media tools and the types of technological activities that were operating on the Internet. The taxonomy contributed a positive approach to illustrate how cyberbullying is defined. However, this study has identified other cyberbullying characteristics or influential factors not yet included in existing definitions of cyberbullying, like cyberstalking and sexting. All of the cyberbullying related terms require a thorough review in differentiating the family of cyberbullying in the future.

Science. Psychological impacts are related to cyberbullies and victims, leading to the state of mind of cyberbullies and the degree of harm of victims. The technical aspects are focused on emerging technologies. The technical issues have already been discussed throughout this study and demonstrated by other researchers identified in the literature reviews. For example, some researchers refer to cyberbullying as a health science problem (Baas et al., 2013; Hamm, 2015). Researchers considered cyberbullying as a psychological effect of motivation and suicide.

Technology and SMN. Parime and Suri (2013) used a *text mining* process to extract "useful text patterns from a natural language text rather than a database … to discover insights by analyzing multiple word documents, social network profiles, comments posted on social networks like Facebook, tweets on Twitter, etc." (p. 1542). Although more research needs to be conducted, this approach might be the solution to detect cyberbullying. Nevertheless, it raises the question of how or whether this works with languages other than English. Mackay confirmed, "bullying that manifests through technology and social media" (Participant 4).

Theme 2. The *Consequences and Results* were based on the observation of cyberbullying outcomes that emerged from Theme 1 as obtained from the document analysis and interview data. The sub-themes formed the related issues within the larger circumstance of Theme 2.

Behaviour. Hango (2016) observed from the Canadian Statistics Report that "26% of individuals who were cyberstalked said they had an emotional, psychological or mental health condition. That probability rose to 33% for those who were cyberbullied and 41% for those who experienced both" (p. 7). Thus, the psychological constructs, as Hango reported (personal behaviour and mental health) were also considered as part of the cyberbullying consequence findings. 16.7% of the 16 selected articles in the SLR process were found to be related to psychological research. Mackay also indicated a psychological component to understanding

cyberbullying, noting that bullies like “to be noticed and to attract attention to [themselves],” and they “like to hide behind the keyboard and make negative comments” (Participant 4). Mackay further said that “who have been victims of bullying or cyberbullying […] sometimes too then become [bullies].” This kind of revenge would become a never-ending cycle.

Cause and effect. The cyberbullying facts identified by Parime and Suri (2013) have illustrated some of the causes and consequences of cyberbullying weaknesses, which were mostly technology-centred with social media tools, such as email, Twitter, and Facebook, and demographic users, such as boys and girls. All of these technological inventions were frequently considered marvellous in improving convenience before negative or unacceptable consequences arose. Some of the incidents involving social media tools were mentioned in Chapter 1. Another influential factor of cyberbullying was behaviour. Some research studies indicated that cyberbullying is the extension of face-to-face bullying (Li, 2007). Meanwhile, Pennington (2014) stated that "continued progress toward the understanding of how cyberbullying victimization outcome differs from face-to-face bullying is needed" (p. 80). Pennington's research "suggested that in all cases, face-to-face bullying was a significant factor in the prediction of fear, self-protection, and school avoidance while cyberbullying was not a factor" (Pennington, 2014, Abstract, p. ii).

Additionally, the investigation by Milosevic (2017) focused on:

> the role of private platforms in regulating online spaces, the differences between industry self-regulation in the United Kingdom and the United States... [The author] takes a deeper look at cyberbullying and self-regulation from the perspective of the privatized public sphere of social media companies ... and [the role of engaging] nongovernmental

> organizations…in serving on advisory boards, monitoring cyberbullying and educating the public (Milosevic, 2017, p. 44).

Challenges. The consequences of cyberbullying were described by Hango (2016), who noted that "for all the positives that come with this technological necessity, there might be some unintended negative consequences. An issue that has undesirable and potentially far-reaching consequences was Internet victimization—particularly cyberbullying and cyberstalking" (p. 1). He further showed that:

> the risk of negative consequences associated with Internet use, such as being a victim of cyberbullying, increases as the length of time online increases. At the same time, the risk of negative consequences associated with sleep, physical activity and social well-being may also rise with increased Internet exposure among young adults. (p. 2)

It has been shown that the consequences of cyberbullying could ultimately be severe in the context of the well-being of youth. Several suicides have been linked to cyberbullying as described in the introduction chapter. As a result, legislators and policymakers have been passing laws to prosecute perpetrators and to try to accommodate victims (Fafinski, 2013). Besides adopting cyberbullying laws to punish cyberbullies, technologists would like to have early detection of cyberbullying activities. Parime and Suri (2014) illustrate that:

> cyberbullying is best detected by observing the individual. It is very easy for a parent to detect if their kid is facing bullying when the kid stops using his/her cell phone or computer or any other form of communication, when the kid gets upset after taking a call or receiving a text or when he/she appears suddenly emotionally withdrawn. (p. 1542)

Furthermore, the synthesis of El Asam and Samara's (2016) study has covered most of the constructs discussed in this research. The authors state that:

> according to many studies, bullying and cyberbullying can have devastating consequences on a child's mental and physical health; hence the punishment should equal the impact. Technology has offered some solutions to reporting and reducing cyberbullying. However, it might not be judged as fully efficient at the moment, especially that many of the SNS are international and issues of jurisdiction [that] can, amongst other factors, prove to be challenging. Schools and parents should be the first to tackle the problem, but the legal system should provide an alternative in severe cases and a platform to facilitate that. Defining what is severe could be challenging; what affects one person might not affect the other, and what is viewed as a minor incident could bare more impact. (p.138)

Cooperation. Mackay commented that "a collaboration between different government departments [and] between parents, teachers, and students as much as possible" would increase the chance of decreasing cyberbullying because this can help "how we teach our young people to learn to live in a digital world" (Participant 4). Furthermore, Mackay believed that there should be "a mandatory duty to report [cyberbullying incidents]." He continued to elaborate that "he thinks there is another important way to encourage bystander involvement."

In contrast, Mishna remarked that:

> [n]obody reports that. Say, if you report, you are squealing. I don't think that help[s]. I don't think that they believe that. They still believe that [it is] squealing and they often know that if the cyberbully got found out that they reported cyberbullying, they would get into trouble. (Participant 3)

Deschamps also made some comments regarding cooperation:

> it's also important to say 'it's not really cyberbullying' is a kind of the worst-case scenario, but what we really want to know […] is how does the Internet affect our daily lives, and

> how can we manage and cope [with an] online lifestyle because frankly, it's not even just that somebody is cyberbullying me. (Participant 5)

Hence, the Internet supports and improves our lifestyle while also helping cyberbullying at the same time. Technology has positive and negative characteristics as well as multi-dimensional effects, as this study encountered.

Misconduct. A participant, Deschamps, illustrated that "the public thinks of bullying and cyberbullying [as] some kind of misconduct" (Participant 5). There was a concern with considering misconduct to be a factor of cyberbullying because misconduct could also refer to other aspects. Participant 16 explained:

> students know this [cyberbullying] behaviour is wrong, and physical bullying is easily caught and happened in the school space. However, arguments and disagreements between students often don't end when a teacher notices and puts a stop to it, but continues later in the digital space. (para. 7)

Furthermore, if the sub-theme *misconduct* was part of the characteristic of cyberbullying, and there was a law enforced for cyberbullying, Shapka questioned if we were "forcing kids to go through an adult penal system" (para. 12).

Motivation. Participant 12 indicated that motivation plays a role in cyberbullying, noting: "I think social or emotional problems would motivate students involved in cyberbullying. There are a perceived loss of status, loss of friends, a need for acceptance jealousy, a need for attention, loneliness, inability to express their own emotions" (Participant 12). The same participant said that teenaged students were learning to cope with emotions. Because of this, sometimes, the students made mistakes and became "socially or emotionally aggressive and cyberbullying platforms make these mistakes harder to correct and erase" (para. 2).

Public policy. In 2013, CyberSCAN, a Nova Scotia governmental anti-cyberbullying unit, adopted the Cyber-Safety Act (2013), which was later found to be infringing the Canadian Charter of Rights and freedom of expression. The main issue was the law's broad definition of monitoring online electronic communication activities. The act was struck down by the Nova Scotia Supreme Court Justice in 2015 because of the infringement of the Canadian Charter of Rights. Subsequently, Tutton (2018) from the *Globe and Mail* reported that the act was redrafted so that the definition of cyberbullying "now includes harm to a victim, it includes things like maliciousness" (para. 7). The updated act is now called the Intimate Images and Cyber-Protection Act (Bill No. 27). In this act, "The complainants can also seek court orders for the removal of online material and – if the online abuse continues – go to the courts for civil remedies and compensation" (para. 9). Tutton also mentioned that the act was scheduled to be reviewed in 2021 in order to determine whether or not it improved the Charter of Rights. Thus, the modification of any policy has the potential to create other influential factors related to cyberbullying. Participant 12 commented that "cyberbullying is addressed in the Ontario Ministry of Education Health curriculum, starting in junior grades (grade 4), I believe" (para. 4). Thus, Ontario's anti-cyberbullying policy in their education curriculum set an excellent example for other provinces.

Category 2: The Social Context Associated with Cyberbullying

This category illustrated the social context associated with cyberbullying, and the sub-themes demonstrated the insights from the participants, including their perceptions of cyberbullying from their experiences working in schools and related research. One of the school's IT support participants also discussed a possible approach in order to control cyberbullying.

Theme 3. This theme refers to *awareness and mitigation* of cyberbullying. It is composed of awareness, preventive measures, resources discussion, and outcomes of cyberbullying. The predominant sub-theme was the discussion of the *control* of cyberbullying, and the least discussed aspect was the sub-theme *respect*.

Table 20
Category 2: The Social Context of Cyberbullying

Category 2: The Social Context Associated with Cyberbullying			
No	Theme	Sub-Themes	Hits %
3	Awareness & Mitigation	Awareness	7.35
		Control	14.12
		Outcomes	2.65
		Privacy	2.35
		Resources	4.12
		Respect	0.88

Awareness. For the most part, the issues discussed in this study do not require financial support; the exception to this is the cyberbullying awareness program. Financial resources were required in order to promote anti-cyberbullying preventive measures. However, these preventative measures needed a proactive approach to eliminating cyberbullying prior to providing a thorough understanding of the shortcomings. Furthermore, school administrators from Canadian schools have the challenge of balancing their budgets during the school year. Administrators are faced with other equally important items to be implemented or replaced, and cyberbullying awareness programs might not have the highest priority. The SLR selection process found that there were hardly any preventive measures such as awareness or preventive programs implemented to minimize cyberbullying activities. Cantin made an important point, noting:

> [administrators] don't think the solution lies in monitoring students; rather, we need to educate them not to engage in cyberbullying and encourage them to report cyberbullies.

> When dealing with them, it is not necessary to be in a punitive approach, but rather educational by making them understand the scope of their actions. (Participant 9)

Teachers should become aware that punishment may not solve the practice of cyberbullying. Mishna suggested that teachers should instead "focus on the impact of […] how to use technology properly, the benefits of it, and then deal with the rest, and not to be negative about it" (Participation 3).

Control. This sub-theme provided an idea of how to minimize cyberbullying. The codes associated with the cyberbullying environment were identified as those uncontrollable substances that corresponded to the fields of psychology, sociology, law, science, and technology. The uncontrollable elements from technology demonstrated the negative outcomes (values) in cyberbullying, as described in Luhmann's social systems theory. This social systems theory (hypothetically speaking) breaks down the community of the cyberbullying stakeholders into types of tangibles, such as family groups (parents and children), the gender of cyberbullies and bystanders, and educational categories at the micro and macro levels (local schools and federal governmental organizations). Participant 13 stated that "banning access to social networks in schools is also a good way to do this [control cyberbullying]," but it is not an easy task because of operational issues. Participant 13 continued to recommend that:

> the best approach would be in the form of a philosophical discussion to get students to talk about the associated dangers, their use of social networks, etc. Using literature or short documentaries on this subject can also be a good approach to engaging young people. (Participant 13)

Outcomes. In 2014, Parime and Suri echoed the involvement of "the use of computers, mobile phones, etc. for bullying activities" to qualify the "cyber" part of the term cyberbullying

(p. 1541). The authors also revealed a report conducted by Symantec that asserted that cyberbullying:

> mainly targets children and adolescents … [1] only 25% of the parents in a test group were aware that their wards were involved in a cyberbullying incident. In most of the cases of cyberbullying, the younger individual involved becomes the victim, making the older individual the perpetrator. A study [2] revealed that cyberbullies are just as likely to be males as females and are more likely to be older teens. The same study concluded that they tend to have poor relationships with their family and friends. According to a survey [3], it has been identified that a significant number of suicides have been committed by teens who were exposed to cyberbullying. (p. 1541)

Hence, it was relevant that this cyberbullying research focused on K–12 education and the research findings were beneficial for analyzing the consequences of cyberbullying. Participant 14 stated that "[they] know that special education technicians are implementing interventions in schools to combat cyberbullying," but there were no further details about the implementation.

Privacy. Privacy refers to the concern that personal information, like personal messages, might be disclosed (Mackay, Participant 4). The balance of security and privacy is always a dilemma, and the trade-off generates endless debatable topics (Solove, 2011). The question of concern is always, how much privacy are cyberusers sacrificing in order to benefit from a safe cyber-environment? Although the issue of privacy may seem to be unrelated to cyberbullying, the disclosure of non-consensual private material online is also a type of cyberbullying activity, which makes it relevant to this study. The enactment of the Canadian cyberbullying Law C-13 (2014) was created to amend the criminal code of the Canada Evidence Act, the Competition Act and the Mutual Legal Assistance in Criminal Matters Act. The first clause stated:

> (a) new offence of non-consensual distribution of intimate images as well as complementary amendments to authorize the removal of such images from the Internet and the recovery of expenses incurred to obtain the removal of such images, the forfeiture of property used in the commission of the offence, a recognizance order to be issued to prevent the distribution of such images and the restriction of the use of a computer or the Internet by a convicted offender (Bill C-13, 2014)

The activity of the disclosure of non-consensual private material online exists under the term *sexting* (Ahern & Mechling, 2013; Browne, 2015; Gámez-Guadix & Mateos-Pérez, 2019; Shariff, 2014). One of the participants, Shariff, researched sexting, and she suggested that this activity should be included in this cyberbullying study (Participant 15). However, this research was unable to closely examine the topic of sexting because the study could be a comparable broad topic as cyberbullying, but it was recommended to be an aspect of future cyberbullying studies

Resources. I examined how an online and centralized repository of interconnected cyberbullying resources would help to diminish cyberbullying. Shapka indicated that "there's no […] huge repository—tried-and-true—with known [and] good outcomes for cyberbullying. So, we are in need" (Participant 1). Also, Shapka added, "I love your idea of a repository. The researcher thinks that there are a lot of interesting [studies] published, but it is hard, you know, all in a few pieces" (Participant 1). Deschamps also agreed with the idea of a repository, as he mentioned: "a wiki could help, but getting support from other organizations, you know, like [the] government work of the [government of Canada] wiki is a good example to follow" (Participant 5).

