Ethical Complexities in the Virtual World: Teacher Perspectives of ICT Based Issues and Conflicts

by

Shawn Lennie

A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy
Department of Curriculum, Teaching and Learning
Ontario Institute for Studies in Education
of the University of Toronto

© Copyright Shawn Lennie 2013
Abstract


In response to growing pressure to prepare children for life in a digital world, schools have engaged in the wide scale integration of information and communication technologies (ICT) into classrooms. The use of the Internet, assistive technologies, learning management systems and mobile technologies has become a central component of educational practice, reflecting a broader social dependence on digital technologies (Cuban, 2001; Postman, 1993; Rowland, 2006) and the desire of the educational community to utilize ICT as a tool to enhance learning (Cuban, 2001; Prensky, 2005; Wagner, 2005; Wallis & Steptoe, 2006). However, in the face of issues such as cyber-bullying, software piracy, sexting and Internet addiction, what needs to be considered about the use of ICT in schools has little to do with its efficiency as a teaching tool.

Using a qualitative research methodology, this study explores the perceptions that K-12 teachers have on the ethical issues they have experienced as a result of, or in relation to, ICT. Participants included 10 practicing teachers who had identified experience with ICT based issues in their teaching practice. Each participant engaged in two semi-structured interviews focused on the research topic. The first interview explored the perceptions and experiences that the participants had with ICT based issues in their practice, while the second involved an examination of eight vignettes involving ICT based issues that were ethical in nature. The use of this approach provides a descriptive account of the experiences and perceptions of the participants in the study.
Results from the study highlight the impact that ethical issues involving technology have on the moral work of teachers and the challenges that emerge as teachers attempt to identify morally responsible ways to respond to the complex and dynamic challenges that they face. Participants demonstrate a heightened sensitivity to ethical issues involving technology that compromise the safety and well-being of children, such as cyber-bullying, as well as those that compromise professional and academic integrity, such as plagiarism. Results also reveal the predominant use of subjective moral judgment when evaluating the moral significance of ICT based issues and reluctance on the part of teachers to challenge the inappropriate use of technology by their colleagues. This contrasts with a strong belief that teachers play an important role as moral models for students who are developing an understanding of what constitutes responsible digital behaviour. These results are significant to scholarship on teacher professionalism, digital ethics and citizenship, and policy development relating to ICT based issues.
Acknowledgments

T.S. Elliot noted that we often have an experience but miss the meaning, and that the meaning of any experience can not be captured by the perspective of the individual, but rather, is embodied in the lives of all who participated. Motivated by the wisdom of this sentiment, I reflect on all of the people who took part in my doctoral journey, in tangible and intangible ways, and would like to take this opportunity to give thanks to those who have had an influence on this work.

I would like to express my gratitude to all of the participants who shared their stories in the hopes that it would bring a greater understanding of the research problem. Your contributions serve as the foundation of this scholarship and your cooperation and willingness to share your experiences are indicative of your commitment to your profession.

I would like to thank the external members of my defense committee, Dr. Nick Burbules, Dr. David Booth, and Dr. Elizabeth Smyth. I truly appreciated the opportunity to engage in a discussion with you about my work and feel that your contributions have helped me to understand my work in a new light. It is my hope that we can continue this discourse as we attempt to develop a deeper understanding of the impact of ICT on our profession.

To the members of my thesis committee, Dr. Doug McDougall and Dr. Clare Brett, I express my sincerest gratitude for your support and guidance throughout this process. You have both been an integral support for me in both my master's and doctoral work, and I have benefited from your mentorship and encouragement. In your roles you have managed to strike a perfect balance between kindness and efficiency and your experience and continued support were essential to the quality of this work.

To my thesis supervisor, Dr. Elizabeth Campbell, I believe that any words that I can use are insufficient in expressing my gratitude for your support throughout this process. Over the past
eight years you have been my greatest advocate and mentor. The experiences we have shared have contributed to my development both as a scholar and as a person. You have always been respectful of my ideas, honest in your critique and available for consultation. You are truly a person of virtue, and the integrity with which you conduct your professional work is complimented by a personal touch of kindness, grace and elegance that represents your character. It is difficult to quantify the many ways that you have supported me in my work, but there is one thing that I do know for sure, without you I would not be where I am today. And so it is with great humility that I express my deepest thanks for all that you have done.

I would also like to express my thanks to the countless colleagues and friends that have provided me with encouragement and support as I worked on this thesis. Your presence serves as the intangible element of my work, equally as important, but perhaps not as visible. To Dr. Nick Scarfo, your mentorship has, and continues to have, a tremendous impact on my work. I consider you to be not only a colleague, but also a friend, and I look forward to the opportunities that the future may hold. To Dr. Robert Fantilli, I appreciate your willingness to share your own journey with me. I have benefited from your practical wisdom on many occasions and will return the favour in kind at any time.

To my family, I offer this work as a testament to the lifetime of support and encouragement that you have provided, which has allowed me to pursue my dreams unabated.

To Mary, Frank and Jim, your quiet confidence provided subtle inspiration and I appreciate your sincere understanding, which has allowed me to retreat into my work. I thank you for your patience.

To my grandma Ruth, your unconditional love has helped me to become the man I am today and this work is a byproduct of all of the support you provided.
To my sister Laura, your editing skills helped to improve the quality of this work, but more importantly, your unwavering enthusiasm and encouragement injected positivity into the experience of doing a Ph.D. I look forward to the day when we can write a book together.

To my father Archie, you provided the framework for my understanding of what constitutes hard work and have always challenged me to be a leader. You are a man of integrity and dedication, and this thesis serves as a testament to the positive impact you have had on me.

To my mommy Margo, you have often called me an old soul, however, it is your steadfast belief in me that has given me the courage to be myself and to achieve without the fear of failure. You don’t ever have to call me doctor, because being your son is the greatest title that I could ask for.

To my beautiful daughter Talia, as I write this you are only a nine months old and you have a curiosity and love of books that makes me think that some day you may want to read this. Even if you don’t, I want you to know that you have been the greatest motivation for me to complete this work because from the time I found out you were on your way I dedicated myself to working endless nights so that when you were born I could spend time holding you rather than working on my thesis. I thank you for giving me the final push that I needed to finish.

Finally, to my loving wife, Jennifer, you have been my greatest source of strength throughout this process and I am sincerely grateful for the sacrifices that you have made so that I can pursue my dream. You have been kind, patient, encouraging and are the cornerstone of all that I am. As I am sure that these words are insufficient in expressing appreciation for your support, I dedicate the entirety of my academic career to you in the hopes that I can honour your love and friendship. A chuisle mo chroí.
<table>
<thead>
<tr>
<th>Chapter One: Introduction</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Background of the Study</td>
<td>3</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>5</td>
</tr>
<tr>
<td>Significance of the Study</td>
<td>7</td>
</tr>
<tr>
<td>Theoretical Framework</td>
<td>9</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>13</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>15</td>
</tr>
<tr>
<td>Background of the Researcher</td>
<td>16</td>
</tr>
<tr>
<td>Overview of the Thesis</td>
<td>18</td>
</tr>
<tr>
<td>Introduction</td>
<td>21</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>2.2 Nature of ICT and its Impact on School Communities</td>
<td>22</td>
</tr>
<tr>
<td>2.2.1 Emergence of digital culture</td>
<td>22</td>
</tr>
<tr>
<td>2.2.2 Impact of digital culture on school communities</td>
<td>24</td>
</tr>
<tr>
<td>2.2.3 Use of ICT for learning</td>
<td>26</td>
</tr>
<tr>
<td>2.2.4 Teacher Beliefs about the Role of ICT</td>
<td>30</td>
</tr>
<tr>
<td>2.3 Ethical Nature of ICT Based Issues</td>
<td>33</td>
</tr>
<tr>
<td>2.3.1 The global village</td>
<td>33</td>
</tr>
<tr>
<td>2.3.2 Digital ethics and the moral landscape of cyberspace</td>
<td>35</td>
</tr>
<tr>
<td>2.3.3 The moral nature of teaching</td>
<td>39</td>
</tr>
<tr>
<td>2.5 Ethical Issues Affecting School Communities</td>
<td>41</td>
</tr>
<tr>
<td>2.5.1 Issues of Intellectual Property Rights</td>
<td>42</td>
</tr>
<tr>
<td>2.5.2 Issues of accessibility and the digital divide</td>
<td>45</td>
</tr>
<tr>
<td>2.5.3 Cyber-bullying</td>
<td>49</td>
</tr>
<tr>
<td>2.5.4 Issues related to privacy and the protection of children</td>
<td>53</td>
</tr>
<tr>
<td>2.5.5 Youth and hyper-sexualization</td>
<td>57</td>
</tr>
<tr>
<td>2.5.6 Impact of digital immersion on mental and physical health</td>
<td>62</td>
</tr>
<tr>
<td>2.6 Resources and Supports for Dealing with ICT Based Issues and Conflicts in Schools</td>
<td>66</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>2.6.1 Policing ICT use: development of acceptable use policies</td>
<td>67</td>
</tr>
<tr>
<td>2.6.2 Preventing ICT Issues: Media Literacy Curriculum</td>
<td>70</td>
</tr>
<tr>
<td>3.1 Research Design and Rationale</td>
<td>74</td>
</tr>
<tr>
<td>3.2 Sample and Participants</td>
<td>81</td>
</tr>
<tr>
<td>3.3 Data Collection</td>
<td>83</td>
</tr>
<tr>
<td>3.4 Data Analysis</td>
<td>90</td>
</tr>
<tr>
<td>3.5 Ethical Considerations</td>
<td>96</td>
</tr>
<tr>
<td>3.6 Summary</td>
<td>97</td>
</tr>
<tr>
<td>4.1 Introduction</td>
<td>98</td>
</tr>
<tr>
<td>4.1.2 Participant Profiles</td>
<td>99</td>
</tr>
<tr>
<td>4.2 Issues Relating to the Safety and Well-being of Children</td>
<td>106</td>
</tr>
<tr>
<td>4.2.1 Cyber-bullying</td>
<td>106</td>
</tr>
<tr>
<td>4.2.2 Concerns about student privacy and vulnerability to online threats</td>
<td>117</td>
</tr>
<tr>
<td>4.2.3 Concerns about the impact of digital immersion on social-emotional development</td>
<td>125</td>
</tr>
<tr>
<td>4.3 The Impact of ICT on Academics</td>
<td>131</td>
</tr>
<tr>
<td>4.3.1 Academic dishonesty: Plagiarism and cheating</td>
<td>131</td>
</tr>
<tr>
<td>4.3.2 Concerns about the impact of lack of access to ICT</td>
<td>142</td>
</tr>
</tbody>
</table>
4.4 ICT Based Issues and Teacher Professionalism ................................................................. 147

4.4.1 Impact of ICT on professional relationships: Dealing with the inappropriate use of technology by teachers .................................................................................................................. 147

4.4.2 Impact of ICT on professional identity ........................................................................ 154

4.5 Dealing with ICT Based Issues: Strategies, Resources and Supports Used by Teachers and Schools ........................................................................................................................................ 162

4.5.1 The school approach: The use of school policy as a strategy for responding to ICT based issues ....................................................................................................................................... 163

4.5.2 The teachers’ approach: The use of intuition, direct instruction and modeling as strategies for responding to ICT based issues .................................................................................. 169

4.5.3 Consideration of resources and supports that would help in responding to ICT based issues ........................................................................................................................................ 177

4.6 Summary .................................................................................................................................. 181

5.1 Ethical Nature of ICT Based Issues ..................................................................................... 185

5.1.1 Defining the ethical nature of ICT based issues: The focus on people ......................... 185

5.1.2 Teachers’ moral sensitivity to ICT based issues that challenge the safety and well-being of children ........................................................................................................................................ 188

5.1.3 ICT based issues that extend beyond the boundaries of the school: Concerns about privacy and identity ......................................................................................................................................... 191
5.1.4 Summary........................................................................................................................................193

5.2 ICT Based Problems and the Moral Work of Teachers.................................................................194

5.2.1 Teachers as models for digital citizenship......................................................................................195

5.2.2 Teachers’ ethical knowledge about ICT based issues.................................................................198

5.2.3 Teachers’ use of moral language in articulating the ethical nature of ICT based problems ........................................................................................................................................201

5.2.4 Summary........................................................................................................................................202

5.3 The Moral Significance of Teacher Responses to ICT Based Issues.............................................203

5.3.1 The morally subjective nature of teachers’ responses to ICT based problems .................203

5.3.2 Digital applied ethics and the value of acceptable use policies in dealing with ICT based problems........................................................................................................................................206

5.3.3 The moral significance of teachers’ responses to inappropriate use of ICT by colleagues ........................................................................................................................................208

5.4 Summary........................................................................................................................................211

Chapter Six: Implications of the Study and Recommendations for Future Research .............213

6.1 Primary Conclusions and Implications of the Study.................................................................213

6.1.1 Implications for teacher professionalism and the moral work of teachers.........................214

6.1.2 Implications for digital ethics, digital citizenship and media literacy ..................................217
6.1.3 Teacher responses to ICT based issues and implications for ICT based policy development

6.1.4 Recommendations and implications for future research

References

Appendices

Appendix A: Online Survey

Appendix B: Letter of Invitation

Appendix C: Protocol for Individual Interview #1

Appendix D: Protocol for Individual Interview #2
# List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1: Code List</td>
<td>93</td>
</tr>
</tbody>
</table>
# List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1: Stages of Investigation</td>
<td>84</td>
</tr>
<tr>
<td>8</td>
<td>89</td>
</tr>
</tbody>
</table>
Chapter One: Introduction

1.1 Introduction

Information and communication technology (ICT) has become a ubiquitous presence in the lives of people living in the industrialized world. As our adoption of ICT has increased, the structure and organization of society have developed into what Neil Postman (1993) called a “technopoly,” or “the submission of all forms of cultural life to the sovereignty of technique and technology” (Postman, 1993, p. 52). In a time characterized by Blackberrys and iPhones, Google and Yahoo, Facebook and Twitter, the cultural significance of ICT should not be understated.

In response to the need to prepare children for life in this digital world, schools are actively integrating ICT into classrooms and placing greater emphasis on the technological literacy required for the 21st century (Wallis & Steptoe, 2006). The use of the Internet, Smart Boards, assistive technologies, learning management systems and mobile devices reflects the desire of the educational community to utilize ICT as a tool to enhance learning, as well as the broader social dependence on digital technologies (Cuban, 2001; Prensky, 2005; Wagner, 2005; Wallis & Steptoe, 2006).

The motivation to prepare children is influenced by the transformative impact digital technologies have on our daily lives (McLuhan, 1963; Postman, 1993; Rowland, 2006; Tapscott, 2009). This impact can be felt on individual, institutional and systemic levels and is causing fundamental changes to our social, economic and educational systems. Areas such as employment and communications are being transformed by ICT, as the need for technological expertise increases and jobs related to technology become prevalent in the market. This trend is also affecting non-technology industries, as the dependence on ICT increases not only technical knowledge, but also an adaptability that
allows people to keep up with the exponential pace of technological innovation. As a result, schools are faced with a task of preparing children for jobs that do not exist, using technologies that have not yet been invented (Fisch, 2009).

Current research in educational technology focuses predominantly on the ability of technology to support curriculum and instructional goals. In this context, technology is understood as an instrument of change and embraced for its ability to support learning. Many scholars view ICT as a revolutionary tool that enables teachers to practice constructivist pedagogy and engage students in collaborative learning (Downes, 2006; Flanagan & Metzger, 2008; Foo, 2005; Hope, 1998; Katz & Denti, 1996; Wallis & Steptoe, 2006). The excitement in the academic community about the pedagogical potential of ICT is understandable; however, the emergence of issues such as cyber-bullying, software piracy, violations of digital copyright and addiction to digital mediums suggests that perhaps what needs to be considered about the use of ICT has little to do with its ability to support educational reform.

Consider the following cases:

*Case #1:* In January 2008, two students in a Caledon, Ont. school were suspended, after making offensive comments on Facebook about their school principal over the ban of cell phones in the school (Schriever, 2007).

*Case #2:* In November 2009, Ashley Payne, a teacher in the U.S., was fired, after a parent filed a complaint with the school about the content of pictures posted on her Facebook account (CBS News, 2011).
Case #3: In March 2009, a 13 year old was charged with child pornography, after posting nude pictures of herself on her MySpace page (Sacco, Argudin, Maguire, & Tallon, 2010).

Case #4: In September 2009, a student in Wisconsin was expelled from school for “sexting,” sending sexually explicit images through text messages to other students (Sacco, Argudin, Maguire, & Tallon, 2010).

Case #5: In July 2008, Jessica Logan, an 18-year-old girl, committed suicide, after a sexually explicit photo she had texted to her boyfriend was circulated around her high school (Thomas, 2009).

Cases of this nature involve complex ethical issues that have a fundamental impact on the well-being of students, teachers and the school community. While issues such as cyber-bullying and child exploitation receive considerable attention, they represent the beginning of a growing list of ICT based issues affecting schools that include, but are not limited to, things such as academic dishonesty, issues of accessibility, media literacy, privacy rights and Internet addiction. Given the scale, scope and complexity of these issues, it is important to recognize and investigate the holistic impact that ICT is having.

1.2 Background of the Study

As ICT based issues grow in frequency, educators are faced with the challenge to closely examine the problems that exist as a result of, or in relation to, ICT use and consumption. The problem is complicated by the unique ability of ICT to transcend physical boundaries and impact a variety of stakeholders from multiple communities. However, the potentially serious implications of ICT based issues highlight the importance of examining its broader impact.
The present understanding of how to deal with ICT based problems is informed by concepts of Internet and digital ethics, a field of ethics that attempts to provide moral guidance for the commercial and private use of digital technologies (Langford, 2000). While there is disagreement about main core issues within this field, there is a strong desire on the part of researchers and industry leaders to establish a unified concept of digital ethics, in order to ensure the continued success of ICT (Edgar, 2003; Johnson, 2003; Langford, 2000). Currently, issues like software piracy are understood by combining existing legal concepts, such as copyright infringement, with long-standing virtues, such as honesty to determine morally responsible online behaviour (Edgar, 2003). Despite the growth of scholarship in this area, there is limited connection between digital ethics and the school environment, or an analysis of how ICT based issues that are ethical in nature directly affect children.

The gap that exists between our understanding of Internet ethics and its application within educational environments is one that deserves empirical investigation. To date, very little is known about the experiences that teachers and students in K-12 environments have with issues resulting from the use of ICT. When considering the cases noted above, it becomes evident that the surge of digital culture is having a profound impact on children and school communities. Additionally, it would appear that, as Resta (1994) argued, "although microcomputers have been used for educational purposes for more than a decade, many teachers still do not understand a number of long-standing ethical and legal issues related to use of the information technology" (p. 271).

Investigating the ethical nature of ICT based issues is a complex challenge that requires the examination of multiple perspectives, including those of teachers, students,
parents and administrators, all of whom are affected by the integration of ICT. Given the scope of this challenge, this study focuses primarily on the perspectives of teachers as one stakeholder group that is challenged each day to define the appropriate use of technology and understand its impact. Additionally, teachers also serve as role models for behaviour. This assumption is based on extensive scholarship in applied professional ethics, which highlights the moral and ethical nature of teaching (Campbell, 2003; Fenstermacher, 2001; Hansen, 1993; Sanger, 2005). For better or worse, educators will play an important role in influencing the development of responsible digital citizenship, just as they influence students’ moral development more generally (Goodman & Lesnick, 2004; Lickona, 2004; Noddings, 2002; Nucci & Navarez, 2008).

The broad adoption of ICT serves to further complicate the already challenging role that teachers have in influencing the moral culture of school communities. Given the importance of this responsibility, it is essential that teachers be given an opportunity to discuss their experiences in order to develop an understanding of the nature of ICT based issues and the impact that they have on school communities.

1.3 Purpose of the Study

Current attempts to deal with issues related to ICT use in schools have come largely from the development of prohibitive acceptable use policies and a curricular focus on media literacy, which involves the “ability to access, analyze, evaluate and communicate messages in a wide variety of forms” (Hobbs, 2011, p. 16). The inclusion of media literacy within the Ontario curriculum (Ontario Ministry of Education, 1995) and the emergence of organizations, such as the Media Awareness Network and the Association for Media Literacy demonstrate an understanding of the importance of preparing youth for participation in the digital world (Johnson, 2003). However, what is
missing in these initiatives is a direct focus on how teachers perceive ICT based issues and the strategies they use to respond to them.

The purpose of this study is to document the experiences that K-12 teachers have with issues and conflicts relating to ICT use. The study provides a descriptive account of these experiences from the teachers’ perspective and aims to gain an understanding of the impact of ICT based problems on school communities. Additionally, the study examines the perceptions teachers have about the ethical nature of ICT based issues and explores their beliefs about what constitutes inappropriate ICT use. Finally, the study investigates the ways in which teachers respond to and cope with these issues and conflicts and gives consideration to the resources and supports that teachers see as valuable in supporting them.

Overall, the study will serve as a descriptive account of the personal statements, beliefs and experiences of teachers, in order to provide the academic and public communities with a deeper understanding of the ethical challenges that arise from the use of ICT. This investigation is conducted within the context of the K-12 environment, focusing primarily on grades four to 10, and identifies the perspectives that teachers have about their experiences with ICT based issues, as well as their perceptions about the impact of these issues on school communities. The issues that are explored cover a broad range of situations occurring inside and outside of the school community, as incidents that occur outside of the school are understood to have an impact on the school; and involve the use of ICT by students, teachers, administrators and other stakeholders. This examination serves to support educators as they attempt “to adapt to a rapidly evolving
technological society, address emerging challenges, and guide children to become civic-minded individuals” (Shariff & Johnny, 2007, p. 42).

**Research Questions**

In order to investigate the research problem, the study will focus on addressing the following questions:

1. How do teachers describe the ethical nature of ICT based issues and conflicts that they experience in their practice?
2. What is the relationship between ICT based issues and the moral work of teachers?
3. How do teachers respond to and resolve ethical issues and conflicts involving ICT?

**1.4 Significance of the Study**

In the wake of our growing dependence on digital technology, researchers are faced with the task of examining the impact that ICT is having on social relations, behaviour and culture. Research in this area is expanding, as ethicists, philosophers, psychologists and sociologists scramble to develop an understanding of the power of digital technologies. It is well understood that ICT has increasingly become a central component of how people define their existence and impacted how people work, play, learn, socialize and collaborate (3TU Center for Ethics and Technology, 2006).

This study approaches this problem within the context of education and focuses specifically on the experiences of individuals within the K-12 environment. As such, it expands on existing empirical studies that look at how people define the appropriate use of information technologies. Although research in this area is becoming more common, it
is relatively limited to a sampling of adult computer users in the workplace (Peterson, 2002) or higher education students (Kreie & Cronan, 1998; Szabo & Underwood, 2004).

Research involving children is primarily focused on topics such as cyber-bullying, (Brown & Demaray, 2009; Shariff, 2009), violence in video games, (Barlett, Anderson, & Swing, 2009; Soraker, 2010; Wilson, 2008) and the illegal downloading of music and movies (Chiou, Huang, & Lee, 2005; Leggatt, 2010; Livingstone & Bober, 2004). Internet addiction and inappropriate use of mobile technologies are emerging as research topics, but are relatively new in their development (Ribble, Bailey, & Ross, 2004).

What is missing in this examination is a specific focus on the ethical nature of the issues and conflicts that arise from the use of ICT and the effect they have on the moral culture of the school community. The absence of research in this area becomes critical, when considering the degree to which ICT is present in the lives of educators and students at all levels of schooling. According to the Information and Communications Technologies in Schools Survey in 2004, almost all elementary and secondary schools in Canada had computers, with provincial rates ranging from 91 per cent in Manitoba to 100 per cent in Ontario (Sciadas, 2006).

The 2011 Horizon Report on new media verifies the trend towards a technology-based school environment and identifies technologies, such as mobile devices, smart technologies, personal web applications and geo-everything applications, as being likely to have a large impact on teaching, learning or creative inquiry (Johnson, Smith, Willis, Levine, & Haywood, 2011). Although the extent to which ICT will impact the educational community is unknown, a fundamental shift has already begun, and researchers are trying to catch up with the overwhelming momentum of the digital age.
The increased presence of ICT has led to an increase in issues associated with their use. Cyber-bullying, cyber-harassment, sexting and Internet addiction have emerged as key issues that now challenge the safety and well-being of students, teachers and others within the community. Discussions about accessibility to technology, issues of copyright infringement and concerns about online privacy are becoming common, as digital culture pushes forward. In light of the potentially devastating consequences associated with these issues, we are forced to give more attention to the human impact of ICT.

As school boards establish policies to respond to the inappropriate use of ICT, there is a need to examine the understanding teachers have about the nature of the issues with which they are dealing. It is the intention of this study to present a detailed understanding of the nature of ICT issues occurring within Ontario schools. It is believed that providing a platform for teacher perspectives will shed light on the nature of these issues and contribute to a broader theoretical and practical discussion of what constitutes the acceptable use of digital technologies in schools, thereby helping to prepare students and teachers for participation in the complex virtual world.

1.5 Theoretical Framework

This study is framed by the understanding that teaching is a moral profession in which educators are constantly required to make difficult decisions and resolve ethical conflicts. Additionally, as teachers attempt to negotiate complex pedagogical questions about integrating technology into their practice, they are also being challenged by increasingly complex ethical problems that come as a result of, or in relation to, the use of ICT.
Empirical research in applied ethics has established a strong foundation for the belief that ethical dimensions of the classroom have a fundamental impact on the well-being of students, teachers and the school community (Campbell, 2003; Colnerud, 1997; Jackson, Boostrom, & Hansen, 1993). ICT based issues are unique because they transcend the boundaries of the school and extend the moral responsibility to the virtual realm. Problems such as cyber-bullying, Internet addiction, sexting and increased incidents of plagiarism, represent a sample from a growing list of moral problems stemming from the use of digital technologies. At the heart of these issues are teachers who play a central role in influencing the moral character of school communities.

Scholarly literature and empirical research on the moral dimensions of teaching emphasize the role that ethics and morals play in teaching practice and the overall mission of schooling (Bergem, 1990; Buzzelli & Johnston, 2002; Carr, 2000; Fenstermacher, 2001; Jackson et al., 1993). From this work comes the general understanding that the experiences that children have in schools have an influence in their understanding of values that govern social interaction, including how to treat others, which they develop as they observe and interact with their teachers and peers. Consequently, the ways in which teachers conduct themselves on a daily basis, and their position of elevated trust, serves as a model for a child’s understanding of the ethical nature of the outside world (Campbell, 2003; Fenstermacher, 2001; Jackson et al., 1993; Sockett, 2006).

In her study on the moral life of schools, Campbell (2003) interviewed experienced teachers and found that morally significant events occur regularly in a teacher’s professional life and that some teachers demonstrate a keen awareness of the
moral nature of the profession. However, other studies, such as those conducted by Jackson, Boostram and Hansen (1993) and McCadden (1998), show that the ability to demonstrate ethical knowledge is not common, as many teachers are often uncertain of moral messages implied in their actions towards children. The important message of this evidence is classroom activities often involve questions of moral and ethical significance, whether the teacher is aware of them or not. As teachers engage in their daily practice, they provide the moral model that children may adopt as they develop their own ethical awareness.

The understanding that teaching is a moral activity also provides a framework for perceiving the social nature of ICT based issues. This assumption is rooted in the belief that ICT has a transformative impact and influences patterns of culture and social behaviour (Fisch, 2009; Fischer, 2006; McLuhan, 1963). As suggested by Sciadas (2006), one of the key impacts of ICT is its ability to manifest changes in behavioural patterns, such as the way individuals communicate and spend their time. This perspective is characterized by Burbules and Callister (2000) as the relational perspective, in which technologies are seen for their transformative impact and their ability to influence who we are, what we think about and how we understand relationships. From this perspective, our understanding of the ethical nature of ICT based issues in inherently connected to the social and human nature of digital communications. As a result, many scholars highlight the need to seriously consider the intended and unintended consequences of our technological dependency and its impact on our daily lives (Fischer, 2006; McLuhan, 1963; Postman, 1993; Wright, 2001).
Researchers also suggest that the use of ICT in schools has led to increasingly complex problems that cover a broad range of behaviours and challenge educators on a daily basis (Bugeja, 2008; Burbules & Callister, 2000; Cuban, 2001; Rowland, 2006). Academic issues, such as plagiarism are compounded by social issues, such as cyber-bullying demonstrating the expansive reach of the problems relating to digital technology. The connection between social issues and the use of ICT in schools is natural because, at a fundamental level, schools are social environments where children develop an understanding of what constitutes appropriate behaviour. As such, teachers are faced with the added responsibility of responding to ICT based issues and providing moral guidance for its appropriate use.

Much like the ethical dilemmas that confront teachers (Campbell, 2003; Colnerud, 1997; Tirri & Husu, 2002), digital issues can jeopardize the moral culture of schools. Issues, such as cyber-bullying, sexting and Internet addiction challenge the safety and well-being of students and raise questions about the responsibility of schools to protect children in virtual spaces (Wright, 2001). Responding to these issues is further complicated by the dynamic properties of ICT, which is a medium that is constantly changing and is capable of transcending school boundaries. In response to ICT based issues, teachers must now extend their ethical knowledge to include an awareness of technological issues that are constantly in a state of flux.

This study is also informed by the field of applied ethics, which emphasizes the moral nature of the teaching profession and critical media theory, which approaches technological adoption from a position of skepticism, in order to highlight the dynamic and transformative nature of technology. Each of these fields, as they are addressed
further in the review of the literature, serves as a lens for understanding the research problem and provides the context for examining participant experience and perception. Using this lens, ICT based issues will be systematically analyzed, in order to develop an understanding of the impact they have on the moral culture of school communities.

1.6 Definition of Terms

The following terms will be used throughout the study and are described below based on definitions adapted from those located in relevant literature.

**Information and communication technology (ICT).** Information and communication technology is any technology that allows for the creation, distribution or consumption of information and communication. This definition is informed by Bruce and Levin's (1997) taxonomy of educational technology that is based on a four-part division between technologies used for inquiry, communication, construction and expression.

**Media.** The terms media, medium and technology are used interchangeably to describe the various technologies that impact the scale, pace or pattern of human association, affairs and actions (McLuhan, 1963). In this regard, all media are understood as being an extension of a previous technology and to be ecological in their impact, which is to suggest that their introduction into an environment fundamentally changes that environment. Within an educational context, media is understood as technologies that link students to other learners, teachers, other technologies, ideas and the physical world (Bruce & Levin, 1997).

**Relational perspective of technology.** The relational perspective of technology approaches ICT from the understanding that media and technologies reshape people’s self-perceptions, their relations to one another, the perceptions of time and speed, and
their expectations of predictability. Each of these change people’s way of thinking about means and ends, purposes and efficacy (Burbules & Callister, 2000).

**Professional ethics and morals.** Applied professional ethics are sets of moral or ethical principles applied in teaching practice that guide the professional conduct of teachers and administrators (Strike & Ternasky, 1993). These include, but are not limited to, values rooted in Aristotelian virtues, such as fairness, honesty, kindness, empathy, respect and integrity (Campbell, 2003), and are believed to influence moral reasoning, ethical decision making and actions of classroom teachers (Campbell, 2003; Carr, 2000; Fenstermacher, 2001; Jackson et al., 1993; Sockett, 2006; Strike & Soltis, 1992). While professional ethics imply formalized principles of moral conduct, the conceptual context of this study recognizes that the ethical and moral dimensions of teaching are not simply expressed by formal standards of practice, but more significantly infused into the layered nuances of a teacher’s daily practices of both a formal and informal nature. The terms ethics, ethical and moral are each understood as being expressive of principles of right and wrong, as they relate to specific conduct or character. This understanding is informed by Campbell’s (2003) articulation of the duality of the terms as they relate to the complex dynamics of teaching, as she suggests, “I do not distinguish conceptually between the terms (ethics and morals); both address virtue and basic principles of right and wrong as they influence belief, intention and behaviour” (Campbell, 2003, p. 17).