A repository requires resources that are available in multiple languages, apart from the two Canadian official languages, as a diverse Canadian population needs to be able to access articles concerning the understanding of cyberbullying (Participant 11). Bailey also commented that the idea of storing all resources in an online repository would be a good one because of the "problem with updating contents and legislation that are regularly changing. [However, the repository is] a very labour intensive effort," and one needs to "be thinking about converting expert ideas into layman language and that for an expert is actually not very easy" (Participant 2). Bailey, Mackay, and McNutt agreed that the use of the online platform of PREVNet was appropriate (Participant 2, Participant 4, & Participant 6). Additionally, another participant, a teacher from Quebec City, noted:

> The best approach would be in the form of a philosophical discussion to get students to talk about the associated dangers [with] their use of social networks, etc. Using literature or short documentaries on this subject can also be a good approach to engaging young people. (Participant 13)

Another teacher from Quebec City observed that, at her school, "special education technicians are implementing interventions in schools to combat cyberbullying" (Participant 14). This extraordinary interest technician's initiative might need to be explored further so that it can be integrated into other schools. Besides, Mishna specified that "it's important to get a lot more commitment of time and money and effort is to build a community like in a school or wherever the community is that foster good etiquette" (Participant 3). The idea of implementing a centralized repository for storing the resources of cyberbullying was perceived positively by many participants. Furthermore, Lazarus illustrated that "it would be best to go through school boards, to have representative[s] lead workshops for teachers, and for schools to have trained

guest speakers to speak to youth" (Participant 7). However, this suggestion of changing the types of resources would perhaps require additional budget expenses.

Respect. One of the participants mentioned that "to educate kids about human rights and what rights they have and what right[s] other people have and to encourage and promote respect for different cities and school environments and elsewhere" (Bailey, Participant 2). Another participant commented that it is important to create an "understanding of social responsibility and human rights and kids, helping them to realize that should happen online too and not just face-to-face" (Shapka, Participant 1). Schools should teach their students to *respect* senior persons, like teachers, parents, and older people, but there is a general lack of respect for their classmates.

Final Themes and Categories

Table 15 illustrated how the themes that were identified evolved from the three data sources. The identified constructs from both literature reviews were grouped by their associated fields and domains (properties or characteristics), and then the group was given a theme name. Once the stage of analyzing interview data was reached, the themes were named *environment*, *consequences*, and *awareness*. The names of the themes were chosen according to the relationship of the constructs. That is, the theme *environment* designated the type of cyberbullying research, the theme *consequences* referred mostly to *IT-related trends and mitigation*, and the theme *awareness* was applied typically to *management*, *standards*, and *definition*.

The final themes for cyberbullying were identified as *awareness*, *governance*, and *environment*. The theme of *awareness* indicated the necessity of knowing the cause and impacts of various science and technology elements deployed in our daily lives. The theme *governance*

indicated the rules and norms used for preventing cyberbullying. The theme *environment* indicated the surroundings in which the cyberbullying was conducted. For instance, a cyberbully might be conducting cyberbullying outside the school area, and general society has hardly any preventive measures on cyberbullying. The interview data were reviewed repeatedly until all the possible themes were identified from the transcripts. Then, the codes stored in Dedoose were reviewed and modified, if necessary. The final three themes in this research served as the three major pillars of the study of cyberbullying.

Table 15
Evolution of the Categories Emerged from the 3 Data Sources

Group	Narrative Literature Review (Table 7)	Systematic Literature Review (Table 8)	Interview Data (Table 9)	Final Themes (Table 18)
1	Science, Psychology, & Sociology	Science, Psychology, & Sociology	Environment	Awareness
2	Technology & SMN	Cause & Effect, Control & Procedure, Trend & IT Related	Consequences	Governance
3	Innovation Policies, & Legality			
4	Management, Definition, Standard, & Theory	Awareness, Theory & Definition, Standard & Legality	Awareness	Environment

By analyzing the themes in Table 18, the final main themes were concluded to be (1) *awareness*, (2) *governance*, and (3) *environment*. The rearrangement of the themes was needed because I believe that the knowledge of technologies deployed and behaviour of the stakeholders in cyberspace must be known before establishing preventive measures. The first theme has the designated theme of awareness of the attribution of the cyberbullying. The second theme of governance was designated as the control of technological innovation and

policies. The final third theme was the environment, indicating where cyberbullying activities were conducted, like in schools or at homes. If the governance of cyberbullying is well-established and controlled, the environment would be an anti-cyberbullying zone. I named the acronym *A.G.E.* to denote the three final themes of cyberbullying. This acronym could be used as the three pillars of cyberbullying knowledge that must be fully understood before conducting any intervention of cyberbullying.

1. Awareness - the knowledge of technologies deployed and the behaviour of the stakeholders in cyberspace must be known before establishing preventive measures. For example, Kashy-Rosenbaum and Alzenkot (2020) highlighted that the increased use of WhatsApp also augments cyberbullying and impacts the social climate of the classroom. Piccoli et al. (2020) analyzed the social influence mechanisms between peer groups regarding cyberbullying, which provides a greater understanding of stakeholders' behaviour. Steer et al. (2020) illustrated those perceptions of how humour and banter play a role within cyberbullying. Hence, this pillar of knowledge provided consciousness of the different circumstances in deploying technologies among stakeholders and raises awareness about potential shortcomings.
2. Governance – is the control of technological innovation, policies and laws. For example, the Canadian law C-13, the Protecting Canadians from Online Crime Act of 2014, was adapted for anti-cyberbullying laws. Also, the Lexis Nexis law journals covered activities in the legal system and court proceedings. In the same Canadian context, consulting from the Government of Canada, the R.C.M.P. (2019) provided cyberbullying resources. Holt's (2016) study of the problem of cybercrime in a multidisciplinary context study contributed knowledge in this aspect. Lidsky and

Norbut (2018) illustrated that online threats and understandings of specific speech were protected by law, such as the *First Amendment* in the USA Also, the study of Steer et al. (2020) showed the perceptions and awareness of the association between humour, banter, and cyberbullying, which were necessary to understand the correct rhetoric. Additionally, secondary sources were also useful for obtaining the latest changes in the legal sector before scholarly articles were available, like Tutton's (2018) report of redrafting of the anti-cyberbullying and its effective date in the Province of Nova Scotia.

3. Environment – is where cyberbullying activities were conducted, like in schools or at homes. The location governed the standard (obtained from the second pillar) to be implied. At home, one's parents influenced support for legislation and parental mediation strategies (Ho et al., 2019; Martínez, Murgui, Garcia, & Garcia, 2019). At schools, apart from the existing code of conduct, if any, school psychologists and school counsellors were required to address a pervasive social justice issue (Elbedour et al., 2020). Furthermore, Baldry, Sorrentino, and Farrington (2019) highlighted the importance of cyberbullying and cyber victimization versus parental supervision, monitoring and control of adolescents' online activities. The collaboration of parents and school counsellors improved preventive measures at homes and schools (Dennehy, Meaney, Cronin, & Arensman, 2020). Moreover, Stevens (2015) provided insights into the cybersecurity environment in terms of how communities understood the past,

present and future—thereby shaping cybersecurity as a political practice, which caused changes in policies.

Thus, the potential in deploying the strategy of *A.G.E.* to mitigate cyberbullying is worth exploring in future research. The three pillars of knowledge interact with each other, and changes in one area would undoubtedly affect one or two of the different areas. The interconnecting areas of the three pillars signified the characteristics of the systems thinking approach.

Canadian Law C-13 (2014) in Action

The narrative literature review also revealed that SMNs were the main medium for cyberbullying. A concern for suicides due to cyberbullying has prompted governments to establish new laws regulating the practice, such as the Canadian Law C-13 (2014). The question posed now by me whether there are more studies conducted because of the passing of the law is one indication of the rising momentum of general interest in and concern with cyberbullying? This question of legislation is important for all cyberbullying researchers. The legal database service LexisNexis was used to verify the legal cyberbullying cases in Canada since the adoption of Law C-13 (2014) on December 9, 2014. Up to the present, there have been 9 cases filed in the courts of different provinces. All of the litigations were successfully prosecuted in favour of the victims (Table 13).

Table 13
List of Cyberbullying Cases Involving the Law C-13 (2014)

#	Cyberbullying Cases Extracted from Lexis-Nexis	Date	Location	Verdict
1	R. v. C.N.T., [2015] N.S.J. No. 293	Jul 08, 2015	Pictou, NS	6 months
2	R. v. Saskatchewan (Attorney General), [2016] S.J. No. 353	Jun 30, 2016	La Loche, SK	Publication banned

3	R. v. Greene, [2018] N.J. No. 95	Mar 28, 2018	Corner Brook, NL	8 months
4	R. v. A.C., [2017] O.J. No. 2867	May 12, 2017	Brampton, ON	5 months
5	R. v. Verner, [2017] O.J. No. 3206	May 08, 2017	Oshawa, ON	Charged
6	R. v. Canadian Broadcasting Corp., [2016] A.J. No. 336	Apr 07, 2016	Edmonton, AB	Injunction is dismissed
7	Jane Doe 72511 v. N.M., [2018] O.J. No. 5741	Nov 02, 2018	Supreme Court of Ontario	Paid punitive damages
8	R. v. Ly, [2016] O.J. No. 7196	Nov 28, 2016	Ontario Court of Justice	12 months
9	R. v. M.R., [2017] O.J. No. 7045	Jul 07, 2017	Ontario Court of Justice	4 months

Despite the implementation of this cyberbullying-related Law C-13 (2014) in Canada, the successful prosecutions do not diminish cyberbullying as expected, nor do they provide a 100% prevention of cyberbullying (see Chapter 2). This law also has its own shortcomings, including how the law treats underage children, who are often the perpetrators of cyberbullying. Additionally, there are privacy concerns with implementing the law and authorizing the monitor action on cyberusers by law enforcement. How the monitoring is done may cause privacy concerns similar to the case of CyberScan described in Chapter 1. The violation of privacy was identified in Table 5. The degree of a breach needs to be addressed in detail.

This study reviewed only the Canadian Federal Law C-13 (2014), but the cyberbullying regulations adapted in school boards and provincial Minister of Education across Canada have not been reviewed because of the magnitude of such document analysis. The effectiveness of those regulations provides an adequate standard in the realization of an awareness program in cyberbullying for K-12 education in Canada.

Summary

The interviews conducted in this study identified two categories, namely (1) *The current state of cyberbullying*, and (2) *The social context associated with cyberbullying*. Three themes

emerged, namely (1) *Environment of Execution*, (2) *Consequences & Results*, and (3) *Awareness & Mitigation.* The first two themes were included in the first category (Table 19), and the second category only represented by the third theme (Table 20). Each of the themes had its granulated description by sub-themes.

Most of the participants were the cyberbullying subject matter experts, who were recommended by PREVNet or by the participant to another expert. The participants were either distinguished cyberbullying researchers, experienced school teachers, school IT-related technologists, or policymakers. The interview data were insightful and corresponded to the research questions utilizing the participants' experiences and perspectives. Some of the identified themes had shared characteristics, such as themes about the school and home environment (location), themes about the individual (cyberbully or victim, parent and teacher), and themes about industry emerging technology (control and resources). When specific themes, such as ethics, privacy, and definition, were not indicated in the social conceptual framework, the theme identification process was reworked. In this case, ethics, privacy, and definition were placed under the main governance theme. The least discussed topics were anonymity, privacy, and technology; in particular, technology was hardly discussed by the participants. In addition, a list of cyberbullying cases was provided to illustrate the prosecution under the law C-13 (2014). The verdicts of the cases have shown all in favour of the victims (Table 13).

Finally, identified themes and sub-themes merited further exploration analyzing, particularly in the area of innovation and SMNs, and how these technologies were impacting ethics and privacy. Given the findings from the document and interview data, Chapter 5 extended the analysis by combining both data via the technoethical inquiry approach.

Chapter 5: Advanced Analysis and Discussion

I have analyzed and discussed the findings from the documents analysis and interview data from Chapter 4 and attempted to answer the three research questions. Furthermore, the advanced analysis and discussion of the perspectives provided by the technoethical inquiry to assist the deepen understanding of cyberbullying with the collected data. This chapter also included the delimitations and limitations of the study and provided recommendations for future research on cyberbullying.

Introduction

I have shown that cyberbullying is an unwanted by-product of technology that, affects the health of students (Flannery et al., 2016). Insofar, technology has been emerging at a faster rate, cyberbullying researchers also realized that the growth of technology has become necessary in an e-Society environment. Winston and Edelbach (2011) theorized that the world has been experiencing a technological revolution. They argued that history now records successful technological events—such as the moonwalk, development of personal computers, and evolution of information on the Internet—instead of wars and political conflicts as in centuries past. Technology has improved lifestyles in society, but it has also resulted in negative outcomes, such as cyberbullying. Winston and Edelbach further elaborated that the predecessor of the technological revolution was the industrial revolution, which followed the earlier agricultural revolution. Both of the previous two revolutions had a longer duration of lifespans than the technological revolution. Having said that, the shorter period of the technological revolution meant that the products have a shorter life cycle maturity. Because of this, there might not be time to correct any anomalies within new products before consumers experience negative consequences. For example, researchers have already shown that social media networks were

used as a convenient tool for communication between cyberusers, especially among young people. However, research showed that there are many adverse outcomes to social media, including cyberbullying and security, that have not been fully addressed. The shortcomings were partly due to the rapid rise of these social networks. Prior to the global use of social media, the main consideration for cyberusers is to have a fast and secure Internet connection (Participant Deschamps).

Response to the Research Questions

The purpose of this qualitative research study was to discover the core constructs of cyberbullying in in given who the participants were. The research was guided by the proposed research questions in Chapter 1. The following section uses the findings to respond to the three research questions.

Research question 1. Research question 1 asked, "What is the state of research on cyberbullying and anti-cyberbullying initiatives in K–12 education in Canada?" In Chapter 4, two themes emerged under the Category 1 – *The Current State of Cyberbullying*, which responded to research question 1. The two themes were found to be *Environment of Execution* and *Consequence and Results*, along with the associated sub-themes (see Table 19). The first theme indicated how and where the activities were conducted. The second theme provided the consequences of cyberbullying, which were encountered by the participants.

Most participants responded by discussing the need to introduce a cyberbullying social system across primary and public schools in Canada to address the current situation of cyberbullying in Canadian society. Regarding the state of cyberbullying activities across Canada, participants were concerned about having a proper definition and classification of cyberbullying, i.e., the degree of harm. Shapka (Participant 1) stated that "there are three tenets

in the definition of bullying [like wilfulness, repeated, and intent to harm]" and noted that some people define cyberbullying as merely an extension of bullying with an online component in order to qualify the "cyber" part of the term. However, Participant Shapka continued: "I think that there is a far more complex [situation to manage] … I think what is happening online does not actually have those three tenets" (Participant 1). Participant Shapka continued with a comment about a universal definition of cyberbullying applicable across Canada. She said, "I think that they are absolutely well-intended, but unfortunately, this sort of justice is absolutely the standard approach to dealing with this, but [if] it is not done right, [it] might have the opposite effect" (Participant 1).

Meanwhile, Deschamps (Participant 5) also addressed the issue of defining cyberbullying, asserting:

> The problem would be nice if we have a really solid definition of cyberbullying […] it is not always clear who gets to decide what because cyberbullying is not well defined—or defined too broadly. That was what the issue was with the Nova Scotia [CyberScan] policy. (Participant 5)

Participant Deschamps also illustrated that "we use kind of rash policy put in place, and it is not used really for the purpose it was designed." (Participant 5)

Policymakers have inadequate and ineffective policies and regulations to be implemented in the cyberbullying environment. For example, Bailey (Participant 2) stated:

> I don't actually tend to use the term cyberbullying and that is because I find that it […] often wind[s] up being, sort of, a whitewashing term that guides other kinds of an underlying problem, such as, you know […] crime, like harassment […] or human rights violation[s] like hate propagation and so forth. (Participant 2)

Thus, an essential first step is to establish an accepted universal definition of cyberbullying before proceeding to the mitigation process and addressing issues in cyberbullying. In relation to this, Participant Smith stated that there is a "boundary of cyberbullying" that must be considered in order for the definition of cyberbullying to be cohesive with the reality of cyberbullying (Participant 17). The boundary of cyberbullying provides a good point of demarcation in the definition of cyberbullying. Participant Shapka also referenced boundaries, stating that "cyberbullying tends to bring in [an] equal fear boundary—scaring kids not doing bad things online" (Participant1).

With another perspective on defining cyberbullying, Mackay (Participant 4) considered "bullying and cyberbullying [to be] just variations on the same thing [...] Very often the two activities overlap [in] that they're actually bullying people but also cyberbullying as well" (Participant 4). Furthermore, Participant Mackay stated that "we are doing quite a bit better on coming up with legislation in sanctions and penalties, but prevention is probably our weakest part. Partly because we haven't yet fully recognized what are the most effective ways to prevent it, and secondly[,] failure to put the necessary energy and resources into that." Mackay recommended that:

> we could actually have some statistics about the extent of cyberbullying in particular schools and particular provinces and whether there are certain areas worth a bigger problem than others and so we are going to try to respond to this problem. (Participant 4)

Currently, each province has its own provincial educational initiatives, and "the criminal code, which is federally controlled. So, using criminal law as the vehicle for a national standard or code of behaviour in cyberspace would seem to be the way to go" (Participant 10). Consequently, Participant Mackay cautioned that "to create public policy on cyberbully[ing], we

need a very clear definition of what the problem is with cyberbullying and why cyberbullying exists" (Participant 4).

One of the mitigation methods provided by Participant McNutt used an approach of *digital citizenship*. She stated that youth should learn how to live in a digital world since social morals and expectations associated with human interaction operate on different levels of understanding in digital citizenship (Participant 6). This approach of digital citizenship in the context of a social systems framework is worth further exploration.

The impact of evolving technology on the rate of increase of cyberbullying was not addressed by the participants except that the participants agreed SMN tools were the medium of cyberbullying. For example, Participant Lazarus illustrated that cyberbullying is considered to be "any online (e.g., using Snapchat, Instagram, texting, etc.) bullying (e.g., threats, mean comments or visuals) that may or may not be anonymous" (Participant 7). However, the SLR process showed that while evolving technology is a good vehicle to improve lifestyle in society, it also inspired youth to use the same technology to conduct cyberbullying, as described in Chapter 2 and the literature reviews in Chapter 4. In response to these issues, Participant Lazarus mentioned that "some schools have electronic device policies" (Participant 7). Participant 14 also declared that "special education technicians are implementing interventions in schools to combat cyberbullying."

Electronic policies seem to have already started appearing at all levels, including at the schools (micro) level, the Provincial government (meso) level, and the Federal government (macro) level. For example, policies of acceptable use of electronic devices in schools' codes of conduct could be established by a local school or an individual school board. Hence, the evolutionary social systems framework of the *micro-meso-macro* approach could illustrate

different levels of the analytical structure of cyberbullying. Besides, King (2004) also explained the complexity of the social system at the macro-level and human social interactions with systems at the micro-level. The current state of these social levels of cyberbullying and their insights need to be further studied and be adjusted for K-12 education in Canada. Further research might achieve a perceivable standardization of anti-cyberbullying mitigation in the future in Canada, leading to a clearer understanding and controlling the activities of cyberbullying.

Research question 2. Research question 2 asked, "How do anti-cyberbullying researchers promote cyberbullying awareness in Canadian public, private, primary, and secondary schools?" This second research question was a follow-up question from the first one. Thus, the themes of Category 1 (Table 19) were still used to respond to the second research question.

Participant Lazarus mentioned that "the best prevention measure is to educate youth, [parents, and teachers]" about the shortcomings of cyberbullying (Participant 7), but Participant Shapka noted that this could be difficult because "we don't have any real [tried and] true education program" (Participant 1). The Participant continued saying, "I think that teachers are mandated to get [tougher on cyberbullying] as suggested in the scholarly literature research. They need to teach kids something about online safety and cyberbullying" (Participant 1). Participant Cantin also agreed about the need for a cyberbullying promotion program, mentioning, "I believe that this means educating future generations about healthy use of the Internet and social networks" (Participant 9). She further added, "in my opinion, it is up to each teacher to set up a program to make students aware of this phenomenon" (Participant 9). However, Participant 16 noted that there would be some challenges in establishing a standard cyberbullying awareness program, because "it would be difficult to get all schools on board, as

well as [to] make sure administrators follow proper directives that might be too strict and not applicable in the same sense for different cyberbullying circumstances." A standard cyberbullying program for Canada is a challenge since all the influential components of cyberbullying are not fully categorized. There are many available online resources on cyberbullying, like Statistics Canada, Cyberbullying Research Center, and PREVNet. However, most resources are in the American context rather than the Canadian context. This study might assist in centralizing all the important components of cyberbullying and convey the information to the Canadian context for K-12 education in a centralized location.

In addition, Participant Shapka indicated one of the key issues that needed to be addressed by these programs:

> [By] helping kids understand the difference behind the screens and how much harder you have to work to make sure you don't fall into that kind of, you know, [feeling of] being protected behind the screens and [so] you are not acting as [responsibly] as you typically would because of the screens. (Participant 1)

A teacher from an Ottawa private school found that "there is a lot of talk from teachers and administrators to 'stop bullying,' but [there is] little real action when kids come forward or speak out about it" (Participant 16). There is a challenge in creating a universal policy, because "any national standard would be difficult to implement simply because the federal level has very little influence [on] provincial education" (Participant 10). Another private high school teacher mentioned that "[in] the Ontario Ministry of Education Health curriculum, starting in junior grades (Grade 4), students are taught about [cyberbullying] every year. At most schools, there is an annual assembly by police or other related organization" (Participant 12). A primary school teacher from Quebec City stated:

> I often read hate messages in Facebook publications, comments made by adults who could be described as "responsible." I think the best way to improve this situation is to talk about it—to make young people aware of the consequences associated with this practice, […] depending on the teacher's comfort level and knowledge of the subject. (Participant 13)

Opening the dialogue with students about anti-cyberbullying is a way to combat these unwanted activities, which were anticipated activities in a social community.

Prevention measures have focused on education as well as on the creation of new laws. However, Participant Shapka pointed out that "if we create laws that are targeting a behaviour that is primarily happening among kids, we are kind of forcing kids to go through an adult penal system" (Participant 1). As such, Participant Shapka stated that more laws on cyberbullying are not needed. Instead, "like in [British Columbia], it is written in our ministry document that is included as part of the curriculum, teachers are responsible for teaching social responsibility to kids." Furthermore, Participant Shapka stated that having law enforcement present a cyberbullying awareness program is not a good approach because of kids associate violations of the law with the possibility of going to jail. Participant Shapka further stated that scaring kids with jail time may not work, and she suggested that "[kids] need to discuss and understand [how] to develop relationships as well as [how] to develop empathy and [compassion]" (Participant 1). This participant indicated that the factor of trust between youth and parents or teachers would increase collaboration in combating cyberbullying.

In order to create better preventions for cyberbullying, Participant Dallaire stated that "raising the awareness of policymakers, education leaders, teachers, parents, etc., about the depth and spread of cyberbullying is the first step" (Participant 10). It might be appropriate to target these audiences in the awareness program using this first step approach. Another

participant noted that this is occurring, saying that "[cyberbullying] is a subject that is increasingly discussed with students, depending on the teacher's comfort level and knowledge of the subject" (Participant 13). The teacher from Quebec City stated that "maintaining a relationship of trust based on dialogue and sharing can help to raise young people's awareness of the use of social networks" (Participant 13). Participant Cantin also suggested implementing "role-playing games in which students are exposed to examples and counter-examples of what ethical behaviour should be adopted when using the Internet and social networks" (Participant 9). Once cyberbullying awareness programs are in place, there should be an additional follow-up process to address the issue. This research question used the technoethical inquiry approach and discovered the cyberbullying constructs surrounding the social subsystems so that a proper awareness process is implemented.

Research question 3. Research question 3 asked," How does a systems-oriented conceptual framework advance a holistic understanding of cyberbullying in Canada to help inform anti-cyberbullying resource development?" From the induction process of the interview data, Category 2—*The Social Context Associated with Cyberbullying* in Table 20 was used to respond to this research question. The theme *Awareness and Mitigation* emerged in Category 2 was served to respond to this research question.

From the document analysis, the researcher tried to consider social systems theory concepts informed by Luhmann's Social System Theory for the adoption of a conceptual framework for this study. The social system interacts between society and the environment via communication (King, 2012). Hence, communication determines how the system evolves. But the elements of a cyberbullying system have not yet been established. This study is trying to discover the constructs of a cyberbullying system. Therefore, Luhmann's system theory is not

appropriate for this study to explore the influx of technological and non-technological influences within the cyberbullying landscape. An alternative conceptual framework, Swart and Bredekamp (2009), was considered. It provided the primary perspective components of the conceptual framework for this study, namely the system and environment in a social world (see Figure 7).

This conceptual framework (Figure 7) accommodates the integration of multiple perspectives from multiple knowledge domains to cyberbullying to provide a holistic understanding of the numerous components of cyberbullying in the K-12 Canadian context. There were a few perspectives extracted from the participants validating the elements of the conceptual framework.

Participant Dallaire has considered cyberbullying as being "motivated by the need for power and control over others" (Participate 10). If those cyberusers operate in the environment of a cyberbullying social system as illustrated in Figure 7, the conceptual framework accommodates the diversity of core constructs identified in the interview data, namely, persons, *processes, social perspectives*, and *intervention and prevention*. Cyberbullying contains many components. Participant 13 defined cyberbullying as "a form of bullying that occurs on social networks. It [the action] can be insults, threats, sharing photos in order to harm someone or other." This participant confirmed the process component in the framework. Participant Mackay stated that cyberbullying is a social problem because it "causes fear, intimidation, humiliation, distress or other forms of harm to the person" (Participant 4). This participant provided the social perspective of cyberbullying.

Much of the merit of adopting a social system approach was to study cyberbullying, which lies in the acknowledgement of system complexity. In the case of this cyberbullying study, cyberbullying system parts are not all well understood or integrated with other system parts

within the whole system. The conceptual framework helps explain why society is sometimes slow to act against cyberbullying in terms of preventive measures. The negative value of a social systems theory that Luhmann (1984) referred to is analogous to Participant McNutt's statement that "a lot of parents didn't grow up with these [computing] tools" (Participant 6). If parents are unfamiliar with the latest technology used in cyberbullying, it is challenging to create preventive anti-cyberbullying measures. This participant identified the challenges in the intervention and prevention component. Participant Deschamps also indicated that, in contrast, "youths focus on the positive value of technology," and this is the social shortcoming of technology.

Finally, the core gaps identified from the SLR process in Table 7 answered part of the first and second research questions about the current state of cyberbullying, and the strategies or initiatives that lawmakers, school boards, and administrators should follow to eliminate (or at least diminish) cyberbullying. The responses from the participants for the third research question confirmed the advancement of a holistic understanding of cyberbullying via the conceptual framework of this study.

Advanced Analysis

Additionally, the Technoethical Inquiry Approach was used to provide a holistic picture of the multiple perspectives and multiple levels of interactivity within a cyberbullying system researched. As discussed in Chapter 2, technologies can become obsolete very fast, and new and improved products replace them, often in the absence of knowledge concerning the ethical use of these products. Because of this technological gap, ethical considerations are difficult to align with the rapid changes, and the modification of existing laws and regulations to cope with system changes and the protection of consumers. Indeed, six interviewees (Participants 2, 3, 4, 5,

6, and 15) noted that cyberbullying laws are usually only adopted after an incident has occurred. (Further discussion of the Canadian cyberbullying laws was discussed in the Findings section.)

Furthermore, Pennington (2014) stated that "understanding the victim's potential outcomes and the possible dangers within schools can aid in addressing electronic crimes and establishing proper legal guidelines" (p. 78). In a slightly different vein, Participant Cantin suggested that ethics could be demonstrated by "role-plays to which students could react or role-playing games in which students are exposed to examples and counter-examples of what ethical behaviour should be adopted when using the Internet and social networks" (Participant 9). However, there was also an ethical concern when a child was monitored for bullying behaviour, as illustrated by McNutt, who questioned: "Should we be concerned about the ethics of the monitoring of child behaviour, whether that child is bullying are being bullied[?]" (Participant 6). There is also the question of how the child should be monitored. Children are under the age of lawful prosecution, and trade-offs between monitoring and privacy infringement need to be considered. Hence, there are several aspects of the laws and regulations realization and this led to the issue of the multiple interconnections of the constructs of cyberbullying. Lawmakers must have a thorough understanding of all the aspects of cyberbullying before new legislation is introduced.

Further to ethical aspects, traditional approaches to ethics (see Chapter 2) can hamper a new cyberbullying law if the entire country does not support it. Both the USA and Canada consist of people of diverse cultural backgrounds who may or may not consider some actions are offensive. For example, attitudes in Western and Islamic societies toward gender are different because of their customs and traditions (Mazrui, 1997). A Westerner may believe that some words or actions that are acceptable by Islamic standards are abusive, or vice versa. Individual (virtue) ethics is more concerned with the individual living their life according to their moral

character as opposed to ethical duties and rules (Hursthouse, 2012). This ethical style is based on a belief in an individual's inherent goodness, and cyberbullying laws would not usually govern according to ethics. In addition, Participant Dallaire stated that "The Internet is simply an instrument for the communication of knowledge. Humans, as the users of this instrument, must exercise ethical judgement" (Participant 10). Eventually, ethical judgement would become part of the role of a well-behaved digital citizen, as Participant 6 mentioned.

Other cultural ethics can be customs or the traditional and religious beliefs possessed by an individual cultural or ethnic group. I considered that various ethical theories—utilitarian, virtue, and duty, etc.—may apply to multiple disciplines in social subsystems, like science and technology (Luppicini, 2009a). Thus, a pragmatic ethical impact approach, like technoethics, is the most appropriate for this study. Technoethics allows all of the ethical theories to be used as sources of knowledge to facilitate a comprehensive social inquiry that includes other relevant perspectives, like culture, custom, tradition, and political practice (Luppicini, 2009a). Furthermore, May (2013) "deduces that organizational ethics are merely governing the actions of individuals and states; organizations do not make decisions, per se, people do" (p. 11). Hence, a person (user) must understand the role of a digital citizen, as noted by Participant 6, who embraced social morals and expectations associated with human interaction.