**Ethical knowledge.** The concept of ethical knowledge used in this study is based on the definition put forth by Campbell (2003). Ethical knowledge is understood as an awareness of the moral and ethical aspects of teaching and involves an understanding of how moral principles, such as fairness, honesty, kindness, empathy, respect and integrity
are reflected in the normative practices of the teacher. It is also connected to the concept of moral agency and is based on an understanding of “how teachers treat students generally and what they teach them of a moral and ethical nature” (Campbell, 2003, p. 2).

**Ethical dilemma.** Within the context of this study, the term ethical dilemma describes a situation that challenges principles of the teacher’s moral agency and applied professional ethics more broadly. This may include an ethical problem, issue or tension that arises from situations or behaviours that conflict with moral principles, such as fairness, honesty, kindness, empathy, respect and integrity. This study will not employ an absolute definition of an ethical dilemma, which is to say that it need not include an ethical paradox where one must decide between two moral imperatives (e.g.: two “wrongs” or two “rights”); rather it need only to involve situations “...where one must somehow assess the relative importance of conflicting moral principles and try to balance ethical ideas against contextual factors and consequentialist concerns” (Hare, 1997, p. 67).

**1.7 Limitations of the Study**

This research study investigates the personal perspectives and experiences of classroom teachers dealing with dilemmas resulting from the inappropriate use of ICT. This investigation aims to help educators gain insight into the perceptions these teachers have about their experiences and the strategies they use to cope with the dilemmas that they face. The study is descriptive in nature and presents illustrative examples of situations experienced by the study’s participants. Because of the small sample size, the study will not attempt to make generalizations about the perspectives of all teachers or provide solutions to the ethical issues, conflicts or dilemmas that are encountered. The scope of the findings will also not provide comprehensive recommendations on how to prevent ICT dilemmas from occurring. Results are intended to provide a voice for
educators to examine the ethical challenges confronting teachers in Ontario and serve as a platform for further investigation in this field.

1.8 Background of the Researcher

My interest in the area of ethics and technology stems from a variety of teaching and research experiences that have shaped my understanding of the transformative role that ICT plays in our lives. These experiences have led me to the belief that educators play an essential role in providing the foundation necessary for technology to be applied in a meaningful and responsible way.

My theoretical understanding of educational technology has been fortified by my work in the Knowledge, Media and Design Institute (KMDI) at the University of Toronto. As a student within the KMDI program, I have engaged in coursework and graduate research that examine the ways in which media technologies shape, and are shaped by, human activity. My studies in this area have exposed me to topics in human-centred design; knowledge media technologies; social implications of knowledge media; examples and applications of knowledge media; and the emerging trends in knowledge media. The focus on human-centred design has also provided opportunities to collaborate with users within the broader community to help define information systems as being fundamentally social processes that are supported by information technologies.

As a faculty member, I have had the opportunity to apply my understanding of technology in an instructional context and witness first-hand the powerful impact that ICT has in shaping the educational environment. In this role, I have designed and implemented technology-related courses, such as the Internet and Society, History of Technology and Ethics, Technology and the Environment. Each of these experiences has
fortified my understanding of the historical and social elements of technology-related 
issues, as well as the dynamic role that technology has played in our development.

In conjunction with my role as an instructor, I have also focused on providing 
support to colleagues and students by becoming a Learning Management System (LMS) 
mentor at Centennial College and Sheridan Institute of Technology in Ontario, where I 
provide support to faculty on how to integrate ICT into their instructional practice. These 
positions have provided me with valuable insight into the challenges educators face when 
attempting to adopt new technologies into their pedagogy, as well as the perceptions they 
have about the changing nature of students and learning.

My role as an LMS mentor also helped me to see a greater need for support in the 
educational community on issues related to ICT use. This motivated me to develop S.O.L. 
Media, an educational consulting business focused on providing consulting services to 
academic institutions and educators on issues related to the integration of ICT. My work 
in this area has provided me with a dynamic set of opportunities, such as developing ICT 
workshops for faculty and integrative web solutions for academic departments. Recently, 
my services have extended to include the development of technology-related curriculum 
for institutions, such as the University of Ontario Institute of Technology and Sheridan 
Institute of Technology, where I have developed courses on technology leadership and 
the Integration of Information and Communication Technologies Into the Classroom. 
Work in this area has demonstrated the pervasive nature of ICT and illustrated the 
continuing role that it will have in education at all levels.

While technology has been a dominant focus in my academic and professional 
career, I have also developed a sincere belief in the need for awareness of the ethical
nature of ICT. This understanding stems from my involvement in academic and empirical work in the area of applied professional ethics. As a research assistant for the SSHRC funded study “The Cultivation of Ethical Knowledge Teaching,” I was exposed to the tensions that teachers experience when confronted by ethical dilemmas in their professional practice (Gajewski, Lennie, & Campbell, 2008; Lennie, Gajewski, & Campbell, 2009; Syed, Kieltyka, Lennie, & Campbell, 2007).

Conducting interviews with participants highlighted the perceptions teachers have of ethical dilemmas and the strategies they use to cope with them. This focus provides the foundation for examining the perceptions teachers have about the ethical nature of ICT as they play an integral role in fostering understanding of the moral implications of digital technologies.

My theoretical knowledge and practical experiences have provided me with what Strauss and Corbin (1990) refer to as the theoretical sensitivity necessary to undertake this study. Awareness of the subtleties that will arise from the data will provide deeper insight into the complex nature of the topic to be explored. This insight will help me identify with the experiences of the participants and reflect a holistic understanding of the meaning held within the data. In this way, I intend to bring the full extent of my experience and professional knowledge to this research study.

1.9 Overview of the Thesis

This thesis is organized into six chapters. The first chapter provides an introduction that sets the context for the study. It describes the background and purpose of the study and articulates the research problem. It also explores the significance of the study and identifies the key terms and limitations of the study.

Chapter two reviews current and prominent literature related to the research topic
and is divided into three main sections. The first section aims to define the character of ICT and explore the impact it has on social organizations and communication. Specific attention is given to the increased presence of ICT in schools and its impact on the classroom environment. The second section explores the ethical issues that have occurred as a result of, or in relation to, the use of ICT as they relate to schools. Focus will be given to both the academic and social problems that affect school communities. The third section provides an examination of the strategies and resources that educators use to respond to the ethical issues and conflicts that arise as a result of ICT use and consumption. The examination in this section will focus on the value of Internet and computer ethics, the development of acceptable use policies and the implementation of the media literacy curriculum.

Chapter three describes the qualitative research methods, research design, and instruments used in the study. Consideration is given to the value of qualitative methods for exploring social or human problems (Connelly & Clandinin, 1990; Glesne, 1999). The areas of data collection, organization and analysis are addressed with specific attention given to the process of inquiry undertaken in the study. Finally, the chapter identifies the ethical considerations involved in interviewing teacher participants.

Chapter four reports the key findings that emerge from the interviews conducted for the study. These findings are organized into four main categories of findings, including the examination of ethical issues that compromise the safety and well-being of those in the school community; the impact of ICT on academic integrity, ethical issues that challenge concepts of teacher professionalism; and consideration for the strategies, resources and supports used by teachers and schools in dealing with ICT based issues.
Each of these areas is explored in relation to the data collected within the study and aims to provide a descriptive account of participants’ responses.

Chapter five provides a summary of the findings of the study, drawing connections to the relevant literature on the ethical nature of ICT based issues and the moral work of teachers. This examination is placed within the context of the research questions and gives consideration to the salient ethical issues that have emerged as a result of, or in relation to, the use of ICT, the impact of these issues on the moral work of teachers and the moral significance of teacher responses to ICT based issues.

Chapter six explores the implications of the study and provides recommendations for future research related to the perceptions and experiences of teachers with ICT based issues, challenges and conflicts. Consideration is given to the implications of ICT based issues on teacher professionalism, digital ethics, digital citizenship and media literacy, and the significance of teachers’ responses to ICT based policy development.
Chapter Two: Literature Review

2.1 Introduction

The purpose of this review is to provide focus and context for the thesis research by examining some of the key issues and conflicts that exist as a result of, or in relation to the use of ICT. The review will situate my study within an examination of existing empirical research and theoretical scholarship related to ICT and give specific consideration to ICT based problems that occur within the context of the K-12 educational environment. It should be noted that the scope of research related to this field is vast and touches upon various disciplines. The review will focus primarily on the context of education as a lens for exploring the broader impact of ICT.

The review of literature is organized into three broad sections. The first section aims to examine the transformative nature of ICT, meaning the ways in which it changes people’s patterns of behaviour, and gives consideration to its impact on social organizations, such as schools. The second section explores the ethical nature of ICT based issues and the emerging field of digital ethics. This section highlights issues that have occurred as a result of, or in relation to, the use of ICT as they relate to schools. Focus will be given to both the academic and social problems that affect the well-being of individuals within the school community. The third section provides an examination of the strategies and resources that educators use to respond to ethical issues and conflicts that arise as a result of ICT use. The examination in this section will focus on the development of acceptable use policies and the implementation of the media literacy curriculum. The conceptual analysis of the literature will provide the theoretical foundation for the empirical work done within the study.
2.2 Nature of ICT and its Impact on School Communities

Developing a holistic understanding of the ubiquitous presence and transformative nature of ICT serves as the first step in appreciating the influence it has on social organization and behaviour. In short, it is important to acknowledge the degree of digital technology that has penetrated our everyday lives and the ways in which it has transformed or changed social patterns and behaviour. Literature in this domain is vast, extending into fields including, but not limited to, education, medicine, psychology, sociology and computer science. However, despite the diverse focus of this research, there appears to be a common conclusion that although our dependence on digital technologies is complete, our understanding of the impact they have is not (Cuban, 2001; Fischer, 2006; McLuhan, 1963; Postman, 2009; Rowland, 2006).

2.2.1 Emergence of digital culture

The significant role that ICT now plays in modern life can be observed in the daily habits of any individual living in the industrialized world. As of November 2010, over 93% of Canadian households (with at least three individuals) had access to the Internet and an increasing number of users are accessing ICT through mobile devices, such as laptop computers (64%) and wireless handheld devices (35%) (Statistics Canada, 2010). This has led to the potential for users to be always connected to ICT, regardless of what they are doing and where they are.

The emergence of the digital culture has led researchers to focus on the role that ICT plays in altering social behaviour. When researching the influence of ICT on Canadians, Sciadas (2006) noted the ability of technology to manifest changes in behavioural patterns, such as the way individuals communicate by using text based forms of communication like email and devoting large amounts of leisure time to playing video
games or “surfing” the Internet. Another intriguing example of this comes from the Mobile Youth Around the World Report (Nielsen, 2010), which noted that 60% of young mobile users load texting, mobile internet and social networking applications before they even get out of bed. Veenhof (2006) identifies this kind of change in behaviour as being a result of time displacement, where individuals replace time previously spent doing other things with time engaging in digital behaviours.

A key element of this shift is the timelessness of digital communication, which is often asynchronous in nature. As a result, communication via text, instant messaging and through social networks is free from the limitations of time and space, resulting in continuous participation from the user (Media Awareness Network, 2003). Consider, for example, that teens in North America send an average of 3,339 text messages a month, which equals approximately six for every hour that they are awake (Nielsen, 2010). Given that at least a portion of a child’s life is spent in school, there would appear to be only two explanations for this level of use. Either the amount of texting is actually concentrated to times when children are out of school, which would increase the average numbers of texts sent per hour, or they are texting during school, which research suggests is often the case (Greenhow, Robelia, & Hughes, 2010; Lenhart, Ling, Campbell, & Purcell, 2010).

The increased role that ICT plays in our everyday lives is a representation of its transformative nature and illustrates the ways in which technology has changed so much about our daily existence. Technological adoption is not additive; it is ecological, in that one change creates total change (Postman, 2009). The automobile provides a concrete example of this, as it changed the ways in which we transport things, such as food and
also restructured the ways in which communities are organized (i.e.: the suburbs). In this regard, the current structure and organization of our lives are not simply the combination of our lives plus the technologies that we use, but rather a new way of living that is completely changed each time we adopt a new medium. Fischer (2006) characterized this phenomenon as digital shock, a term used to describe the cultural consequences of changes brought on by the emergence of digital technologies. Whether this is understood through the lens of the relational perspective (Burbules & Callister, 2000) or characterized as digital shock, the ability of ICT to transform our lives serves as a primary motivation for examining the consequences of these changes.

2.2.2 Impact of digital culture on school communities

The wide scale adoption of ICT has had a direct impact on school communities because, at a fundamental level, schools are social environments where children develop an understanding of the world in which they live. As a result, educators are being called on by stakeholders at all levels of the school system, including policy makers, administrators, parents and students, to shed traditional thinking of technology as a means to an end and develop an understanding of the broader impact it is having on academics and school culture.

Research suggests that the emerging importance of ICT for everyday life has led to increasingly complex problems that cover a broad range of situations that occur both inside and outside of the school environment (Bugeja, 2008; Cuban, 2001; Rowland, 2006). Issues, such as cyber-violence, cyber-crime, exposure to violent or highly sexualized material, breaches of privacy, security violations and addictive online behaviours challenge the safety and well-being of children (Media Awareness Network,
These concerns are compounded by broader issues, such as the debate about the monetary value of an Internet originally intended to be free, known as net neutrality, unequal access to technology and the developing importance of technological literacy, which have become important considerations for schools.

A unique characteristic of ICT that generates concern is its ability to transcend physical boundaries. Issues such as cyber-bullying are more complex because they often fall outside of the domain of school authority (Johnson, 2003). A poignant example of this can be seen in the case of Megan Mier, a 13-year-old girl from Michigan who committed suicide after being a victim of cyber-bullying. This case is complicated further by the fact that the person responsible for the cyber-bullying was a parent of one of Megan’s classmates, who created a fake identity in the social networking site MySpace in order to bully the young girl. Cases such as this have become a central focus for schools because they redefine concepts of school violence and challenge schools to develop strategies to protect students beyond school grounds (Roher, 2007).

The ability of digital communication to transcend physical boundaries has also raised concerns for teachers, as they attempt to balance their personal use of technology with their professional obligations. The importance of this for Ontario teachers was highlighted in a 2011 Professional Advisory sent out by the Ontario College of Teachers, which stated, “Maintaining professional boundaries in all forms of communication, technology related or not, is vital to maintaining the public trust and appropriate professional relationships with students. Members must be aware of the numerous challenges and ramifications associated with the use of electronic communication and social media” (Ontario College of Teachers, 2011, p. 3).
The message of this advisory comes in response to situations that have occurred in both Canada and the United States, where teachers have used social media tools, such as Facebook, in ways that have been deemed to be professionally inappropriate. This includes situations where teachers have been dismissed for things, such as engaging in inappropriate communication with students (Bielski, 2011; Lidner, 2011), using Facebook as a medium for venting about their job (Heussner & Fahmy, 2010; Schaefer, 2011) or posting personal photos of themselves on social networks where they are engaging in behaviour that may not be deemed to be professionally appropriate (Moriarty, 2011).

While each of these situations may demonstrate questionable professional judgment, they also raise questions about the teachers’ right to privacy and the professional expectation that teachers serve as role models for children even when they are not in the classroom. Although it could be very easy to suggest that teachers avoid social networking to protect themselves from potential breaches of professionalism, there is a growing pressure for educators to appeal to the learning needs of children who have grown up in a digital world by adopting new strategies, like using Facebook or Twitter to facilitate student engagement (Burt, 2011; Prensky, 2005).

The multi-faceted nature of issues related to the use of social media is reflective of the overall complexity of ICT based issues that affect school communities. Issues such as cyber-bullying, breaches of privacy and the inappropriate use of ICT represent the beginning of a growing list of issues that challenge school communities.

2.2.3 Use of ICT for learning
There is an indelible connection between technological trends in society and the educational system. Both environments are naturally interdependent, as schools prepare children for life in the broader society in which they live (Katz & Denti, 1996). The emergence of the digital culture has been accompanied by the integration of digital technology as a medium for supporting learning.

According to the 2011 Horizon report, current trends in educational technology include a move to electronic books and digitized content, the use of mobile devices, cloud computing (where data is stored on servers), game-based learning and the implementation of virtual reality (Johnson, Smith, Willis, Levine, & Haywood, 2011) The dynamic nature of these changes is occurring with tremendous speed and, as noted by Burbules and Callister (2000), “New technologies will become, have already become, indispensable to the overall purpose of schooling, for better or for worse” (Burbules & Callister, 2000, p. 2). Amidst this integration, there is extensive academic debate that examines the presence of ICT in the classroom and questions the impact that it is having on students, teachers and the curriculum.

Generally speaking, perspectives on the use of ICT in education can be identified by three positions. The first position is characterized by an instrumental view of ICT, which is embraced by educators as a revolutionary tool that has the potential to support learning (Flanagin & Metzger, 2008; Hargadon, 2008; Reid, 2002; Yelland, 2002). The second position is characterized by the relational view of ICT, which is the focus of critical media theorists who are concerned about the impact that ICT has on teaching and learning. Individuals with this view admit the potential of ICT, but are concerned about the unintended consequences of its use (Burbules & Callister, 2000; Ellul, 1989; Fischer,
The third position is characterized by an opposition to the integration of ICT, which argues that not only does ICT do little to enhance learning, but it also has a negative impact on the educational environment (Bugeja, 2008; Cuban, 2001; Olson & Nordkvelle, 2005; Postman, 1993). While the characterization of these positions is not absolute or fixed, they illustrate the broad spectrum of opinion that has emerged about the use of ICT in schools.

These perspectives also demonstrate the philosophical difference between those who see ICT as a tool to be used to enhance learning and those who view it as something that changes what learning is. Burbules and Callister (2000) approach this issue from the relational perspective and warn that, “Adopting new technologies changes what we want to do, what we try to do, what we see it is to be possible to do” (Burbules & Callister, 2000, p. 38). Other scholars, such as Downes (2006) and Siemens (2006), call for a revised approach to understanding the purpose and nature of learning because of the emergence of digital culture.

One of the main motivations for ushering ICT into classrooms is the belief that it supports the goals of educational reform. Allan, Yuen, Law and Wong (2003) found that educators generally feel that educational technologies are an extension of the goals of educational reform and that they provide an ideal opportunity to explore a student-based approach to school curriculum. Studies echo this by looking at the ever-changing needs of students who have a desire to be engaged in learning through the use of ICT (Prensky, 2001; Wagner, 2005). Findings from these studies identify a need to connect with the “Net Generation,” children born after 1979 who have been surrounded by digital technology their entire lives (Tapscott, 2009), and focus on the ways that technology can
support the curriculum, enhance pedagogy and extend the quality of learning experiences. As desktops, laptops and projectors migrate into schools, it is obvious that, on the surface, the nature and function of classrooms are very different than they were 30 years ago.

In response to these changes, researchers are examining the potential for ICT to be used to enhance students' capacities for self-learning, problem-solving and information seeking (Loveless, 2003; Wallis & Steptoe, 2006). There are various research projects that are examining the potential of ICT to support student learning. Programs such as the Web-Based Inquiry Science Environment (Slotta, 2002), and Apple Classrooms of Tomorrow (Apple Computer Inc, 2012), suggest that technology in the classroom can significantly increase the potential for learning and engage students by providing meaningful and relevant learning experiences. Scholars, such as Pea (2006) and Slotta (2010), are committed to developing smart classrooms of the future that use smart boards, video technology and mobile devices to engage children in learning. Both of these programs is focused on providing evidence for the claim that ICT skills are necessary for success in the growing virtual world and are an integral part of the curriculum.

Despite the optimistic perspective supported by this research, there is also an opposing viewpoint that is critical of the integration of ICT. Cuban (2001) comments on the relationship between technological innovation and education reform by offering a critical perspective on the history of technology in schools and challenging the idealism associated with the adoption of new technologies (Levin & Wadmany, 2008). In his argument, he outlines three promises new technologies offer in response to the needs of schools and students. The promises are:
1. Make schools more efficient and productive than they currently are,
2. Transform teaching and learning into an engaging and active process connected to real life, and
3. Prepare the current generation of young people for the future workplace.

Cuban challenges the assumption that ICT has the capability to satisfy these goals and makes note of previous “revolutionary” technologies, such as the overhead projector, that failed to achieve these goals. He suggests these technological advances, and the novelty of their impact, go through a cycle that begins with lofty promises, high expectations and policy development but ultimately end with limited application in a classroom context. Scholars, such as Bugeja (2008) and Monke (2007), extend Cuban’s ideas by suggesting that ICT not only fails to satisfy the goals set out in the curriculum, but also serves as a distraction for students and is a detriment to the learning environment.

As the debate about technology and school reform continues, it is important to note that once computers and the Internet became widely available and affordable, educators had no control over their adoption as an essential component of modern-day existence. As children from the Net Generation enter schools, there is an expectation that their education reflects the patterns of their daily existence and helps prepare them for life in a digital world (Tapscott, 2009). Regardless of whether or not one takes an optimistic or pessimistic view on the use of ICT in schools, the consensus is that ICT is a reality with which educators must deal.

2.2.4 Teacher Beliefs about the Role of ICT
As a consequence of the growing emphasis being placed on ICT, teachers have been asked to change their understanding of pedagogy and integrate digital technologies into their practice (Allan, Yuen, Law, & Wong, 2003; Tapscott, 2009). Levin & Wadmany (2008) suggest, “Since the introduction of ICT in education, schools now face new social, cultural, and pedagogical phenomena, which challenge teachers in terms of their technical ability, knowledge and expertise” (p. 234).

Because teachers have a profound effect on the way educational technologies are adopted, researchers have focused on the perspectives that teachers have about their use. Empirical studies suggest that a teacher’s understanding of how technology works plays a key role in their willingness and ability to apply the technology in their practice (Foo, 2005). Hennessy (2005) suggests that on a pedagogical level, teachers express caution when using ICT and tend to emphasize the dangers of uncritical use. Kellar, Watters, and Shepherd (2007) found that teachers were also concerned about the unintended consequences of using ICT, particularly when there was a lack of understanding of how the technologies function. In this regard, teachers demonstrate concern and apprehension about the challenges and constraints of ICT initiatives and are highly skeptical about the integration of digital technologies.

Studies also suggest that teachers face obstacles even if they are technologically literate and have a desire to use ICT to support instructional strategies. Teachers express frustration over things like “technology overload” (Hardy, 1998; Preston, Cox, & Cox, 2000), a lack of access to hardware (Smerdon, Cronen, Lanahan, Anderson, Ianotti, & Angeles, 2000) and a lack of experience with digital technologies (Hope, 1998). As a
result, these factors serve as barriers to the effective use of educational technology (Sherry & Gibson, 2002; Zhao & Frank, 2003).

In addition to these barriers, Levin and Wadmany (2008) suggest that teachers are also generally limited in their application of digital technologies and tend to view them as a replacement for “older technologies.” Eves and Davis (2008) provide a clear example of this when they found teachers generally use presentation software, such as PowerPoint, as a replacement for overheads, despite the potential of the application to perform multimedia functions. This seemingly limited approach to using ICT is also reflective of the belief that the use of digital technologies are appropriate for some areas of the curriculum, such as those related to technical skills, as opposed to being used in an integrated way to affect the learning and teaching process (Tondeur, Braak, & Valcke, 2006).

Examining the perspectives that teachers have about the use of ICT reveals the complexity of the technological integration process. As teachers balance traditional approaches to schooling with the demands of the digital age, they encounter various issues that challenge their pedagogical beliefs and their understanding about the nature of schooling. This serves as an example of the ecological nature of technological change and highlights the fact that making such a profound shift in a well-established system is a difficult challenge. This is a challenge that will continue to require professional development, adequate training and preparation time, as well as a continued focus on the impact of technology on our humanity (Johnson, Smith, Willis, Levine, & Haywood, 2011).
2.3 Ethical Nature of ICT Based Issues

Despite the tendency to view technologies from an instrumental perspective or simply as a tool to be used for a specific purpose (Burbules & Callister, 2000), there is a growing understanding that issues related to ICT are ethical in nature because they affect the well-being of people and communities. Problems involving digital violence, Internet addiction, hyper-sexualization of youth and compromises in academic integrity represent a growing list of moral issues affecting schools. As such, it is important for educators to understand the moral nature of these challenges, which are influenced by many factors, including the global reach of communication technology, the emergence of the field of Internet and digital ethics as a way of understanding the moral landscape of cyberspace and the role that teachers play as moral models of responsible digital citizenship.

2.3.1 The global village

The advancement of information and communication technology has allowed billions of people to join what McLuhan (1963) referred to as the global village. People from all around the world now share a common space, as entire populations of developed and developing nations participate in the digital community (Moor, 1998). The result of the intersection of technology and humanity is that we are now “simultaneously living and participating in two worlds in a hybrid condition that makes our contemporary universe half real, half virtual – a strange social mix” (Fischer, 2006, p. 45). As a result, human interaction is occurring on a scale that has never been seen before and the increasing complexity of this communication is raising questions about the values to be emphasized in a digital world that has no borders.

In cyberspace, people communicate, engage in business, consume entertainment and are increasingly living out portions of their social and private lives in the digital
realm. The use of the Internet for communication between individuals and communities, gives rise to problems that are distinctly moral because they affect social and human values, such as health, opportunity, freedom, democracy, knowledge, privacy, security and self-fulfillment (Baird, Ramsower, & Rosenbaum, 2000; Bynam, 2011). As a consequence, cyberspace is an environment that is laden with ethical implications.

In a clear articulation of this, Martin and Martin (1990) wrote:

> Computers often alter relationships among people. Data communications can take place without any personal contact and at such high speed that the individual may not have time to consider the ramifications of a particular transmission. In addition, electronic information is more fragile than hard copy paper information. New ethical dilemmas with competing rights and values have arisen due to the advent of high-speed, worldwide transmission; low cost, mass storage; and multiple copy dissemination capabilities. Precepts regarding proprietary rights, residual rights, plagiarism, piracy, eavesdropping, privacy, and freedom of expression should be examined and perhaps redefined. Advancements in computer technology were made under the naïve assumption that efficiency was the main purpose or thrust, not moral values. Now the application of ethical principles to computer technology must take its proper place so that ethical dimensions are integrated into the concept of managing technology and the human relationships that accompany technological advancements. (p. 24)

The significance of this summary is still evident today even though it was written over twenty years ago. The insight regarding the effect of the speed of digital communication on people’s ability to make good decisions is illustrated by the proliferation of social media scandals, such as those involving Tiger Woods (texting) and Anthony Weiner (Twitter) (Emerson, 2011). Issues about competing rights and access to ICT have evolved into complex discussions around net neutrality (Bollman, 2010), the digital divide (Carvin, 2000; Epstein, Nisbet, & Gillespie, 2011) and the declaration of access to the Internet as a fundamental human right (United Nations Human Rights Council, 2011).
The personal nature of digital communication and the growth of the global village has led to an increased focus on the responsibility that people have to one another in the digital world. Terms such as “digital citizenship” and “media literacy” have become common in the vernacular of educators and technology leaders, as they attempt to articulate what it means to be a responsible participant in an increasingly technological world (Hollandsworth, Dowdy, & Donovan, 2011). However, as concepts about the responsible use of technology continue to develop, the proliferation of ICT has continued in the absence of specific ethical principles that guide its use.

As noted earlier by Martin and Martin (1990), technological advancements are made under the pretext of efficiency as a primary motivation, not the development of ethical and moral values. This has lead to what many scholars identify as a moral vacuum, where existing principles have become insufficient for dealing with the new moral issues created by digital technology (Edgar, 2003; Fischer, 2006; Moor, 1998). The continued development of technology is occurring with such speed that ethical issues related to its use will continue to change form, requiring that all members of the digital community reflect on the role they play in the moral culture of cyberspace.

**2.3.2 Digital ethics and the moral landscape of cyberspace**

In an attempt to cope with the gap between technological advancement and moral codes that guide people participating in digital spaces, scholars have engaged in the examination of ethical theories that can be applied to ICT. Within this field, responses to issues are informed by the combination of existing ethical frameworks and concepts of Internet and computer ethics, a field of ethics that attempts to provide moral guidance for the commercial and private use of the Internet (Langford, 2000). This has proven to be a
challenging endeavour because of the complex and dynamic nature of the Internet, which is a landscape characterized by change and instability.

Maner (1996) used traditional ethical theories to understand technology-based issues and considered computer ethics to be a distinct field that involved the examination of ethical problems that were aggravated, transformed or created by computer technology. Based on his investigation, he provided four categories of ethical issues that arise through the use of computers.

The first category involves situations where technology aggravates existing ethical problems, such as the proliferation of highly sexualized content. The second involves situations where technology transforms familiar ethical problems into unfamiliar problems, such as the concept of ownership and originality around malleable content. The third involves situations where technology has created new ethical problems that are unique to the digital realm, such as the use of artificial intelligence to supplement human decision-making. The fourth involves situations where a technology may alleviate existing moral choices, such as using computer analysis to gauge environmental issues, but place greater responsibility on decisions because we have a greater understanding of their moral implications. The value of these categories is that they help to articulate the dynamic nature of the consequences of ICT use, which is an important consideration for applying ethical judgment to technology based issues.

Moor (2000) defines computer ethics within a social context and identifies it as the “analysis of the nature and social impact of computer technology and the corresponding formulation and justification of policies for the ethical use of such technology” (p. 23). This definition focuses on the social elements of ICT, as well as the
development of policies to govern its use. His focus on the social impact of digital technology reflects the growing understanding of the human impact of technological development.

Scanlan (2000) echoes this focus by highlighting the personal nature of ICT based issues. Scanlan writes, “the ethical problems will not be in our computers they will be in ourselves… and they will be writ large, for those who are willing to see, in the programs of our machines” (p. 43). Scanlan’s position places emphasis on an understanding of the relationship between people and technology and that behind each machine, there is a person whose character is amplified by the enormity of cyberspace. Consequently, he recommends that people exercise moral deliberation in their use of technology.

The goal of developing practical guidelines to govern ICT use has been elusive. A key factor contributing to this is the malleable nature of digital information, which leads to issues that are intangible and difficult to define (Moor, 2000). An example of this can be found in the shifting definition of intellectual property and its connection to concepts of digital theft. Due to the ability of technology to represent and manipulate any piece of information, including pictures, voice, video and even the human persona, the concept of originality and ownership has changed. Consequently, the moral judgment of whether or not a person is guilty of stealing now requires a careful examination of what constitutes property in cyberspace (Edgar, 2003).

The dynamics involved in defining concepts such as ownership is exacerbated by the global appeal of ICT. The diversity of culture in the global village is truly vast with over 1.5 billion people having access to the Internet with an over 80% penetration rate in 22 countries (World Bank, 2011). As a result, finding consensus about what constitutes
responsible digital behaviour has proven to be a goal that is just out of reach. Consider as an example, the 2001 International Cybercrime Treaty put forth by the Council of Europe (Council of Europe, 2001), which has spent the past ten years under review and ratification until being dismissed by the UN in April 2010 (Ballard, 2011). This document is just one of many that demonstrate the challenge of balancing the competing interests of individuals, businesses and governments all over the world.

Langford (2000) responds to this challenge by emphasizing the importance of finding parallels between emerging ethical issues and responses to long-standing ethical problems. He noted, “however impressive the Internet may appear it can be argued that it is really just the latest of many aids that have evolved over millennia to aid human interaction” (p. 5). In response, he suggests that issues, such as software piracy, should be understood by combining existing legal concepts, such as copyright infringement, with virtues, such as honesty to determine morally responsible online behaviour. While it could be suggested that this is an understatement of the influence of ICT, it does highlight the interconnected nature of the virtual and physical worlds where issues of privacy, equity, identity and personal responsibility are a priority.

Although there remain differences in the interpretation of what constitutes digital ethics, there is a general understanding that we are in need of an ethical framework that helps us to maintain a desired quality of life in our digital participation. Our understanding of ICT must go beyond our material capabilities and examine its impact on our emotional and social development (Edgar, 2003). Ethics within cyberspace is not merely a theoretical construct, but result from the habits and behaviours that we develop in our use of technology. In essence, we are required to consider what Aristotle (Furley,
2003), referred to as the virtue of our character and understand that each individual has moral responsibility to consider not only what he or she would like to do in cyberspace, but also who they would like to be in cyberspace.

As technology evolves, it creates new choices and opportunities while, at the same time, changing the way that we make decisions (Baird, Ramsower, & Rosenbaum, 2000). The result is many of the moral issues that arise in relation to technology are uniquely untraceable or difficult to define. Fischer (2006) observes, “We are discovering a new world of shadows and conquests, where science and fiction, utopia and misery, liberty and alienation intersect” (p. 45). As a result, ICT based issues are in a constant state of flux, adding to their complexity. In this light, individuals are called to develop the critical and technological literacy to navigate through complex situations that have ethical implications. The question that comes next is, where does guidance for the development of this critical and technological literacy come from?

2.3.3 The moral nature of teaching

As schools serve as agents of socialization, they are in a unique position to influence the development of a student’s understanding of what constitutes responsible digital behaviour. At the centre of this influence are classroom teachers who act as important guides in the development of children. The understanding that teaching is a moral activity provides a foundation for understanding the ethical nature of ICT based issues that affect schools.

ICT issues and conflicts involve the well-being of all members of the school community and challenge existing concepts of right and wrong (Magid, 2010). Considering the scope and complexity of issues, such as identity theft, obsessive use of
technology and over exposure to commercial messaging, educators face an important realization about the dynamic nature of ICT based issues that extend into academic, as well as social spectrums.

At the heart of these issues is the understanding that teaching is inherently a moral endeavour, where teachers play a central role in establishing the moral character of their classroom. Scholarly literature and empirical research on the moral dimensions of teaching emphasize the role that ethics and morals play in teaching practice and the overall mission of schooling (Bergem, 1990; Buzzelli & Johnston, 2002; Carr, 2000; Jackson et al., 1993). Being in an elevated position of trust, teachers become moral role models for children, who develop an understanding about ethics and morality from their experiences in school (Carr, 2006; Campbell, 2003; Fenstermacher, 2001). The experiences that children have in schools form the foundation of their understanding about socially appropriate behaviour, including how to treat others, as they observe and interact with their teachers and their peers. As a result, the actions of educators hold a tremendous influence in the moral framework that a child adopts in understanding the ethical nature of the outside world (Campbell, 2003; Jackson et al., 1993).

Given the position of power that teachers have, it is essential that they possess a thoughtful understanding of how their decisions and actions will impact the children in their care. The ethical knowledge that a teacher possesses plays an important role in their ability to establish a moral culture within the classroom (Campbell, 2003). This is challenged regularly, as teachers are forced to navigate complex ethical situations on a daily basis and balance professional obligations, the needs of their students and the ideas of other members of the school community. In her study on the moral life of schools,
Campbell (2003) noted that morally significant events are a regular occurrence in a teachers’ professional life and classroom activities often involve questions of moral and ethical significance, whether the teacher is aware of them or not.

As teachers engage in their daily practice, they serve as moral models for children and, as such, have a direct impact on childrens’ understanding of what constitutes morally acceptable behaviour (Carr, 2000; Fenstermacher, 2001; Sanger & Osguthorpe, 2011). The importance of modeling in the moral work of teaching is also present in the role that teachers play in providing guidance for children in their online behaviours (James et al., 2009). The instruction of how to use technology is secondary to understanding the ethical implications of its use and just as an effective teacher will support students in developing their understanding of virtues, such as respect and honesty within physical environments, they must also demonstrate the application of these principles within digital contexts as well (Johnson, 2008). In this regard, the teacher plays a key role in a child’s understanding of the appropriate use of technology (Davis, Weigel, James, & Gardner, 2009). Consequently, the nature of the ICT based problems that teachers encounter and the way they respond to them has the potential to impact the development of morally responsible digital citizens.

2.5 Ethical Issues Affecting School Communities

As teachers attempt to negotiate questions about their role in guiding morally responsible digital behaviour, they are challenged by increasingly complex ethical problems that come as a result of, or in relation to, the use of ICT (Burbules & Callister, 2000). Much like other conflicts that affect the classroom, digital issues impact the moral culture of schools and have a fundamental impact on the well-being of students, teachers and the community.
These issues occur in both academic and social spectrums and cover a wide range of areas, including identity, privacy, ownership and authorship, credibility and civic participation (James et al., 2009). Academic issues, such as those related to intellectual property rights and equal access to technology, challenge principles of integrity and trust and agitate existing socio-economic inequalities, such as when one school has access to technologies that another school may not (Burbules & Callister, 2000; Prenksy, 2001). Social problems, such as cyber-bullying, the sexualization of youth and the impact of digital immersion on physical and mental health raise fundamental questions about the safety and well-being of children online. The combination of these issues highlights the fact that “changes in technologies are always accompanied by a host of other changes in social processes and patterns of activity” (Burbules & Callister, 2000, p. 7). Consequently, it is important to give consideration to the nature of these issues and the impact that they have.

2.5.1 Issues of Intellectual Property Rights

In classrooms around the country, students and teachers are relying more and more on digital technologies as tools for the creation and collection of information. Although this has created some unique opportunities in teaching and learning, it has also raised concerns about issues of academic dishonesty that have been augmented by ICT. According to Kizza (2009), academic dishonesty covers a broad range of ethical problems, including plagiarism, academic cheating and falsification of information. Although these issues are not new to educators, they are occurring with greater frequency
and are threatening the integrity of work at all academic levels (Auer & Krupar, 2001; Kizza, 2009; Oblinger, Groark, & Choa, 2001).

The issue of plagiarism is a good example of a long-standing practice that has become more prominent in recent years due to the malleability of information on the Internet (Burbules & Callister, 2000; Ladd, 2000). Ma, Tuner, and Wan (2006) found that peer culture, the pressure to achieve and a lack of understanding of the concept of plagiarism combined with websites that facilitate plagiarism all increase academic cheating amongst middle school students. Underwood and Szabo (2003) found that, at the secondary level, cheating is not only occurring more frequently, but students are using more sophisticated technological methods in their transgressions.

Occurrences of cyber-plagiarism are more common than other forms of plagiarism because of how easy it is to access and copy information that is in digital form (Flanagin & Metzger, 2008). This “copy and paste” approach is characteristic of research conducted by those in the Net Generation who prefer to utilize the convenient fluidity of information on the Internet. As a result, incidents of academic misconduct have increased significantly because of the access to information provided by digital mediums (Combes, 2005; Underwood & Szabo, 2003).

Empirical studies suggest students from the Net Generation have a different perspective of what constitutes plagiarism and will often choose information that is easily accessible as opposed to that which is useful (Burbules & Callister, 2000; Howard, 2007; Park, 2003). Marshall (2005) also found students generally have less respect for information they get from the Internet and are more likely to plagiarize from digital sources than they are from other sources. Lenhart, Rainie, Horrigan, Spooner and Packel
(2000) connect this willingness to copy information found online to the culture of the Net Generation and their views on issues like intellectual property and suggest that individuals who regularly participate in the illegal sharing of other types of media, such as music and videos, are unlikely to view academic information as being off limits.

While the discussion about the increase in plagiarism often leads to the conclusion that educators need to focus on teaching children how to do online research, there are other examples that suggest technology is actually changing the understanding that young people have about what cheating is. The proliferation of online paper mills, where students can purchase ready-made papers from an online repository and the use of mobile technologies serve as two examples of intentional breaches of academic integrity. In a study of Ontario secondary and post-secondary students, Hughes and McCabe (2006) found that 15% of high school students admitted to using paper mills to submit work for school and failed to identify this as cheating. In a report on the use of cell phones in schools, Saritzky and Connolly (2008) found that more than a third (35%) of teens with cell phones admitted to using them to cheat at least once and that 65% of respondents reported seeing or hearing about other people using their mobiles for the same purpose. In each of these studies, respondents demonstrated a belief that what they were doing was either a minor offence or did not constitute cheating at all because it involved helping a friend. This point raises questions about the deterioration of ethical sensitivity to issues of intellectual copyright when digital technology is involved.

The shift in perspective that students have about issues of cheating, plagiarism, and intellectual property is identified by Bugeja (2008) as a byproduct of a failure to educate future generations about the social element of the virtual world, where problems
require critical thinking and interpersonal intelligence. Phukam (2005) echoes this concern by suggesting that a compounding factor to the growth of unethical behaviour in the virtual world is that users are largely focused on how to use ICT as a tool to achieve an end, as opposed to understanding the impact of their actions. As a consequence, “ethics and other related issues are relegated to the distant background” (Phukam, 2005, p. 234).

Edgar (2003) points out that there is a responsibility to realize the social nature of ICT and understand that real people are the foundation of the virtual world. He says the responsibility is even greater for people in professions using computers because they need to “be aware of the moral issues computers raise and to be knowledgeable about how to find viable solutions for them” (p. 6). As schools begin to use online resources, such as Turnitin.com, a website that will automatically scan student work for plagiarism to catch those involved in violation of academic honesty, educators are being forced to give consideration to the emerging understanding that young people have about ownership of online material and the virtue of honesty in the digital behaviour.

2.5.2 Issues of accessibility and the digital divide

The need to prepare students to be aware of the ethical dimensions of the virtual world is motivated by the belief that technological literacy will play a key role in their future success (Media Awareness Network, 2001). Technological literacy is dependent on access to ICT and developed through experiences where students have the opportunity to work with a variety of digital mediums. However, access to ICT and the subsequent inequities it creates have become key issues that challenge the development of a sustainable digital culture. According to Burbules and Callister (2000), issues of access
should be analyzed based on four different levels, including technical access; skills, attitudes and dispositions of access; practical access; and issues of form and content as an issue of access.

Technical access involves the physical reality of integrating ICT into the infrastructure of social environments, such as schools. Within this level, funding, infrastructure and the speed of technological advancement become barriers to access. As schools struggle with the fiscal constraints of purchasing equipment, they also encounter the physical limitations of integrating 21st century technology into 20th century architecture (Butterman, 2011). The amount of time devoted to managing the fiscal and structural constraints of integrating ICT also contributes to impeding access because by the time many technologies are implemented into schools, they are already obsolete. These barriers highlight the point that, “The mania over getting ‘wired’ is a luxury built on top of many other luxuries that a significant number of people, nationally and worldwide, cannot even dream about” (Burbules & Callister, 2000, p. 22).

Compounding technical challenges are issues related to the skills and dispositions that people have in using ICT, as well as the issue of form and content of digital information. As Burbules and Callister (2000) observe, “It is not surprising that having machines does little good if people do not know how to use them” (p. 25). The development of skills and strategies for ICT use are varied and, at a fundamental level, require the willingness of the user to engage in a process of trial and error. In this regard, the orientation that people have to machines is influenced not only by their comfort level in using them, but also the disposition they have towards technology in general.
An individual’s disposition to adopting a new technology is also impacted by pace of change in form and content of the digital medium. The design of ICT is based on a process of iteration that changes so quickly that “a person not actively engaged on a regular basis just barely manages to get a sense of what is going on at about the time that the information becomes superseded” (Burbules & Callister, 2000, p. 26). This highlights the fact that changes in operating systems, software requirements and user interfaces involve a number of experience based conventions that are non intuitive. While many aspects of digital interfaces have become more accessible to new users, the highly specialized nature of digital technologies has resulted in a persistent gap between early and late adopters.

This gap may not have significance if it were not for the fact that technological literacy has become an important element in allowing an individual the opportunity to become a full participant in our society (Morse, 2004). Another key issue of access to developing technological literacy is having the time to engage in exploration of digital media, which is identified as an issue of practical access. This issue acknowledges the substantial amount of time that is required for successful adoption of technology, which is a luxury that not all people have. As noted, “someone working from home, raising children and managing a household experience a different structure of time and scheduling and may not have the time to devote to exploring the Internet, even if they have physical access to it” (Burbules & Callister, 2000, p. 25). As a result, even if an individual has the technical access and a desire to learn, the structure of his/her day may serve as a limitation on the amount of time that they can devote to technological adoption.
The existence of the accessibility issues noted above has also raised serious concerns that the use of ICT is widening existing divisions drawn along economic, social, and cultural lines. The separation between digital immigrants, individuals who must adapt to digital culture, and digital natives, individuals whose entire lives have been immersed in digital culture has been identified by scholars as the digital divide and represents fundamental challenges to the utopian ideal of using ICT to create social equality (Prenksy, 2001). Burbules and Callister (2000) stated, “Like illiteracies of other sorts, a lack of access to information and communications technologies such as the Internet will mean a lack of opportunities to acquire the skills and knowledge necessary to change that status” (p. 22).

Critical media theorists, such as Fischer (2006), look deeper into the digital divide and understand it not only as an indication of difference in familiarity and comfort with technology, but also as a representation of the inequality inherent in ICT adaption. Studies, such as those conducted by Brown, Higgins and Hartley (2001), as well as Clark and Gorski (2001), point to the digital divide as being a representation of cultural and ethnic divisions. In this regard, individuals from racial minorities have less access to technology, both in their schools as well as at home, perpetuating existing socio-economic divisions. What this highlights is as computers and multimedia become more important to the learning process, they also become barriers to students whose families lack the means to keep up with the pace of technological innovation (3TU Center for Ethics and Technology, 2006).

The issue of access to technology serves as a window into social concepts of equity and democracy. It is important to understand that, as noted by Morse (2004), the
digital divide is a multidimensional construct that is based on tangible and intangible elements of access. As a result, developing the moral awareness of how technologies impact principles of equity is a priority for teachers and students, as they engage in responsible digital citizenship.

2.5.3 Cyber-bullying

Cyber-bullying has become a global social phenomenon that has evolved out of the use of ICT for interpersonal communication (Kowalski, Limber, & Agatston, 2008). It has become a primary concern for school communities because of its potentially devastating effects on the social, psychological and emotional well-being of children. Although it is closely connected to other types of bullying, the key distinction is it takes place in the virtual world, away from the eyes of teachers, making it difficult to detect in schools and nearly impossible to monitor off school property.

Cyber-bullying is bullying that occurs through an electronic medium, such as a computer or cell phone and involves the participation of perpetrators, targets and bystanders (Media Awareness Network, 2005). It can take many different forms and is largely a byproduct of the social nature of digital mediums. Email, blogs, text messaging and instant messaging have become normal methods of communication for children and adults of the Net Generation. The emergence of social networks, such as Facebook and MySpace has increased the broad range of relationships that children can have, but has also provided a new and powerful platform from which to target peers (Be Web Aware, 2010).

Statistics on cyber violence show a disturbing trend that indicates cyber-bullying and other forms of online harassment are occurring with alarming frequency. The Young
Canadians in a Wired World Report (YCWW) found that 34% of children in grades 7-11 report being bullied online, often by those within their peer group (Media Awareness Network, 2005). The Pew Report on Cyber-bullying and Online Teens (2009) also found that about one third (32%) of all teenagers who use the Internet have been targets of a range of annoying and potentially menacing online activities, such as receiving threatening messages; having private emails or text messages forwarded without consent; having an embarrassing picture posted without permission; or having rumors about them spread online (Lenhart, 2009).

Empirical studies suggest that cyber-bullying, like all forms of bullying, can have a profound impact on a child’s self-concept and self-esteem. Online harassment is a form of violent expression and although physical force does not occur online, victims can, and do, perceive online threats as real (Shariff, 2009). This can affect not only a child’s self-confidence, but also their feelings of safety and security (Cassidy, Jackson, & Brown, 2009). This is highlighted by cases such as those involving Megan Meier and Dawn Marie Wesley, two teenagers who committed suicide after being the victims of persistent cyber-bullying attacks. Cases of this kind serve as a dark representation of the negative impact that cyber-bullying can have on the psychological and emotional well-being of children.

Studies also suggest that the pervasiveness of cyber-bullying is not limited to the targeting of marginalized groups or students, as is the case with other forms of bullying. Cyber-bullying is more likely to happen to the average student because it occurs within friendship groups and can be misunderstood as teasing (Cassidy, Jackson, & Brown, 2009). This highlights one of the areas of concern about the impoverished nature of
digital communication, where it is difficult to see the impact of one’s actions on another person. As Willard (2002) writes, “When people use technology, there is a lack of tangible feedback about the consequences of actions on others” (p. 5). In this regard, children demonstrate a greater tendency to engage in aggressive discourse with each other in online communication, which raises general concerns about the nature of interaction between children in online spaces.

Research also suggests that students are not the only ones who have become the victims of digital attacks. In its 2007 poll on the state of the teaching profession, the Ontario College of Teachers found 84% of respondents reporting having been targets of cyber-bullying by their students (Schriever, 2007). This trend is also reflected in the increase in recent legal cases where students or parents have used websites or social media to attack teachers and administrators (Broster & Brien, 2010). Although Canadian case law involving attacks against teachers and administrators is small compared to that in the United States, there are growing concerns about the use of online tools for the defamation of members of the school community.

By nature, cyber-bullying is fundamentally different from traditional bullying because it transcends the limitations of time and space and can evolve into a relentless attack on an individual. There is no escape for the victim, as the traditional boundaries of the schoolyard do not exist in the virtual world. Perpetrators can send emails or instant messages containing insults or threats directly to a person or use social media platforms to spread hateful comments about a person. While some of these threats can be mitigated through filters or privacy settings, cyber-bullying still poses unique challenges for schools, as they struggle to address the issue of cyber-bullying among students, especially
when it occurs outside of school. When real-world bullying occurs in a schoolyard or classroom, teachers are often able to intervene, but online bullying takes place off the radar screen of adults, making it difficult to detect in schools and impossible to monitor off school property (Media Awareness Network, 2005).

The emergence of mobile technologies complicates the matter even further and extends the reach of the cyber bully to also include instant email and text messaging with mobile devices such as cell phones. The use of cell phones is challenging the ability of adults to monitor and guide children because, unlike a computer placed in a public area of a home, school or library, mobiles are personal, private, connected and always accessible. Students tend to keep their phones turned on at all times, meaning that bullies can harass victims at school or even in their own bedrooms (Lenhart, 2007). Built-in digital cameras in cell phones add a new dimension to the problem, as cyber-bullying goes beyond the power of words to include pictures and videos of students. What makes this type of bullying so damaging is that it is immediate and pervasive and once it goes “viral” there is no way to take back the impact.

A key element contributing to the increase in scope and complexity of cyber-bullying is anonymity, where the perpetrator can initiate bullying behaviour under a fake or false identity. As Brown, Jackson and Cassidy (2006) point out, youth may adopt or hide behind avatars, different identities and unique personalities to engage in online activities they may not normally assume in face-to-face encounters. This provides a sense of invisibility that allows students to write things online that they would never say in person because they feel removed from their own actions and from the person at the
receiving end. This is highlighted in the Media Awareness Network Report on Young Canadians in a Wired World (YCWW) 2001, where a participant noted:

[With] the Internet, you can really get away with a lot more because I do not think a lot of people would have enough confidence to walk up to someone and be like, “I hate you, you're ugly.” But over the Internet you do not really see their face or they do not see yours and you do not have to look in their eyes and see they are hurt. (p. 2)

This comment reflects the impact that an absence of visual and auditory feedback can have in fueling hurtful behaviour. Digital technology can affect students’ ethical behaviour because they are not fully aware of the impact of their actions on others (Willard, 2002). This lack of feedback reduces feelings of empathy or remorse.

Cyber-bullying raises fundamental questions about the ethical use of ICT and its impact on social, emotional and psychological well-being of members of the school community. It also raises concerns about the ways in which digital technologies impact the development of moral intelligence and ethical awareness. Given this challenge, schools have a responsibility “to adapt to a rapidly evolving technological society, address emerging challenges, and guide children to become civic-minded individuals” (Shariff & Johnny, 2007, p. 42).

2.5.4 Issues related to privacy and the protection of children

Concerns about privacy have arisen out of the growing disclosure of personal and private information that individuals place on the Internet. As the Internet serves as a primary medium for communication, it has become saturated with information that is highly personal and private. However, the emergence of behaviours described in this section, such as data mining, phishing and stalking, have been perpetuated by the
technological affordances of the Internet and raise concerns about the protection that
individuals have from online manipulation, identity theft and surveillance.

At a fundamental level, the issue of privacy represents the violation of trust that
an individual has about the security of digital communication. This violation can occur in
many forms, either criminal or legitimate in nature, and ultimately affects an individual’s
concept of safety. As noted by Edgar (2003), the right to privacy is connected to the
concept of ownership and “the right to one’s own, if valid, can be interpreted to include
one’s thoughts and actions. Thus one would seem to have the right to protect those
thoughts and actions against unwanted intrusions: for just as no one should violate
someone else’s body, no one should violate someone else’s thoughts or actions” (p. 254).
In this regard, the violation of one’s privacy affects concepts of trust, respect and
confidentiality, which are essential components of positive human relations.

Statistics indicate that the intentional breach of privacy for the purpose of
collecting personal information is occurring with alarming frequency. One example of
this can be found in the practice of phishing, which involves a process by which sensitive
information, such as usernames and passwords, are acquired by individuals who pretend
to be as a trustworthy entity in an electronic communication, such as an email or instant
message (Department of Public Safety Canada, 2009). According to a report on phishing
by the Minister of Public Safety (2006), one out of every three Canadians have reported
receiving an email from a company seeking personal or financial information.
Additionally, the Anti-Phishing Work Group reported from January 1, 2006 to June 30,
2006, there were a total of 157,477 unique reports of phishing attempts sent to
individuals. These types of practices represent not only a lack of respect for people’s
privacy, but also the intentional use of ICT to cause damage or harm, which is an alarming application of technological capability.

While phishing attempts are understood to be criminal in nature, there are other examples of invasions of privacy that are considered to be legitimate business practices. One example of this is the collection of personal information by corporations that monitor online behaviour for the purpose of marketing. This practice, known broadly as data mining (Shoemaker, 2010), is conducted under the pretense of applications, such as security, marketing and advertising. The belief that data mining is a legitimate practice comes from the fact the data that is mined comes from public data sources. This gives rise to questions about whether information that is posted on the Internet or provided through digital channels is public or private in nature.

Despite the perceived legitimacy of these practices, scholars who identify data mining as an issue of privacy place greater focus on what is done with the information that is mined, as opposed to the fact that it is mined in the first place. The collection of information by governments and corporations is often used for the purpose of persuasion and manipulation (Edgar, 2003). These techniques have grown in sophistication to the point where “advertisers, marketing agents, pollsters and politicians have become increasingly proficient at predicting the preferences of people before they have even considered the choices themselves” (Burbules & Callister, 2000, p. 130).

This has been a key consideration when examining issues of privacy related to the use of ICT by children. As noted by the YCWW study (Media Awareness Network, 2005) children are more likely to divulge personally identifiable information, such as their name, age and address, when visiting commercial sites. This raises concerns about
the awareness that children have about divulging personal information over the Internet. Almost one third of young people say they would give their real name and address to sign up for a free email account or to create an online profile on a site like MSN. Additionally, 19% of children would give this information to enter an online contest (Media Awareness Network, 2005). Once this personal information is provided, advanced computer processing allows businesses to track children’s online behaviour and to manipulate the content that children receive to ensure brand loyalty.

Studies indicate that the use of hypermedia, online characters and avatars are common marketing techniques that companies use to target children as young as four, in an attempt to manipulate their consumption patterns (Bucy, Kim, & Park, 2011). This leads to what scholars believe is not only the development of materialistic values in children, but also a development of understanding one’s identity through the purchase of consumer goods (Clay, 2000; Dahl, Eagle, & Baez, 2009) As a consequence, the willingness of companies to use the information that children may knowingly or unknowingly provide makes children more vulnerable to the persuasion of consumer culture and may affect their psychological and social well-being.

The impact of these privacy violations is not lost on children. As revealed by the YCWW (2005) study, 66% of children say they would like to learn how to protect their privacy while they are on the Internet. Some children indicate an understanding of the importance of maintaining their personal information online; however, studies suggest that this is context specific. For example, the YCWW (2005) study also found that only 7% of students would reveal their name and address in a chat room or in a profile on a dating site, while within the same sample one-third of children would give their email
address in a chat room. This suggests a contextual understanding of the implied privacy of different online environments and a misunderstanding of the technological sophistication involved in data mining by commercialized sites.

The growing concerns about privacy is reflective of Postman’s (2009) concept of the Faustian bargain of technology, which states that although technology may provide individuals with a specific advantage it also takes something away from them. In this case, ICT has opened up numerous opportunities for the collection of information and global communication but has deteriorated concepts of privacy and identity. This raises questions about the vulnerability of children who may participate in an online world without fully understanding the impact of the messages they are being exposed to.

### 2.5.5 Youth and hyper-sexualization

Consideration of the content that children are exposed to has also raised concerns about the impact that sexualized content has on child development. The proliferation and availability of highly sexualized material on the Internet, and the presence of sexual predators who use the Internet for sexual solicitation and child pornography are important issues that challenge the health and well-being of children.

One of the most prevalent areas of concern about the well-being of children in cyberspace is the pervasive presence of highly sexualized material on the Internet. It is well understood that pornography was a catalyst for the development of the Internet, and studies suggest that it remains one of the most widely used applications of digital technology (Roekel, Bell, & Ezell, 2007). Statistics from the Internet Watch Foundation Annual Report (2010) and the Internet Filter Review (Ropelato, 2005) help to provide a
context for the extent of pornography on the Internet and the degree to which children
have been exposed. The reports states:

- As of 2007 there were over 1.3 million pornographic websites, translating into
  over 260 million pages of content. (Ropelato, 2005)
- 9 of 10 children aged between the ages of 8 and 16 have viewed pornography
  on the Internet, in most cases unintentionally (Ropelato, 2005)
- Average age of first Internet exposure to pornography is 11 years old (Internet
  Watch Foundation, 2010)
- 1 in 7 children who use the Internet have been sexually solicited (Internet
  Watch Foundation, 2010)
- Child pornography was a $3 billion annual industry (Ropelato, 2005)

These trends highlight that, not only is sexually explicit material widely accessible to any
child that has an Internet connection, but also the messages inherent within the content
are more likely to impact a child’s understanding of sex and sexuality.

The saturation of sexual content is also not limited to the domain of pornography.
Researchers are finding disturbing trends about the sexual nature of mainstream media
sources that children are exposed to on a regular basis. According to the YCWW (2005)
study, almost one-third of children’s favourite Web sites incorporate material that is
highly sexualized. Two sites that appear in the top four most popular sites with students
in Grades 6 to 11 are Newgrounds and eBaumsworld. A search of content from
eBaumsworld reveals video links to stories such as “Trizza’s Sexy Summer Car Wash”
and “Hot Tennis Player Changes Underwear mid Match” (eBaum's World, 2011). In
Quebec, one of the most popular sites for girls in Grades 8 to 11 is
DoYouLookGood.com, where users as young as thirteen years old can post photos,
videos and information about themselves so others can vote on their looks (Media
Awareness Network, 2005). The alarming nature of these behavioural trends has
motivated a deeper examination of the impact that a highly sexualized environment such as the Internet has on child development.

Research suggests that there is a link between a child’s exposure to sexual content and their experiences with sex in the real world. Marshall (2000) found that early exposure (under fourteen years of age) to sexual content is related to greater involvement in deviant sexual practice, particularly rape. Eysenck (1984) also found that the habitual consumption of pornography often results in a diminished satisfaction with mild forms of pornography and a correspondingly strong desire for more deviant and violent material. Consequently, “the sexualization of children may not only reflect sexist attitudes, such as societal tolerance of sexual violence and the exploitation of girls and women but may also contribute to these phenomena” (American Psychological Association, 2007, p. 3).

The exposure to sexually explicit materials including pornography is also understood to have an impact on a child’s understanding of sexuality and sexual activity. As children become more and more exposed to soft-core pornography and explicit sexual images, they may develop a distorted understanding that sex without responsibility is acceptable and desirable (Fisher & Barak, 2001; Hughes, 2001). Photographs, videos, magazines, virtual games, and Internet pornography that depict rape and the dehumanization of females in sexual scenes constitute powerful but deforming tools of sex education (Kearney & Pivec, 2007). As a result, the subliminal messages about sex and sexuality communicated through digital mediums can have a strong impact on a child’s social and emotional development.

This is of particular concern considering that many children and teens now rely on the Internet as a primary resource for sexual education. In a study of 200 teens from
Ontario schools, Kumar (2011) found that 40% of teens felt that the Internet is more useful than parents or sexual education courses for providing information about sex. The study also indicates that the exposure to information on the Internet did not necessarily translate into an accurate understanding of issues related to sex and sexuality. For example, 40% of the participants did not think it was dangerous to smoke while pregnant and 27% thought it was possible to become pregnant from oral sex. Although the study represents a small sample of Canadian teens, it raises questions about the influence that the Internet is having on children’s ability to develop a healthy understanding of sex and sexuality.

The emergence of Sexting as a social phenomenon is a prime example of a child’s inability to decode the powerful messages of sexual liberty expressed by digital mediums. Sexting involves the creating, sharing and forwarding of sexually suggestive nude or nearly nude images by minor teens and has become a primary concern for parents, educators and advocates who question the role of cell phones in the sexual lives of teens and young adults (Lenhart, 2009). In particular, press coverage and policy discussions have focused on how teens are using or misusing cell phones as part of their sexual interactions and explorations both inside and outside of schools.

According to the Pew Research Center’s Internet & American Life Project (2009), 4% of cell-owning teens (ages 12-17) reported sending sexually suggestive nude or nearly nude images or videos of themselves to someone else via text messaging and 15% say they have received such images of someone they know via text message (Lenhart, 2009). The nature of these exchanges can be characterized by three main scenarios:

1. Exchange of images solely between two romantic partners,
2. Exchanges between partners that are shared with others outside the relationship, and

3. Exchanges between people who are not yet in a relationship, but where at least one person hopes to be.

In part, these scenarios reflect the desire for risk-taking and sexual exploration during the teenage years, however the impact is compounded by the affordances of mobile technologies. As Lenhart writes, “Teenagers have always grappled with issues around sex and relationships, but their coming-of-age mistakes and transgressions have never been so easily transmitted and archived for others to see” (p. 2).

Research suggests that children who are intentionally or unintentionally using technology for communicating sexual messages or visiting websites that have sexual content are also more likely to experience sexual solicitation and harassment (Media Awareness Network, 2005). This is a salient concern when considering that the Internet is a tool for pedophiles and sexual predators who engage in sexually explicit conversations with children, and seek victims in chat rooms. Online predators use the Internet as a tool for developing a relationship with a child that is sexual in nature and focus on using online communication as a gateway for physical contact (Marcum, 2007). In this regard, the Internet provides pedophiles with an avenue to perpetuate their sexual fantasies about children from the comfort and safety of their own homes.

The realization of the highly sexualized nature of the online world has lead many scholars, parents and social organizations to focus on ways to protect children and monitor online use. This has proven to be a significant challenge given the global proliferation of sexual content and the personal nature of children’s online
communication. However, the impact of these experiences on the socio-emotional, physical and psychological development of children serves as the primary motivation for developing critical skills for decoding the implicit and explicit messages of digital mediums.

2.5.6 Impact of digital immersion on mental and physical health

As children from the Net Generation immerse themselves in digital culture, there are concerns about the impact that living life in front of a screen is having on children’s mental and physical health. While research in this area does not attempt to establish a causal relationship between media consumption and health, it highlights some emerging patterns that suggest there is a correlation between immersion in digital culture and some psychological and physiological problems.

One of the most controversial social issues connected with the use of digital mediums is their impact on psychological health and patterns of obsession. The term Internet Addiction has emerged out of research that analyzes compulsive and impulsive behaviours associated with the use of digital technologies such as excessive ICT use that is associated with a loss of sense of time, feelings of tension or anger during periods of withdrawal and changes in personal behaviour such as social isolation, deception and fatigue (Block, 2008; Christakis & Moreno, 2009).