In the aspect of technological impacts on other social subsystems, Luppicini (2010) highlights that technology can affect the environment, such as the invention of Dichlorodiphenyltrichloroethane (DDT), an insecticide used to eliminate mosquitos. This chemical was later found to be harmful to human beings and other wildlife. Luppicini then connects this to the non-technical impacts of technology on users:

> How do we ethically guide technology to leverage society? How can technological innovation and human innovation be reconciled within an ethical framework? Technoethical inquiry provides a unique conceptual framework for studying the ethical and social context of science and technology in society. (p. 73)

This specialized social system orientation places non-technical (social and ethical) and technical aspects of social systems at the core of technoethical inquiry. By following the guidelines of technoethical inquiry (Luppinici, 2009), this study has provided the key perspectives of cyberbullying through the technoethical lens from ethics and values perspectives with the increasing use of technologies (Luppicini & So, 2016). The following sub-sections Illustrated different aspects guided by the technoethical Inquiry:

Technical aspects. Technologically speaking, messages are generated by a computing device. If the computing device is registered through its serial number, then every outgoing message is automatically associated with that serial number. The owner of the device could be identified, and the sender would, in most cases, be the owner. This idea of computer device serial number registration may be a good solution for anti-cyberbullying, but the registration part is an obstacle. For example, a similar registration program of the Canadian Firearms Registration started in 1993 but failed later, and the program dropped all non-restricted firearms registration in 2012 (RCMP, 2010) because of budgetary constraints and controversies over not being able to prove decreasing murder rates. Recent technological research on tools to proactively monitor SMN sites and cyberbullying text detection could address this perspective (Moore, Nakano, Suda, & Enomoto. 2013; Dinakar et al., 2012; Reynold, Kontostathis, & Edwards, 2011). However, the latter type of technological research becomes more complicated when communication is not in English. Participant Mishna showed that it could also be difficult to

determine intentionality in terms of identifying who is "using technology somehow to hurt somebody and doing it, and it's not like doing it accidentally but doing it intentionally to hurt them. I'm not sure about the repetition part because I know it's complicated" (Participant 3).

Participant Mishna's comment about determining the repetition characteristic of bullying is important because the capability of technology might make this easy to reproduce the transmission. For example, messages and images that are transmitted once to their destination might still be able to be viewed by many persons. There is hardly any way to determine the number of people who viewed an undesirable message (forwarded by recipients) or whether only the recipient viewed the text messages or images.

Technoethical Inquiry Approach. This study follows the technoethical inquiry framework from applied to the ethical use of domestic drones (Luppicini & So, 2016). The previous study of Luppicini and So (2016) uncovered three important elements revolving around the ethical dilemmas surrounding drone use (*safety*, *ethics*, and *privacy*) from the perspectives of the individual, organization, and society. These three elements appear to align well with the current cyberbullying research study, i.e. the *safety* to K-12 students (see suicide cases in Chapter 1), the *ethics* of having social responsibility (Shapka, Participant 1), and *privacy* disclosure (Participants 1-3, 5-7, 10, 13, 14, and 16). The aspects of how technology "shapes a society are studied by assessing ethical uses of technology" (p. 114). Building on the prior research, this study used the technoethics approach to highlight the ethical aspects of technological usages to improve lifestyle and the shortcomings of cyberbullying in society. Table 21 illustrated "key perspectives (historical, theoretical, political, legal, economic, socio-cultural, levels of influence, stakeholders, intended ends, possible side effects, and means) that warrant consideration when attempting to arrive at an ethical assessment" (p. 114). The

participants' excerpts from the interview data and document analysis touched on most of the key perspectives of the technoethical inquiry, and they were presented in each of the descriptions of the ten critical perspectives provided by the technoethical inquiry approach. The following section contained the description of the ten perspectives in detail in conjunction with the participants' narratives. Subsequently, Table 21 included a summary of the ten perspectives that this study encountered.

Conceptual Perspectives. As discussed in Chapter 2, cyberbullying has been defined in several ways among many scholarly research studies. From a social systems perspective, in order to leverage the advancement of large scale cyberbullying prevention activities applicable to diverse domains, a holistic understanding of system behaviour and trade-offs in the context of interactions between the components in a system, such as in a cyberbullying environment, is required (Gradinger et al., 2009). As shown in Appendix G, the core aspects of the cyberbullying system were identified through the SLR process and interview data. This content helped to clarify the classification of the knowledge domains among the stakeholders in this study. Based on this, the current posited data flow framework (Appendix G) illustrated the interconnection of the core system components in a typical cyberbullying environment with minimum cyberbully interventions and prevention measures in operation.

Identified knowledge domains connect to the digital world through the undesirable consequences of technological innovation. These physical components served as the key resources for identifying cyberbullying characteristics and data flow through the SLR process

and the interview data analysis. It is interesting to note that there was a system component at the micro-conceptual perspective level, which involves individuals or groups of cyberbullies and victims as well as system components at the meso- and macro-conceptual perspective level, which involved a larger scale of groups or cultures in a technological society (Ba et al., 2019). The components were grouped into three knowledge domains:

- Micro—ethics awareness in society, culture, school, group, and user involved in the local cyberbullying landscape
- Meso—innovation and technology management, regulations, and research and R & D applied in a national or regional cyberbullying landscape
- Macro—technology, ISP, economy, gross domestic product (GDP) deployed in an international cyberbullying landscape

The three knowledge domains guided the categorization of cyberbullying knowledge domains of interactions operating in multiple dimensions of a cyberbullying environment of technology, governance, and ethics. The diagram (Figure 8) in Appendix G serves as an illustration of how the identified cyberbullying components are connected so that the reader could follow the flow of the data information in a typical cyberbullying environment. The conceptual perspectives exposed all the possible concepts in the landscape of cyberbullying.

Historical Perspectives. Eight participants out of 17 (about 50%; Participants 1–4, 6, 9, 11, and 16) indicated that cyberbullying originated with traditional bullying. The SLR process showed that the scholarly articles found in Table 8 (no. 10, 12, 15, and 16) were mutually triangulated with the interview data from the participants. Bailey (Participant 2) said that cyberbullying is “a form of bullying that carried out electronically.” Participant Mackay also confirmed that “you do have to respond to bullying as well as cyberbullying because the

motivations and the activities are basically the same, just one is done online and one is done in person" (Participant 4). Participant Mackay continued to comment that "very often the two activities overlap [in that] they're actually bullying people but also cyberbullying as well" (Participant 4). Participant McNutt defined cyberbullying as "bullying that uses electronic tools, like smartphones with social media Internet" (Participant 6). If the provenance of cyberbullying was physical bullying, how would one define cyberbullying, or would the definition simply follow part of the definition of physical bullying with additional cyber-related elements?

Furthermore, Participant Mackay also stated, "very often the two activities [bullying and cyberbullying] overlap that there they're actually bullying people, but also cyberbullying as well" (Participant 4). He believed that "bullying and cyberbullying are just variations on the same thing" (Participant 4). So, there must be a clear distinction in the difference between bullying and cyberbullying. It must be considered whether cyberbullying is a practice continued from bullying, or whether they are two different shortcomings. Participant Smith's concept of defining the boundary of cyberbullying would provide a better definition of cyberbullying. Once the different historical perspectives of how cyberbullying were defined and agreed on by an official committee, all the information could be inscribed into a kind of repository. Then researchers and lawmakers would have better knowledge from which to adapt an appropriate definition of cyberbullying. Consequently, new laws and preventive measures for cyberbullying would be more effective and applicable across Canada.

Political Perspectives. As stated in Chapter 1, anti-cyberbullying laws were usually adopted after a tragic incident of cyberbullying. Apart from the absence of proactive preventions, political influence also contributed to the lack of careful examination of all interconnected constructs of cyberbullying. In Canada, there were public complaints of privacy

infringement in a portion of Bill C-13 (Anderson et al., 2015), which was introduced by Justice Minister Peter Mackay in 2014. Another example, the Nova Scotia Cyber-Safety Act (2013), created a dilemma regarding enforcement of the act and raised questions about the overstated surveillance powers of law enforcement and privacy issues (Anderson & Christopher, 2014; Boutilier, 2014). Sometimes, the political perspectives of cyberbullying can create more issues than they were supposed to mitigate in the practice of cyberbullying, as discussed in Chapters 1 and 2. Participant Mackay further clarifies the political challenges in creating such legislation:

> The political decision is not obvious. If it's not criminal, only the federal or provincial government can prosecute criminal cases. [For example,] Manitoba [… and] now in Alberta […] have legislation on the distribution of intimate images, but then that there's a whole other part of the Nova Scotia legislation that also does deal with cyberbullying as well." (Participant 4)

Lastly, Participant Mackay (Participant 4) specified that the element of politics has an impact on school budgets, in terms of whether or not the provincial government will allow or compensate for financial compensation. Participant Mackay (Participant 4) showed concern that school administrators would have different priorities on budget allocation for cyberbullying prevention if there is no proper provincial legislation of cyberbullying. Thus, the school administrators would need to prioritize in allocating the school budgets, adding another obstacle in the process of preventing cyberbullying.

Socio-Cultural Perspectives. Cyberbullying, as explained by Participant 13, is "a subject that is increasingly discussed with students, depending on the teacher's comfort level and knowledge of the subject." A holistic understanding of cyberbullying is essential across all K-12 education in order for the teachers to address the problem. Participant 16 also commented that

"students have to trust their teachers enough to come forward about being cyberbullied, and teachers have to be able to talk to their students about why they engage in it, and how to stop it."

One of the participants, Dallaire, argued that "education, awareness, and empowering parents, teachers, and authority figures can go a long way in creating a culture of trust in which to address cyberbullying" (Participant 10). Participant Shapka noted that this is already happening in some provinces, stating that in "British Columbia, it is written in our ministry document that is part of the curriculum teachers are responsible for teaching social responsibility to kids" (Participant 1).

Furthermore, Participant Shapka elaborated that it is important to create an "understanding of social responsibility and human rights and kids, [in terms of] helping them to realize that should happen online too and not just face-to-face" (Participant 1). In this assertion, Shapka (Participant 1) has mentioned an important factor in handling cyberbullying. She further explained that "we know parents try to control[, but] that never works. Kids are really strongly led by their social needs and strongly feel that they should have a say" (Participant 1). Participant Bailey confirmed that "[in the British Columbian] school curriculum, teachers have to teach kids social responsibilities" (Participant 2). This participant confirmed the importance of the ethical approach for cyber users and technology creators, as illustrated by Bauer (2014). Participant Bailey further elaborated that it is essential to "educate kids about human rights and what rights they have and what right other people have and to encourage and promote respect for different cities and school environments and elsewhere" (Participant 2). Similarly, Deschamps (Participant 5) also confirmed that "we want people to treat each other with respect." In addition, Participant Cantin "believes that this [mitigation] means educating future generations about healthy use of the Internet and social networks" (Participant 9).

Participant 16 shared an interesting perspective: “I think students [who] are doing cyberbullying […] should be reprimanded and counselled, but they are still young children. They need to be advised and educated and given a chance to mature and understand why it is wrong”. Therefore, the element of under-aged persons needs to be considered when lawmakers are adopting laws and regulations for cyberbullying.

Economic Perspectives. There was hardly any discussion by the participants concerning the economy and cyberbullying. However, the literature review of the technical perspective in Chapter 1 showed that there is a business initiative to develop software that has the capability of monitoring cyberbullying messages on SMN sites. The development of such software to monitor or detect cyberbullying would affect the economy in the IT domain. Another participant (Deschamps) specified that “creating a business out of preventing cyberbullying” is recommended (for example, selling anti-cyberbullying applications with text detection programs or providing anonymous options in SMNs). Since “a very large part of cyberbullying is enabled by anonymity” (Participant 8), the development of the anonymity option in SMN tools provides easier opportunities for cyberbullies. However, Participant Mackay also remarked that “experts are not really in agreement yet on what are the most effective prevention programs or mechanisms” (Participant 4). The economic growth in developing SMN tools is encouraging and changing lifestyles (Maras et al. , 2015; Participant 5; Shariff & Churchill, 2009; Smith et al., 2008), but the growth needs to include the concern of negative outcomes of emerging technologies. In the literature review, Doern and Stoney (2009) illustrated the three themes, which triangulated part of the concern of Participant Mackay.

Stakeholders Perspectives. Shareholders have been discussed throughout this dissertation. Shareholders included tangible and intangible components, like bullies, victims,

SMN tools, ethics, and privacy. Figure 8 (Appendix G) demonstrated how most of the components interconnected with each of the stakeholders in a cyberbullying environment.

Figure 8 (Appendix G) is a diagram highlighting an overview of the data flow framework in a cyberbullying environment with the identified constructs discovered in this study. The cyberbullying system operates normally in an unprotected against cyberbullying environment, which is currently affected by technological innovations in the digital world, overarching the undesirable consequences. In Figure 8, the cyberbullying system consists of tangibles, like ICT, an Internet service provider (ISP), a rule-setting authority (lawmakers and regulators), research and innovation organizations (academic and industrial), and cyberusers, including perpetrators, victims, bystanders, parents, teachers, and IT technicians in the K–12 educational environment. Meadows (2008) refers to these tangibles as soft tangibles, i.e., actors with bounded rationality of "information, incentives, disincentives, goals, stresses, and constraints" (p. 110). Interaction among the actors can also trigger secondary effects. On the contrary, hard tangibles are technological tools. The physical entities in this proposed conceptual diagram serve as the key resources' vantage point for examining technological and legal changes in the future.

When Participant McNutt was asked during the interview about her thoughts of prosecuting an under-aged child, she said that "the legislation put in place [was] probably answering a problem. So, let['s] take the kids. The prosecution is a little tricky, though" (Participant 6). Participant McNutt continued to explain that a key consideration must be "the defendant's notion of ethics versus privacy; she asks, "should we be concerned about the ethics of the monitoring of child behaviour, whether that child be bullying are being bullied?" (Participant 6). Thus, ethical awareness and concerns as the result of cyberbullying should be

explored more in detail in further research in order to explore all the possible constructs and concepts of cyberbullying.

Level of Influence. Multiple levels of influence related to cyberbullying were uncovered during document and interview data analysis, including levels like in the schools' environment, legality, and the lifestyle change inspired by innovation. One of the participants mentioned that "any national standard would be difficult to implement simply because the federal level has very little influence in provincial education" (Dallaire, Participant 10). Participant Mackay also suggested that "we have many different levels of response that needs to be implemented like schools, […]the government, […] parents, [… and] teachers" (Participant 10). These three levels of intervention (federal, provincial, and local school board) might have different types of influence. Also, as previously disclosed in the literature review in Chapter 2, Langoes (2015) stated that there were different levels of harm in cyberbullying. Langoes' categorization of harm in cyberbullying was a valuable conceptual insight. I believe that the levels of harm should be integrated with the discussion of the levels of intervention. However, these levels were either undefined or ambiguously defined for criminalization, and were in their infancy of research.

Moreover, the discussion of innovation perspectives in Chapter 2 illustrated the importance of corporate social responsibility and technology transfer, or rollout, as part of the commercialization process (Bauer, 2014; Doern & Stoney, 2009; Sanders & Miller, 2010). Without a doubt, new SMN tools will continue to push out to the market, and youth follow the trend of new technologies (Boyd, 2007; Gustafson & Branch, 2002; Jones, Mitchell, & Finkelhor, 2013; Steeves, 2014).

Intended Ends and Possible Side Effects. This study has reviewed several intended ends of cyberbullying from the document analysis and the participants. These ends include the

Canadian Law C-13 of 2014, the minimization of the use of the Internet in schools, the detection of cyberbullying messages, cyberbullying text detection, and the continuation of new communication tools without the anonymous option. Can these intended ends result in lessening cyberbullying, and what are the possible side effects of the interventions? The dynamics of SMNs make communication easier through technological advantages and the changes in people's lifestyles, but technology can also lead to some undesirable outcomes, like cyberbullying. Text detection could proactively identify cyberbullying activities, but the action could infringe privacy law when other systems besides the recipients can view the contents of the messages.