What makes the issue controversial is that many researchers and psychologists do not agree about classifying the compulsive use of digital technologies as a disorder. Part of the hesitation about using the term "addiction" to describe excessive use of the Internet comes from the fact that it does not entail physical symptoms, however researchers are increasingly referring to excessive Internet use as a “behavioural addiction” or
“behavioural obsession”, which is defined as losing the ability to stop going online to the point where it impacts on other areas of your life – including relationships, emotions, social life, school, and so on (Be Web Aware, 2010).

One of the unique characteristics of the Internet is that it is a socially connecting device that is socially isolating at the same time (DeAngelis, 2000). Addictive behaviours based on Internet activities can include compulsive downloading, shopping, gaming and accessing of pornography. Loss of control is just one indication of the potency of the psychoactive nature of the Internet. Other signs include time distortion, accelerated intimacy and decreased inhibition (Yellowlees, 2007). Studies also suggest that incidents of online addiction are symptomatic of deeper psychological issues, such as depression or social phobia, suffered by the individual and that the Internet serves as an escape from both underlying problems (Yen, Ko, Yen, Wu, & Yang, 2007). Consequently, there is a general understanding that technological addictions are not addictions to digital mediums, but rather serve as a pacifier to cope with deeper social and emotional issues.

One of the main areas where children and teenagers demonstrate addictive behaviours is in the realm of online gaming. Studies show that 92% of children under age 18 play online games regularly and that about 8.5 percent of 8-to-18-year-old gamers can be considered pathologically addicted (Media Research Lab Iowa State University, 2008). Increasingly, children are spending large amounts of time participating in MMORPG (Massively multiplayer online role-playing game), which lend themselves particularly well to excessive use because they have no end and there is always someone available to play with (Khan, 2007). In addition, role-playing games also contain elements of social responsibility where players are often members of groups, which mean they need to stay
engaged so everyone in the group can succeed (Be Web Aware, 2010). As a result, children who engage in excessive online gaming demonstrate dependence-like behaviors such as preoccupation and a disruption in their family/school schools lives (Khan, 2007).

In the classroom, teachers are being challenged by the behavioral changes of children who engage in an immersion in the digital world. One of the most prevalent issues facing educators is the increase in incidents of violence and aggression from children who have been exposed to violent video games. Anderson and Bushman (2001) noted children who are exposed to violent video games are more likely to show aggression towards their peers, and physiological arousal and aggression-related thoughts and feelings. Empirical studies also suggest that participation in violent video games causes, along with a decrease in parental involvement in this area of children’s lives, can cause a desensitization to real life violence and impairs a child’s ability to develop empathy (Carnagey, Anderson, & Bushman, 2007). In a study of six hundred middle school students, Gentile, Lynch, Linder, and Walsh (2004) documented an increase in incidents of hostility, arguments with teachers, and physical fights among children who were regularly exposed to video game violence. The impact of this on the classroom environment cannot be understated as teachers are being confronted by emotional byproducts of digital immersion.

The amount of time that children spend engaged in digital activities has also raised concerns about the impact that media consumption has on physical health. Aside from recent attempts by companies such as Nintendo and X-Box to create gaming platforms that require the user to move, most online activities require the individual to
maintain inactive physical positions for long periods of time. This has lead researchers to investigate the impact that this sedentary lifestyle is having on physical well-being.

The sedentary lifestyle associated with digital culture and the consumption of foods that are high in total energy and fat content are factors that are associated with obesity, cardiovascular disease, type 2 diabetes, inadequate bone mineralization and poor mental stimulation (Canadian Paediatric Society, 2002). According to the Kaiser Family Foundation (2010), children between the ages of 8-18 consume an average of seven hours of media per day and because much of this time is devoted to “media multi-tasking” they are able to pack ten hours of media content into that time. This excessive consumption of media has been associated with obesity development, increased energy consumption, reduced energy expenditure, negative body image development, and reduced concern with the concept of self-care (Kaiser Foundation, 2004; Wadsworth & Thompson, 2005).

One of the strongest connections between the consumption of media and childhood obesity is the impact that online and television advertising has on levels of inactivity and food selection. Studies from many countries, including Canada, have indicated that food is one most heavily advertised product category and that the majority of advertised food products are high in fat, salt, and/or sugar (Chamberlain, Wang, and Robinson, 2006; Wadsworth & Thompson, 2005). Chamberlain, Wang, & Robinson (2006) observed that children who were exposed to advertising were more likely to request foods and drinks that they had seen advertised in various media forms. Results of this kind have lead researchers to develop a simple equation for understanding the relationship between digital immersion and obesity, which is the more time children
spend in front of screens, the more they are exposed to advertising that encourages unhealthy eating habits.

In addition to the influence that media consumption has on food selection, it is also accompanied by levels of physical inactivity that are associated with various health risks. The relationship between screen time and physical inactivity is well documented and indicates that children who spend more time in front of a screen time tend to exhibit obesity, low fitness levels, and lower levels of self-efficacy for physical activity (Activity Healthy Kids Canada, 2008; Bral-Bredenbeck, et al., 2009). The impact of this relationship becomes even more pronounced in adolescence, which correlates with an increase in digital engagement and serves as a critical period of development that often determines lifestyle behaviours (Nunez-Smith, Emanuel, & Gross, 2008). The development of an inactive lifestyle as a result of media consumption is a complex social problem that requires further empirical investigation.

The potential impact of digital immersion and Internet addiction on the psychological and physiological well-being of children is an important consideration for all members of the school community. The consequences of children spending more time in front of a screen affect educators and parents equally. Consequently, it is important for educators and other members of the school community to take a unified approach to supporting children in the development of media literacy skills they can use to have a balanced approach to technology use.

2.6 Resources and Supports for Dealing with ICT Based Issues and Conflicts in Schools

As ICT use grows extensively and intensively within schools, there is an increasing amount of pressure from parents, teachers, and other stakeholders to respond
to incidents of inappropriate use that jeopardize the safety of the school environment (Dill, 2003; Kafai, Nixon, & Burnam, 2007). Generally speaking, responses from schools have come in both reactive and preventative forms and include the development of acceptable use policies intended to respond to incidents when they occur, and the deployment of the media literacy curriculum, which aims to prevent inappropriate use by educating children about digital responsibility (Ontario Ministry of Education, 1995).

2.6.1 Policing ICT use: development of acceptable use policies

The development of acceptable use policies serves as a reactionary attempt to cope with the abuse of technologies both inside and outside of the school. This approach has created a debate around the role that schools must play in policing inappropriate activity and the effectiveness of such policies.

Supporters of acceptable use policies emphasize the need for a clear course of action for dealing with ICT issues. According to Adams (1986), established policies help to remove ambiguity concerning the security of computer equipment, the access and sharing of materials, and the availability of services. In a meta-analysis of acceptable use policies, Moyer (1990) notes policies often serve to demystify the role of technology in the educational curriculum, and, as a result, teachers, staff, students, and the general public gain the level of confidence necessary to use ICT in a responsible manner. Dill (2003) states that in addition to establishing guidelines for responsible use, written policies provide the reason and support for administrative action when dealing with specific issues that occur within the school. Critics of acceptable use policies suggest that using them as the sole method for dealing with ICT issues is an insufficient way to establish a culture of responsibility for ICT use. Scholars highlight the challenges that
arise in both the development and application of these policies and suggest the end result is the establishment of ambiguous guidelines inapplicable to practical circumstances (Boynton, 2004; Burnam & Kafai, 2001; Carpenter, 1996; 2000).

Carpenter (1996) draws attention to the challenges of policy development and suggests that acceptable use policies are generally drawn up after an incident has occurred and are reactive in nature. Using this model, policy developers establish criteria for dealing with specific behaviours that have already occurred while attempting to anticipate future problems. Consequently, the articulation of the acceptable use policies often carries a punitive tone understood by teachers and students as being a list of rules to follow as opposed to a guiding framework for decision-making.

Burnam and Kafai (2001) found that in many cases, teachers and students demonstrated misconceptions about the policies that existed within their own schools, and this misunderstanding actually led to inappropriate use. A reoccurring example that demonstrates this misunderstanding is the conflicting perspectives students and teachers have regarding the violation of intellectual property rights. Dill and Anderson (2003) found that despite policy guidelines regulating the copying and distribution of shared software programs, students and teachers remained uncertain about what constitutes a copyright infringement. In addition, the conflicting legal and ethical principles surrounding the broader issue of intellectual property rights created confusion about what a violation of copyright actually is. What is apparent in this example, as well as many others, is that, “while trying to implement ICT in their classroom curriculum, students and teachers must deal with highly debated, continually changing, and oftentimes
difficult to understand policies regulating student computer and Internet use” (Carpenter, 1996, p. 60).

Kafai, Nixon, and Burnam (2007) found that teachers also showed a lack of awareness regarding the guidelines in their school policies and tended to use personal judgments when deciding what constitutes inappropriate use. Taylor, Whang, and Tettegah (2006) also found that teachers and students did not share the same perspectives of issues relating to ICT use, which led to differing interpretations of written policies. Burnam and Kafai (2001) note the complexity of the teacher’s role in this process and suggest in order to offer students more than a set of policy regulations to follow, teachers need to be intimately familiar with school and board policies, as well as student beliefs.

On example that demonstrates the confusion around the implementation of policies targeted towards technology use is the development of personal electronic policies (PED) that schools have adopted to prohibit the use of cell phones in schools. As noted by Kiedrowski, Smale, and Gounko (2009), cell phone technology has introduced significant discipline problems into schools, from mere disturbance of peace and quiet in the classroom to enhanced opportunities to cheat. Camera phones in schools also threaten the privacy interests and emotional well-being of students and teachers alike (Turkle, 2008).

In response, many school boards such as the Dufferin Peel Catholic District School Board (DPCDSB) in Ontario, Canada have implemented PED policies that banned the use of cell phones during school hours and on school property (Dufferin Peel Catholic District School Board, 2008). However other school boards, such as the Toronto District School Board, have recently rescinded their ban on PED’s, citing the need to
adapt to the learning needs of children in the 21st century (CBC News, 2011). The result of the different application of policies between boards is a growing confusion on the part of teachers and students about whether or not cell phones should be allowed in schools, which has led to issues related to the enforcement of PED policies (Kiedrowski, Smale, & Gounko, 2009).

Overall, research suggests that the confusion around PED policies is indicative of the misunderstandings surrounding acceptable use policies amongst administrators, teachers, students and parents. Studies also suggest that the implementation of such policies is inconsistent and ineffective, leading educators to consider what alternatives there are for protecting students while at the same time teaching them about responsible technology use.

2.6.2 Preventing ICT Issues: Media Literacy Curriculum

Many scholars support a preventive approach to digital problems in order to promote a critical awareness of the influence of digital technologies (Bugeja, 2008; McLuhan, 1963; Postman 1993; Shariff & Johnny, 2007). The re-introduction of the media literacy curriculum is an example of this and represents a proactive measure that schools have taken to provide students with the skills necessary to think critically about their use of ICT. This is an important step in addressing the need to educate children about the interpersonal nature of ICT, as media literacy involves the “ability to access, analyze, evaluate and communicate messages in a wide variety of forms” (Hobbs, 1998), p. 16).

The Ontario Ministry of Education includes media literacy in its standard curriculum documents and focuses on exploring the impact and influence of mass media
and popular culture (Ontario Ministry of Education, 1995). At the elementary level, students are expected to:

1. Demonstrate an understanding of a variety of media texts;
2. Identify some media forms and explain how the conventions and techniques associated with them are used to create meaning;
3. Create a variety of media texts for different purposes and audiences, using appropriate forms, conventions, and techniques;
4. Reflect on and identify their strengths, areas for improvement, and the strategies they found most helpful in understanding and creating media texts.

At the secondary level, students are also provided with opportunities to take courses relating to a variety of technological fields in order to further their understanding of the impact and influence of ICT. Each of these curriculum areas has been heavily influenced by the growing role that ICT play in our lives and reflects the understanding that students require digital literacy skills in order to be successful.

Media literacy aims to address this by combining the development of traditional skill areas such as reading and writing, with an examination of current educational concerns such as equity, violence, life skills and anti-racism (Shepard, 2009). Studies such as those conducted by Yates (2011) and Pinkleton, Austin, Cohen, Yvonnes and Fitzgerald (2008) suggest that even with minimal media literacy training, children begin to develop different attitudes about content they are exposed to through media. Digital and media literacy competencies are not only needed to strengthen people's capacity for engaging with information but also for addressing the many potential risks associated with exposure to mass media, popular culture, and digital media (Hobbs, 2011).
Consequently, the ultimate goal of media literacy is to develop autonomy and a critical approach to experiences of popular culture (Burbules & Callister, 2000).

Research also suggests that, while teachers and librarians play a key role in supporting the development of media literacy skills, parents may be in a greater position to influence children’s online habits. This is connected to both the willingness of the parents to become involved in children’s online activities as well as their level of comfort with technology. Barron, Martin, Takeuchi, and Fithian (2009) found that children who have parents who are actively involved in their use of technology are more likely to exhibit caution and critical thinking when evaluating the safety and reliability of online sources. Tapscott (2009) echoes these findings and notes that parents play a key role in helping children deconstruct their online experiences. These findings highlight the importance of understanding family-based learning relationships when considering the development of technological literacy skills that can help to protect children in online spaces.

Placing a priority on the health and well-being of children in their digital participation has led to both prohibitive and preventative approaches noted above. While the effectiveness of these frameworks is still in question and requires more research, there is evidence to suggest that the development of technological and information literacy is the key piece in helping children to develop as responsible digital citizens. However, what is lacking in these initiatives is the ethical foundation that Campbell (2003) suggests is required to support teachers and students in their ability to make decisions when faced with morally complex dilemmas. As such, exploring how teachers perceive and cope
with these dilemmas provides a theoretical foundation for the development of ICT strategies that are informed by ethical awareness.

The literature relating to ICT based issues that contain ethical implications covers a wide spectrum of potential topics that are academic and non-academic in nature. While issues such as cyber-bullying and child exploitation receive considerable attention, they represent the beginning of a growing list of ICT based issues affecting schools such as academic dishonesty, issues of accessibility, media literacy, privacy rights and Internet addiction. The literature presented herein provides a context for understanding the relationship between the ethical nature of these problems and the moral work of teachers and highlights the impact that ICT is having on school communities. Furthermore, a review of the current strategies used for responding to these issues, in the form of acceptable use policies or a focus on media literacy, demonstrates the need for supporting school communities as they adapt to the increased presence of ICT.
Chapter Three: Methodology

This study explores the perspectives, experiences and professional practices of K-12 teachers as they respond to ethical issues that arise from, or are related, to ICT. These issues, problems and conflicts cover a broad range of situations occurring both inside and outside of the school and involve the use of ICT by students, teachers, administrators and others within the school community. This chapter elaborates on the research methods used to address this research problem. It includes an overview of the rationale for choosing a qualitative approach to the study and lays out the various stages included in research process. It also provides a description of the participant sample, process of data collection and analysis, and identifies the ethical considerations that governed the collection, analysis and reporting of data.

3.1 Research Design and Rationale

The method of inquiry for this study is qualitative in nature and attempts to provide a descriptive account of the technology based ethical issues experienced by K-12 teachers. The use of a qualitative approach was selected for its ability to facilitate a natural exploration of social or human problems (Connelly & Clandinin, 1990; Glesne, 1999), as well as to provide a deeper understanding of the multiple perspectives involved in the research focus (Creswell, 2007). In this regard, the methods have been used in the study help to gain insight into the individualized perspectives of the participants and provide a descriptive account of the ethical complexities of ICT based dilemmas.

Studies such as those conducted by Campbell (2003), Colnerud (1997), and Tirri and Husu (2002) demonstrate the value of qualitative research for examining moral and ethical issues within classroom contexts. In their study on the dilemmas that Early
Childhood Educators experience in balancing moral stances of care and responsibility with a teachers’ professional morality, Tirri and Husu (2002) selected a qualitative methodology in order to interpret the lived experiences, ethical conflicts and choices of their participants. Similarly, Colnerud (1997) and Campbell (2003) used a qualitative methodology to examine the ethical conflicts faced by teachers and provide a descriptive account of their daily experiences. Following from these examples is the understanding that qualitative research has the capability of exploring participant experience and identifying ways in which people experience the world (Connelly & Clandinin, 1990). As such, a qualitative methodology has been selected for the purpose of this study, which explores the experiences of K-12 teachers as they engage with complex ethical issues and problems related to technology use.

Recent research also suggests that qualitative approaches may help to gain a deeper understanding of the impact of technology on human relations. Wide scale studies, such as the GoodPlay project (MacArthur Foundation, 2011), illustrate the value of providing individuals with an opportunity to discuss the ethical issues related to digital media. Within this study, semi structured interviews were used to examine the ethical considerations inherent in the experiences of youth participating in virtual worlds. Additionally, studies such as those conducted by MacDonald (2008) and Croft (2011), demonstrate the value of using qualitative methods to examine the perceptions and attitudes that individuals have about participating in virtual worlds. In each of these studies, semi-structured interviews and qualitative analysis were used in order to explore the viewpoints that participants had on ICT based issues and identify competing viewpoints that impacted moral judgment of these issues. Consequently, it is understood
that qualitative methods also provide a unique avenue for exploring human insight into technology related issues.

The use of a qualitative approach also reflects the dynamic and social nature of ethical issues that occur within school communities. This approach is informed by extensive scholarship on teacher beliefs about and experiences with ethical issues impacting school communities (Buzzelli & Johnston, 2002; Fenstermacher, 2001; Hansen, 1993; Hansen, 1993; Jackson et al., 1993; Sergiovanni, 1992; Sockett, 2006; Stengel & Tom, 2006), and is guided by the assumption that education is “...considered to be a social process and school a lived experience” (Merriam, 1997, p. 4). As this study seeks to explore the multiple realities that are constructed socially by individuals (Merriam, 1997), and provide a greater understanding of teacher beliefs on issues relating to ICT use (Eisner, 1991), a qualitative methodology has been selected.

The design of this study is based on the idea of qualitative research being a process involving an active relationship between the researcher and the data. This design is informed by Seidel’s (1998), articulation of qualitative research as a methodology that is iterative, recursive and holographic wherein in the researcher engages in a process where information is collected, reflected on, and then reported; where points within the data serve to highlight elements for further consideration; and where each step contains elements of the entire process. Following these principles, the research for this study was collected over three phases.

The first phase of the research design involved the deployment of an online survey (Appendix A) that collected quantitative and qualitative data related to the experiences of teachers with ICT based issues. The purpose of the survey was twofold.
First, the survey was a mixed method instrument that included both open and close-ended questions that examined the experiences that participants had with ICT based issues. In this context, closed ended questions are defined as questions for which the response patterns or answer categories are provided by the researcher, and open ended questions are defined as those questions for which the response patterns or answer categories are provided by the respondent (Lewis-Beck, Bryman, & Liao, 2004).

The survey contained six closed ended questions, four of which dealt with participant demographics (years of teaching, grades taught, use of ICT in professional practice and perceived expertise with ICT) and two that asked participants to identify whether they had ever witnessed or experienced ICT based issues such as, cyber-bullying, sexting, software piracy, plagiarism, signs of Internet addiction, Internet pornography and online gambling. The survey also included three open ended questions that asked participants if they felt that ICT posed ethical issues, problems or conflicts for teachers, what those issues, problems or conflicts would be and to describe any situations where they had experienced an issue, problem or conflict involve ICT in their professional practice.

The rationale for the use of a mixed method instrument is that, as scholars suggest, a combination of approaches to data collection will result in the most accurate and complete depiction of the phenomenon under investigation within a population (Johnson & Christensen, 2004; Patton, 1990; Teddlie & Tashakkori, 2006). Consequently, the use of a mixed method survey provided data that helped to answer the first primary research question, which focused on the experiences teachers have with issues and conflicts involving ICT.
Second, the survey provided an instrument for identifying individuals who had experience with ICT based issues within their practice and were interested in participating in subsequent phases of the research study. As such, the second purpose of the survey was to serve as a tool for purposive sampling, which involves a non-random selection of groups or individuals, whose experiences can directly inform the research problem (Devers & Richard, 2000). The use of this sampling survey was also intended to engage a large community of potential participants who, due to their professional standing would help to fulfill the goals of the study (Creswell, 2007).

In order to achieve this, responses to the survey were filtered based on participants having at least two years of teaching experience, demonstrated experience with ICT based issues and an expressed interest in participating in subsequent phases of the study. Using this filter, participant responses were sorted based on their ability to inform the aims of the research study. The rationale for using a survey to identify potential participants is that purposive sampling is understood to enhance the understanding of the experiences of groups or individuals within a specific population, in this case teachers, and to identify information rich cases that provide the greatest insight into the research question (Miles & Huberman, 1994).

The second phase of the research process involved the use of semi-structured face-to-face (f2f) interview, which is identified by Patton (1990) as a standardized open-ended interview. According to Patton (1990), the use of a standardized open-ended interview involves a pre-determined phrasing and sequencing of interview questions that are asked in an open-ended format. This type of interview was selected as it increases the comparability of the responses, reduces interviewer effects and bias and facilitates
organization of data collected (Patton, 1987). Hoepfl (1997) also points out that the standardized open-ended interview is an appropriate tool for conducting research involving educational technology because it provides a framework for covering the dynamic nature of technology related subjects in a more systematic and comprehensive way and also allows the researcher the flexibility to probe and explore within these predetermined inquiry areas.

Using this rationale, the primary focus of the second phase of the research design was on further examination of the ICT based issues that participants had experienced within their practice. As noted, purposeful sampling was used to identify individuals who had identified in the survey from phase one that they had experienced ICT based issues within their practice and whom, identified an interest in participating in subsequent phases of the study. Consequently, the second phase of the research process focused on providing evidence for the first and second research questions of what experiences teachers have with issues and conflicts involving ICT, and what perspectives they have about the ethical nature of ICT based issues and conflicts.

The third phase of the research process involved a second standardized open-ended f2f interview with the same participants who participated in the second phase of the study. It is understood that using the same participants helps to provide consistency across the phases of the study and provides an opportunity for deeper examination of the experiences within the individual cases (Devers & Richard, 2000). Within these interviews, participants were asked to reflect further on their experiences discussed in the previous interview and give consideration to the resources and supports that they used to respond to the issues that they faced. In this regard, a primary focus of this third phase
was to collect data to answer the third research question, on what strategies and resources teachers use to cope with and resolve ethical issues and conflicts involving ICT.

A second component of the third phase of the research design was the use of vignettes within the standardized open-ended interviews. Poulou (2001) describes vignettes as short descriptions of hypothetical situations that contain information necessary for the respondents to base their judgments upon. Similarly, Huebner (1991) defines vignettes as written, fictitious materials including background, referral or observation information. Following from these descriptions, the vignettes used within this phase of the research design included eight vignettes involving ICT issues, which were adapted from a study by Burnam (2005) on moral reasoning relating to the use of computers and the Internet (Appendix D). In his study Burnam, (2005) used vignettes to explore the contextual, developmental and experiential influences on children’s moral reasoning when applied to eight scenarios that involved the inappropriate use of computers or the Internet. Following from this, this study used an adapted version of those scenarios, which are further described in the section on data collection, to provide insight into the second research question regarding the perspectives that teachers have about the ethical nature of ICT based issues.

The rationale for using vignettes within the context of a standardized open-ended interview was twofold. First, vignette analysis was chosen to provide participants with illustrative examples of ICT based problems that are ethical in nature and to elicit the perspectives on situations involving the inappropriate use of ICT by students, colleagues and members of the school community (Burnam & Kafai, 2001). Second, vignettes promote reflection and critical thinking; they can stimulate and arouse interest in a given
topic (Miles, 1990). In addition, the use of vignettes is intended to illicit a deeper understanding of the perspectives that participants have on a variety of situations involving ICT based issues and to “…make a truer assessment of what the respondent really believes” (Cohen, Manion, & Morrison, 2007, p. 357).

In response to the vignettes, participants were asked share their perspectives on what ethical issues, if any, were involved in the scenarios and to offer strategies for dealing with the situations. In order to achieve this, participants were asked to rank the scenarios according to their understanding of which scenarios involved the greatest breach of ethics. This discourse also provided a foundation for further discussion about participant perceptions of the ethical nature of ICT based issues, which facilitated the collection of data that directly related to the third research question.

Overall, the use of a three-phase approach to the research design was intended to reflect the progressive and iterative nature of the research methodology. Each phase of the research design provided a specific lens for exploring the research questions and provided opportunity for the researcher to engage in the reflexive process of identifying the primary themes that emerged from the study (Patton, 1990). Consequently, the design of the study helps to provide a descriptive account of the perceptions and experiences of the participants.

3.2 Sample and Participants

Potential participants for the study were recruited using an electronic invitation (Appendix B) that was sent out to graduates of a Canadian faculty of education. This invitation included a description of the study, identification of the risks and benefits of participation in the study, and a link to the aforementioned online survey distributed in
the first phase of the data collection. The invitation was distributed to any individual who had graduated with a Bachelor of Education degree, Master of Teaching degree, or was a practicing teacher who had taken additional qualification courses at the institution. Within this context, the online survey was used to solicit a wider spectrum of potential participants and provided a greater representation of the perspectives within the population (Glesne, 1999).

Forty-three participants responded to the online survey, and survey data were analyzed to identify individuals who were willing, and able to contribute to further examination of the research problem. In this regard, survey data were analyzed in order to facilitate purposeful sampling, which identified individuals who could “inform an understanding of the research problem” (Creswell, 2007, p. 125). This form of sampling was used to identify individuals who had identified in the survey that they had experience with ICT based issues within their teaching practice. Criteria for the selection of these participants were based on the following characteristics:

- Certified teacher with a minimum of two years of teaching experience in a K-12 environment,
- Identified experience with ICT based issues, conflict or challenges, and
- Identified interest in participating in subsequent phases of the research study,

The rationale for choosing participants who met these criteria is threefold. First, since the study investigated experiences relating to teaching practice, it was important for participants to have at least two years of teaching experience from which to draw. Second, as the study was interested in exploring the experiences and perspectives that teachers had with ICT based issues, it was important for participants to be able to describe and
discuss experiences they had that related to the research problem. Third, given that the
data collection was focused on providing a descriptive account of participant experiences,
it was important for individuals to be willing to participate in the subsequent phases of
the research. As such, only individuals who indicated a willingness to participate further
in the study were invited for the semi-structured interviews conducted in phase two and
three of the study.

Of the forty-three individuals who responded to the survey, ten participants were
selected based on the criteria above and invited to participate in interviews for the study.
These participants were contacted electronically (Appendix B) and asked to confirm their
interest in participating in the study as well as to arrange a date for the interview.
Participants were informed of the objectives of the study, methodologies, and their
potential time commitments prior to the commencement of the study.

3.3 Data Collection

Data collection for this study occurred over three stages that were intended to
elicit participant responses on ICT based issues that were experienced within their
teaching practice. Each stage is understood to be iterative, analytical and reflexive, and
provides and addresses a specific area of the research problem (figure 1). It is believed
that the iterative approach to data collection provided an opportunity for continued
refinement of the research focus as well as allowing time for developing a deeper
understanding of the participant experiences (Patton, 1990). Within this process, the
researcher assumes the position of an interpretive subject and provides critical reflection
on the data collected.
The first phase of the study involved the online survey (Appendix A) that was distributed to members of the university community who had subscribed to email list serve from the institution. The invitation to participate in the survey included an introduction to the study, a description of the purpose of the survey along with a hyperlink to the online survey. The survey was comprised of six parts and included 10 closed and 4 open-ended questions that explored participant demographics, participant use of ICT in their professional practice, issues experienced from this use and a broader focus on ethical issues related to ICT. A total of forty-three individuals completed the survey with thirteen indicating an interest in participating in the second phase of the study. Out of these thirteen, ten participants were selected on the basis of the criteria mentioned previously.

The second phase of the study involved an individual standardized open-ended f2f interviews (Appendix C) with ten participants selected from phase one of the study. The interviews were between 90 to 120 minutes in length and were audio recorded (digitally) and transcribed in their entirety by the researcher. The use of digital recording and full
transcription of the interviews is motivated by Patton’s (1990) belief that “the perspectives of others is meaningful, knowable and must be made to be explicit” (p. 278). As such, the interviews provided participants with an opportunity to discuss the experiences they reported on in the online survey and to engage in further examination about the ICT based issues they had encountered in their practice.

During these interviews, participants were invited to reflect on their own experiences with incidents of inappropriate ICT use and consider challenges, thoughts and feelings they have regarding ICT and its impact on the school environment. The topics of interest that guided the interview focus included a discussion about the perceptions that participants had about the ethical nature of ICT based issues; issues, challenges or conflicts they had experienced that involved the inappropriate use of ICT by students; issues, challenges or conflicts they had experienced that involved the inappropriate use of ICT by teachers and other school administrators; and the issues, challenges or conflicts they had experienced that involved the inappropriate use of ICT by members of the school community (parents, community organizations etc). In addition to exploring their experiences with ICT based issues in relation to these three areas, participants were also encouraged to identify the strategies and resources that they use to respond to or cope with the issues and problems that they had experienced.

The purpose of using these open-ended questions was to provide for detailed descriptions of participant experience and allow for unexpected or unanticipated responses. “Complex reactions and feelings are best given meaning and are optimally articulated … through a dialogue which encourages reflection on, rather than mere reporting of, experience” (Crouch & McKenzie, 2006, p. 487). The primary themes that
emerged from this dialogue were further examined through the use of probing questions, which as defined by Hatch (2002), are questions that are not pre-determined by the researcher and are used to further explore topics that arise during an interview and add depth and richness to interview data.

Within the context of the interview, elaboration probes were used to encourage participants to provide further detail on their comments, clarification probes were used to provide participants with the opportunity to refine comments, and contrasting probes were used to help define the boundaries of a response (Patton, 1990). While the nature of the discourse was open ended, discussions of these issues were framed by the theoretical framework of the study and concentrated on the understanding of ICT based problems as ethical issues.

The third phase of the study involved a second standardized open-ended interview with the ten participants from phase two of the study. These interviews were 60-90 minutes in length and were digitally recorded and transcribed in their entirety by the researcher. The interviews occurred within 30 days of the first interview to allow participants an adequate amount of time between interviews to consider their responses within the context of the study. This is an important component of the interview process because it encourages participants to engage in a reflexive process where they consider the relationship between their experiences and the research topic (Hatch, 2002). As such, the focus of the second interview built on the experiences described by participants during the first interview and examined the perceptions that participants had about the ethical nature of their experiences as well as the strategies they used to deal with them.
Participants were also asked to respond to a series of eight vignettes (Appendix D) that involved ICT based issues. The vignettes were sent electronically to participants one week prior to the scheduled date and time of the follow-up interview, and participants were informed that they would be asked to review the scenarios and provide their perspective on the ethical nature of the issues; rank the scenarios, one through eight, in terms of seriousness; and to consider whether they had experienced similar scenarios in their practice. These instructions were intended to identify participant perspectives about the ethical nature of various scenarios that involved the inappropriate use of ICT by students and teachers, to elicit participant beliefs about what type of scenarios are considered to be morally objectionable and to provide a context for further examination of scenarios they may have experienced in their practice that may not have emerged in discussions during the first interview. As noted by Miles and Huberman (1994), vignettes serve as an effective tool for connecting the broader context of a research study to the personal experiences of the participants. Additionally, the use of vignettes has been shown to generate renewed interest in a topic and facilitate critical analysis of social phenomenon that impact the professional practice of teachers (Burnam, 2005; Huebner, 1991; Poulou, 2001).

The vignettes used within this study were adapted from those used by Burnam (2005), who investigated children’s moral judgement of ICT based issues that involved the inappropriate use of technology by students. Burnam’s scenarios were based on observations made by Kafai and Harel (1991) who documented field notes of critical incidents that occurred in the classroom that focused academic and non-academic issues with technology that were ethical in nature. For the purpose of this study, eight vignettes
were used that were categorized based on the context of the scenario, who participated in the inappropriate use of ICT, and the primary ethical issue that was involved in the scenario (see Figure 2).

Figure 2: Overview of ICT based vignettes

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Academic/Non-academic</th>
<th>Student/Teacher</th>
<th>Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Academic</td>
<td>Student</td>
<td>Plagiarism</td>
</tr>
<tr>
<td>2</td>
<td>Non-academic</td>
<td>Student</td>
<td>Copyright infringement</td>
</tr>
<tr>
<td>3</td>
<td>Non-academic</td>
<td>Student</td>
<td>Cyber-bullying</td>
</tr>
<tr>
<td>4</td>
<td>Non-academic</td>
<td>Student</td>
<td>Text based threats</td>
</tr>
<tr>
<td>5</td>
<td>Academic</td>
<td>Teacher</td>
<td>Software piracy</td>
</tr>
<tr>
<td>6</td>
<td>Non-academic</td>
<td>Teacher</td>
<td>Inappropriate use of email</td>
</tr>
<tr>
<td>7</td>
<td>Academic</td>
<td>Student</td>
<td>Email hacking</td>
</tr>
<tr>
<td>8</td>
<td>Non-academic</td>
<td>Student</td>
<td>Software piracy</td>
</tr>
</tbody>
</table>

The first category of classification for the vignettes determined if a scenario was academic or non-academic and was developed based on Burbule’s and Callister’s (2000) distinction between academic and non-academic. The former are those directly related to the instruction of a curriculum area, whereas non-academic ICT based issues may occur within the school and have an impact on the school environment, but are not directly related to the academic curriculum. The second category of classification focused primarily on the status of the individual who was responsible for using the ICT inappropriately within the scenario. Of the eight vignettes, six involved the inappropriate use of ICT by students and two involved the inappropriate use of ICT by teachers. The
third category of classification involved the identification of the primary issue involved in
the scenario, which was informed by literature within the field of digital ethics that
identifies the legal and ethical issues related to ICT use (Burbules & Callister, 2000;
Carpenter, 1996; Edgar, 2003; Fischer, 2006; Johnson, 2003; Langford, 2000) and
included a specific focus on issues related to intellectual property, copyright, privacy,
security and digital violence.

The purpose of the vignettes was to elicit participant perceptions on the ethical
nature of situations involving the inappropriate use of ICT by students and teachers and
to identify which situations were perceived to be the most serious. Participants were
asked to comment on the vignettes within the context of their role as teachers, as opposed
to from their personal opinion, in order to maintain an alignment with the primary focus
of the research study. Further to this, the use of vignettes that were both academic and
non-academic provided the opportunity to explore the multi-faceted nature of ICT based
issues that are not purely contained within the boundaries of the school (Burbules &
Callister, 2000).

The use of these three phases of data collection is intended to support the
development of a rich understanding of participant experiences as they relate to the
purpose of the study. The iterative approach aims to provide a thorough account of the
nature of ethical dilemmas experienced by teachers, the perceptions that teachers have
about these issues and the ways in which ICT based issues, challenges and conflicts are
resolved. As noted by Crouch and McKenzie (2006), an iterative approach provides an
opportunity for a naturalistic collection of data, where both the participant and the
investigator grow in their degree of comfort in exploring complex social issues, which
helps to enhance the validity and reliability of the findings. Additionally, the development of trust between the researcher and the participants helps to support the goal of providing participants with an avenue to share their experiences and lends itself to a descriptive style of data collection that is valuable when conducting research exploring complex social problems such as those related to technology (Flyvbjerg, 2006).

3.4 Data Analysis

Data collected throughout the study have been analyzed systemically based on categories and themes that, although informed by scholarly literature, emerge from the data. The process of data collection is understood to be cyclical in nature based on Seidel’s (1998) articulation of qualitative analysis as a progressive process involving an active relationship between the researcher and the data where information is collected, reflected on, and then reported. This also follows a hermeneutic perspective that is concerned with “understanding the meaning of human experience, action, and its products, and involves an ongoing, situated process of interpretation (rather than an end product)” (Sanger & Osguthorpe, 2011, p. 8). As such, the data for this study were reviewed and analyzed in three stages, with the primary focus being on data that were collected as part of the standardized open-ended interviews.

The first stage involved a complete reading of transcripts from each of the participant’s interviews where the researcher identified initial impressions from the data and documented those impressions. Within this stage, the researcher engaged in a cycle of reading content and categorical review to identify trends emerging within the study. This review was informed by natural generalization, which utilized the personal and private knowledge of the researcher to facilitate an understanding of social phenomena
spread over a broad range of categories (Creswell, 2007; Stake 1995). Within this first stage, data were categorized based on three levels of classification that included an identification of the nature, context and theme relevant to the participant comment.

The first level of classification involved the identification of nature of the data, which was identified as being either an articulation of an experience, a statement of perception or belief, or the description of an action taken by the participant in response to an ICT based issue. Data were categorized as an experience if they involved the description of a story or scenario that related to the participant’s experiences as a teacher. Data were categorized as a statement of perception or belief if they involved the articulation of a judgment or interpretation of a participant’s experience, and typically, involved a determination of the ethical nature of an ICT based experience. Data were categorized as a response or action if they included the articulation of how a participant has, or would, respond to the ICT based issues described within their experiences and to the vignettes provided in the second standardized open-ended interview.

The second level of classification focused on identifying the context for participant comments. The experiences, perceptions and actions of participants were identified as being either academic or non-academic in nature, and placed either within the context of the school environment or outside of it. Within this area of classification, issues such as plagiarism and inappropriate use of school computers were typically identified as being academic/inside the school, whereas issues such as cyber-bullying and student exposure to inappropriate content were typically identified as being non-academic/outside of the school. There were also examples that crossed these categories such as an experience involving plagiarism that was done on a homework assignment,
which was classified as being academic/outside of the school environment, or an incident of cyber-bullying that occurred during school time, which was classified as being non-academic/inside of the school.

The third level of classification focused on organizing the experiences, perceptions and actions of the participants within a broad theme, derived from relevant literature on ethical issues with ICT. Within this level, a focus was on interpreting the relationships between the previous levels of classification and identifying a broader area within the literature through which the data could be further examined (Patton, 1990). For example, an experience involving plagiarism was classified as an ICT based issue related to academics, regardless of whether it occurred inside or outside of the school, whereas cyber-bullying was classified as a non-academic ICT based issue that was social in nature. Within this process, the second and third levels of classification overlap in that they both use the broader categories of academic and non-academic to frame participant responses. However, in the third level of classification, these categories are further defined in order to capture the diverse nature of participant experiences. Academic issues, such as plagiarism, focus primarily on the impact of ICT on student’s academic work whereas non-academic issues are placed within a social, professional or legal context. Consequently, the second level of classification provides framework for the third level of classification, which in turn, informs the second stage of data analysis.

From this classification process data were categorized into the following broad themes:

- ICT based academic issues
- ICT based social issues
- ICT based professional issues
- ICT based legal issues
- Responses to ICT based issues (personal)
- Responses to ICT based issues (institutional)

Each of these themes provided a context for understanding the experiences, perceptions, and actions discussed by the participants during the interviews.

The second stage of data analysis involved the coding of the classification levels from the first stage into specific instances relevant to the six themes (Table 1). This was achieved through the use of categorical aggregation, which Stake (1995) defines as the process of drawing meaning across multiple instances of data in order to articulate examples of specific phenomenon relevant to the research problem. Emerging themes were coded and organized using HyperResearch™ software and analyzed for categorization and frequency. The specific focus of this phase was to identify the type, nature and frequency of ethical issues experienced, the contributing factors that lead to the ethical issues and the processes and supports the teachers use to respond to the issues and problems.

Using this method, 63 codes were developed and categorized based on their relevance to the six themes that emerged in phase one of the data analysis. Some examples of the codes, and their relevant themes include:

**Table 1: Code List**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT based academic issues</td>
<td>Plagiarism</td>
</tr>
<tr>
<td></td>
<td>Inappropriate use of school computers</td>
</tr>
<tr>
<td></td>
<td>Accessibility to ICT</td>
</tr>
</tbody>
</table>
| ICT based social issues | Cyber-bullying (Facebook)  
Digital Addiction (video games)  
Hypersexualization |
|------------------------|------------------------------------------------------------------|
| ICT based professional issues | Professional identity (Facebook)  
Privacy (Facebook) |
| ICT based legal issues | Copyright infringement  
Piracy  
Child pornography/online predators |
| Responses to ICT based issues | Direct instruction  
Modeling  
Personal values |
| (personal) |  |
| Responses to ICT based issues | Acceptable use policies  
Media literacy and curriculum  
Community support professionals |
| (institutional) |  |

In addition to providing further organization of the data, the use of categorical aggregation also served as a heuristic tool that facilitated the “discovery and further investigation of the data” (Seidel, 1998, p. 3) and helped to identify consistent trends emerging within the study (Creswell, 2007).

The third stage of analysis involved the application of inductive analysis using a constant comparison method, which analyzed the major themes that emerged from interview data (Cohen, Manion, & Morrison, 2007). As noted by Dye, Schatz, Rosenberg and Coleman (2000), a constant comparison method involves the classification, comparison, and refinement of data in order to highlight the interconnected nature of the data set. This was an important consideration because common patterns that emerge from varied phases of data analysis are understood to have value in capturing the shared, central, and core experiences of participants (Patton, 1990).
Within this phase, the experiences, perceptions and actions of the participants were compared internally, in relation to the data understood in context, and externally, in relation to the data understood through comparison. As noted by Dye et al. (2000) data that are contained within sub-categories should be analyzed to identify similarities or differences within the data as well as for patterns or variations that illustrate a relationship between the data. Following from this, the data codes were compared across each of the six themes and analyzed for consistency, which resulted in the articulation of four interrelated categories of findings that included; 1) a general concern about the safety and well-being of children in relationship to ICT based issues, 2) a focus on the impact of ICT on academics, 3) a focus on the impact of ICT based issues on the professional lives of the participants and, 4) a discussion of the strategies and supports that participants use to respond to the ICT based issues they encounter within their professional practice.

The use of a progressive approach to data analysis, which was spread over three phases, is based on the assumption that understanding the meaning of experience, action, and its products involves an ongoing and situated process of interpretation (Creswell, 2007). This process is also understood to have a positive impact on the credibility and validity of the data collected throughout the study as the iterative nature of the analysis provides opportunity for a continued refinement of the findings relevant to the study (Dye, Schatz, Rosenberg, & Coleman, 2000). The credibility of findings from a qualitative study depends on the richness of the information gathered and on the analytical abilities of the researcher (Patton, 1990). An iterative approach also reflects the idea that the analysis of data needs to be viewed as “a chronology of unfolding events and turning
points or epiphanies” (Creswell, 2007, p. 155) and supports the goal of providing the academic community with a descriptive account of the perceptions that experienced teachers have on the issues, challenges and conflicts that they experience in their professional practice.

3.5 Ethical Considerations

Approval for this study was granted by the Research Ethics Board of the University of Toronto via expedited review prior to data collection. All elements of the research were governed by the ethical review protocol outlined by the committee. As a result there were minimal risks involved in this study.

Participation in the study was voluntary, and participants were provided with the opportunity to withdraw at any time. Participants indicated their willingness to participate in the study by completing a letter of informed consent (Appendix B) outlining the nature of the study and the conditions of their participation. Participants were further informed that if they decided to withdraw from participation in this research study all data pertaining to them would be destroyed immediately and not be used.

The collection of data for the study was undertaken solely by the researcher and remained confidential. Only the researcher and research supervisor had access to primary data. Pseudonyms have been used to protect the confidentiality of participants and their respective employers. All data, including audio recordings, and all interview transcripts were secured in a locked facility. Electronic files were stored in files protected by passwords. Access to hardware containing any information regarding the study, as well as printed information was kept in a secure facility. Within five years of completion of the study, all paperwork will be shredded and all digital files deleted.
The perceived benefits for participating in the study include the opportunity for participants to share their experiences and knowledge and contribute to the literature relevant to the study. Participants had the opportunity to have someone listen to their views carefully and to engage in the process of reflecting on their experiences. Participants may also gain a sense of satisfaction that they have contributed to a research study that can support their colleagues in dealing with similar challenges. Finally, participation in the study may also provide opportunities for personal reflection on individual teaching practice, providing insight for coping with further ethical dilemmas that may arise in their practice.

3.6 Summary

The methodology for this study has been informed by previous empirical research that explores teacher beliefs about and experiences with ethical issues impacting school communities (Buzzelli & Johnston, 2002; Fenstermacher, 2001; Hansen, 1993; Hansen, 1993; Jackson et al., 1993; Sergiovanni, 1992; Sockett, 2006; Stengel & Tom, 2006) and scholarship that explores ethical issues related to digital media and ICT (Burbules & Callister, 2000; Edgar, 2003; Kafai, Nixon, & Burnam, 2007; Ladd, 2000; MacArthur Foundation, 2011; Media Awareness Network, 2005; Media Awareness Network, 2005; Media Awareness Network, 2005). Following from this research, this study aims to provide a descriptive account of the technology based ethical issues experienced by K-12 teachers and frame this account based on the four categories of findings previously noted. Each of these categories, and their relationship to existing scholarship on ICT based issues is discussed in further detail in the following chapters.
Chapter Four: Findings

4.1 Introduction

This chapter identifies the study’s findings that are based on the experiences and perceptions of participants described in 20 individual interviews (two with each participant). The discussion of the results is also be informed by the conceptual framework of the study regarding the ethical nature of ICT based issues. The findings answer these questions within the context of this study and serve as a representation of the multi-faceted elements inherent in ICT based problems and provide a voice for participants who have shared their perceptions about the moral work of teachers within a digital culture.

Analysis of survey and interview data reveals four categories of findings that emerge from the data. The first category centers on the concerns that teachers have about ICT issues that challenge the safety and well-being of children. This includes, but is not limited to, an exploration of things such as cyber-bullying, the vulnerability of children participating in online activities and the impact of digital culture on interpersonal relationships and social behaviour. The second category explores participant concerns about the impact of ICT on academics, including the role that technology plays in academic honesty and the challenges that are created when students and teachers have a lack of access to technology. The third category of findings deals with the impact of ICT on the professional lives of teachers, including consideration of the impact of digital communication on professional relationships and professional identity. The fourth category of findings explores the perceptions that participants have about the ethical nature of ICT based issues and the strategies and supports that they use to respond to
these challenges.

Each of the categories of findings are sub-divided into topics that are relevant to the research problem, which involved a focus on the following research questions:

1. How do teachers describe the ethical nature of ICT based issues and conflicts that they experience in their practice?
2. What is the relationship between ICT based issues and the moral work of teachers?
3. How do teachers respond to and resolve ethical issues and conflicts involving ICT?

These topics discussed in the findings answer these questions by exploring the experiences; perceptions and actions of participants as they relate to ICT based issues, challenges and conflicts that occur within their practice. Overall, the articulation of the findings aims to provide a descriptive account of the data and the experiences and perceptions that participants have about ICT based problems.

4.1.2 Participant Profiles

The participants within the study represent a diverse group of individuals with varied teaching experience and technological comfort. While the sample is not considered to be representative of the broader teaching profession as a whole, it is important to note the context for the experiences of the participants that inform their perceptions on the issues discussed within this study. The following is a brief description of each of the participants, with specific attention being given to their teaching experience and level of comfort and proficiency with ICT as it relates to their teaching practice.
Bob is currently a grade eight teacher in a Catholic school board. He has experience teaching in grades six (one year), seven (three years) and eight (three years). When considering his levels of comfort and capability with ICT, he states:

Definitely not advanced, but just comfortable integrating it, nothing sophisticated. I know how to use the Internet, LCD projector, that kind of thing, PowerPoint, but not beyond that. And when we get into smart boards, I am not skilled enough to use those, or do not have the training to use those right now.

In his survey response Bob says he is very good with personal computers (PC’s), cell phones, productivity tools, Internet use, and email. He is good with presentation tools, instant messaging (IM) tools and social networking tools. He says that he has no capability with graphic design tools, web design tools, or blogging. In his teaching practice he uses technology on a daily basis to prepare lessons and communicate with other teachers. He uses technology on a weekly basis to access educational materials, for assessment and evaluation and for preparing reports. He never uses technology to communicate with parent or students.

Don is currently working in a school for students with exceptionalities in a public school board. He has experience teaching in grades seven (three years), eight (two years), and nine (three years). When considering his levels of comfort and capability with ICT, he states:

I would say advanced, almost. I am very comfortable using all kinds of technology, assistive and otherwise. I would not call myself an expert, because the IT guys come in and wow me still but I would stay definitely advanced, for sure. In his survey response, Don identifies himself as having excellent proficiency with PC’s, Smart Phones, Productivity tools, Internet, and Email. He has a very good proficiency with presentation tools, IM tools and a good proficiency with social networking tools. He also identifies that he has no proficiency with graphic design tools, web design tools or
blogging platforms. Uses technology on a daily basis for teaching curriculum, teaching computer skills, finding educational materials, creating presentations, preparing lessons, communicating with students, parents and teachers, assessment, preparing reports, and professional development.

Roz is currently a grade six in a Catholic district school board and has experience teaching grades 5 (two years), six (three years) and eight (two years). When considering her level of comfort and capability with ICT, she notes,

I feel somewhat tech savvy when I compare myself to my teacher colleagues who are over 50, and are in a different generation all together, so I feel like I am a little more in the know, but at the same time know enough to know that I do not know enough, if that makes any sense.

In her survey response, Roz identifies herself as having a very good proficiency with PC’s, Smart Phones, Internet, and Email. She has a good proficiency with presentation tools, graphic design tools, and a fair proficiency with instant messaging tools, social networking tools, web design tools and blogging platforms. In her teaching practice she uses technology on a daily basis to find information and educational materials, prepare lessons, communicate with teachers, and for personal development. She uses ICT on a weekly basis for teaching specific curriculum subjects, teaching computer skills, assessment and evaluation. She never uses ICT to communicate with parents or students.

Janet is currently a grade nine teacher in a public district school board. She has experience teaching in grade eight (one year), and grade nine (five years). When considering her level of comfort and capability with ICT, she says she is:

Probably average, I know about a lot of things, I would not say I am an expert on a lot of things, your general IT email, using computers, the Internet, I use them on a daily basis but I do not go above and beyond, I would not consider myself an expert at all so maybe I am a 6, 6.5, 7/10.
In her survey response, Janet identifies herself as having a very good proficiency with PC’s, Internet, and email and has a good proficiency with smart phones, productivity tools, presentation tools, IM, blogging platforms and social networking tools. She also says she has a fair proficiency with graphic design tools and web design tools. She uses technology on a daily basis for communicating with teachers and for assessment and evaluation. She uses technology on a weekly basis for finding educational materials, creating presentations, preparing lessons, and preparing reports. She uses technology on a monthly basis for teaching specific curriculum, and communicating with students. She never uses technology to teach computer skills or communicate with parents.

Jasmin is currently a teacher librarian in a public district school board and has experience teaching grades one through eight, with four years of experience teaching grade five and five years teaching grades six, seven and eight respectively. When considering her level of comfort and capability with ICT, she says she is, Very comfortable. As a teacher librarian, you have to be up to date. I would not say that I am an expert but I am open to trying new things, experimenting a bit. I am not apprehensive but I know enough to know that that there is a lot more to know.

In her survey response, she identifies herself as having an excellent proficiency with productivity tools, presentation tools, Internet, email and blogging and a very good proficiency with PC’s, smart phones, and IM. She also has a good proficiency with social networking tools, graphic design tools and a fair proficiency with web design tools. She uses technology on a daily basis to teach curriculum, teach computer skills, accessing educational materials, creating presentations, preparing lessons, communicating with students and teachers, assessment, and preparing reports. She also uses ICT on a monthly basis to communicate with parents.
Belle is currently a grade five teacher in a public district school board and has experience teaching in grade one (three years) and grade five (two years). When considering her level of comfort and capability with ICT she notes,

I like technology. I am a gadget kind of person so in my personal life technology is natural for me. I think it is a bit different when it comes to school related technology though. Some of that stuff is very specific but I would like to learn more about Smart Boards and those types of things.

In her survey response, she identifies herself as having very good proficiency with PC’s, smart phones, productivity tools, Internet, email, IM and social networking tools. She feels she has a good proficiency with presentation tools, and graphic design and a fair proficiency with web design tools, and blogging tools. She uses ICT on a daily basis to teach curriculum, access educational materials, create presentations, prepare lessons, communicate with other teachers, and for assessment and evaluation. She uses ICT on a weekly basis to teach computer skills and on a monthly basis to communicate with parents, prepare reports. She never uses ICT to communicate with students.

Barb is currently a grade seven teacher in a Catholic district school board. She has experience teaching in grade five (two years), six (one year) and grade seven (one year). When considering her level of comfort and capability with ICT, she notes, “I am comfortable with computers. I actually have to help teachers cause they have trouble learning how to use computers. I think for me it comes easily because I’ve used it most of my life.” In her survey response, she identifies herself as having excellent proficiency with smart phones and the Internet, a very good proficiency with PC’s, productivity tools, presentation tools, email, IM and social networking tools. She notes that she has fair or no capability with graphic design tools, web design tools and blogging platforms. She uses ICT on a weekly basis to teach computer skills, access educational materials, create
presentations, and to communicate with other teachers. She uses ICT on a monthly basis to teach curriculum, prepare lessons, assessment and evaluation, and preparing reports. She never uses ICT to communicate with students or parents.

Deanne is currently working with students with exceptionalities in a Catholic district school board and has experience teaching in grades five (one year), six (one year) and eight (three years). When considering her level of comfort and capability with ICT she notes, “I am okay with technology, I am not a genius, so I think that kind of sucks. I wish I knew more, because I could teach them (my students) more, right?” In her survey response, she identifies herself as having excellent proficiency with email and IM, a very good proficiency with smart phones, Internet, and social networking tools and good proficiency with PC’s and productivity tools. She notes that she has fair proficiency with presentation tools, graphic design tools, web design tools and blogging platforms. She uses ICT on a daily basis to access educational materials and communicate with other teachers and on a weekly basis to teach curriculum, prepare lessons and reports. She uses ICT on a monthly basis to teach computer skills, communicate with students, create presentations, and for assessment but never uses ICT to communicate with parents.

Diego is currently a principal in a Catholic district school board and has experience teaching grade seven (five years), eight (five years), and elementary special education (two years). When considering his level of comfort and capability with ICT, he notes

I would say that I have a fair knowledge with a good comfort level. If I had to rate it on a scale of 1-10 I would probably say about an 8. I do feel that I am not keeping up with technology as much as I could have. I think that I would have been more comfortable 4-5 years ago.
In his survey response, he identifies himself as having a very good proficiency with PC’s, smart phones, productivity tools, presentation tools, Internet, email, and IM and a fair proficiency with social networking tools, graphic design tools, web design tools and blogging platforms. As a teacher, he used ICT on a daily basis to communicate with other teachers, to teach curriculum, teach computer skills, access educational materials, create presentations, assessment, and to prepare reports. He notes that as a teacher and as a principal, he never uses ICT to communicate with parents or with students.

Hugo is currently a grade eight teacher in a public district school board and has experience teaching grade five (two years), grade six (one year) and grade eight (one year). When considering his level of comfort and capability with ICT, he notes, “I am very comfortable with technology in general. I know there is always more to learn but I help a lot of my colleagues with different things so I guess they would say I am an expert.”

In his survey response, he identifies himself as having an excellent proficiency with PC’s, smart phones, Internet, and email, a very good proficiency with productivity tools, presentation tools, and IM, a good proficiency with social networking tools, graphic design tools and fair proficiency with web design tools and blogging platforms. He uses ICT on a daily basis to communicate with other teachers, on a weekly basis to access educational materials, prepare lessons and for assessment and evaluation, on a monthly basis to teach curriculum, to create presentations and instructional materials, and to prepare reports. He notes that he never uses ICT to communicate with parents or students or to teach computer skills.

The themes and findings presented within the study are placed against the backdrop of the experiences and perceptions of the participants identified above. As
previously noted, the description of participants does not attempt to establish a

correlation between teaching experience, comfort with technology and perceptions of
ICT based issues but rather serves to provide a context for the voices represented in the
data.

**4.2 Issues Relating to the Safety and Well-being of Children**

The first category of findings deals with the concern that participants had about

the impact that digital technology has on the safety and well-being of children. When

asked what they felt were the greatest ethical issues and challenges relating to ICT,

participants focused primarily on issues that challenged children’s well-being in a variety

of ways, such as the role of technology in cyber-bullying, concerns about the

vulnerability of children participating in online activities and the impact of digital culture

on the school environment. Participant responses also provide evidence to suggest that

the safety and socio-emotional well-being of children are a primary concern for teachers,

and that issues that relate to the use of ICT are complicated by the boundary-less nature

do digital communication.

**4.2.1 Cyber-bullying**

The issue of cyber-bullying was one of the most talked about areas of concern as

participants considered the impact of ICT on the safety and the well-being of children.

Participants noted that cyber-bullying was one of the most significant and common issues

that they had experienced and expressed a belief about the increasing role that social

networks, such as Facebook, appeared to be playing in cyber-bullying. They also felt that

cyber-bullying was more malicious in nature than face-to-face bullying and expressed
feelings of frustration about being unable to control cyber-bullying because of its invisible nature.

Survey data collected in the first phase of the study showed that 72% of respondents (n= 26) had experienced or witnessed cyber-bullying in some form in their practice. Of the ten participants who were interviewed, nine had direct experience with cyber-bullying cases, and one had secondary experience with cyber-bullying. These results highlight the point that cyber-bullying is a common issue that teachers deal with in their daily practice.

The frequency of these experiences also appears to have led participants to adopt a position where they expect cyber-bullying to occur and consider it to be a normal part of children’s online experiences. As Janet notes:

That is what kids do, they run home and go on their Facebook or whatever or they go on their MSN and they spend hours talking about other people and saying negative things about those people and starting drama. I think a lot of them just go online so they can talk about other people.

The expectation that cyber-bullying was normal was discussed by many participants who attributed it partly to the access that children have to a variety of communication media. As Belle states:

There has been a lot of cyber-bullying. It seems to be fairly common. Students have all these channels, they are using instant messaging, a lot of texting, emails, so it can happen in so many different places. And no one says anything and I hear the word snitch a lot, like no one wants to be a snitch you know.

Belle’s comment also alludes to an observation that the unwritten rules of playground bullying, such as those about being a snitch, have carried over into online spaces.

Participants also pointed out the diverse and multi-faceted nature of the cyber-bullying cases they had experienced. In this regard, cyber-bullying resists being
characterized by a single form of conflict and can range from threats, such as name
calling, to illegal activity, such as breaches of privacy. On the one end of the spectrum,
Roz shared an experience where two students had a verbal confrontation online. She
recalled:

I remember having two girls in my class last year, 10 and 11 years old, that did
not speak to each other. They did not talk to each other for months and months
until one day another student in my class came to tell me that one of the girls had
posted something really rude about the other one on their Facebook wall, and it
went back and forth, back and forth until the point other kids in my class were
getting involved. It was just name calling, it was just rude name calling but done
in a public forum so it got a lot of other students involved, riled up.

A similar experience shared by Don also reflects the escalation that can occur in online
conflicts where comments made online carry over into daily face-to-face interaction. As
he notes:

There were issues last year, there was texts that were sent around, basically some
very derogatory terms to the female population it was sent from one guy to
another and then when that guy received it, one of the girls happened to be sitting
beside him, so it was like so and so is a slut, she is a whore, that sort of thing,
back and forth and it was as a result of a break-up that had occurred. It was going
on during school hours at their recess, so they weren't doing it in the classroom
but they were caught during recess and of course what blew it up was the one girl
who's sitting beside and when she saw the text, burst into tears, was quite upset,
and came and reported it and then that is how, and that is what usually happens,
that is how it becomes an issue, because the wrong person receives the message,
or the person who was never intended to see the message.

The experiences shared by Roz and Don highlight a common characteristic of
bullying, which is the escalation of a conflict that carries over into the student’s face-to-
face communication. As a result of these experiences many participants believed that the
technologies involved had contributed to the escalation of the issue as the conflict
between two individuals was thrust into a more public form online.
This characteristic of cyber-bullying is also reflected in more serious situations that involved threats of violence between students. The impact, which included threats over digital communication, was evident in an experience shared by Jasmin, who had a student receive death threats over instant messaging. She describes:

I had one girl in my class who was on MSN, and sometimes you can get these random messages where the message just pops up and someone messaged her and said I know that you are friends with so-and-so” and there was a threat. I can’t remember exactly what was said but something along the lines of you are going to die on Friday. It was something really scary. She got it when she was at home. And the person clearly knew her because she identified who she was friends with, so she was kind of scared and she did not really want to tell me at first but it eventually came out somehow and I told the principal and got the police involved but at that point they could not do anything because she had deleted the message.

Jasmin’s story also reflects the boundary-less nature of cyber-bullying, which does not stop even after the child is at home. Many participants pointed to this characteristic of online bullying as a key reason why they felt it was more serious than face-to-face bullying. As Belle noted:

I think cyber-bullying is ten times worse than anything I had to face as a child. I mean I got bullied a fair bit when I was in school but I always knew that when I went home I could get away. I mean, it is not that regular bullying is okay but at least I could hide in my house or with my friends if I needed. At least I had somewhere I could feel safe. When it is online there’s no place to hide and the kids are often alone, at home, and it is like the bully can reach you at anytime, so the threat never goes away.

The extended reach the cyber-bullies have was also illustrated in an experience shared by Barb:

There was girl and a boy, grades 6’s, who were dating and then the girl broke up with the boy and then the boy hacked into her msn account and took her identity and started sending lewd sexual messages to her family members that were on her msn saying all the sexual things that she did with this boy. This is grade six. Obviously the aunt was one of the women and she was like what is this and called the girl’s mother and the mother called the police and the next day the police came to the school and the boy was brought in, the girl was brought in, there was an investigation and the other problem is that the people who knew that this was
going on, they also got in trouble because they were participants, they did not say anything.

This situation highlights the ways in which technology can be used by children to threaten or harm others, particularly in cases where the children were once friends and shared private information. Experiences such as this are also characteristic of the multi-faceted nature of cyber-bullying issues as it involves a breach of privacy, identity theft, and threats to the child’s sense of security. Experiences of this type are further compounded by questions of the developmental appropriateness of a sexual relationship between children in grade six, the emotional impact of distributing private information within a public forum and the role that bystanders played by allowing the activity to continue.

Barb’s experience also reflects an emerging trend where social networking tools were being used for bullying amongst children. When describing their experiences with cyber-bullying situations, participants commonly identified instant messaging tools such as MSN messenger and social networking platforms as environments where cyber-bullying is perpetuated. A particular platform of concern is Facebook, which was used in numerous cyber-bullying cases. Diego’s experiences with cyber-bullying lead him to conclude:

Most of the bullying I have seen is on Facebook. A lot of racist stuff is said. Challenging someone's race, sexual orientation, all stuff that is of course inappropriate and it is not often said face-to-face. It is said behind the computer screen. It happens in the conversations online, where they post to each other’s walls.

The use of Facebook “walls” for teasing and cyber-bullying was common, and participants also described the role that this form of social tagging played in social exclusion. As Roz notes:
There are probably going to be tons of kids who are basically going home being de-friended and they are probably going to be upset about it. I think the thing that killed me the most is that I had a 14-year-old girl in my class, and she was talking to her friends about de-friending people. Saying I am going to de-friend so and so. And all of the other girls who were talking to her were getting on board, like saying oh yeah me too. I mean that happens normally too but on Facebook it just perpetuates it, it makes it 10 times worse.