Consequently, by applying Meadows's (2008) approach of systems thinking in a complex system, like the cyberbullying systems, one cannot just modify a single problematic element that connected with other elements. The use of the systems thinking approach is preferred, as it assists in solving a multi-dimensional system like cyberbullying. A single-dimensional solution would be limited in providing a solution to a complex system.

Participant Lazarus reinforced this multi-dimensional problem of cyberbullying by stating, "some schools have electronic device policies so that students do not have these devices in classrooms. This action may limit when the cyberbullying is happening but might not prevent it" (Participant 7). That is, a single action such as stopping the use of electronic devices in classrooms would not completely stop cyberbullying activities because they could still occur outside of a classroom setting. Additionally, Mishna (Participant 3) illustrated that an action such as inviting the police to present cyberbullying awareness in schools caused more intimidation and fear to students than it was intended to do. Finally, side effects from the legal issues need to be assessed and balanced against the intended goals of diminishing cyberbullying.

Compare Means and Intended Ends? This study has several relevant intended ends recovered in the document analysis and interview data to accomplish the elimination of cyberbullying. For example, the Nova Scotia Cyber-Safety Act (2013) described in Chapter 1 showed the set back of the act when it was first adopted because of some unforeseen issues, such as privacy infringement. Then, the Act needed to be modified and re-introduced as a new version addressing personal privacy infringement. Participant Mishna demonstrated another intended end: "With cyberbullying, we haven't said that these are the risks, these are the steps that you should follow; if you get in trouble, and here is what you do" (Participant 3). However, the "steps" that Participant Mishna (Participant 3) mentioned are not usually available in schools except in the B.C. education curriculum:

> Again, I'd be interested to see studies that show the effects of awareness programs. In my experience, students who engage in cyberbullying are very aware that it is wrong but do it anyway. It would be difficult to get all schools on board, as well as [to] make sure administrators follow proper directives that might be too strict and not applicable in the same sense for different cyberbullying circumstances. (Participant 16)

There were different means of eliminating cyberbullying, as discovered by this study—document analysis and interview data lead to different silos of research domains, psychological and technological research to address cyberbullying. Then the intended end out of those research domains would need to be proven for the effectiveness. Again, this study has shown that cyberbullying does not have a one-dimensional solution, as this would contradict the findings from the individual research domain and not consider all domains together.

Overall Assessment in Terms of Efficiency and Fairness? McNutt (Participant 6) said that "Cyberbullying has no parameters on it. The child can be tortured by 24/7". Thus,

cyberbullying is not just a problem within Canadian K-12 education, but it is also a problem for parents or guardians at home. Cyberbullying preventive measures involve the control of cyberbullies, technology, and regulation enforcement, which comprise the factors of continuous changes in technology and non-linear relationships of social interaction.

There were several interrelating perspectives discussed in the above technological inquiry illustration causing different intended ends in different research domains. Some of the intended ends found in the document analysis were in the scenario of one problem solved by one solution, such as in a behaviour perspective (Shariff & Churchill, 2009). This single consideration has led to the inclusion of Meadows' (2008) multiple problem-solving approaches in this study.

Table 21 summarized the analysis of the ten above detailed perspectives of the technoethical inquiry.

Table 21
Summary of Technoethics Inquiry of Cyberbullying

Conceptual Perspectives? • Necessary consideration of adapting a theoretical and conceptual framework • Need to readjust K-12 school students with individual ethics, like social responsibility • Need for societal laws reflecting the shortcomings of emerging technologies • Lack of information about the multi-dimensional interconnection of constructs • Need for further research of the three knowledge domains (micro, meso, and macro)
Historical Perspectives? • The provenance of cyberbullying to be determined and acceptable from physical bullying • Need to adapt an appropriate definition of cyberbullying from the collection of historical perspectives
Political Perspectives? • Need to clarify overstated surveillance powers of law enforcement and privacy issues • Need for unifying Canadian provincial cyberbullying legislation for K-12 schools
Socio-Cultural Perspectives? • Need for privacy infringement to be considered in cyberbullying laws • Need to clarify under-aged youth' violation of cyberbullying law and respect with others • Need for adopting cyberbullying preventive measures in the school curriculum • Need to leverage positive impacts with new technology without encouraging cyberbullying

Economic Perspectives? • Provide the trend of new software development • Provide deployment of anonymity software of sending cyberbullying messages • Provide the means of detecting cyberbullying activities
Stakeholders Perspectives? • Need to identify all the possible constructs • Need for a universal definition of cyberbullying to adapt laws • Need to be aware of the knowledge of multi-dimensional interconnecting constructs • Need for more ethical awareness programs concerning cyberbullying
Levels of Influence • Need for standard levels of response at federal, provincial, and local school board levels • Provide the level of categorization or harms of cyberbullying • Increase a tighter norm of technological innovation in industries against cyberbullying
Intended Ends and Possible Side Effects? • School administrators ban or limit the use of social media network tools • Public concerns about privacy on cyberbullying monitoring tools • Effectiveness of the new cyberbullying law is yet to be proven • Multidimensionnel side-effects syndromes (Meadows, 2008)
Compare Means and Intended Ends? • Enforcement of the law C-13 (2014) • Means of avoiding anonymous messages • Awareness program for K-12 school curriculum
Overall Assessment in Terms of Efficiency and Fairness? • Enabling effective anti-cyberbullying procedures for schools • Need for more control of cyberbullying activities in schools and at homes • Leveraging of technological innovation • Establishment of standard procedural steps across schools in Canada

Delimitations and Limitations

The entire research plan was scheduled according to the following high-level activities. After the assessment and approval of the proposal by the thesis committee, a request for ethics approval was sent to the University of Ottawa Ethics Committee and then to the Ottawa OCREAC committee before conducting interviews with cyberbullying researchers and K-12 teachers according to the methodology section. The SLR process was expected to take three months, but it took more than six months. I needed to switch the stored selected articles from

the RefWorks bibliographical management tool to Endnote, another similar tool because the University was no longer maintaining RefWorks. The interviews with anti-cyberbullying researchers and related participants from schools took place over the following nine months due to the delay in obtaining permission from the committee OCREAC. The committee is the authorizing committee for the Catholic and public school boards to permit external researchers to conduct studies on their educational operations, i.e. their school districts in Ottawa. Unfortunately, OCREAC rejected the interview application after two subsequent attempts. There were only interviews conducted in private schools. Consequently, the dissertation was drafted over the following nine months using the available findings and related discussions. The research schedule was adjusted in light of unexpected interruptions.

Furthermore, this research was restricted to interviewing anti-cyberbullying researchers across Canadian universities who were recommended by the Promoting Relationships and Eliminating Violence Network (PREVNet). The primary and secondary school educators interviewed were mostly from the Ottawa region, and they were all from private schools because I could not obtain permission from OCREAC to interview public school staff. There were also three primary public school teachers interviewed from Quebec City.

Additionally, the SLR process was limited to the last eight years (from 2012 onward) when incidents of cyberbullying via SMNs and the use of smartphones increased dramatically, as reported in the news and scholarly research articles (Hinduja & Patchin, 2011a, 2011b, 2014). The timeframe and focus of the study were influenced by the significant Canadian cyberbullying case of Amanda Todd's suicide on October 10, 2012. An SLR of all primary and secondary sources was performed to obtain a broader sense of cyberbullying, existing cyberbullying conceptualization, and related components. Thus, similar research has to be conducted in other

Canadian provinces to obtain a broader and more accurate perspective of cyberbullying awareness and resources for K–12 educators.

Research has shown that cyberbullying spreads from schools and the workplace into the home due to emerging technology and various, easy-to-use social media networks (Boyd, 2014; Li, 2007; Patchin & Hinduja, 2016). In my dissertation, I focused mainly on youth attending public and private, primary and secondary schools in Canada. Postsecondary students and workplace cyberbullying were not covered in Canada or other countries; this could be the focus of further research in order to obtain a more general perception of cyberbullying.

Recommendations and Practical Implications

This research provided valuable knowledge on the consequences of participating in cyberbullying in a visionary cyberbullying-permissible environment and laid the groundwork for future cyberbullying awareness initiatives and intervention efforts. After asking the participants the best location for storing the cyberbullying information, a few participants suggested that the knowledge findings should be stored in a central location (a repository) and accessible via the Internet (online). For example, Participant Bailey stated that “it is an interesting idea. I mean one way to do [it would be that] it might be connected to an organization like PREVNet” (Participant 2). The content of the repository would include cyberbullying-related constructs, outcomes, cases, mitigation tools, prevention measures, and basic guidelines. All of these cyberbullying elements would be maintained in a repository that would be customizable by authorized persons in the future. The repository thus becomes an educational and cyberbullying research resource.

The proposed repository was recommended to be hosted on a leading anti-bullying website, PREVNet (Promoting Relationships and Eliminating Violence Network), Canada’s authority on research and resources for bullying prevention (PREVNet, 2019). PREVNet is an

organization based out of Queen's University. According to its website, it is a network of researchers who are "engaging, building, and co-creating initiatives and programs that aim to bring an end to bullying" (PREVNet Team, 2019, para. 1). The proposed digital repository would allow cyberbullying researchers and school personnel to retrieve and update cyberbullying resources with the authorization by PREVNet. Participant Deschamps also agreed that a sort of online repository is appropriate to disclose the cyberbullying resources that were discovered in this study. He said, "I think of a wiki, and I think that putting [in] the resources [is] the key for those sorts of things that it needs" (Participant 5). The repository would be designed to be flexible enough so that authorized interested anti-cyberbullying groups could grant permission to add or modify any missing cyberbullying components, concepts, and empirical gaps. However, the intention of developing a repository was not part of this research study, and will instead be planned for a future project.

In the document analysis, Gerald Weinberg (1975) proposed "three great systems thinking questions: (1) Why do I see what I see? (2) Why do things stay the same? and (3) Why do things change?" (As cited in Monat & Gannon, 2015, p. 13). The three questions anticipated outcomes when an intervention was implemented, such as introducing a new law or a new SMN tool at an impact point in a cyberbullying system. All of the actors in the system would probably be involved in the anticipated changes. The changes could have positive or negative consequences; for example, the positive point may be the greater flexibility in communication through the use of SMN tools, and the negative point is the implementation of an option of sender anonymity, or there may be privacy infringement when cyberusers were being monitored at all times. The idea of the systems thinking concept has contributed to a different means in addressing the issue of cyberbullying and reunifying cyberbullying research in silos of research domains. Based on this

line of reasoning, future research could design a cyberbullying model with the discovered constructs identified in this study. Then, changes in these constructs would provide outcomes of the changes in multiple dimensional environments.

Summary

The recommended systems thinking approach could contribute to the creation of a cyberbullying model with the identified interacting constructs taken into consideration. *The Intended Ends and Possible Side Effects* perspective illustrated the property of interconnected constructs might cause a secondary effect. For example, monitoring users' online activities might infringe privacy. The cyberbullying system model could be used in the future to evaluate counteracting and reinforcing preventive measures and the introduction of new laws. This model could display the interrelated properties of cyberbullying that can be visualized in the form of a diagram. Finally, this research provides the groundwork for future research in cyberbullying by discovering all the constructs of cyberbullying.

Chapter 6: Conclusion

In this final chapter, I discussed the significance and contribution to the research field, highlighted the limitations of the study, and provided recommendations for future research on this topic.

Findings and Contribution

I attempted to uncover the state of knowledge on cyberbullying, primarily in Canadian public and private K–12 education. The findings served to confirm knowledge and contribute awareness about cyberbullying. There were three data sources from this multi-methods study, namely (a) narrative literature review, (b) systematic literature review, and (c) interview data. The first two data sources were discrete quantitative statistical data for document analysis, and the third data source was qualitative data. The first data source was used to validate the initial knowledge of cyberbullying of the researcher of this study, identifying or confirming the initial empirical evidence of cyberbullying. The second data source was obtained from a systematic literature review with the initial empirical evidence as to the input of the SLR process. The third data source was obtained from the interviews. The interview data obtained from the one-on-one interviews with cyberbullying researchers, teachers, and other IT related technologists were used along with the other data sources to triangulate the previously identified or known constructs. This triangulation of constructs is significant because it allowed for new insights into the complexity of cyberbullying to emerge.

Most of the cyberbullying constructs were identified through the SLR process. They were: *Science & Psychology*, *Social Science Research*, *Cause & Effect*, *Control & Procedures*, *Trend & IT Related*, *Awareness Program*, *Theory & Definition*, and *Standard & Legality* (Table 8). Then, the interview data analysis revealed three themes and twenty sub-themes through the

thematic data analysis process. The initial themes were the *environment of execution*, *consequence and results*, and *awareness and mitigation* (Table 18). The sub-themes were also identified under each of the themes, which were comprised of the perspectives of the cyberbullying researchers, school teachers, school IT-related personnel, and technologists from the IT industrial domain. They provided rich data from their past experiences with cyberbullying, focusing on Canadian K-12 education. I identified the final themes in this study as (1) *awareness*, (2) *governance*, and (3) *environment* with the acronym *A.G.E.* This acronym could be used as the three pillars of cyberbullying that must be fully understood before conducting any intervention of cyberbullying. Also, there were two main categories, namely *the current state of cyberbullying*, and *the social context associated with cyberbullying*, realized from the themes and sub-themes (see Table 19 and 20), and they were utilized responding to the three research questions in Chapter 5.

I made several significant contributions to the field of cyberbullying research. First, I identified most of the cyberbullying constructs among the social sub-systems of an e-society. Second, I suggested that there were interconnected relationships between the most identified constructs of cyberbullying, which led to the difficulty of mitigating cyberbullying. Finally, I highlighted the necessity of future research and interventions, such as the realization of an online updatable repository, recognition of an appropriate conceptual framework, evaluation of the effectiveness of the Canadian Law C-13 (2014) and local schools' codes of conduct. Lastly, all of these elements would assist the adoption of an adequate informative awareness program for Canadian K-12 education.

Reflections and Limitations

My study did not follow Luhmann's (1982) social systems theory for developing the conceptual framework of the design of this research. The social systems theory usually correlated the positive and negative value of the social media network by exposing the lifestyle change from the positive values of social media communications, and the negative outcomes of cyberbullying. Moreover, Barlett (2019) stated that "traditional bullying, cyberbullying, and aggression (both reactive and proactive) are highly related constructs" (p. 15). Barlett further demonstrated that traditional bullying and cyberbullying "both share many aggression-related characteristics, which makes theory predicting cyberbullying confounded with traditional bullying/aggression" (p. 16). Barlett's assertions confirmed the choice of highlighting similar negative characteristics with emerging technologies in society using the guidance of Luhmann's social systems theory. However, the social systems from Luhmann's point of view were not fully identified in the cyberbullying field. All of the elements are not entirely identified in a cyberbullying system. Actually, the identification of the elements (constructs) was the objective of this research. Therefore, a different conceptual framework was adopted for this study. I used the proposed conceptual framework of Swart and Bredekamp (2009) for perspectives on non-physical social bullying. Research questions were correlated from the latter conceptual framework. The final cyberbullying data flow framework (see Figure 8 in Appendix G) was adopted to assist future cyberbullying researchers. The data flow diagram facilitated in further understanding cyberbullying concerning the growth of technologies and the impact on users in societies, particularly social media tools commonly used by youth in schools and homes as described by Boyd (2007). All of the components were discussed in the section of in-depth analysis guided by the technoethical inquiry.

Despite the findings from the literature review and participants from this study, I determined that there was still a need to accept cyberbullying as a form of bullying for policymakers. I meant, at least for all the provinces in Canada, would be based on the CDC's definition and not an interpretation of some other definitions. There were also various terminologies related to cyberbullying that still need to be considered, including cyberstalking, cyberharassment, and sexting (Ahern & Mechling, 2013; Browne, 2015; Hango, 2016; Shariff, 2014). These kinds of terms need to be classified and differentiated before delving into the overall definition of cyberbullying. However, the creation of such a definition is further complicated because new technologies are exploding all the time, and new cyberbullying-related matters may arise, leading to the generation of new terms to be considered.

One limitation of this study was the number of participants for interviews. I could not recruit any participants from the Catholic or public-school areas, and the participants did not represent all the Canadian provinces. The types and locations of the 17 participants were listed in Table 3. The participants included eight cyberbullying researchers from various Canadian universities (located in Nova Scotia, Quebec, Ontario, and British Columbia). Additionally, there were four private school teachers (primary and secondary) from the Ottawa area and three teachers from Quebec City. The remaining two participants were a school IT-related staff member and a technologist from the industry. None of the youth in K-12 schools were interviewed because of the difficulty of obtaining permission from public school boards for under-aged children. Their perspectives of cyberbullying may enhance awareness programs, implement preventive measures, and discover the generalization of the phenomena of cyberbullying. The year of publication selected in the literature review process was another limitation. I only reviewed articles from 2012 onwards because of the most significant Canadian

cyberbullying incident, the Amanda Todd case, which had triggered the adoption of the Canadian Law C-13 (2014). Besides, the Cyberbullying Research Center and the NoBullying.com forum report different victim rates in 2014 and 2015, the alarmingly high percentage in both years created concern in communities of the USA and Canada.

An intensive legal document analysis was not conducted in this study because of my lack of legal knowledge to render more professional legal comments about the laws. Nevertheless, significant Canadian legal cases were discussed, including the cases that involved the use of Canadian Law C-13 (2014) (as shown in Table 13). In general, the existing codes of conduct and cyberbullying regulations in some schools need to be reviewed for their effectiveness as a future research topic.

Recommendations

I concluded that there were relationships between the cyberbullying constructs and the behaviour of each of the individual constructs interacting with each other becoming a multi-dimensional effect in a conventional cyberbullying system. The in-depth analysis in Chapter 5 illustrated the influential elements of cyberbullying resulted from the technoethical inquiry of evolving knowledge in society as extracted from the participants (see Table 21). These elements could be used to address the shortcomings of cyberbullying. However, I showed that additional processes needed to review all constructs before allowing for the modification of existing constructs because of the interconnecting characteristics of the constructs. For example, adopting a new cyberbullying law to diminish cyberbullying would need to avoid changing other unforeseen constructs. Subsequently, I suggested a systems-thinking approach to advance a holistic understanding of cyberbullying as a social system, as described in Chapter 2.

With the knowledge of cyberbullying uncovered in this study, I recommended developing a strategic plan to design an online digital repository. The repository would contain information on the characteristics of cyberbullying and prevention efforts in Canadian K–12 education. For example, it would provide strategic information about the final themes of the three pillars of cyberbullying knowledge (*awareness*, *governance*, and *environment*), as discussed in Chapter 5. The proposed repository would also provide other cyberbullying researchers and school personnel with better cyberbullying awareness programs and a greater understanding of the positive and negative effects of technology used by youth. In the future, researchers would be able to use the proposed repository to access the perspectives of anti-cyberbullying researchers and their studies in terms of the cyberbullying knowledge, related theory, and preventive practices that were collected in the three pillars of cyberbullying (*A.G.E.*). Hence, all cyberbullying researchers would be in a better position to pinpoint empirical gaps and discover solutions to dilemmas, such as identifying a unique definition of cyberbullying and developing cyberbullying prevention measures. In addition, this research also contributed more excellent knowledge and better guidelines for school educators and parents, who do not usually have adequate experience to address and mitigate cyberbullying.

Further research will have to be conducted to understand how the perception of different cultural groups at the same level of K-12 education influences each of the three knowledge pillars in other Canadian provinces and other countries. These different knowledge pillars included various levels of a local school, provincial, and federal environment, or at the level of micro, meso, and macro, as mentioned in Chapter 5. Furthermore, the approach of *social responsibilities* needed to be studied and be explored in detail. Stakeholders, like technologists

and cyber users, were the best actors to be considered (Bauer, 2014; Bolton, 2013; Participant 2; Van Royen, 2015).

Ultimately, this research provided a uniquely holistic perspective on the interconnecting constructs of cyberbullying to promote cyberbullying awareness and cyberbullying prevention measures to diminish cyberbullying activities in Canadian K-12 education.

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Appendix A: List of Participants

Participant 1. Dr. Jennifer D. Shapka is a Professor in the Department of Educational and Counselling Psychology and Special Education at the University of British Columbia. Within the field of developmental psychology, her research focuses on the different factors affecting adolescents, including how the Internet impacts social and cognitive development. In this context, she has also examined cyberbullying and issues surrounding online privacy. "She has explored the online risks associated with cyberbullying, as well as privacy-related concerns due to the over-disclosure of personal information" (University of British Columbia, n.d.).

Participant 2. Dr. Jane Bailey is a Full Professor in the Common Law Section (English) at the University of Ottawa. She researches the effect of technology on issues such as equality, privacy, and multiculturalism, and examines the broad social and cultural impact of the Internet, particularly on marginalized communities. In addition, she has been active in studying and publishing on cyberbullying and cyberviolence. "She has spoken, written [,] and published on a variety of topics, including cyberbullying, cyberviolence, and sexting" (University of Ottawa, n.d.).

Participant 3. Dr. Faye Mishna is the Dean and Professor at the Factor Inwentash Faculty of Social Work, University of Toronto, and is cross-appointed to the Department of Psychiatry at the University of Toronto. She also holds the Margaret and Wallace McCain Family Chair in Child and Family and is a Fellow of the *International Academy for Research in Learning Disabilities. Her "*program of research is focused on bullying, cyber abuse/cyberbullying and cyber counselling; and school-based interventions for students with learning disabilities. An integral component of her research entails collaboration with community agencies and

organizations. Her scholarly publications have focused on bullying, social work education, and clinical practice" (University of Toronto, n.d.). Dr. Mishna has contributed perspectives on bullying and cyberbullying in terms of motivation and viewing cyberbullying as a divergence of the dominant power among youths.

Participant 4. Professor Wayne MacKay teaches in the areas of Constitutional Law, the Charter of Rights, Human Rights, Privacy Law, and Education Law at Dalhousie University. In addition to teaching, he has led government studies and published on issues, such as inclusive education and cyberbullying, "social and economic rights, and he has written extensively in these areas" (Dalhousie University, n.d.). He was the Chair of the Nova Scotia Task Force on Bullying and Cyberbullying in 2011-12.

Participant 5. Dr. Ryan Deschamps is a Postdoctoral Fellow at Johnson–Shoyama School of Public Policy, University of Waterloo. He is a computer scientist, and his interest is in policy in Web archives and the digital history of Canada. He is the co-author of an exciting study on the perspective of cyberbullying. This study is particularly relevant to this research, as can be seen in this abstract:

Cyberbullying has been a difficult problem for policymakers and observers to define. For some, cyberbullying is understood as a public health problem, while others view it mainly as an education issue, and still, others see it as a justice problem. In Canada, while the definition of cyberbullying continues to evolve, a nascent approach assumes that it is similar to traditional face-to-face bullying with computer-mediated communication as a new element. This definition is at odds with recent research on cyberbullying, which may have significant implications for policymakers seeking to design effective interventions. (Deschamps & McNutt, 2016, Abstract, p. 45)

Participant 6. Dr. Kathy McNutt is a Johnson Shoyama Graduate School (JSGS) professor and Associate Vice-President (Research) and Dean of Graduate Studies and Research of the University of Regina. Her current research focuses on "the impact of social media on policy processes, the public sector, and governance. Her interest is in the impact of social media on policy processes, the public sector, and governance" (University of Regina, n.d.). Her research on the digital government contributes to the aspects of this study of cyberbullying.

Participant 7. Dr. Jill Lazarus is a public high school teacher at Mackenzie Community School, Renfrew, Ontario, and education researcher in a public-school collaborative environment in mathematics. She has "experience in deploying social media tools to explore different options in creating blended mathematics curriculum in K–12 education. Her perspective on the *next generation* may reflect some insights on the cyberbullying perspective and consequences." (Lazarus, November 23, 2018). Her next-generation vision of technological assistant in teaching mathematics may provide a perspective of the trend of how technology is progressing and how such technology could improve the capability of cyberbullying activities in a negative manner.

Participant 8. This participant is a technologist who has worked as an intellectual property and patent consultant at a network corporation in Ottawa for over 20 years. They provided some of their perspectives on cyberbullying in terms of potential cyberbullying stakeholders and possible network preventative measures. The participant also suggested Meadow's systems approach (2008) draws on the similarity behaviour of cyberbullying when this technological shortcoming is viewed as a system. The participant specified that under the influence of multiple interconnections, Meadow's systems approach supplied a conceptual

framework to guide the mitigation of cyberbullying. The conceptual framework illustrated changes in the entire system, while one of the constructs of the system is adjusted.

Participant 9. Valerie Cantin is a 2019 graduate of the undergraduate teacher training program from the University of Laval in Quebec City. Valerie has been an occasional teacher in various primary schools in Quebec City, Quebec, for the past three years, with a keen interest in the preventive measures for cyberbullying among youths. Valerie provided useful perceptions based on her teaching experience and her interaction with students who experienced cyberbullying. The interview was in French, and the researcher translated the transcript into English. The experience of this participant provided cyberbullying perspectives from a province other than from Ontario, the researcher's residency.

Participant 10. Dr. Michael Dallaire is an independent scholar who describes himself as "researching and writing in the area of spirituality as well as occasionally teaching at St. Mark's College in Vancouver" (Dallaire, 2013, para. 4). He was a chaplain in Catholic schools in Ontario for 21 years and completed an Ed.D. in Philosophy at the University of Toronto in 1999 (Dallaire, 2013, para. 2). Dr. Dallaire has encountered many bullying and cyberbullying cases, and his perspectives about this matter contributed valuable information in this research.

Participant 11. This anonymous participant is a researcher, mostly in human memory and external storage implications. Although requesting anonymity, this participant shared their research on the involvement of technology on humans, and how cyberbullying reflects youths' daily life and performance in schools. The analogy of both implications provided some insights into mitigating cyberbullying.

Participant 12. This anonymous participant is a teacher from an Ottawa private secondary school. There was no other personal information provided by this participant. This participant

shared some of their experiences in cyberbullying among the students and how the school addressed cyberbullying. Their intervention of cyberbullying in a private school contributed some contrasts of addressing cyberbullying between private and public schools in Canada, if any.

Participant 13. Sarah Bradette-Laplante graduated from the undergraduate teacher training program in 2019 at the University of Laval, Quebec City. The interview was in French, and the researcher translated the responses into English. Sarah has been a replacement teacher in various schools in Quebec City for the past few years. She provided excellent perceptions of cyberbullying from her experience interacting with primary school students and her own experience in cyberbullying.

Participant 14. This anonymous participant is a teacher from a primary school in Quebec City. This participant was also graduated from the undergraduate teacher training program in 2019 at the University of Laval. They have a couple of years of teaching experience in a primary school. They observed how their students used social media tools, like Facebook, to conduct cyberbullying, and she was concerned about some of the non-reported cyberbullying incidents. They referred to the bystanders. This interview was also held in French, and the researcher translated it into English. This participant was one of three teachers from the Province of Quebec.

Participant 15. Dr. Shaheen Shariff is a professor at McGill University. She is an Associate Member of the Centre for Human Rights and Legal Pluralism at McGill's Law Faculty and Affiliate Scholar at Stanford University Law School's Center for Internet and Society. She is "best known for her expertise on cyberbullying, sexting [,] and sexual violence on university campuses, and advocates for a balance between free expression, privacy, safety, protection, and

regulation "(McGill, n.d., para.1). Dr. Shariff has conducted many studies in cyberbullying, and she is best known in Canada and internationally for her expertise in this topic. Shariff's research covers cyberbullying issues, solutions for schools, and parents, and she defines the supervision in cyberspace for youths. Unfortunately, Dr. Shariff could only speak for a 15-minute phone call, but she pointed out a few interesting shortcomings to be included concerning cyberbullying. Dr. Shariff was also concerned about sexting, and she suggested that it should be included in the discussion of the study. (Sexting involves sending, receiving, or forwarding explicit messages, photographs, or images via digital devices; Shariff, 2014). This activity could be added as a topic of discussion, like cyberstalking within the context of cyberbullying.

Participant 16. This anonymous participant was a teacher from a private secondary school in Ottawa. They did not provide any further personal data except that they taught for 7 years in a private school. This participant provided some of their cyberbullying perceptions and incidents encountered in that school. Their perspectives of cyberbullying coincided with the other participant, who taught in a private school

Participant 17. Dr. David Smith is a professor at the Faculty of Education, University of Ottawa. Although his research interest is mainly in bullying, his school-based bullying prevention programs may contribute insights on developing cyberbullying prevention programs in a similar school climate as he did his research in bullying. The climate that Dr. Smith indicates is "warm and caring relationships between students and teachers or parents could lower the rate of bullying" (University of Ottawa, n.d.). In addition, "Dr. Smith is a member of PREVNet and BRNET, both international networks of researchers, educators, and community-based organizations committed to the prevention of bullying and promotion of healthy relationships among children" (University of Ottawa, n.d.). Smith (Participant 17) also agreed to

assist the development of the online repository for cyberbullying resources to be hosted on the PREVNet website.

Appendix B: Interview Questionnaire

Date:
Location:
Interviewee:
Interviewer: Arthur So
Title: Your Perspective on Cyberbullying Resources and Prevention Measures

Introductory statement:

I appreciate your taking the time to be interviewed today. The purpose of this interview is to obtain your perspective on cyberbullying resources and prevention measures. This will help me to better understand the complex issue of cyberbullying so that relevant information can be stored in the proposed digital repository to promote cyberbullying awareness with the goal of diminishing cyberbullying activities.

Questions:
1) How do you define cyberbullying? [Background]

2) Why would someone be involved in cyberbullying? Probe: what motivates students to cyberbullying? [Background]

3) Are the current legislation and school regulations effective in controlling cyberbullying activities? Is it effective/not -effective? Please elaborate. Probe:

- What do you think about anti-cyberbullying at the national and provincial levels referring to specific legislation, if any? How could they be improved?
- Will a national standard be feasible to all provinces? [principles for anti-cyberbullying for the repository] [Background]

4) What prevention measures are in place to prevent cyberbullying in K–12 education in the provinces? Which measures are the most effective? Please elaborate. [Practices in place]

5) What measures are in place to encourage bystanders to report cyberbullying incidents? [Practices]

6) What is the best way to respond to cyberbullying? What principles should guide it? [Principles and practices]

7) What are the challenges of implementing preventive measures and awareness program? How do you balance ethical and privacy concerns in those challenges, like monitoring students on their computing devices? [Practices and strategy challenges]

8) What is the best approach to implement an online cyberbullying interacting elements repository once the contents are ready? [Strategies for implementation]

9) Is there anything else you would like to add?