The use of Facebook for social exclusion and isolation appeared to be a relatively surprising development for teachers but is reflective of the many stories that participants shared where social networks appeared to escalate existing social conflicts. In this regard, the immediacy and scale of the technology are understood by participants to agitate existing social pressures on children. Bob recalled an intriguing example of this when he noted:

Some of my students ended up breaking their own unwritten code amongst their friends who had access to each other's Facebook profiles and they brought in pictures that were inappropriate of this one girl. What ended up happening was that it got so bad that this girl was so ostracized because of the whole situation that was going on amongst the students that she ended up leaving the school in her grade 8 year. Her parents pulled her out of the school, and said they could no longer take it that their daughter would come home every single night crying, she had asked for forgiveness from some of her friends but it just never stopped, it got worse as more people saw the picture and other students trying to really make her life a living hell by pulling out all the stops and using what she had done online against her, and it was one thing after another, a barrage, of things going on and of course the texting and all that.

When asked if he felt as though his experience involved any ethical issues, Bob felt strongly that the use of Facebook was a serious ethical issue because it appeared to cause such a great deal emotional distress and disrupt the relationships between children. He also felt that the individuals involved had also breached of Facebook's code of conduct policy by allowing each other to have access to their Facebook profiles, which he felt was an invasion of privacy.
The importance of the social and emotional impact of cyber-bullying was not lost on participants who expressed concerns about the challenges of technology that transcends the boundaries of the school environment. As an example, Deanne shares another story where a student was suspended for making fun of another student on Facebook. She notes:

I actually have big concerns with Facebook. I had this child get suspended for making comments about another girl on Facebook. She was making fun of the way she looked, the way she spoke, the way she dressed and was generally trying to humiliate that child. I could not imagine it, it is so embarrassing, and then Facebooking it on a post where everyone saw it and all the kids from the class, and the girl who was doing it was this popular girl so everyone was a follower to her but apparently it was happening for a while and the other kids were making fun of her at school too.

Deanne’s concern about the impact of Facebook is indicative of the opinion that participants had that social networking platforms make bullying worse because they extend the bullying beyond the confines of the school, where children have no place to hide.

Participants were also concerned about the tendency for cyber-bullying to involve a larger number of children because of the scale of exposure that results from using technology to bully. In this regard, participants felt that children were more likely to join in on cyber-bullying than face-to-face bullying. This concern also connects to the perception that cyber-bullying is more malicious in nature than face-to-face bullying as it results in a mob mentality where people are acting in groups. In recalling their experiences, participants pointed out that children showed a greater degree of insensitivity towards others when communicating online. As Belle notes:

These kids that do not know how to communicate with each other face-to-face and all of a sudden they have this extra device to hide behind if you will. And now that they are hiding behind this device it is going to make it easier for them to
say things that are inappropriate and make others feel like crap. So I think that the technology, it is a complication.

Building on this line of thought, Dan attributed the malicious nature of cyber-bullying to the misunderstanding that children have about the permanent nature of digital communication. He notes, “these kids really do not have a grasp of the fact that once they let go, once they hit send, it is gone and they can't get it back, you can't retract and that sort of thing”. The perception that develops in this dialogue is that children have access to technologies that they do not truly understand and that, in some sense, the technology is partially responsible for the frequency and severity of cyber-bullying cases.

Bob follows this line of thought and highlights the point that the immediacy of electronic communication requires a heightened level of understanding about the impact of one’s actions, which in his experience is beyond most children. He states:

These students have a vehicle to react, literally at their fingertips, as opposed to having the opportunity to have it filtered in their brain, they've got it at their fingertips and immediately it spills out and it is a hard copy, permanent record of something that they did, and the truth is the world is pretty harsh, so there's another lesson where the world looks at that, and they look at a transcript, the world doesn't see the entire situation, the entire background, the years before that the childhood problems of grades 5-8, grade 3-8, they see a transcript, this person did this and your reaction was totally inappropriate. So you're giving them a vehicle to make greater mistakes and not even have an opportunity to learn lessons.

A finding that emerges from the discussion around cyber-bullying is that participants identify it as an issue that is very challenging to deal with because it is often invisible to educators. Deanne notes:

I find that I hear less physical bullying, but you know it is going on. It is weird, it is like the playground could be entirely silent but there’s bullying going on through texting and all that. I mean you can’t really see it but you get a sense of it you know?
Deanne’s sensitivity to the invisible interaction going on in digital space is representative of a common discomfort that participants shared about bullying that occurs outside of the scope of their practice. Consequently, cyber-bullying was understood to pose unique challenges because it was occurring in spaces where teachers were not present, and as such, could not protect children from harm as they may be able to if the bullying was occurring in school.

When asked if cyber-bullying was more complicated than face-to-face bullying, Belle quickly responded:

Yes. Absolutely. 100%. It is no longer happening in the classroom. What is happening in the classroom is hard enough to control and now all of a sudden these kids have phones and it is happening everywhere because you take your phone wherever you go. How can one person deal with that? You cannot regulate that.

Jasmin builds on this when she states:

It makes me uncomfortable knowing that these dialogues are occurring outside of the classroom, or even inside the classroom for that matter, and I kind of feel a little awkward you know because what can I do? I mean I could open up a notebook and say what is going on here and see a note that is written from someone but how do I check someone’s phone or their email?

Underlying these comments is a feeling that teachers feel unprepared, and in some cases helpless, to deal with a complex social issue that transcends school boundaries.

The ability of cyber-bullying to transcend school boundaries and impact the well-being of children is also a key reason why participants identified it as the most serious issue relating to technology. Overall, participants felt strongly that cyber-bullying was a serious ethical issue because it caused emotional harm to the victim. This finding is supported by interview responses to eight vignettes (Appendix D) involving a variety of issues such as plagiarism, copyright infringement, privacy violations and cyber-bullying.
When asked to rank the scenarios in order of seriousness, nine out of ten participants ranked scenario 4, which involved children using Facebook to bully and tease another child, as being the most significant ethical issues. Of those nine participants, seven also ranked scenario 3, which also involved an situations of cyber-bullying and death threats being exchanged between students over text messaging, as being the second most serious. Additionally, the one participant who did not rank scenario 4 as being the most serious ranked scenario 3 as being the most serious. As a result, all participants ranked one of the cyber-bullying scenarios as the most serious.

When asked to provide a rationale for why they felt the cyber-bullying vignettes were the most serious, participants commonly noted the impact that cyber-bullying can have on the well-being of the child involved. Reflecting on the fourth scenario, Roz notes:

I would be concerned about that child's social and emotional well-being and the impact it could have on the student. We've all heard the stories like he mentioned suicide, some kids can't handle that kind of ridicule or shame and I really take it seriously, and as a classroom teacher, if I were the teacher I would be speaking to administration, parents, guidance and doing whatever needs to be done.

Many participants also expressed similar empathy for the boy involved in scenario 4 and compared it to their own experiences with bullying. They commented on the deeper impact that cyber-bullying could have because of the scale of exposure allowed by Facebook. As Deanne reflects:

That would be so hard on him. I mean, I remember being bullied when I was in school over the phone, you know getting crank calls from other kids and all that, and I felt horrible. I can't imagine what would happen if that teasing was all over the Internet or on Facebook. I mean everybody would know. There would be no hiding from that.
Deanne’s comments reflect the concern that participants had about the ability of cyber-bullying to impact children on an emotional level and cause irrevocable harm that would affect their lives both inside and outside of the school. Reflecting on this impact Don observes:

Cyber-bullying is the most serious by far because it has to do with the right to learn. If you and I are going to learn anything, we have to feel safe and secure in our environment. If we do not feel safe and secure in our school environment then we won't be ready to learn, so it is not only impacting the student’s well-being, as an individual emotionally, it is also affecting their academic ability because if they are in the classroom the whole time worried that the next text message that they get on their cell phone is going to be another one that is bringing them down a peg, that is all they are going to be focused on.

Don’s concerns about safety were re-iterated by other participants as they identified cyber-bullying as a direct threat to a child’s well-being. The use of threats in cyber-bullying was a primary consideration for Roz as she evaluated the seriousness of each of the cyber-bullying vignettes in the second interview. She notes:

When it is physical harm being threatened it becomes a really serious issue, right away. I’ve done research in schools as part of a certain project with the literacy and numeracy secretariat where I walked in and happened to see the police in the administration's office because students were doing cyber-bullying and uttering threats. And someone said we will see your blood or something like that apparently and the police were there to talk with them. It is taken very seriously so something like this is violent and needs to be dealt with immediately so that someone understands appropriate use of technology and the repercussions of their actions.

In connecting her evaluation of the case study to her personal experience Roz re-iterates the focus teachers have on cyber-bullying because it threatens the safety of children involved. This focus was applied to both real life and hypothetical scenarios and reflects the increase in cyber-bullying cases that participants have experienced. Consequently cyber-bullying is taken very seriously by members of the school community because of the damage it causes in the lives of those involved.
4.2.2 Concerns about student privacy and vulnerability to online threats

In addition to understanding the direct threat that cyber-bullying has on the emotional well-being of children, participants also expressed concern about other issues that challenge the safety and security of children in online spaces. Within this context, participants discussed their concerns about the exposure of children to online predators and the impact of inappropriate content on a child’s development. These perceptions were discussed in relation to participant experiences where the public nature of the Internet had raised questions about the vulnerability of children.

The discussion about children’s safety often revolved around issues of online privacy and security and highlighted a common belief that the public nature of the Internet can pose a security risk for children. The example that many participants noted to support this concern involved the issue of anonymity and its role in allowing online predators to collect data on children and “stalk” or “groom” them for face-to-face interaction. The potential for an inappropriate relationship to develop out of an online interaction was a genuine concern for Barb who shared an experience where one of her students had been communicating with an older man over Facebook. As Barb recalled:

I had a girl in my class that I found out had been involved in a situation where she was pretending to be 18 and she was trying to pick up these 21 year olds. This was one of my grade sixes. I was shocked. This 12-year-old girl was on Facebook setting up a date with a 21 year old guy, who was pretending to be 15 or something. She said she was in high school and they were communicating constantly.

When asked if she felt this was an ethical issue, she continued:

Of course, it is a huge issue. I mean they were both lying about their age. So I guess it is an honesty issue but I think it is much deeper than that. What would’ve happened if they had actually hooked up? I do not even want to think about that. I do not know how the mother found out; thank goodness she did, because as far as I know the girl did not go to meet the guy so it was stopped in time, but what if it wasn’t? You know? That is a problem.
An experience of this kind highlights the role that anonymity can play in exposing children to inappropriate contact with others. It also raises questions about the ways in which children knowingly, or unknowingly, may put themselves into vulnerable situations that challenge their security.

While it was not common for participants to have experienced a situation where a student had been exposed to an online predator, they remained concerned about the possibility of such an occurrence. As Don notes:

It is scary, there's no control, online I can be whoever I want to be, and that anonymity it protects a lot of things that you do not know about. So when you have that person who “friend's” you, who you've never heard of before, think twice. Yes, they are telling you they may be 16 and they live in your hometown. You do not know if they are 45.

The question of control and responsibility emerged as a point of discussion as participants made note of the role that websites such as Youtube and Facebook play in exposing children’s identities. As Hugo recalls:

These are 14-year-old kids who are posting their crazy whacked out videos on YouTube and that means that they are publicly advertising themselves, right? I'll think about one of the kids from last year. He would post videos of himself skateboarding and my issue with that is he posted vids eos of himself skateboarding in his neighborhood and he showed me one of them one day, and it was very easy for me to pick up where he was, and I mean I live in same city. So he's identifying himself without really knowing it. I mean the description of the video he even used his handle from his email, but his email handle is just basically deciphering his name, like you can tell who it is, they do not hide themselves very well, and they genuinely think it is still theirs, they do not understand that once it is posted on the internet it is gone and anyone, I mean anyone, can see it.

Hugo’s concern about the level of exposure children attain when posting videos online was also shared by participants who identified Facebook as a platform where children can jeopardize their own privacy through self-promotion. As Janet notes,
I think that Facebook is even more dangerous because you have access to a lot more information. Kids will post videos and pictures that expose their friends as well. I mean you can glean background information from their photos, you know take a look at the photo when you get a general sense of the area that they live in. Facebook tells you what city they live in. So it is a huge issue. Considering that we usually do not allow photographs in school for privacy and protection issues, and these kids are posting pictures on the Internet and I think it is a lot more dangerous.

Each of these concerns highlights the perception participants shared that children do not have a true understanding of the public nature of the Internet. For many, this was a key contributor to the potential harm that online activity can cause. As Roz notes,

They are putting themselves in precarious situations. This is exactly why I have major ethical problems with technology when people do not understand the repercussions of what they are getting themselves involved in. You know just like you hear on the news, someone is applying for a new job, and some corporation is looking at their Facebook page or MySpace page and they see that they are drinking with their beer buddies and thinking this is not the type of corporate image that we want to present and so therefore we can't hire that person. You start seeing this taking place and a 12-13 year, and 9, 8 year old, I do not think they can really fully comprehend the problems that can arise.

Similarly, Bob discusses the importance of children becoming media literate to cope with online threats when he says:

That is what happens, and these kids are young, right? They are not grown-up kids. They do not have the critical skills to recognize that what they are doing for example has huge ramifications in the long term. They just do not so I think that is the other ethical issue is that awareness.

When asked to explain further why awareness is an ethical issue, Bob gave consideration to impact that a lack of awareness would have on a child’s safety and that, within this context, teachers had a duty to protect children by teaching them how to protect themselves. Jasmin also reflected this belief within the context of her role as teacher when she states:

I teach up to grade 3-4 computers, and I do not allow them on the Internet at all because I feel that until I’ve kind of run through it with them and talked to them
about it. I do not feel that they should be allowed to go on there, willy nilly free for all kind of thing.

Similarly, Barb notes:

I think its my responsibility to be a model and show them how to use the Internet properly and warn them about what could happen if they posted an inappropriate picture online or if they were having online discussions with someone who is older then them and they are asking to meet up somewhere. I think it is important that we talk about these types of things.

Comments of this kind reflect the desire that teachers have to protect children from experiences that compromise their safety.

Participants also noted that the degree of exposure on the Internet is an issue even if the child is protective of their own identity. In this regard, participants identified the exposure of children to inappropriate content as being an ethical issue they were concerned about. In particular, participants expressed concerns about children being exposed to adult content through online video games and the Internet. These concerns were informed by experiences where participants had observed the impact of developmentally inappropriate digital content on children’s behaviour.

Video games are a primary concern for participants who have witnessed children acting out the content of the media that they had been exposed to online. Belle recalls the following incident:

I am thinking of a situation where there is little boy that I work with and he is addicted to grand theft auto, which is a really bad videogame that is R-rated. And this boy is six or seven. And he is talking about killing or shooting and all of these crazy things. I mean this game is rated R for the reason that a seven-year-old should not be playing with this. So it is difficult for me because I cannot really say what a child shouldn’t or should not be doing in their own house right, but at the same time he is completely addicted to this videogame to the point where reading and writing is just like, there’s no interest in it whatsoever, he just wants to go and smash some more cars. I mention this because I know it is not just this particular situation with this particular boy in this particular house, I know of other situations from talking to colleagues in the school where these boys, maybe girls
but I am thinking more boys, they are just consumed and I think it is extremely wrong that these kids are exposed to these games that, and they are swearing, they are exposed to these things they are too young to be exposed to, and then they start to adopt the behaviors from the video games. For example this little boy was talking to me about how to build a bomb or how to build a weapon and I was thinking how do you even know how to do this, you can’t even recognize high frequency words but you can tell me about the levels of bomb building? I just remember it was something insane and I felt disgusted that this kid is exposed to this. And I know it is not just him.

Hugo shared a similar experience that included a concern about massive multi-player online role-playing video games (MMPORG) where children were interacting with adults online.

We had this kid in grade 2; he was playing “Call of Duty PSP” online. So I mean that is the parents’ prerogative if they want to let him play that game but because he was playing online there is a lot of trash talking online and there are a lot of berating people. So he was hearing a lot of language, I am guessing from the game, but he was bringing it into the classroom and other kids were picking up on it so that was a big problem because I could not believe the words that were coming out of this kid’s mouth. He was calling people “gay”, “fags”, dropping “F bombs” all over the place calling people bitches, sluts … in grade 2.

The experiences shared by Belle and Hugo connect to a fundamental concern that participants shared about the impact of inappropriate content on children’s behaviour and the role of adult guidance in regulating children’s online behaviour. Hugo’s comments about the “parents’ prerogative” alludes to this and highlights a similar apprehension that participants felt in overstepping their boundaries as professionals when dealing with issues where parental involvement was required.

The monitoring of children’s use of media also became a concern when participants discussed their experiences with children who had been exposed to highly sexual content, either through mainstream media or pornographic imagery. Survey data from the first of the study revealed that 25% (n=11) of participants had some experience where a student had been exposed to highly sexual material outside of the school
compared to 11% (n=5) of participants who had witnessed or experienced it within the school. These results led participants to express concerns about the impact that these experiences were having on children.

A key factor that participants felt contributed to these types of experiences was the increased access to a wide range of content that children received once they went online. Many participants felt that technology had made it too easy for children to discover media that may be developmentally inappropriate for young children. As Roz notes:

One of the other major issues that I have is with the overexposure that children are getting to the sexual imagery. Like we were talking about the pornography thing. And I really have a problem with that, the fact that young boys are being exposed to pornography where they can do pretty much anything and then they grow up with this conception that they can do that. You know things like anal sex, they think that it is okay. I think about my students and I would never want something like that to happen to them. But now it is easy, they just need the computer and Internet connection and they are open to this world of endless pornographic possibilities. And I think that it distorts their perception of sexuality. And I do not think it is appropriate for children to see that sort of thing.

Many participants identified the ease of access that technology provides as a contributing factor for the overexposure of children to inappropriate content. Although this exposure was not understood as a new issue, participants felt the uncontrolled nature of the Internet had made it more common.

An example of a concern that was not new, but had been impacted by technology, involved children accessing pornographic imagery online. This had consequences for teachers whether the images were accessed inside or outside of the school context. Commenting on the impact of exposure on other children in her class, Barb notes:

One boy came in at lunchtime and he started talking about his favorite porn website. This is grade six, and then he started talking about anal sex and describing it for the class and encouraging them to visit this website. During class,
during lunchtime. He was talking about this pornography and graphically explaining it. It was very disturbing.

While Barb’s experience involved a child being exposed to pornography outside of the school and bringing it into the school, Diego shared an experience where students were accessing pornography within the school, in spite of filters which had been put in place to block inappropriate content. He recalls:

What had happened is that I was the VP at the time and the teacher came to me with a suspicion that the kids were visiting inappropriate pornographic sites. I did not think it was possible and then we did some investigating and we looked at the history and we found out that they were looking at pornographic sites during the day. It was pretty shocking because these kids are 12-13, and pretty savvy at finding things that they really should not.

Diego’s situation highlights another concern that participants had about the ability of children to circumnavigate parental and school controls that are put in place to protect them. In this regard, students demonstrate the technological literacy required to access adult content without having the emotional maturity to deal with it. Diane shared a similar concern when she notes:

I mean the older kids when they get to that age when they want to view naked women or men or whatever, it is very easy for them to do that especially if they are skilled with technology and they know how to hide it. If they use some kind of “history killer”, or whatever, I am sure there are kids that do it at that age but I can talk to them about it in the end I can’t hold their hand at home and I do not even know if they are actually doing it at home but I would assume that there are kids that would be doing that.

Experiences shared by Diego and Diane highlight the capabilities of students who possess the technological knowledge to access inappropriate content and to hide their actions by using tools like “history killers”, which erase the data that are collected when someone uses a web browser. Furthermore, these experiences demonstrate that exposure to
pornographic imagery was a part of their students’ private lives that has now impacted the school environment.

Against this backdrop, participants emphasized their role as protectors and identified their duty to protect children from being exposed to inappropriate content. When asked to articulate why he feels this is an ethical issue Don commented, “from the school’s standpoint, those types of images are offensive in nature, they can be considered harassing in nature by law and they are not appropriate for a work place and school falls under that.” Reflecting on an experience that he had where students shared pornographic imagery with other students Don continued:

So some boys were hanging out at home and one Googled something and pictures of naked women came up. I do not know what they Googled but it came up and another student came up to me and told me about it. For me that suggested that he was uncomfortable with it and that immediately presents the ethical issue, the minute a student is uncomfortable, we have an obligation to act and investigate and that was what the end of the investigation.

Don’s use of the word “obligation” when discussing his experience alludes to the argument that it is the teacher’s duty to protect children both inside and outside of the school. Underlying this conviction is a belief that exposure to highly sexualized content has a negative impact on a child’s understanding of sexuality. As Barb notes:

The porn that is available online, does not showcase a true loving relationship. It does not show how you are supposed to treat women. That is my problem with the images that are on the pornography, because the content is degrading, most of it, not all of it, but most of it. So is that appropriate for boys to be looking at that and say ‘this is normal. This is what sex is supposed to be like?’ I have a problem with that.

Within the context of this discussion, participants felt that technology played an important role in exposing children to content that was developmentally inappropriate.

Whether it is in the form of violence, adult language or sexual imagery, participants
expressed concerns about what impact these experiences would have on their students’ development. This, combined with issues of privacy and the public nature of the Internet, lead participants to adopt a strong opinion that although the Internet can be used as a tool to support children’s development, it also poses a threat to the safety and well-being of children that needs to be monitored by parents and educators.

The concerns that participants expressed about issues such as pornography and online predators appeared to be based on a wider concern about the potential impact of incidents that had serious implications for the well-being of children. While the impact of these experiences on the participants who were interviewed should not be under-stated, survey and interview data suggest that they were not a regular part of the participants’ daily professional experience. Nonetheless, the focus on the vulnerability of children when participating in online spaces is informed by a sense of duty to protect children against harm, and that the public and adult nature of the Internet is perceived by participants as being elements that jeopardizing children’s safety.

4.2.3 Concerns about the impact of digital immersion on social-emotional development

When considering the ICT based issues that do confront them on a regular basis, participants focused on the impact of digital culture and mobile technology on classroom climates and interpersonal relations amongst children. In particular, participants shared concerns about the ubiquitous presence of cell phones in schools and their impact on classroom environments. They also expressed concern about compulsive behaviours of children who are always connected to their devices, and questioned the impact of de-personalized text-based communication on children’s social development.
Many participants in the study hold the feeling that cell phones have become a catalyst for ICT based issues within the school. Survey data collected in the first phase of the study indicates that 72% of respondents (n=31) had experienced or witnessed the inappropriate use of mobile devices during school hours. The degree to which cell phones had become part of the daily lives of children is evident in Janet’s comments that, “These kids rely on their cell phones. They do not go anywhere without it. I’ve even seen when they go for Phys Ed. They shove it in their bras. I mean, what do you need your phone for in Phys Ed?” Similarly Jasmin points out:

The cell phones are always there, always on, there’s no shut off, there’s no beginning or end. It feels like it is just one continuous never ending thing that just keeps going and going and going. It is a never ending problem. I find kids with phones all the time, before school, after school, during school, lunch, recess, they are constantly connected.

Participants with more than four years of teaching also observed that presence of cell phones was a relatively new problem that has emerged only within the past couple of years. As Roz notes:

When I was also a brand new teacher, I do not remember it being an issue, and that was only a few years ago that I started. There was no cell phone use. I mean we had them but we did not have them everywhere. I do not remember having to tell kids to get off the phone. And I do not remember texting, I just remember in the past couple of years, that is what you see and it is the norm now. My tolerance has even changed in the past year or so. I used to tell kids put their cell phones away, and now I walk down the hall and I do not say one word to those kids cause no matter how much I harped on it, it just got worse and worse.

The observation that children need to be connected prompted many participants to use the word “addicted” when describing the connection that students have to their cell phones. This became particularly evident when participants talked about the degree to which children use their cell phones for text-based communication. Janet’s experience
speaks to the scale of this behaviour when she describes the following conversation that she had with a student,

I do not know if they think twice about it, ‘oh ya’ and I do not know if I’ve mentioned it, I asked a kid, I said ‘curious, it is 3 pm, how many texts have you sent today?’ and she said ‘over 1000’. 1000 texts! Do you know how long it would take me to send...? And that is during a school day, Now I do not know if she went to all of her classes that day, but I would imagine she was in class and that is what they do is text. They just text.

When asked to comment on the perception that students are addicted to their cell phones

Don shared:

I would say, that there are probably a small percentage of kids who would be pretty close to addicted. I know they are doing a lot of research on it right now, and it is somewhat conclusive the fact that it can be addictive especially texting. Texting seems to be coming out as being very addictive. I would say for some of the kids there is an addictive quality to it, they feel like it is a need that they have to have instead of something they want.

Upon reflecting on the same question, Barb attributed children’s overuse of texting to a broader issue regarding their dependency on all forms of technology.

I think that kids these days are so used to multitasking in being bombarded by the television, the computer, and their cell phones going off, that now they do expect this multi sensory experience. I think that these kids are definitely changing. I do not necessarily agree that it is for the better, I would actually almost argue that yes we are having attention deficit difficulties. I have actually seen kids sit in their desks and play with their hands as if they were at a controller, like a videogame. So maybe you would say that is an addiction. I think they are daydreaming because I would ask the kid ‘what are you doing?’ And he is like ‘I am thinking about my videogame’ and I said ‘well stop thinking about that and start thinking about the curriculum.’ Is that an addiction? Or is it ADD?

Barb’s comments speak to a broader concern about the impact of digital immersion and multi-sensory experiences on children. In particular, her comments reflect a common feeling that the constant connection to digital technology, whether through cell phones or computers, may be causing issues for children in terms of their ability to focus. As Jasmin notes:
Kids do not play on the streets anymore when they get home they go on their computer, the go in front of the TV. They do not play with blocks at the age of six, so what else are they going to do? Is that an addiction? I do not know if that is an addiction? I think it is boredom.

Although it should be noted that these comments are speculative in nature, they are informed by participant observation of children and reflect a broader belief that participants held about the impact of digital culture on children’s development.

Giving consideration to the impact of technology on moral development, Bob notes:

Technology definitely plays a part in keeping people so busy that they do not have time for themselves and to reflect on what is morally appropriate. What their purpose is, their sense of purpose in life, and you know, thinking, because it is constantly an iPod, a car stereo, TV in their room, a Nintendo DS, a video game, it seems like everything, life becomes this big distraction. I think we are losing really the moral fiber of society and a sense of real purpose in what life is all about. And I am not trying to pin it all on technology, there’s a myriad of different factors that play a role in that but I think technology is starting to play a really big one.

Although it cannot be suggested that Bob’s comments are conclusive evidence of the negative impact of technology in schools, they are reflective of the experiences participants shared from observing the impact of certain aspects of digital culture on children.

The discussion about the presence of cell phones in schools also reveals a conflict between the strong feelings participants have about the inappropriate nature of cell phone use and their willingness to respond to such use. Participants spoke of their heightened sensitivity about student privacy when considering how to respond to children who were using cell phones in spite of school policies prohibiting the use of personal electronics. When asked how she responds to students using their phones in school Belle hesitates:
I feel like it is private property. If their parents are paying enough for a phone plan it is their responsibility not mine. I shouldn’t have to as an educator. I should not have to regulate how they communicate on their phone. I am not their mom. But I feel like that is what it is gotten to.

Don articulates a similar concern about student privacy and identifies his limitations in dealing with inappropriate cell phone use when he notes:

I think that becomes sticky because we at this point I have no right to view the texts, I can confiscate the cell phone but I do not have the right to view the text, that would be an invasion of privacy. I can confiscate the cell phone, but we are even recommended that before we confiscate it, they turn it off, so in other words they power it down for us and then they hand it to us.

Don’s awareness of a specific procedure to be followed when confiscating a cell phone was not common among the other participants, who expressed confusion about whether or not they were allowed to take cell phones from students. In Janet’s experience:

We are not supposed to anymore because if something happens we can be held liable. Apparently it is a new policy, the first day of school I was doing a grade 9 orientation so I missed the staff meeting, so they said you can’t take cell phones away anymore and I said what? I was confused because the year before it was like we had to take them away but our principal advised us not to do it anymore because the fact that if something happened to it, schools would be held responsible.

Confusion regarding the application of cell phone policies was further augmented for some participants who received similar messages about liability from their unions. As Jasmin notes:

I have no idea anymore. Our school board and our admin will say absolutely you can. Right, you have the authority to do that, you're the classroom teacher and that would come in and you're able to do that. Our union says do not do it, because the minute you have that you are now responsible for it, so if you happen to be leaving your classroom and god forbid it drops and breaks.

What emerges from these mixed messages, and the focus on avoiding liability, is the adoption of a position of disengagement where many participants choose not to deal with
students using cell phones. When asked why she would not take a student’s phone away

Janet continues:

I think it is protection of yourself as a professional. You do not take it and you do not have to worry about what happens. I mean, we do not have a lot of spaces that we can lock things up and especially at the secondary level, teachers are moving classroom to classroom to classroom, so unless I take it, keep it on my desk, and then bring it with me all the way to my office, lock it in my drawer, go back to my classroom, like there's not a lot of options. And do I want to be carrying 3-4 cell phones that are not mine.

Similarly, Bob takes a practical approach when he comments:

Do I really want to be fighting over this, taking the student’s cell phone away, why are they even welcoming that into their lives, I am going to battle this kid and what, take their phone away for a month, and then I have to be responsible for the phone, if something happens to it then I am legally, it opens up a whole can of worms.

Consideration for the privacy of students was a key reason why participants viewed the confiscation of cell phones as an ethical issue. Overall, they felt as though they would be violating students’ privacy if they were to take cell phones from students, even though the school may have a policy in place that prohibited the use of the cell phone in the first place. Belle shares her concern about privacy when she notes:

I think it is harder. It makes it more complicated because I do not know for example if I have the right to look up information on the student’s phone to see if they are a victim of or perpetrator of cyber-bullying. It is the privacy thing. You know if the student has a phone I do not really have access to that. I can’t ask them for that; I do not know what they do outside of the school. I am not their mom. I am not parenting them but in the sense the question is who is watching that?

The conflict between privacy and security is also important for Diego who notes,

The challenge is that it can become an ethical issue because I may not know the content of what they are texting. I do not know if they just snapped a picture and they are sending it to their friend and if they snap the picture, what was the picture of, what's the purpose of the picture, so I think we really do not know. I mean it is an instructional issue for me from the standpoint that it is distracting my class but
it could also be an ethical issue if the content is inappropriate or is directed at another student in a negative fashion, absolutely.

The finding that emerges from the discussion about responding to cell phone issues is a genuine concern for student privacy that is complicated by concerns about liability.

Participants expressed the opinion that cell phone use during school hours was an ethical conflict between the emphasis placed on maintaining a respectful climate in the school and a student’s right to privacy. These concerns are placed against the backdrop of a concern for student safety and create a conflict for teachers as they consider the most appropriate way to respond to the presence of cell phones in schools.

The discussions about cyber-bullying, the vulnerability of children in online spaces, and the impact of digital culture on children’s social and emotional development are indicative of the primary focus that participants had on the safety and well-being of children. The perceptions and experiences shared above reflect the multifaceted nature of ICT based issues and the unique challenges that educators face as they take on this responsibility.

4.3 The Impact of ICT on Academics

The second category of finding to emerge from the data focuses on concerns that participants have about academic issues that occur in relation to, or as a result of ICT. Results indicate that participants hold strong feelings about academic issues such as plagiarism and cheating, as well as the impact that a lack of access to technology has on their instruction and on student learning. These issues are understood through a professional lens where participants place priority on their duty as teachers to educate children and prepare them for participation in a digital world.

4.3.1 Academic dishonesty: Plagiarism and cheating
When considering the impact of ICT on academics participants expressed concerns about the role that technology is playing in incidents of academic dishonesty. The issue of plagiarism was a key focus for participants as they discussed their experiences with academic issues related to ICT. Survey and interview data suggest that plagiarism is a common issue that teachers have to deal with as 88 % (n = 37) of survey respondents reported having an experience that involved plagiarism from the Internet or other electronic sources inside the school.