This concludes the interview. Thank you for participating. Is there anything that you would like to add or amend? I will send you the transcript of the interview so that you can verify the accuracy of the information that you provided. May I contact you in the future for minor clarifications?

Appendix C: Consent Form

Université d'Ottawa | University of Ottawa
Affaires électroniques | Electronic Business

61, Louis Pasteur, pièce B111
Ottawa, Ontario, Canada
K1N 6N5

61 Louis Pasteur, room B111
Ottawa, Ontario, Canada
K1N 6N5

EBC 9997 Thesis Proposal
Name of Professor: Professor Rocci Luppicini (Thesis Supervisor)
Faculty of Arts, Department of Communications, University of Ottawa
Telephone: 613-562-5800, ext. 8971
Email: rluppici@uottawa.ca

Invitation to participate: I am invited to participate in the research study entitled *Exploring a Holistic Perspective on Cyberbullying in K–12 Education in Canada to Promote Cyberbullying Awareness and Prevention Measures in Canada* conducted by Arthur So for his thesis proposal as required for my thesis.

The purpose of the study: I understand that the purpose of the study is to promote awareness about cyberbullying and to design a strategic plan for developing a repository for K–12 education in Canada.

Participation: My participation will consist essentially of one session of approximately 60 minutes during which I will be interviewed. The interview will be scheduled for a date and time that are convenient for me.

Risks: I understand that since participation in this study will entail my responding to questions about cyberbullying research, it may cause me to feel that I am sharing personal reflections and insights. I have received assurances from the researcher that every effort will be made to respect these personal reflections when the research is drafted and reported.

Benefits: Through my participation in this study, I will provide the researcher with information on conducting qualitative case study research on cyberbullying and will provide anti-cyberbullying resources and prevention measures to the researcher to help him conduct his qualitative research on cyberbullying and design a strategic plan for developing a repository.

Confidentiality and anonymity: I have received assurances from the researcher that the information I share will remain strictly confidential. I can decide whether or not my name is used in the research study. The contents will be used only for this thesis research.

Conservation of data: The audio recordings and transcripts will be securely stored on a password-protected computer. Hard copies of the transcripts will be stored in a locked filing cabinet. The data will be destroyed after one year.

Voluntary participation: I am under no obligation to participate, and if I choose to participate, I may withdraw from the study at any time and/or refuse to answer any questions. If I choose to withdraw, all data gathered by the time of withdrawal will be destroyed.

Acceptance: I, _____, agree to participate in the above research study conducted by Arthur So of the Faculty of Engineering, University of Ottawa, whose research is conducted under the supervision of Professor Rocci Luppicini. I understand that by agreeing to participate, I am in no way waiving my right to withdraw from the study.

If I have any questions about the study, I may contact the researcher and/or his professor at the phone number mentioned above.

If I have any ethical concerns regarding my participation in this study, I may contact the Protocol Officer for Ethics in Research, University of Ottawa, at 550 Cumberland Street, Room 154, by phone at 613-562-5387 or via email at ethics@uottawa.ca.

There are two copies of the consent form, one of which is mine to keep.
Please check one:
☐ I agree to have my identity associated with the interview data collected.
☐ I prefer that my identity remain confidential.

Participant's signature: _____ Date: _____

Researcher's signature: _____ Date: _____

Appendix D: List of the 24 Preliminary Narrative Literature Reviews

1. Baas, N., De Jong, M. D. T., & Drossaert, C. H. C. (2013). Children's perspectives on cyberbullying: Insights based on participatory research. *Cyberpsychology, Behavior, and Social Networking, 16*(4), 248-253.

2. Bauer, T. (2014). *The responsibilities of social networking companies: Applying political corporate social responsibility theory to Google, Facebook and Twitter*

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Appendix E: Tables of Cyberbullying Research Studies

Table 14
Research Studies on Cyberbullying

Item	Authors and Year of Publication / Location of the Research	Title of the research	Data		Study Design		Research Topics		
			Sample N	Participants / Type	Descriptive	Literature Review	Behaviour	Corrective	Preventive/ Policy
1	Ahern, N. R., & Mechling, B. (2013) / USA	Sexting: Serious problems for youth	2 Male students	Youths in a middle school		√	√		√
2	Ahn, J., Bivona, L. K., & Discala, J. (2011) / USA	Social media access in K-12 schools: Intractable policy controversies in an evolving world	N=217 doc.	U.S. K-12 public schools		√	√		√
3	Anderson, J., Bresnahan, M., & Musatics, C. (2014) / USA	Combating weight-based cyberbullying on facebook with the dissenter effect	N=181 (84 women)	University Facebook users	√		√	√	
4	Aricak, O. T., Tanrikulu, T., Siyahhan, S., & Kinay, H. (2013) / Turkey & USA	Cyberbullying: The bad and the ugly side of information age	Gr 6-10	Use of SMN & mobiles	√		√		
5	Baas, N., De Jong, M. D. T., & Drossaert, C. H. C. (2013) / USA	Children's perspectives on cyberbullying: Insights based on participatory research	N=28 (13 female, 11-12 years old)	In an elementary school for 6 weeks	√		√		
6	Bhat, C. S., Chang, S., & Linscott, J. A. (2010) / Asia & USA	Addressing cyberbullying as a media literacy issue	883 (HK), 225 (Macao), Victims (USA)	Youths in high schools	√		√	√	√
7	Cassidy, W., Brown, K., & Jackson, M. (2012) / Canada	Making kind cool: Parents' suggestions for preventing cyber bullying and fostering cyber kindness	339 students 315 parents	From 3 BC schools Gr 6-9	√		√	√	
8	Cassidy, W., Faucher, C., & Jackson, M. (2013) / Canada, International	Cyberbullying among youth: A comprehensive review of current international research and its implications and application to policy and practice	Curriculum Students, parents, community,	International, Schools situate at the 3 levels		√	√	√	√

9	Cénat, J. M., Hébert, M., Blais, M., Lavoie, F., Guerrier, M., & Derivois, D. (2014) / Quebec	Cyberbullying, psychological distress and self-esteem among youth in Quebec schools	N=8194 teenagers 14-20 years old	In 34 Quebec High Schools	√		√		
10	Cesaroni, C., Downing, S., & Alvi, S. (2012) / USA, Canada, UK	Bullying enters the 21st century? Turning a critical eye to cyber-bullying research	Between 2006 and 2010	Compare legislations & criminal codes	√				√
11	Collins, R., Dwyer, C., Hiltz, S. R., & Shrivastav, H. (2012) / USA, Canada, UK	Do I know what you can see? Social networking sites and privacy management	Around N=100 per privacy measure	One month online survey on 2011 and 2007 Facebook	√		√		√
12	Christian Elledge, L., Williford, A., Boulton, A. J., DePaolis, K. J., Little, T. D., & Salmivalli, C. (2013) / Finland	Individual and Contextual Predictors of Cyberbullying: The Influence of Children's Provictim Attitudes and Teachers' Ability to Intervene	N=16,634 in Gr 3-5 & 7-8	Between 2007 and 2009 with 3,418 schools	√		√	√	
13	Cookingham, L. M., & Ryan, G. L. (2015 / USA	The impact of social media on the sexual and social wellness of adolescents	Youths	Role of SMN and its effect		√	√		
14	Couvillon, M. A., & Ilieva, V. (2011) / USA	Recommended Practices: A Review of Schoolwide Preventative Programs and Strategies on Cyberbullying	Students, parents, and admin	Prevention programs in schools		√		√	
15	Crepeau-Hobson, M. F., & Leech, N. L. (2014) / International wide	The impact of exposure to peer suicidal self-directed violence on youth suicidal behavior: A critical review of the literature	23 out of 47 articles	Literature review in suicide behaviour		√	√	√	
16	Daine, K., Hawton, K., Singaravelu, V., Stewart, A., Simkin, S., & Montgomery, P. (2013) / International	The Power of the Web: A Systematic Review of Studies of the Influence of the Internet on Self-Harm and Suicide in Young People	N=225, Youths 25 years and under	Literature review of self-harm between 1991 and 2011		√	√	√	

17	Dinakar, K., Jones, B., Havasi, C., Lieberman, H., & Picard, R. (2012) / USA	Common sense reasoning for detection, prevention, and mitigation of cyberbullying	Evaluated more than 200 instances	Spam filter in Gmail and SMN	√		√	√	
18	Dinakar, K., Reichart, R., & Lieberman, H. (2011) / USA	Modeling the detection of textual cyberbullying	N=4500 YouTube comments	Key words detection	√		√		
19	Donnerstein, E. (2012) / USA	Internet bullying	Policy in the Internet as a medium	Youths, parents and practitioners		√	√		√
20	Elgar, F. J., Napoletano, A., Saul, G., Dirks, M. A., Craig, W., Paul Poteat, V., & Koenig, B. W. (2014) / USA	Cyberbullying victimization and mental health in adolescents and the moderating role of family dinners.	N=18,834 students (12-18 years)	49 schools (Midwestern schools) Mental health	√		√	√	
21	Englander, E. (2009) / USA	Spinning our wheels: Improving our ability to respond to bullying and cyberbullying	N=21,000 youths 2010-2011	Nationwide stat.	√		√	√	
22	Farber, B. A., Shafron, G., Hamadani, J., Wald, E., & Nitzburg, G. (2012) / USA	Children, technology, problems, and preferences	N=344 adolescents	25 years or younger in a Teachers College	√		√		
23	Galitz, T., & Robert, D. (2014) / USA	Governing bullying through the new public health model: A Foucaultian analysis of a school anti-bullying programme	Schools and public health	Review of anti-cyberbullying program		√		√	
24	Heymann, M. J., & Schnackenberg, H. L. (2011) / USA	Cyberbullying: A case study at Robert J. Mitchell Junior/Senior high school	N=650 and 600 students	Gr K-6 Gr 7-12	√		√	√	
25	Hinduja, S., & Patchin, J. W. (2013) / USA	Social Influences on Cyberbullying Behaviors Among Middle and High School Students	N=4,441 (49% female, 63% non-white)	33 Middle (Gr 6-12)	√		√	√	√
26	Jones, L. M., Mitchell, K. J., & Finkelhor, D. (2013) / USA	Online harassment in context: Trends from three youth internet safety surveys	N=1501 2000 N=1500 2005 N=15620 2010	3 Years of youths Internet survey	√		√		

		(2000, 2005, 2010)							
27	Jose, P. E., Kljakovic, M., Scheib, E., & Notter, O. (2012) / New Zealand	The joint development of traditional bullying and victimization with cyber bullying and victimization in adolescence	N=1774 students (10, 12,14 years old, 52% female)	Longitude over 3 time points (one year apart)	√		√		
28	Judge, A. M. (2012) / USA	"Sexting" among U.S. adolescents: Psychological and legal perspectives	Adolescents	Legal aspect of texting and sexting		√			√
29	Juvonen, J., & Gross, E. F. (2008) / USA	Extending the school grounds? - Bullying experiences in cyberspace	N=1454 (12 to 17 years old)	All 54 USA	√		√	√	√
30	Lam, L. T., & Li, Y. (2013) / China	The validation of the E-victimisation scale (E-VS) and the E-bullying scale (E-BS) for adolescents	N=484 (11-16 years old)	High schools	√		√		
31	Lauren, M., & Ratliffe, K. T. (2011) / USA	Cyber worlds: New playgrounds for bullying	N=265 (70% female)	5 Middle Schools with surveys	√		√		
32	Lester, D., McSwain, S., & Gunn III, J. F. (2013) / Canada	Suicide and the internet: The case of Amanda Todd	15 years old students	Posted video on YouTube		√	√	√	
33	Li, Q. (2010) / Canada	Cyberbullying in high schools: A study of students' behaviors and beliefs about this new phenomenon	N=269, Gr 7-12 in 5 schools	Post-bullied, bystanders, and not reported	√		√	√	
34	Louch, M. O., & Frketich, D. D. (2011) / USA	Revisiting tinker vs. des Moines school district: How technological advances change the notion of "disruption" within the classroom	US Court of Appeals	Cyberbullying by using SMN		√	√		√

35	Maras, D., Flament, M. F., Murray, M., Buchholz, A., Henderson, K. A., Obeid, N., & Goldfield, G. S. (2015) / Canada	Screen time is associated with depression and anxiety in Canadian youth	N=2482, Gr 7-12, between 2006 and 2010	31 schools, english speaking students, eating and lifestyles	√		√	√	
36	Mann, B. L. (2008) / USA	Social networking websites: A concatenation of impersonation, denigration, sexual aggressive solicitation, cyber-bullying or happy slapping videos	Privacy policies	SMN websites		√			√
37	Marcum, C. D., Higgins, G. E., Freiburger, T. L., & Ricketts, M. L. (2014) / USA	Exploration of the cyberbullying Victim/Offender overlap by sex	N=1139 University students	3 waves of online surveys	√		√	√	
38	Molluzzo, J. C., Lawler, J., & Manneh, J. (2012) / USA	A comprehensive survey on cyberbullying perceptions at a major metropolitan university — faculty perspectives	N=79 responses	University students	√		√	√	
39	Molluzzo, J. C., & Lawler, J. P. (2011) / USA	A study of the perceptions of college students on cyberbullying	N=121 responses	University students - Awareness	√		√	√	√
40	Moore, M. J., Nakano, T., Enomoto, A., & Suda, T. (2012) / USA	Anonymity and roles associated with aggressive posts in an online forum	26 Forum with 5230 posts	Text processing	√		√	√	
41	Moreno, M. A., & Kolb, J. (2012) / USA	Social networking sites and adolescent health		10-15 years using SMN websites		√	√	√	
42	Morrow, A., & Downey, C. A. (2013) / USA	Perceptions of adolescent bullying: Attributions of blame and responsibility in cases of cyber-bullying	N=163 university students	At least 18 years old received Surveys	√		√		
43	Navarro, J. N., & Jasinski, J. L. (2012) / USA	Going Cyber: Using Routine Activities Theory to Predict	N=935 teenagers	Theory to predict cyberbullying	√			√	√

		Cyberbullying Experiences							
44	Olweus, D. (2012) / USA & Norway	Cyberbullying: An overrated phenomenon?	65,274, 140,758, 148,515 in 159, 468, & 472 schools	Gr. 3 to 12, In 4 years from 2007		√		√	√
45	Patchin, J. W., & Hinduja, S. (2011) / USA	Traditional and non-traditional bullying among youth: A test of general strain theory	N=2000 students	30 Middle schools		√	√		
46	Pelfrey Jr., W. V., & Weber, N. L. (2013) / USA	Keyboard gangsters: Analysis of incidence and correlates of cyberbullying in a large urban student population	N=23 schools in urban district	Middle schools-62 questions High schools-87 questions	√		√		
47	Peterson, M. B., & Peterson, K. A. (2014) / USA	Cyberbullying and race: A literature review	Different races	14 Databases from 2003-2013		√	√	√	
48	Pridgen, B. (2009). A book review / USA	Cyberbullying: Bullying in the digital age	Single incident	Sexual orientation - gay		√	√	√	
49	Reynolds, K., Kontostathis, A., & Edwards, L. (2011) / USA	Using machine learning to detect cyberbullying	Language patterns	Bullies and victims 78.5% accuracy	√			√	
50	Roberto, A. J., Eden, J., Savage, M. W., Ramos-Salazar, L., & Deiss, D. M. (2014) / USA	Outcome evaluation results of school-based cybersafety promotion and cyberbullying prevention intervention for middle school students	N=425 students	Gr 6-8 High schools	√		√	√	
51	Rosen, L. D., Cheever, N. A., & Carrier, L. M. (2008) / USA	The association of parenting style and child age with parental limit setting and adolescent MySpace behavior	N=266 Myspace users	Diversity of races ln LA area	√		√	√	
52	Ryan, W., & Smith, J. D. (2009) / USA	Antibullying programs in schools: How effective are	31 articles, under 50 participants	Antibullying program evaluations		√		√	√

		evaluation practices?							
53	Sanders, A. K. (2013) / USA	Obscenity, sexting, and cyberbullying	Legal implications	Protection under the First Amendment	√		√		√
54	Sengupta, A., & Chaudhuri, A. (2011) / USA	Are social networking sites a source of online harassment for teens?	N=935 Teens	12 to 17 census regions		√	√		
55	Shapka, J. D., & Law, D. M. (2013) / Canada	Does one size fit all? Ethnic differences in parenting behaviors and motivations for adolescent engagement in cyberbullying	N=518 (6% female) East Asian or European	4 School districts of BC	√		√	√	
56	Slane, A. (2013) / Canada	Sexting and the law in Canada	Criminal Codes o Canada s163.1	Canadian legal approaches to sexting		√	√		√
57	Snyder, I., Jevons, C., Gabbott, M., Henderson, M., & Beale, D. (2011) / Australia	More than chatting online: Children, marketing and the use of digital media	N=3 Grade 6 students	Digital marketing on children	√		√		
58	Stewart, D. M., & Fritsch, E. J. (2011) / USA	School and Law Enforcement Efforts to Combat Cyberbullying	Legal cases	Cyberbullying		√		√	√
59	Underwood, M. K., Rosen, L. H., More, D., Ehrenreich, S. E., & Gentsch, J. K. (2012) / USA	The blackberry project: Capturing the content of adolescents' text messaging	N=175 (81 females)	Control text messages sent by Gr 3-4, 5 year study	√		√	√	
60	Varjas, K., Meyers, J., Kiperman, S., & Howard, A. (2013) / USA	Technology hurts? Lesbian, gay, and bisexual youth perspectives on technology and cyberbullying	N=18 adolescents	15-18 years LGBT related	√		√		
61	Walker, C. M., Sockman, B. R., & Koehn, S. (2011) / USA	An exploratory study of cyberbullying with undergraduate university students	N=120 undergra-duates	27-item survey		√	√		

62	Workman, M. (2010) / USA	A behaviorist perspective on corporate harassment online: Validation of a theoretical model of psychological motives	N=54	112 surveys	√		√		√
63	Wright, M. F., & Li, Y. (2013) / USA	Normative beliefs about aggression and cyber aggression among young adults: A longitudinal investigation	N=126 (69 female)	18 to 25 years old. 4 Surveys sent in 6 months apart	√		√		
64	Ybarra, M. L., Boyd, D., Korchmaros, J. D., & Oppenheim, J. (2012) / USA	Defining and measuring cyberbullying within the larger context of bullying victimization	N=1200, 6-17 years old	30,000 member online panel	√			√	

	Descriptive	Literature Review	Behaviour	Corrective	Preventive/ Policy
Frequency	41	23	52	35	19
Distribution Percentage	24.12	13.53	30.59	20.59	11.18

Table 16
Research by Location

Country	USA	Canada	International
Frequency	48	10	12
Distribution Percentage	71.88	12.50	15.63

Table 17
Final Sixteen Articles Reviewed

Article #	Title	Authors	Year/Region	Themes (1-2-3-4)	Limitations / Gaps	Significant Outcome
1	Collaborative responses to cyberbullying: preventing and responding to cyberbullying through nodes and clusters	Broll, R.	2016 / CA	2, 4	Participants are only from South-western Ontario. Lack of Cyberbullying definition and universal collaboration discussion.	Capital possessed by each cluster within the cyberbullying security network and law enforcement cluster.
2	Computer misuse: Response, regulation and the law	Fafinski, S.	2013 / US	3, 4	Domestic criminal law only.	Computer misuses and prevention.
3	Crime from the keyboard: organized cybercrime, co-offending, initiation and knowledge transmission	Hutchings, A.	2014 / AU	3	What is the harm level?	Qualitative analysis of the investigations of law enforcement officers and offenders.
4	Cyber-Bullying Taxonomies: Definition, Forms, Consequences and Mitigation Strategies	Al Mazari, A.	2013 / US	3, 4	Not much citations on the Middle-east countries and impacts on ethics.	The author provides the taxonomies of cyber-bullying definition and mitigation strategies
5	Cybersecurity and the politics of the time	Stevens, T.	2015 / UK	3, 4	Mostly discussed the concern of cybersecurity and less in cyberbullying	The author provides cybersecurity insight for scholars, practitioners, and policymakers.
6	Cyberbullying and the innocence narrative	Gilden, A	2013 / US	4	How cyberbullying is defined?	Exploring bullying and harassment of gay teens. Presenting some preventive strategies
7	Cyberbullying and the law: A review of psychological and legal challenges	ElAsam, A.	2016 / UK	1, 3	The articles discussed the role of technology, but there is little discussion of ethics	Discussion of the absence of consistent bullying / cyberbullying definition prior to establishing cyberbullying legislation.
8	Cyberbullying detection and prevention: Data mining and psychological perspective	Parime, S., Suri, V.	2014 / IN	4	Limit in the English language. Privacy concerns.	Using dataset to detect and prevent cyberbullying
9	Detecting offensive language in social media to protect adolescent online safety	Chen, Y., Zhou, Y., Zhu, S., Xu, H.	2012 / US	2, 4	Language processing limited in English.	Detecting offensive written online SM tools with syntactical identifier detection rules.

10	The fear among bullied school-aged children: An examination of self-protection and avoidance in primary and secondary schools	Penington, D. R.	2014 / US	4	More research on the outcomes of cyberbullying and leads to an adequate theory differs from face-to-face bullying.	Exploring the victims' differences between primary and secondary schools in N. America. The author examines the links between fear, self-protection, and school avoidance.
11	Considering the context of online threats	Lidsky, L. B.; Norbut, L R	2018 / US	3, 4	The "context defence" may need further thorough analysis in order to conform with America's First Amendment.	Providing procedural "context defence" to combat verbal threats in social media contexts and produce contextual evidence in the trial.
12	Policing image-based sexual abuse: a stakeholder perspective	Henry, N., Flynn, A., Powell, A.	2018 / AU	3, 4	The authors mention the lack of engagement with the views of victims or perpetrators and reflect on social media and ICT in responding to IBSA.	Police are seriously treated Image-based sexual abuse (IBSA) in Australia and the authors identified five primary barriers and how to respond to these challenges.
13	Sexting and cyberbullying: Defining the line for digitally empowered kids	Shariff, S	2014 / CA	4	Bill C-13 has already been passed and follow-up post-law study of the impact on cyberbullying activities should be conducted.	Shariff illustrated among children between harmless jokes and harmful illegal postings. Shariff also highlighted the involvement of policy development instead of criminalizing children.
14	Situating the problem of cybercrime in a multidisciplinary context	Holt, T J	2016 / US	4	Cyberbullying should be included in this book chapter as part of cybercrimes.	The author illustrated that social media tools contribute as a factor in cybercrime in a society
15	ICTs and interpersonal violence	Holt, T J	2017 / US	4	This article needs to address to minimize the risk of victimization, and ethical concerns of cyberbullying	The author illustrated the prevalence, predictors, and consequences of cyberbullying
16	Protecting children online?: Cyberbullying policies of social media companies	Milosevic, T	2018 / US	3, 4	By knowing the children's behaviour on the Internet, the author relates the social media's policies with NGO, but how are the governmental laws address these unwanted consequences?	The author analyzed 5 cyberbullying cases and examined the vulnerabilities of social media tools. Good guidelines concerning children and technology for technology developers, lawmakers. educators, and parents. The author also reviewed 14 major social media companies.

Note.

Theme:

1-Science, Psychology

2-Technology, Social Media

3-Innovation Policy, Legality

4-Management, Definition, Theory, Ethics

Appendix F: Open Codes and Axial Codes Generation

Research question one: What is the state of research on cyberbullying and anti-cyberbullying initiatives in K–12 education in Canada?

Table 22
Open codes for RQ 1

Open codes	Properties	Examples of participants' words
Anonymity; Behaviour; Motivation;	Cause & effect;	Hidden identity; Cyberbullying is enabled by anonymity; People being aggressive; Driven by revenge; A victim before; Want to have social 'currency' within their social group;
Definition; Provenance;	Characteristics; Tenets; Bullying; Knowledgeable;	Taxonomies of cyberbullying; Different levels of the social systems; Root problem of cyberbullying; Cyberbullying is the sense of control and protection created by the screen, which separates the victim from the bully; A far more complex; Kind of the same as bullying definition but done electronically; If someone harassing someone, I don't say that they are cyberbullying; Associated or the health and harm concerns related
Environment; Laws and Regulations; Public Policy;	Code of conduct; Canadian Law C-13; Education Act; Misconduct;	Scare of technology; Understanding the beast; Intervention with cyberbullies; Bystander effect is really a significant issue;
Science & Technology;	Psychology; ICT; Innovation; Social Media Network	Grow quickly; Learn things on our own; Facebook and other social media have way to report cyberbullying;

Challenges; Cooperation;	Emerging technology; Privacy; Ethics; Judgement;	Not being afraid of technology; Risk-taking; Creating and accepting new ideas; Peer pressure; Parental & school responsibility; Peer-to-peer pressure; Has no parameters on it. The child can be tortured by 24/7; Generation gap;

Research question two: How do anti-cyberbullying researchers promote cyberbullying awareness in Canadian public, private, primary, and secondary schools?

Table 23
Open codes for RQ 2

Open codes	Properties	Examples of participants' words
Awareness; Control; Outcomes; Privacy; Resources; Respect;	Knowledge; Curriculum; Budget; Behaviour;	Seeking experience; Enough laws for cyberbullying? Is it a health issue? Responsibilities are when they using social media; There are some measures available in prevention, but they are not shown to be effective; Do onto others as you would have them do onto you; Understanding in empathy and compassion; Friendly groups override their beliefs; Teach our young people to learn to live in a digital world; Mandatory duty to report.; More education in schools about the important role bystanders; Experts are not really an agreement yet on what are the most effective prevention programs or mechanisms; May not want to invest the money necessary; Balance the enforcement of privacy; Engage citizens; What we really want to know how does the Internet affect our daily lives, and how can we manage and cope through online life; Cooeration; awareness campaigns;

Research question three: Considering cyberbullying is a communication system, how does a systems-oriented conceptual framework advance a holistic understanding of cyberbullying in Canada to help inform anti-cyberbullying resource development?

Table 24
Open codes for RQ 3

Open codes	Properties	Examples of participants' words
Framework	Conceptual framework; Theoretical framework; Systems; Gap;	Seeking experience; Ambitious; Driven by a communication system; Kids to go through an adult penal system, and I think that we actually undermine how we know best to deal with aggressions between kids in bullying and cyberbullying; No framework mentioned among the participants;

Table 25
Axial codes and selective code based on the open codes

Open codes	Axial codes	Selective code
Anonymity; Definition; Environment; Laws and Regulations; Provenance; Science Technology & SMN;	Environment of execution	A holistic understanding of Cyberbullying
Behaviour; Cause & Effect; Challenges; Cooperation; Misconduct; Motivation; Public Policy;	Consequence	
Awareness; Control; Outcomes; Privacy; Resources; Respect;	Awareness & Mitigation	
Theoretical framework; Conceptual framework;	No data; Gap?	

Appendix G: A Data Flow Framework

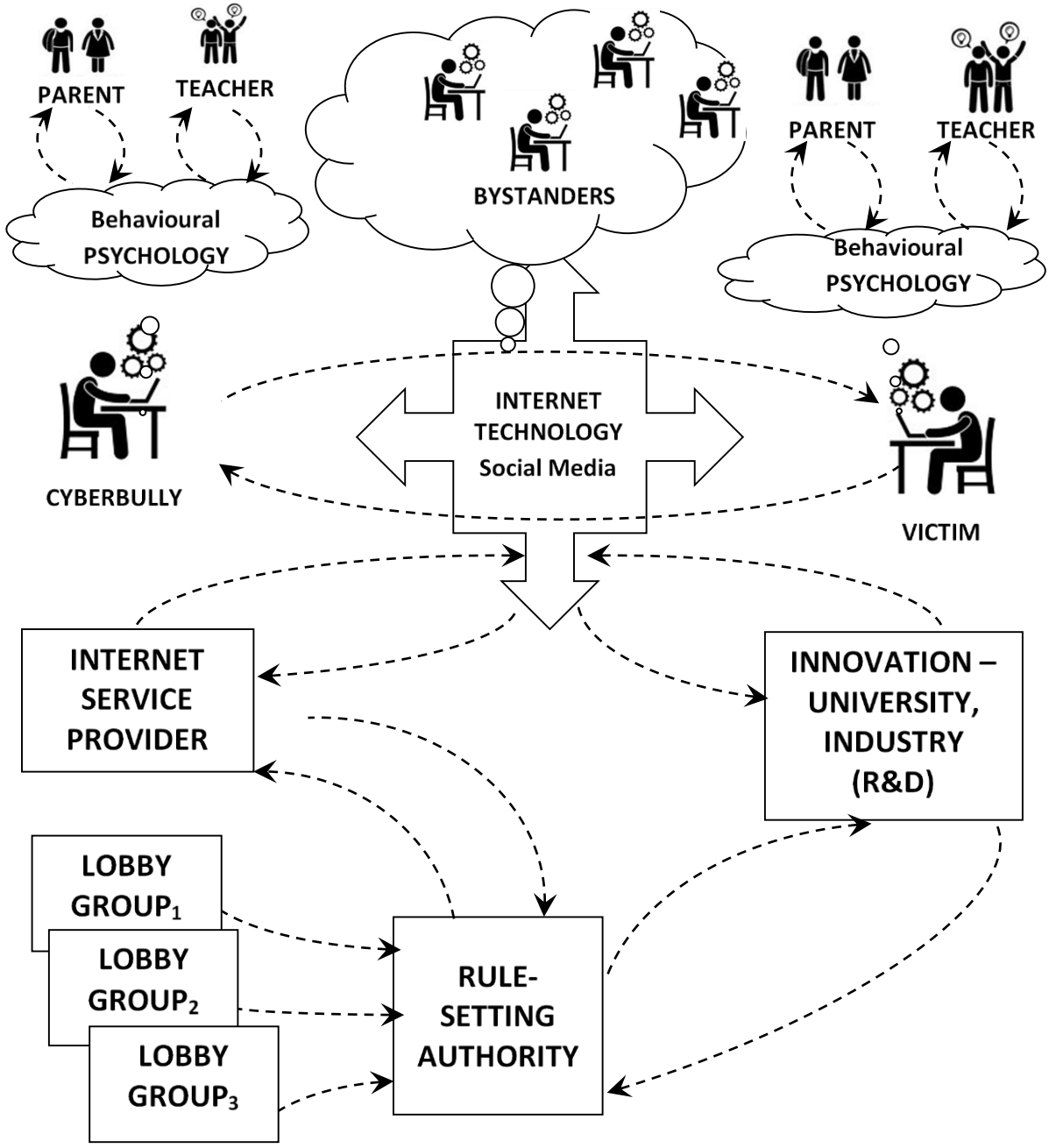

Figure 8. The Cyberbullying Social System Data Flow Framework