Interview participants also shared a variety of stories where students had used the Internet to plagiarize content and suggested that it had become common. When asked to identify how often plagiarism occurred, Don noted, “Plagiarism? It is rampant. Probably every major assignment that I would hand out, there were probably 1 or 2 examples, and you're not talking about a small population, about 30 kids, one or 2 examples every time.” Similarly, Janet comments:

I know it happens all the time. I think there's always at least one. I often have them redo it, say this is not your work, you've pretty much cut and pasted information here which is really, really obvious, but it is so easy to do.

Comments about the types of plagiarism that students engaged in ranged from cases where students appeared to thoughtfully copy content from Internet sources and integrate it into their assignments to more obvious situations where students took entire websites and presented them as their own work. Reflecting on her experience with the latter, Jasmin notes:

I’ve witnessed kids handing in assignments where they literally have printed off the website, and the website is at the bottom. Ya, and they make a fancy title page, in Microsoft word, they put the borders in, the clip art, and they put their name on it and they staple it and literally hand it in.
The ease by which information could be copied from digital sources was identified as a key factor that had contributed to the increase in incidents of plagiarism. As Bob points out, “the access to information is unbelievable, these kids can find information in 15 seconds what would have taken us when we were in school probably a good trip to the library and at least a couple of hours”.

The comments shared by Jasmin and Bob also highlight the mixed feelings that participants had about the potential benefits and drawbacks of having increased access to so much content. As Diego notes:

The Internet’s kind of a love/hate thing, in terms of you know it is a fantastic resource if you can you know how to use and you can locate information, but often I find that kids at my school only know how to use the Internet for very limited things. So when it comes to research skills and research projects, plagiarism is just prevalent. And some of the kids are so oblivious that they do not understand the idea of plagiarism.

Interestingly, the intent of the student was a key factor in determining the response from the teacher. For example, participants who felt as though students had knowingly copied content from the Internet were more likely to view it as breach of ethics whereas cases where it was done out of ignorance, such as the one described by Jasmin, were more likely to be understood as an instructional issue.

What results from this is a general belief that a lot of plagiarism that occurs is a result of misunderstanding as opposed to dishonesty. The application of this reasoning is illustrated in Don’s comments when he shares:

Most grade 7 kids, they are not doing it because they want to cheat, they are doing it because they just did not realize they were cheating. I've dealt with fewer issues at the high school level, but the one that I have dealt with, it was the intent just to get the work over with. They had left their deadlines and that sort of thing and I deal with it in a different way, so I might, I'll tell them to re-submit or they have a 0, and I'll take a late penalty, whereas in the grade 7, I would not have, I would just take what their new one is and just move on.
The distinction between plagiarism as an instructional issue, as opposed to an ethical one, was a common position taken by participants. Overall, many of them felt as though plagiarism was a result of students’ misunderstanding. As Deanne notes,

The students I’ve had they genuinely thought that it was okay to take the content because they did not realize what it was, and that is why I think even though dishonesty is not what we want, it is more of an instructional issue.

Participants like Bob attributed this misunderstanding to the dynamic nature of content on the Internet where the ability to identify a credible source can be challenging. He notes:

I think children do not understand because the Internet looks different than other forms of information. They know for example, like here's my textbook, they think of textbooks in terms of school and they know that you can flip to the back of the textbook, there's probably many contributors, researchers, and many students would probably read an excerpt from that textbook and know where they got it from. But if they Google something, or access Wikipedia I do not think they have that knowledge of where it came from other than to say the Internet or Google.

The behaviour of “Googling” content became a key consideration for Deanne when she recalled the reaction she often received when dealing with plagiarism cases. Jokingly she notes, “I ask students all the time where they get things and they just stare at me and say Google. So, how do they reference that? It just speaks to how much they do not get”.

The emphasis on understanding the nature of information was brought up by many participants who reiterated the role that misunderstanding plays in children’s tendency to copy and paste content from the Internet. When discussing plagiarism as an issue, participants made clear connections to academic integrity and their professional practice. As Hugo states, “I think we, as teachers, are in the business of education; you want to educate the children that plagiarism is serious.” Talking about her role as a teacher librarian, Jasmin passionately states:
I feel that is intrinsically and essentially my job in terms of being a teacher librarian, I am supposed to be the guardian of knowledge and the bearer of access to you know, resources and stuff like that, so I feel that is my personal, that is where it is connected to my responsibilities in my job. I am a big advocate of it, because it is so intertwined with what I do and what I am teaching in terms of the skills.

Jasmin’s use of words like “job” and “responsibility” to describe her conviction about her role in responding to incidents of plagiarism was common amongst participants.

Similarly, Bob characterizes his response to dealing with plagiarism as a “mission” that he undertakes because of how prevalent and accepted it has become. He states:

I just think that kids do not understand that they are stealing other people’s ideas and thinking that it is ok, that it is like, they do not have enough thought of their own, or they are lazy. I think it is a lot to do with that too, is that they are so lazy that they do not want to engage in their own learning that they’ll just easily take the easy route and that bugs me because my whole moral thing about you know being a teacher is to you know, I am supposed to engage kids to learn and give them knowledge and it is just so wrong (to plagiarize) so you have a duty to teach that.

An interesting observation that emerges from the language participants use to describe their position on issues of academic honesty is that although plagiarism was understood by many as being an instructional issue, as opposed to an ethical one, they use moral terms such as “duty”, “responsibility”, and “mission” and describe their roles as that of “guardians” and “role models”. When asked to describe how he responds to plagiarism, Diego states:

I try to teach the kids that it is morally wrong to plagiarize, because it is stealing, you know. And I try to base it on the relationship that we have, their trust, and I hold them to the honour system and hopefully their conscience will supersede the plagiarism and they’ll come to me if they do. You know constant reminders, constant talking about why it is wrong and why not to do it, and I challenge them, right, and I challenge their ethics and their morals and see if they’ll come forward and some kids do.
In this example, the Diego explains his approach to dealing with plagiarism using terms such as “morally wrong” to characterize the act of plagiarism and expresses the opinion that the relationship of “trust” and “honour” between himself and his students should motivate them to be honest in their representation of their work.

Consideration of the impact of plagiarism on the relationship of trust between the student and the teacher was also a concern for participants who felt that the increase in incidents of plagiarism that they had experienced had created a sense of distrust about the work of their students. In speaking about this, Hugo recalled:

I keep reflecting on a story that a brilliant student wrote and it was about a myth about the penguins and why they do not fly. It was just phenomenally written but she was exceptional. But when you talk about plagiarism it makes me wonder, did she write that? Was that her work? It was so creative it was hard to believe that it was her ideas.

Hugo’s statement describes a feeling of distrust that teachers were beginning to feel about the authenticity of their students’ work because of the increased incidents of plagiarism, even when the student had previously done good work.

The increase in incidents of plagiarism also led participants to express the opinion that their roles as teachers now also included “policing” incidents of academic dishonesty. Many felt that they had become responsible for “catching” students, and that this was becoming an increasingly complex challenge as Internet access became more available. As Janet notes:

I know back in the day when I first started teaching you know, the Internet was relatively new and you did not have a lot of places to download papers from. You had a few websites to download the papers from, so you know it was easy to use a search engine to find out how they were cheating. You just plug in the first 3 or 4 lines of the paper and you would find that paper. But now a lot of the stuff they can download and you're not going to be able to find it through searching right? It is going to be. Seems like the bigger web, so it is a lot harder to police, a lot harder to prove.
Exploring the experiences that participants have with plagiarism reveals a deeply held belief that technology has played a role in impacting children’s understanding of integrity. Participants identified the importance of the issue as it relates to their teaching practice and placed emphasis on their duty to support children in developing a greater understanding of how to use technology appropriately to support their learning.

However, an interesting issue that emerged in these discussions relates to the alternative position that participants take when talking about violations of intellectual copyright. The duty that participants express in teaching children about the importance of not “stealing” ideas seems to only be applied to situations involving the academic work of students. The switch in perspective is characterized by the following exchange where a participant was asked to identify the severity of scenario 1, where a student used the Internet to copy a poem for a school assignment, and scenario 2, where a student copied images and HTML code for a personal website that he had built to show off to his friends.

Interviewer: So do you think that scenario 1 involves any ethical issue in relation to the use of technology?
Barb: “Absolutely, For me that is very serious because one he is wasting my time because now I’ll have to catch him doing it and two he has stolen the ideas from somewhere so that is two strikes. That is very serious to me. You respect the teacher and the author.”

Interviewer: okay second scenario however he wants to impress his friends with his website design skills and copies content from another website, do you think there is any inappropriate or unethical use of technology in the scenario?
Barb: “Nope, that is okay. Good for him congratulations, he should be proud of his accomplishments.

The belief that copying online material for academic work is entirely unacceptable, while copying online material for personal use is acceptable, and in some cases to be applauded, reflects the difference in judgment about copyright infringement
that most participants applied to non-academic and academic situations. The majority of participants expressed the opinion that non-academic violations of intellectual property rights were not serious ethical issues that would need to be addressed by teachers. When asked why she felt that the two situations were different in terms of their ethical implications, Barb notes:

I guess because it is his own personal, if it did not have any impact in terms of school connection, again that is his own, personal thing. I guess it could be interpreted as being wrong but do I have any control or power over being able to do anything about it? I do not know if I necessarily would, unless it somehow crossed the line in getting involved with school.

While these comments reflect the strong connection that participants had in responding to issues that directly impacted their role as teachers, it indicates that this degree of conviction is more strongly connected to their professional responsibility as teachers, rather than a belief that stealing content from online sources is morally wrong.

This perspective was also evident in participant responses to vignettes that included piracy and violations of intellectual property rights (scenarios 1, 2, 5 & 8). While the individual ranking of these scenarios varied considerably, cases such vignette #5 which involved a teacher using a pirated version of Photoshop in his instruction, and vignette #8 where a student was stealing airtime from her cell phone provider, were consistently ranked as being the less serious than vignette #1, which involved plagiarism by a student. In many instances, participants felt that situations such as vignette #5, which involved a teacher using pirated materials for instruction, did not pose any ethical concerns. When asked whether vignette #5 involved any ethical issues, Jasmin notes:

I do not think so. I mean on my moral pyramid, it would probably not be ranked very highly. I am not eminently strong about that because I think companies make a lot of money on a lot of things so I do not think it is an issue. I guess because it is not personal, it is not on a personal front, because it is like a company.
In responding to the same scenario, Diego states:

That is not a problem at all in my eyes, because the big companies that are producing software, this teacher is giving the kids this knowledge, that in the future is going to lead to the sale of their resource, I think they should be donating it to the schools. I do not think he's downloading it illegally, I think he's using the 30 day trial, then he's reusing it, it probably does say in the small print, you can only use this once. You know, and I guess the argument would be that he did only use it once and now he's using a different 30-day version, right?

The belief that it was acceptable to steal from companies also came up as participants discussed scenario 8, which involved a student who hacked into her phone in order to use minutes for free. The one key difference is that many participants not only felt that nothing was wrong with stealing minutes from a cell phone company but expressed a feeling of admiration for the technological capabilities of the student. As Barb notes:

Really, can you do that? Is that even possible? Cause if it is I say go for it. Especially if its stealing from Rogers, whatever you can steal from them the better… if I had the opportunity to steal from Rogers or Bell I would steal from them. Whatever I could. Cell phone, Internet. They are horrible, horrible companies.

Comments of this kind are also reflective of the understanding that piracy had become a normal and an accepted part of digital life. Hugo shared this perspective when he states:

I think piracy has become so mainstream now that it doesn’t faze people anymore. I know the older kids they know people who pirate stuff all the time, they do it themselves so it is not like it big like “oh my goodness Mr. so-and-so is stealing music.” If anything, the problem with society is that piracy has become so accepted but I guess that is a result of the information age. You know anything is available. Everything is out in the open. I mean you can get anything now so it is very hard to regulate.

The observation that piracy had become normalized also leads to questions about the degree to which it occurs within a school context. Analysis of survey results showed that 88% (n = 37) of respondents had observed the illegal downloading of music or other media, and 61% (n = 26) had observed other forms of software piracy inside of the
school. Interview results also show that the use of pirated materials by teachers was a common occurrence. As Belle points out:

It happens all the time. I know teachers that use stolen movies, software, presentations, you name it. And I see that it is wrong but how strongly I feel about being wrong I do not feel that bad about it. It is illegal but not very serious because there are no students getting hurt.

As with Belle, the use of pirated materials for instructional purposes was not considered an issue because it was not seen as causing direct harm to students. Furthermore, many participants justified the use of pirated materials on the basis that it was a way to support students in their learning. As Jasmin notes:

For example, in the science classes they show Bill Nye the science guy, and if there was money to go and buy that whole collection, why not? But they do not have the money and there's certain episodes that teachers want to show and I know one of the guys, he get them from wherever he gets them from. So that is, probably the main reason and if it was more accessible, so if I had these resources right there I could get them really quickly, for sure I would go the proper way and get them.

The rationalization that using pirated materials was acceptable as long as it supported student learning was repeated as participants were asked if they had used them in their own practice. As Janet notes:

I've for sure shown my students videos that weren't paid for, that were off the Internet from other people, so definitely. There are some great resources out there and there are some great things and there's limited funds. So you find a way to get it to the students.

Results from interview data also show that eight of the ten participants had used pirated materials in their teaching, and that the two who had not, would have if they had the technical capabilities to do so. As one of the participants who had not used pirated materials, Roz commented:

In terms of grabbing videos and that, I do not know how to do that, so I do not do it, but I've have colleagues that do, and they say oh you'd like that video, or this
TV show and they can get it off the Internet and they copy it. I mean I wish I could do it, but I do not know how yet.

The understanding of the instructional value of multi-media, whether pirated or not, played a key role in the lack of concern that participants showed about the ethical implications of copyright infringement.

One point that was identified as a concern by participants about the ethical issues involved in piracy was whether or not the students were aware of the teacher’s actions. In this regard, piracy was only understood to be unethical if students were aware of it. When asked if she felt scenario 5 was ethical in nature Belle comments, “Can he hide it? Because if he can hide from the students that it is okay. I would do it if I could hide it from our students.” Belle’s comments are indicative of a broader perspective regarding the authenticity of moral behaviour on the part of teachers. Citing an experience he had where one of his colleagues had been sharing pirated materials with other teachers, Diego notes:

Well it is not a huge issue if it is done in confidentiality. But the problem was that a lot of them, those movies were left in the staff room for other people to see and some people were very offended by it.

The contradictory nature of these statements was not lost on participants, however, who expressed some regret about not having stronger feelings about the unethical nature of piracy. When asked whether he felt like he was applying a double standard to his experiences with plagiarism and piracy, Hugo responds:

Yeah, for sure. We are taking people’s work without the consent. They do it for a living. And they expect to be paid for their hard work and I am just kind of taking that and using it for my own benefit and advantage. I guess I should feel stronger about that but I do not. I am just being honest.
Falling back on the justification of using pirated materials as a means to an end, Diego reflects:

> These situations are tough though and I think you are going to get a skewed response to this because you are asking teachers. I think that teachers are already limited in their resources, and if there's any way to get resources that they can use to teach the kids, they will do it.

What becomes apparent in these comments is that participants show a flexible interpretation of ethics in understanding of issues involving the violation of intellectual property rights.

> Overall the focus placed on teaching children about the integrity of digital information reveals some intriguing findings about teacher perspectives on ICT based issues that impact their professional lives. Results suggest that participants place a high priority on academic issues and highlight them as being ethical in nature because they compromise integrity, honesty and impact the relationship of trust between teachers and students. However, this focus is not equally applied to all situations of copyright infringement, as incidents involving the use of pirated materials by teachers and students are understood to be less serious than incidents where material is copied from the Internet for schoolwork. Participants also demonstrate a subjective and flexible application of ethical principles as related to ICT based issues that affect honesty and integrity.

### 4.3.2 Concerns about the impact of lack of access to ICT

The discussion of the impact of ICT on academics also led participants to give consideration to the impact that lack of access to technology has on their instructional practice and on student learning. Participants discussed the challenges that exist when teachers and students lack access to ICT resources, both inside and outside of the school.
For teachers, a lack of access to ICT within the school was understood to have a direct impact on their instructional practice. The discussion about the resources available to teachers within schools was characterized by those who had very limited access to any hardware or software and those who had physical access to ICT but felt unsupported in their use of the technologies. Participants who had very limited access to hardware or software was expressed frustration with the lack of access because they felt that there should be access to ICT in all schools. As Roz points out:

It really makes me mad. It is a sore spot for me because you see I am in a portable, I have no Internet no computer, the only computer I have is the laptop I brought in, no Internet connection, no printer, no technology which is ridiculous.

Although the lack of connectivity within Roz’s situation could be attributed to the physical limitations of being in a portable, other participants with regular classrooms had similar experiences. In describing the condition of technology in her school, Deanne notes:

We cannot afford computers in class. We have a lab, and half the computers do not work. It is pathetic, our computers. You cannot find a mouse for it, or the mouse does not work or the monitor does not work, they are old, … the computers that we have now take 10 minutes to log on, and by the time, it is like your computer lab time is over.

Deanne’s description of a school with outdated equipment was not atypical and represented a common experience for many participants. The feeling shared by Deanne and Roz that the lack of access to ICT resources is “ridiculous” and “pathetic”, speaks to the opinion that participants shared that teachers should have access to technology in their teaching, and that schools are in a position of responsibility when it comes to preparing students for the digital world.
Participants also felt that it was unfair that, in their observations, there were varying degrees of access to ICT across schools, where some schools appeared to have more ICT resources than others. In speaking about his experience with schools in different communities, Diego comments:

It freaks me out because I go to workshops with colleagues that are from schools that are different, socio-economically different and you know, the kids all have their iPhones, their iPads. They are all with their laptops and I am like ok, well. And then I have kids that come in and they are like, I do not know what to do, like they can’t word process, can’t figure out Microsoft word. It is so frustrating. Or if I give them a new program, they can’t instinctually try, they can’t figure things out, and I assume that in a technology age, that kids would be able to naturally work things out because they are used to just navigating a website or a program.

Many participants shared Diego’s frustration and expressed the opinion that the degree of access to ICT within the school was usually reflective of the socio-economic status of the community in which the school resided. Speaking about her experience, Barb notes:

I think about the school that I am at right now, which is in a pretty rich area and there is a smart board in every single classroom and their lab is all the new flat screen Macs and then in my old school, which was next to low income housing. We had no smart boards, there were the oldest computers on the planet that would barely work most of the time but yet there was this expectation that the students should always be working with technology and wherever possible they should be completing assignments using technology. But in that particular school that I was in, which was lower socio economic status, many students did not have computers at home and so I think it bothers me as a teacher that we have these expectations but yet not everybody can afford it or they are not able to use. And yes of course people will argue that we have computer labs in the school library but they are not really accessible.

The experiences shared by Barb and Diego highlights the gaps in resources across schools as well as the perspective that participants had about the negative impact that a lack of access to ICT can have on student learning. This proved to be an important point in the belief that participants held that lack of access to ICT was an ethical issue because it when was inequitable. As Don states:
I guess the ethical issue is, the issue of equity, you know, you say that oh ya, kids can have their blackberry's and that sort of thing. What about, and if you start using it as an instructional technology, you’re going to create gaps. You know, what about the student who can't afford it, and you have to be sensitive to that. You can't globally open it up and say, ok tomorrow I want you to bring all your cell phones it, because then you're immediately going to identify the students who either can't afford it or parents who just simply do not want their students to have it.

The role that technology plays in re-enforcing distinctions in socio-economic class was also something that participants observed in the interactions between children and their peers. An experience Jasmin shared:

I’ve witnessed students being frustrated with other students because they can’t do it as fast as they can or, you know, to be able to work it naturally, but I’ve also witnessed in the same sense students who are comfortable helping them navigate, answering questions, um, which you know, I think you get with both. We have kids that have their iPods and their, they walk around and, then we have kids that you know, do not. So it is like absolutely a status thing.

Jasmin’s observation that access to current technology was a sign of “status” reflects the belief that digital literacy skills were becoming a currency for social mobility and that when schools fail to provide access to technology they aggravate existing social inequalities because students lose out on opportunities to learn skills relevant to the digital culture in which they live. When asked why this was the case, Deanne responds:

Because the level of learning for them is different. It is going to be more difficult for them as they get older to keep up. When they go to high school, university, college, it is like, they do not have all the information, they do not know how to use a computer, they do not know how to access certain things whereas that other kid does.

Participants also felt that lack of access to technology within schools involved an issue of fairness where students in schools that had access to ICT were gaining an unfair advantage over students in school without access. Reflecting on this, Belle states:

Yes this makes me very mad. It is a sore spot for me. It is an ethical issue because I think it is totally unfair. Why should children suffer because the schools can’t
get their act together? I think it affects everyone. You (teachers) miss out on it (educational technologies) and the students miss out on the opportunity to learn.

In speaking about the varying degrees of access to technology that children have, participants demonstrated a heightened level of sensitivity to the access that students had to ICT outside of the schools. Stating concerns about students from lower income families who, even in the cases where they could access ICT in school, may not be able to access it at home, Jasmin states:

I think you can’t assume that all kids can continue your work at home. You can’t assume that kids can do a research project with Internet sources at home because they may have a computer but they do not have Internet access or they have a computer at home but they are not allowed to use it. So I think there are sure absolutely I think that it is not fair to assume. And I’ve witnessed it where you assume the kids have basic computer skills. Being able to use the keyboard, being able to work the mouse, being able to navigate a program to the desktop, being able to just understand the basic format of what a website works. You assume that the kids in this technology age that they would be able to do that and a lot of them do not.

Consequently, many participants felt that access to ICT presented challenges in creating learning opportunities that would equitable to all children. In speaking about this challenge, Deanne states:

In my area because my kids can’t afford all the stuff, really, that is why it is hard as a teacher to implement a lot of like, activities using a computer. We can, in our school, but we can’t say go home and do a research project on, unless they go to the library.

The importance of being aware of the access that children had to ICT when developing curriculum was a new challenge for many participants. In comparing her current practice to her first years in teaching, Jasmin notes:

When I first started teaching I never really worried about what children had at home because I could provide pretty much everything they needed. I had a whole cupboard full of stacks of paper, dozens of markers, pencils, construction paper, stickers, you name it, I had it. And that was all I needed. But now there’s this pressure to introduce new technology into our lessons and create assignments that
support digital literacy skills but I do not have dozens of computers sitting in my cupboard, you know, that I can give the students to take home with them. So I even though I want to be really creative and get students to do assignments on the computer and all that I can’t assume that students will have access to their own when they get home, so it’s not fair to them. And I do not have resources like that so its kind of unfair to me too, I guess.

Like Jasmin, many other participants expressed concern about the impact that a lack of access to ICT resources has on their, and the schools’, ability to prepare students for life in a world dominated by digital technology. For many, this was a key ethical issue because it involved issues of fairness and equality and the belief that a lack of access to ICT aggravates existing social inequity. Consequently, accessibility to ICT was an important ethical consideration for participants when the reflected on their responsibility for maintaining equity in their teaching practice.

4.4 ICT Based Issues and Teacher Professionalism

The third category of findings addresses the impact of ICT based problems on teacher professionalism. Within this category, participants discuss the inappropriate use of technology by other teachers, their concerns about the impact of digital culture on the professional boundaries in the teacher/student relationship, and the impact of ICT on a teacher’s professional identity and reputation. Teachers are concerned about the potential conflicts that can be created or aggravated by the boundary-less nature of digital communication.

4.4.1 Impact of ICT on professional relationships: Dealing with the inappropriate use of technology by teachers

In addition to discussing the importance of responding to the inappropriate use of technology by students, participants also expressed concern about the inappropriate use of technology by other teachers. This included questions about how technology was
being used to support learning, observations of teachers using technology for personal activities during class, time and email communication between teachers that was understood to be inappropriate and unprofessional. At the centre of each of these issues was a common belief that the inappropriate use of ICT involved any activity that was not directly related to the professional responsibilities of teachers.

One issue that emerged for participants as they discussed their experiences with the inappropriate use of ICT by other teachers involved the use of computer labs. Building on previous discussions about the importance of having access to technology, many participants felt that teachers too often allowed children to “do whatever they want” during computer time, without instruction or support. They saw this as an ethical issue because they felt as though many of their colleagues were not conducting themselves professionally and fulfilling their responsibility to use class time and school resources to teach children. As Deanne explains:

I think a lot of teachers take advantage of time in the labs. They just go to the computers and have free play. Kids get on whatever they want, like I’ve seen a lot of shooting games and video games, stuff that is age inappropriate and the teacher’s checking her email on the other side of the room, and nobody’s watching what these kids are playing.

When asked why she felt like this was an ethical issue, Deanne replies:

They aren’t doing their job. They are there to teach. Not check their email. Teach them (the kids) something. Maybe they could justify it if the game was educational, you know the whole play based learning thing, but I’ve seen kids playing Grand Theft Auto during computer time. What’s educational about a game that allows you to steal cars and kill people?

In a similar experience, Roz points out that the key issue for her is that teachers often become disengaged from what children are doing because they are preoccupied with their own interests. Roz notes:
I think it might come from a lack of understanding, or maybe they just do not care or need a break or whatever, but I can’t count the number of times I’ve walked by the computer lab and wondered what the kids were doing. Mostly you just see them playing games. And the teachers too. They are on Facebook playing Farmville or something totally unrelated to what the children are doing.

These experiences highlight the finding that in many cases, teachers appeared to be as distracted by technology as students, and in the opinion of participants, were failing in the professional responsibility to be good models for students. For this reason, many participants felt that the inappropriate use of ICT by teachers was an ethical issue because teachers are in a position to model appropriate ICT use. In reflecting on this point, Don notes:

It is amazing to me that some teachers can go on Facebook during lab time, or use their cell phones, or whatever, and then expect students not to do the same. It is as if they are forgetting the whole lead by example thing and instead, it is like, do I say not as I do. But as a teacher, you have a moral responsibility to model good behaviour for children, whether it involves technology or not.

One common technology that seemed from the perspective of the participants to be as much of a distraction for teachers as it was for students were cell phones. Participants shared common experiences where teachers could be seen checking emails, sending texts and making phone calls on their cell phones in class and during school hours. In discussing these experiences, Jasmin notes, “Teachers they are not supposed to have cell phones with them in class, but I’ve seen teachers taking calls, texting, texting is a big one, texting during teaching time.”

The distraction caused by cell phones was also not lost on the participants themselves as they reflected on their own behaviour. When asked if they had attended to personal emails or text messages during class time eight of the participants admitted to engaging in similar behaviour. As Don admits:
I have a BlackBerry. I definitely get the urge to check my phone and to be honest sometimes I do. But I am always thinking in the back of my mind about what the prickliest parent would say, or my admin if they saw me, so it is usually just quick glances.

For Don, as well as others who admitted to being distracted by their phones, there was an understanding of the importance of being aware of how often they checked their messages and an acknowledgment of the unprofessional nature of such behaviour.

When asked to discuss why they felt like the use of cell phones by teachers during class time was an ethical issue, many participants expressed different opinions. Some participants suggested that they had no personal issue with teachers using their cell phones but seem to feel that it bordered on unprofessional behaviour when done during teaching time. Hugo takes this position when he states:

I have colleagues that are on their BlackBerries for the better part of the day. I mean, do I feel super strongly about that, no. But it is a lot, you know? It is a little odd, but they are adults so what am I going to say? I just have so many other things to do, and I wonder why this person doesn't have anything else to do. I mean people will do their banking at school and do Internet shopping at school.

The concerns that participants raised about the amount of time colleagues spent using technology for personal reasons also came up when teachers talked about the use of email for communication between teachers.

Participants expressed a concern about the inappropriate use of email during school hours and felt that it was unprofessional in nature because it was an indication of people not doing their jobs. When asked about how he uses his work email, Bob notes:

Email is one of those things that everyone has and I do not mind getting the odd one you know when I have 5 minutes to do something online, and I check my inbox but sometimes I am not kidding I have like 50 forwards, from this other teacher, of you know funny pictures of different snowmen, some are inappropriate, there could be some sexual innuendo or something like that and you think, how come this person has so much time for forwards? Aren’t they working like me?
What is interesting to note about comments of this kind is that participants were often more bothered by the fact that their colleagues were doing something other than work than by the content of the emails being sent. Similarly, Roz points to an experience she had with a colleague known for his lack of professionalism when she states:

This person has reputation for always being late to work, for never doing his job that this person is supposed to be doing and all of a sudden first thing in the morning I get three emails from him, cartoons and things, nothing to do with school. First thing in the morning, that is what he’s doing and you feel like, no wonder this person is being judged for not doing their work because they are sending these chain emails. And I am able to recognize the fact that they are jokes and so I do not take offense to them but really, shouldn’t you be doing your work?

Although participants felt teachers should not use technology for personal reasons during school time, they also expressed a belief that adults should be able to make their own decisions about their use of technology. As Don notes:

I think it is important to distinguish between what teachers, the fact that teachers are adults and we also need to have our freedom to express ourselves and to use technology whenever we need to or want to. I think as an adult as a teacher as a professional I think I have earned that right but also there is a level of professionalism that you have to maintain and that the students you do not want to give them the wrong impression.

Underlying these types of comments is the feeling that the use of cell phones by teachers during school hours is an issue of professionalism because of the leadership role that teachers have in modeling responsible technology use for children. When talking about teachers’ texting during class, Jasmin notes:

It is definitely an ethical issue. I think it is inappropriate, I think that you’re not modeling proper behaviour if the you know the rules say no texting for students, then it should include teachers as well and, I think it is a distraction to the students and to the teacher.

The importance of modeling appropriate behaviour for children was also an issue for Belle who states:
I see my grade partner all the time on her computer when she should be teaching. I saw her three times today. I do not know what she is doing, I’ve asked her couple times, sometimes she’s checking her emails, planning something for her wedding, doing something with her house. I have caught her doing that too during teaching time, she is on it while her kids are doing nothing and I just wonder, what’s the message she’s sending you know? How can she tell students not to use their phones in class when she does?

Within the discussion about the inappropriate use of technology by teachers, participants noted their strong feelings about the unethical nature of establishing a double standard between teachers and students about responsible technology use. However, an interesting finding that emerges from this is that although participants felt strongly that what other teachers were doing was wrong, they were unlikely to approach them about their behaviour.

Participants were more likely to preserve the collegial norms of being loyal to one’s peers and respecting their individual judgment, than to address the inappropriate use of ICT by teachers. Participants provided a variety of reasons for not approaching colleagues whom they felt were using technology inappropriately within the context of the school. A common explanation was a desire to maintain their relationships with their peers. When asked if she confronted teachers whom she saw texting while they were supposed to be teaching, Roz responded:

No, never. I guess because again there’s social norms amongst peers, only colleagues, there’s a certain, a line that you know, it is, I do not want it to be uncomfortable between colleagues because I work with them on a daily basis and I require my relationship with them in order for my job to work. If I do not have relationships with other people then I can’t do my job, and so I ultimately that is what prevents me from saying something. If that was not there then I might say something.

The emphasis on maintaining relationships with colleagues was similarly noted by Belle when asked about how she responded to her grade partner whom she had seen using her
phone during class time. She notes, “I do not really want to rat out my partner. That is why I haven’t addressed her issues. I kind of do not want to be a snitch. I know those aren’t professional sounding words, but I just would not want to be a rat.” The use of the words “rat” and “snitch” provide an interesting characterization of someone who would address unprofessional behaviour and reflect a common belief that it would be better to avoid confrontation in order to maintain their social status amongst their peers.

Despite the important role that collegial relations played in stopping teachers from responding to the inappropriate use of technology by their peers, participants were more likely to approach their colleagues if they already had a close relationship with them. When asked how she deals with colleagues whom she sees sending texts and taking calls during class time, Jasmin notes:

Depends on how close I am to that person. If we are close I would say What are you doing? It is, you know you’re not supposed to be texting. You should save it for later. But if I do not have a personal relationship with someone, I do not know, I guess my role as a teacher librarian is kind of, I work more with teachers than I do with students often, so I feel like I am often a mediator and I am kind of like the, I have to maintain relationships with teachers.

Similarly, other participants suggested that being friends with a colleague would make it easier to talk to them about their unprofessional behaviour. As Don states:

I feel more comfortable with them, you know in terms of expressing my opinion, and looking out for them. Whereas it is a professional colleague it is more sensitive because if I say something to them they might see nothing wrong with what they are doing and I do not want them to feel like I am being judgmental of them so I do not know how they might react. There are a lot of teachers who are pretty sensitive about that sort of thing. It would all depend on the colleague.

What emerges from these discussions is a deliberation on the part of participants about the social and professional benefits of addressing inappropriate use of ICT by teachers. Within this deliberation, participants weighed the potential benefits of addressing the
inappropriate use by their peers. As a result, they were more likely to address
inappropriate use of ICT by a peer with whom they were close than they were to address
the inappropriate use of ICT by colleagues with whom they had no personal connection.

In explaining the reason for this, Barb states:

> I think I value my relationships with my colleagues more than my ethics. Because
it is not a priority in terms of my ethical pyramid of things that are important to
me. I think everybody has a pyramid of ethics in terms of the things that we value
and feel strongly about most, and then there are things that we value and feel
about, but not necessarily strongly enough that it would require us to take action.

As a result of this reasoning, participants showed a tendency to deal with the
inappropriate use of technology by other teachers on a case-by-case basis, adopting a
flexible application of their responsibility to uphold professional standards. This proves
to be a drastically different approach than what is applied to the inappropriate use of
technology by students, where participants felt that it was a part of their jobs as teachers
to educate children about the responsible use of ICT. This leads to further discussions
about the role that technology plays in the relationship between the professional
responsibilities of teachers and their reputation.

### 4.4.2 Impact of ICT on professional identity

Discussions about the impact technology on their professional duty also lead
participants to consider the ways in which ICT had affected how they viewed their
professional reputation. Participants talked about the way that technology has changed
their understanding about their professional identity because of the way that it challenges
the professional boundaries that they have with colleagues, students and parents. In these
discussions participants express a sense of apprehension about using ICT in both their
personal and professional lives and demonstrate a heightened sensitivity about the impact of the hyper exposed, always connected nature of digital communication.

One area where this apprehension and sensitivity were amplified was in the use of email for the purpose of communicating with colleagues, parents and students. Participants felt that the benefits of using email for communication purposes was outweighed by the potential damage that could be caused if the email were to be used against them. This concern was reflected in an experience shared by Bob when he noted:

So to make a long story short I was planning a trip with some colleagues and we were sending emails back and forth. One of the emails was misunderstood by one of my peers and they got offended and forwarded it to the superintendent with a complaint about how I was handling things. It turned into a big issue though because they deleted a portion of the email thread so that the forward to the superintendent only had one side of the story, when really there was a chain in the email of this whole discussion, it is caused a major rife between myself and this person at the school because they used technology to try and make me look like I basically I am not understanding and not professional and not a team player, and not willing to work with my colleagues.

Although Bob’s experience was not typical, it is indicative of some of the primary concerns that participants had about the ways in which emails could be used to misrepresent them and negatively impact their professional reputation.

This fear of being misrepresented was also a concern for participants as they talked about the use of email for communicating with parents. When asked why she does not use email to communicate with parents, Roz notes:

I think that parents are more likely to twist emails around. I have had parents twist things that I say on the telephone, so if they can do it on the telephone they could do it in email. I do not even want to bother with that. It is helpful but it isn’t so helpful that it makes it necessary.
The feeling of vulnerability communicated by participants was further compounded by concerns about conflicts that become escalated by the speed of electronic communication, as Janet states:

Some teachers might use technology strictly as an academic channel to communicate but there is always potential for something to escalate from that. And it happens so fast. I mean you send out an email and then within five minutes you have parents responding with complaints. So I mean for me personally I just want to avoid, you know prevention I avoided altogether. I avoid using technology to communicate with parents and students altogether.

A finding that results from these experiences is that many participants felt that communication over email is to be avoided because of its potential to cause conflict. As Barb notes, “I do not email parents. I do not believe that you should put things in writing because it can always come back to haunt you. So I try whenever possible to speak one-on one with the person.” Barb’s comments also speak to a general concern that participants shared that any form of digital communication had the potential to harm a teacher’s reputation.

Many participants felt that the concerns they had about protecting their reputation was an ethical issue because it involved the teacher’s right to privacy. As Don explains:

It is hard for me, and I think for most teachers, when I think ethically, each individual should have the right to privacy right. But is the Internet public or private? And if I post something online that is meant for my friends, is that private? I think the reality is no, it is not, because teachers are held to a higher standard and its almost as if we can’t have a private life. Or at least an online social life because pretty much anything I post could be tracked and seen by a student, parent or whomever. And then I become that teacher double fisting some beers at a bar and that gets tied to my identity as a teacher.

The identification of the impact of digital communication on an individual’s privacy is an ethical issue for many participants who, like Don, felt as though their privacy had been limited by the responsibilities they had as teachers to be role models for students. This
created a sense of tension for many who communicated feelings of stress about the content they posted online because of the potential it might have to negatively impact them as teachers. In describing her tension about posting content to her Facebook profile, Roz notes:

There are so many privacy issues and that something that worries me and concerns me ethically. I mean I have to be aware of myself as a professional all the time now you know. Before I post anything I have to ask, what if a parent saw this, or my principal? Do I really want to put that out there?

The ethical tension that participants expressed in their use of digital communication tools became magnified when they talked about using them to communicate with students. Overwhelmingly, participants felt that using any form of ICT to communicate with students was an ethical issue because it crossed professional lines and made them vulnerable to accusations of inappropriate conduct. When asked if he would use email or other forms of social communication to connect with students, Don emphatically replies:

Absolutely not, no way. I do not want to put myself in a situation where something like that can go wrong. Because even if it is a false accusation that can ruin you professionally, even if you are proven innocent, or not proven guilty. So, I mean why even take that risk. It may never happen but the potential for something to happen is there. And I feel like, yeah even though there is an instructional benefit, the benefit is not great enough for me to risk that.

Participants showed a heightened sensitivity to the potential impact of being perceived as having an inappropriate relationship with students. This was a particular focus for male participants who expressed concern over any contact with students that might be misinterpreted. This is evident in Hugo’s experience when he states:

A couple of years ago when I was doing grade five, at the end of the year I was leaving a girl in another class made a DVD for me as a goodbye thing, it was basically just her you know saying goodbye I will miss you kind of thing because of the time they were not expecting me to come back. It was innocent enough on
her part. I know she wasn’t trying to do anything with it but it was inappropriate. It was just weird you know, getting this DVD from a little girl who is saying I’ll be missed and she’s doing a dance in front of the camera, it was just weird. I mean it was innocent but it could be taken the wrong way.

The sensitivity about crossing professional boundaries with students was also a concern when participants talked about the emergence of social networking sites, such as Facebook.

Each participant was asked about the use of Facebook to communicate with students, and they uniformly identified it as an ethical problem because of the potential to cross professional boundaries. Some participants, such as Diego, questioned the validity of using the social networking platform when he rhetorically asks, “why do I need to talk to this little kid on Facebook or MSN. There’s no need for it. It just seems inappropriate.” Similarly, Roz points out the nature of communication that occurs in a social space as a reason for not using Facebook with students. She notes:

I would never even make contact with a student on Facebook. It is not appropriate. Facebook is a social space. It is like a bar or a club or something. I would not hang out with a student in a bar so why would I hang out with them on Facebook. I think that would send the wrong message and it is important for them to know that our relationship is professional, not social.

Even though participants strictly avoided contacting students over Facebook, they were still concerned about the fact that they had no control over whether a student could contact them. As Bob notes:

You often hear kids say oh I found so and so on Facebook and I found you on Facebook, and it just makes me uncomfortable, because again it blurs that line between professionalism and non-professionalism; even if you do not want them to find you, they will.

Recognizing the increased social connection that Facebook provides, Don notes:

We’ve always been advised that it is a very fine line between your private live and your business work life, and you know it is a fine line and I want to try to keep
that as separate as possible. So I do not need people to search me out and find out personal things about me because I can't always control what people would post on their sites if I get tagged or a picture gets added, that could be something appropriate and then the picture looks inappropriate, and I just do not want to put myself in that sort of situation.

The concern about being found and tagged on Facebook was again of particular importance for male participants who felt more vulnerable to accusations of inappropriate relationships with students. As Hugo comments:

I think that teachers really, really in this time and age have to be careful about things like Facebook, especially male teachers, right? I know it happens for female teachers, but being a male teacher in an elementary school, it only takes one student to say something inappropriate. And if it can get traced back to Facebook or if there's some sort of connection you could have had, you do not have a lot of ground to stand on.

Interestingly, female participants also shared concerns about the ways in which Facebook made them accessible to students. As Belle states:

I’ve had some of my students say they looked me up on Facebook and I do not know, there’s something a little strange about a 12 year old cyber stalking me you know. It could be innocent but I mean why is he adding me, what is the intention? What’s the motive? Why do you care to look up another person and then have them as a friend on Facebook?

Many participants noted that one way to avoid engaging in any form of inappropriate communication with students over Facebook would be to simply not have a Facebook account, however this led to discussions about the rights to privacy that teachers have outside of the context of their professional roles.

Participants noted the complexities involved in trying to maintain a separation between their personal and professional lives because of the boundary-less nature of ICT. The focus on the ways that technology impacts privacy is captured by Hugo’s story:

There was one incident, for the longest time I never told my students if I had a girlfriend; I just felt it was none of their business you know, them asking me questions about my girlfriend so I just avoided the whole thing. But there was one
time that my girlfriend picked me up from school and we were driving and stopped at a stop light, and there was like three of my students. They were on the sidewalk, all of a sudden all three of them took out their cameras and started taking pictures of me in my girlfriend’s car. It was actually really funny, I felt like a movie star but the first thing that popped into my mind was that this would get posted to their Facebook walls and then it would be all over the school.

Hugo’s story highlights the concern teachers have about the scale and speed of digital communication as they attempt to maintain a distinction between their public and private personas.

The consideration of scale and speed of digital communication was also important as participants reflected on the content of their own Facebook use and whether or not it was professional in nature. Participants expressed a concern about the impact of their Facebook “profiles” on their professional reputation. When discussing the kind of content that she feels she needs to be mindful of, Belle notes:

Well Facebook is a primary method of communication with my friends and I am updating my status. I am uploading pictures so I am constantly having to think twice about what I say in status updates, particularly if they have to do with work. You know if I’ve had a hard day and you know something that happened that I do not want my colleagues to know about but I want my friends to know about. Like, wondering why so many teachers out there can’t find a job but I am working with lazy asses” something along those lines.

Commenting on how her Facebook profile has changed since she became a teacher, Janet notes, “I cleaned it up so they would not have anything to say now.” When asked why she felt she had to “clean up” her profile, Janet explains:

I think you are in a different role. I am a professional and I want to maintain an image within the community at large and in the school. I work hard during the day to maintain an image so why would I do something silly online.

This focus on professional reputation was consistent among participants as they reflected on the impact of ICT on their professional identity.
The importance of their professional identity was also an area of concern for participants who pointed out various other online sites where they did not have control over what was being said about them. A site of particular concern that came in discussions about professionalism and privacy was ratemyteacher.com. This concern is reflected in a story shared by Barb about one of her colleagues:

There was a girl that went on there (ratemyteacher.com) and said that a male teacher, a colleague of mine, only stares at girls’ boobs. A student wrote that. But it was completely anonymous and nobody knew who was writing it and the teacher went under investigation. So the principal sent an email to the website and asked them to remove it because it doesn't look good and they said "we only remove information if the person has died", so can you believe now this teacher, has this written that all he does is stare at boobs. Is it true? Who knows? Maybe it is, maybe it isn't. But if it is true then that should've been brought up to the principal and it should've been investigated at the time. You do not just post stuff like that. I am sorry I have a problem with that.

Speaking of the same website, Jasmin expresses similar concerns:

I think that site is absolutely so inappropriate, but in the same sense, I have gone on it to check to see if I am on it and to see what kids have written about me. And my rating is okay but I have had other teachers that have come up to me quite upset because students have written things about them publicly, on a website about them and you know, they are pretty hurtful and pretty derogatory, and that is just wrong. Like that kind of stuff is like is in this public forum and may or may not be true. I think they should have rate my student if they are going to make it equal grounds.

Because of sites such Facebook and Ratemyteacher.com, teachers have become more aware of the potentially negative impact that online content can have on their public persona and professional reputation. Additionally, these issues raise questions about a teacher’s privacy and reflect a feeling of concern that teachers have about the lack of control they have over content that is published about them.

Overall, the findings relating to the impact of ICT on the professional lives of teachers highlights the varied nature of participant experiences and perspectives.
Participants expressed strong opinions about the inappropriate use of ICT by students within an academic context, identifying issues of plagiarism as being a key ethical issue that teachers need to address. The same level of conviction was also applied to issues of inequity that are created when students and teachers lack access to ICT resources, where participants reiterated the responsibility that schools have to prepare children for life in a digital world.

When discussing issues relating the inappropriate use of technology by other teachers however, participants expressed a desire to maintain collegial norms and avoid confrontation with their peers, rather than address issues of lack of professionalism from their colleagues. The desire to avoid conflict also carried over into judgments about whether or not to use ICT to communicate with parents and students, where participants expressed strong feelings against using digital communication out of fear that it could potentially have a negative impact on their professional reputation. This focus on reputation also carried over into their private use of ICT as they gave consideration to the impact of the ubiquitous nature of digital communication on their own privacy. Each of these findings highlights the complex nature of ICT based issues that challenge teachers in their understanding of teacher professionalism.

4.5 Dealing with ICT Based Issues: Strategies, Resources and Supports Used by Teachers and Schools

The fourth category of findings reports on the ways in which schools and teachers respond to ICT based issues. Participants share their experiences with school level policies created to address ICT based problems as well as the ways in way they, as teachers, address these issues. Participants also discuss the resources and supports that
teachers need in order to deal successfully with increasing occurrences of problems involving technology. Within this context, participants express the belief that teachers and schools play an important role in dealing with ICT based issues that occur both inside and outside of the school. Furthermore, they suggest that the complex nature of issues related to technology necessitates a multi-faceted approach that includes developing the digital literacy of teachers and students to prevent ICT based problems as well as determining meaningful ways for coping with inappropriate uses of technology.

4.5.1 The school approach: The use of school policy as a strategy for responding to ICT based issues

In discussing the ways in which schools were dealing with ICT based issues, participants noted the increased presence of ICT policies that addressed the inappropriate use of technology by students. These policies were identified as being punitive in nature and focused on breaches of conduct by students. When asked to describe his understanding of the policies, Don notes:

They are mostly lists of do not’s. So they are mostly students shall not, students shall not, students shall not, they are not written in positive language. They are definitely written in actions against and I think that for the most part reflects the fact that it is protective in nature. It is not really looking at effective use of the technology. It is looking at inappropriate use of and therefore we need to prevent this from happening.

The focus on preventing the inappropriate use of technology by establishing rules was similarly noted by Jasmin, who describes the policies as:

The board has an online code of conduct. I think it is like seven major rules just talking about inappropriate and appropriate uses of technology in the school, and it does touch on plagiarism, it touches on inappropriate websites, that kind of stuff. So I think there is a policy in place so that if things do happen that the board does have a stand on it, which is good.

One policy that participants discussed was a recent policy that prohibited the use of
personal electronic devices (PED), such as cell phones and mp3 players, during school hours. When asked to describe the PED policy at his school, Diego notes:

Our current policy is one around no personal electronic devices or PED's being allowed in the school. And what that policy kind of falls around it, is there's about seven to eight points about primarily if it interferes with the education of the students in the school then it is not permitted. And number two if it jeopardizes the privacy of the students in the school, like being used in washrooms and stuff like that, it is not permitted so there's are the two big policies that we have in school. So what we always try to tell the kids if they are using it in the school for learning, if they are using out in the playground or in the bathroom, you're taking possibly pictures of kids that do not want their pictures taken.

The presence of PED policies was common in schools where participants had worked. Of the ten participants who were interviewed, seven said that they aware of the PED policy in their school, two said that there was a policy but they were not familiar with it and one stated that there used to be a policy, but that it had changed. The prevalence of PED policies is also noted by Bob:

I mean every organization that I've had has a policy laid out about personal electronic devices in the classroom and they also have a policy about bullying/cyber-bullying. While those two policies do not necessarily blend, you have to know them to know in order what you should be interacting on as a teacher. What you might interact on as a teacher and what you can simply just turn a blind eye to because it is a non-issue, just a regular classroom management type thing. So that you need to know in order to figure out what you are going to do and then from there, you just consult with other colleagues and admin to see if they've dealt with the problem, see if they need to pursue it, they need to make it a larger thing than it is.

In addition to PED policies, participants also talked about blocking policies that were being put in places that would ban or restrict access to any technology that may interfere with the goals of the school or impact the safety and well-being of the students. Participants noted that the blocking of online content had become a key component of these policies, with websites like YouTube and Facebook being typical sites that were blocked by schools. Reflecting on her school’s approach, Jasmin notes:
My school has banned things like YouTube and Facebook outright. So they are blocked and when you try to log in to them it doesn’t allow it to go through and that is a school decision. We have a software called Net Support that allows us to control computers in terms of what they have access to, what they do not have access to.

Belle shares a similar story about the targeting of Youtube and Facebook:

YouTube is banned and I think that is a board thing that the school thing. I know that I have tried to look up videos on YouTube and I could not get on them. So there are certain things that I remember where students would click on something and a screen would come up and it would say access denied so I do not know what they were trying to access but they could not.

A common observation about the blocking policies is that the decisions about what content was to be prohibited was generated at a school or board level and outside of the control of the classroom teacher. Some participants attributed the development of these policies to the school’s desire to protect students from being exposed to inappropriate content. Following this line of thinking, Jasmin notes:

I think the policy is there because there’s so much inappropriate content out there and it is not filtered so kids can find it, sometimes on purpose and sometimes by accident. So the policy prevents that from happening and that is huge in terms of inappropriate use, because many kids’ understanding on the Internet is so limited that it would be easy for them to stumble upon something like pornography. Like my little guys, every computer class they say, ‘Miss, can we go on the Internet?’ I tell every single time, I say no.

Other participants expressed skepticism about the motivation for blocking policies, suggesting that they are not in place to protect students, but rather to protect schools. Bob explains:

The policy really is there to protect the school board, not the students. In that broader speaking sense, it has to do with liability. You do not want parents coming after you because their child has been exposed to something at school accidentally. I think that would be a huge problem and is something the boards are trying to avoid.

While participants had different interpretations for why school level policies were put in
place, they shared a common opinion that the PED and blocking policies were ineffective in preventing or dealing with ICT based issues.

Reflecting on their experiences, participants cited confusion about the details and implementation of the policies as a key reason for why they were ineffective. In speaking about the confusion she experienced with her schools PED policy, Janet states:

I'll give you an example. Last year, I had my cafeteria supervision and I was under the impression that you could not have your cell phones out during lunchtime, in school at all. They are in your bag, and maybe so that was probably the standard two years ago. And so I went to do the cafeteria supervision, it had been a while since I had done caf supervision, and so I started taking cell phones away; I had six phones in my pocket. Six! So I am walking around like this, and kids were looking at me like 'what's going on? What are you talking about?' and so then I talk to my colleagues and they say 'no no no, they are allowed to do it in the cafeteria now.

The inconsistent application of PED policies described in Janet’s case was similar to that experienced by many participants who felt that communication about the policies, to both teachers and students, was not clear. In sharing his experience taking a group of students to another school for a basketball tournament, Diego notes:

So we walked into this other school and there was a sign and it said 'absolutely no electronic devices are permitted on school grounds' or something along those lines, and our kids were like 'oh my god!'. They were shocked. It was funny because we were like that is our school policy as well, but they had no idea.

When asked why he thought the students were not aware of the policy, Diego continues:

Well I do not blame them really because if it was school policy everyone would know about it and everyone would follow those guidelines, and again administration really sets the tone, and again I think they've gone back and forth about this and for a while. One minute it is no PEDs, the next it is fine. It is hard to keep up so in the end the message just gets washed out.

The confusion about PED policies was a primary reason for why participants felt that the policies had no real value in dealing with ICT based problems.

Another reason participants saw no value in such policies was because, even
when policies were clearly understood and implemented, students were often able to easily get around them. In describing her experience with her schools blocking policy, Deanne explains:

So I understand that the school board blocks things, but kids are finding ways to weasel themselves into certain websites anyway. But, I do not know, I think it should be discussed in schools and at home, but no one does that. Safety? No. Kids are constantly on the computer, so they know a lot more than we do.

Deanne’s experience with students who knew a lot more than she did about getting around the restrictions put in place by the policy was common, as participants shared experiences that highlighted the ability that students had to get around school censors. In a similar experience where her students were able to get around the Facebook block, Jasmin notes:

It is not hard to get on Facebook, even when the school blocked it. I notice that the kids, what they would do is if on your Hotmail or whatever, it would say Facebook, you have a new message, so instead of going on Google and putting facebook.com, which is blocked, the kids would go on their Hotmail, click on the link in their email, and that is that, they are on Facebook now.

The ease with which students were able to circumnavigate blocks on websites such as Facebook and YouTube was also brought up by Don:

Students know the system better than we do; I mean we block all the games, websites that are going to distract and we block all the music websites where they can get the music videos with questionable content. They still find a way in to them, they can back door anything, so you can set up as many firewalls as you want. The most effective way basically that we've found to prevent those from getting in, is we send the exact URL to the IT department, saying this is a questionable website it needs to be blocked, and that is the only way we can do it. Pretty much seems that if they put up a general firewall I would say seven times out of 10 it is going to work, but then three times they'll find a way around it.

The ability of students to get around blocking policies became a more serious concern for participants when students were able to access content that was both age inappropriate and inappropriate for the school setting. When reflecting on a previously noted
experience where students in his school had accessed pornographic websites Diego notes:

> We have a filter and so kids do not have access to those (pornographic) sites, but if the kids can find either mirror sites or get sites out of Europe, Asia, with different addresses, that won't necessarily get picked up by the filter. They'll have access to that. And there's really nothing we can do because we can't block everything.

Like Diego, many participants expressed a belief that policies were ineffective in blocking children from inappropriate content. In discussing why she does not feel that policies have any value, Barb explains:

> I am not speaking for teachers in general but for me at the end of the day teaching involves people. Everybody is different; administrators have their own agenda parents have their own agenda, teachers have their own agendas so why do we try to create these policies were everybody falls under the same agenda? Whose agenda to those policies push? The people at the board? People at the ministry? Obviously the right answer would be that we want the administrators to be involved, we want to see parents on board we would like to see specific documentation and policies that are explicitly written so that everyone understands them and there is no gray area, but when it comes down to it I do not even think about the policies. No policy is going to govern how I teach.

Some participants pointed out that the static nature of policies was a key reason for why they were ineffective in responding to ICT based problems, which are understood to be dynamic and constantly changing. Don articulates this concern when he notes:

> I think we are sort of at a cross roads right now where boards are making these rules about what the kids can and cannot access, but it is starting to get clouded because as technology becomes more integrated into society, for example you have the no PED rule, in almost every board, right? I understand the reasons. I mean you've got the issue of kids filming or videoing kids that do not want to be pictures taken and sharing that. You’ve got the issue of texting. You’ve got the issue of this Internet surfing and distractions in the classrooms, and I mean you block it for these reasons which I think are valid, but then you've got all these other uses, so we are sort of at a stage now where I think that blanket statement of no PED's is not going to be very effective, and we know it is not working, the kids still have them, it is not like they are keeping them at home, it is not like it is working, the kids still have them, the kids are still having them taken away.

Don’s perspective highlights the challenges that come with attempting to develop policies
for technologies that are constantly changing. For many, this also led to a sense of
resentment about who was responsible for developing policy documents, which
participants believed was by people who had no connection to the daily experiences of
teachers. As Bob states:

Maybe these big shots want to create a policy about something that should be
common sense, then so be it, because I know not all teachers have common sense.
So those documents are for those people. But I do not think the policy is covering
my behavior.

The point that policy makers appeared to be out of touch with what teachers experience
on a daily basis was also made by Roz, who was critical of the language used in the
documents when she suggests:

No one's ever read that legal jargon, no one's ever been that familiar with it. I
think most people rely on their own common sense, and what the prudent man or
person would do in this case type thing. And you know there might be an Internet
policy but I think that even the people that write policy know that nobody spends
their time reading policy.

What emerges through these comments is the belief that policy documents are
insufficient for dealing with the daily challenges that teachers have to face. As a result,
many participants like Roz, Barb, Bob and Don stated that they willingly ignored the
policies and, instead, used their own judgment to determine what constituted
inappropriate use of ICT within their classes.

4.5.2 The teachers’ approach: The use of intuition, direct instruction and
modeling as strategies for responding to ICT based issues

When talking about how they responded to ICT based issues participants showed
a tendency to rely on their own sense of right and wrong, rather than professional
guidelines, in determining what constituted inappropriate use. The responses used by
teachers in dealing with ICT bases issues are independent of school policy, address
situations on a case-by-case basis, and are characterized by the use of direct instruction and modeling as strategies for teaching children about morally responsible online behaviour.

Overall, participants used their own judgment as a strategy for identifying how to respond to ICT based issues. In describing her approach, Belle states:

As a teacher, I do what I believe, that is all that I can do in terms of educating them and then it lies with the students themselves to make the right decisions. And then it lies with the parents to monitor I can't follow them home and take care of them.

Similarly Hugo reflects:

I think that if you have a strong sense of ethics, or I guess if somebody thinks they have a strong sense of ethics it should translate from their life to their work as well. For me, I use my personal ethics to guide what I do as a teacher so I guess I just rely on common sense. But I think most teachers do.

When asked to describe how his personal sense of ethics guided how he responds to situations he had experienced involving ICT, Hugo explains:

Well, I think that it depends, you know, on the situation. Sometimes you just know when something is wrong, like when a kid plagiarizes, that is common sense that they shouldn’t do that cause it is stealing right, and they know it as well. Or like in cyber-bulling, that is common sense too right because it goes against the idea of not hurting your brother, which is one of the things we talk about in my school because it is a Catholic school. So yeah, sometimes it is a judgment call but most of the time it is pretty obvious.

Hugo’s comments are reflective of the trend that participants showed towards using the concepts of “common sense”, “sense of ethics” and their “personal judgment”, rather than school policy, in understanding the ethical nature of the issues with which they were faced.

The use of an independent approach is also evident in the ways in which participants responded to ICT based problems, citing the use of direct instruction of
moral values as a strategy for teaching children about appropriate online behaviour.

Participants often described their experiences as teachable moments where they had the opportunity to pass on moral values, such as respect, to their students. As noted by Jasmin:

So I hope that the conversations that I have with my kids stays with them, and I tell them ‘you should be behaving in a respectful way. Thinking of the person on the other end of the computer screen’, all that kind of stuff. I want them to be good people. That to me is more important than the curriculum.

Janet also emphasized the importance of talking to children about appropriate online conduct when she states:

I think cyber-bullying needs to be explicitly discussed and taught to kids so they understand what the implications are and the consequences, not just in terms of the school but in a broader way as well. I spend a lot of time talking to kids about this kind of stuff cause they need to know that it is not okay, and that there are consequences.

The strategy of talking to students about issues was a common tactic used by participants, who used it to respond to a variety of issues that occurred within a variety of contexts. For example, when asked how he deals with the issue of plagiarism, Diego notes:

I tried to teach the kids that it is morally wrong to plagiarize, and I try to base it on the relationship that we have, their trust, and I hold them to the honour system and hopefully their conscience will supersede the plagiarism and they’ll come to me if they do, you know constant reminders, constant talking about why it is wrong and why not to do it, and I challenge them, right, and I challenge their ethics and their morals and see if they’ll come forward and some kids do.

In a different context, Deanne described a similar approach in addressing the issue of hyper-sexualization with a group of students who were mimicking what they saw in mainstream media. She recalls:

I hear students all the time listening to songs where the girls were wearing these booty shorts, and you know, their body parts hanging out and some of the rappers what they would sing about, shooting, and you know, do not mess with me, I’ll put a bullet through your head, those kinds of songs, So, when I taught grade 8
though, I took those videos and I played them and made it a point to teach the students about messages in the songs. I asked them why do you think it is a positive song, why do you think it is not a positive song. We had a candid conversation and I was like wow, some big issues. But I think my relationship with the students is open enough where we can talk about those kinds of things.

While each of these experiences occur within a different context the experiences shared by Diego and Deanne involve the use of conversation as a strategy for dealing with the issues and highlight a belief that participants have about the power that having a good relationship with children can have on their moral development. In some cases, this relationship was used as leverage for discussions with children. As noted by Barb:

When you sit there in front of them and say I am so disappointed that you did this and you see that they are generally, a light bulb goes off and they think somebody actually cares. It is not that they are in trouble I never go in yell at them, I just say ‘wow, I can't believe you chose to do this’ and I think those types of relationships with people, when they know that people actually care about them, and they are disappointed, when you disappoint somebody that cares about you I think that is pretty powerful. Pretty powerful when compared to the administrator making them sit in the office for a day.

Overall, participants shared a common perspective that talking directly to students and telling them what was appropriate and inappropriate, and why, was an effective strategy for helping children to understand the consequences of their inappropriate use of technology.

In addition to the use of direct instruction, participants also focused on the use of modeling appropriate behaviour as a strategy for encouraging responsible technology use. Many participants point out that they feel it is part of their professional duty to be a model for students. In reflecting on a situation where one of her students had been exposing their personal identity online, Barb explains:

I think it is my responsibility to be a model and show them how to use the Internet properly and warn them about what could happen if they posted an inappropriate picture online or if they were having online discussions with someone who is
older than them and they are asking to meet up somewhere. I think it is important that we talk about these types of scenarios.

The use of the word “model” was prominent in describing the most effective way for supporting children in their understanding of appropriate online conduct. When asked about how effective they felt modeling was, participants such as Janet noted:

I think it would work with the majority of my students, they would look to me as a model and I would help them to just see what is good or bad, to make the right choices, I really push choices and show them through what I do.

The image of the teacher as a moral model was also important for Bob, who states:

I try to give them my own examples as their moral compass because I think as kids, that really kind of makes things clear for them in terms of whether or not it is appropriate or inappropriate. A lot of kids are very blurred in terms of what they, in my experience anyway, a lot of my students are not sure if something’s appropriate and I always try to advise them that if you're not sure, and if you're not comfortable, ask.

The belief that participants had about their role as models for the appropriate use of technology becomes an interesting point when discussing the feelings of inadequacy that participants shared about their own level of technological literacy.

Results from interview data suggest that the level of comfort that participants had with technology played a key role in their ability to effectively deal with technology related issues. Overall, participants felt that the lack of technical knowledge that many teachers possess impacted their ability to understand and respond to ICT based problems. As Jasmin points out:

Teachers aren't as educated. Educated is the wrong word, not as versed in the technology as the kids. It is all about education, and I mean I think there’s an issue of respect there too. How can you be influenced by someone you do not respect? For example if you do not know what you’re doing, and the kids know what they are doing, how can you show them what the right thing to do is?

The belief that being more educated about technology would help in dealing with ICT
related issues was similarly noted by Bob who states:

I think the more well versed the teachers are with technology, and the pitfalls of them, the more equipped they are to deal with these issues. I know I need to be more versed and I absolutely think that we could be better role models and it would hopefully allow me to better address these issues because I can talk to the students and show them that I actually understand.

Inherent in Bob’s statement is the belief that many participants shared that teachers need to demonstrate an understanding of technology in order to be role models for children. This serves as an intriguing challenge for participants who are used to being an authority on issues but may be out of their element. The irony of this shift is evident in a comment shared by Hugo who recalls:

I heard an interesting joke the other day that I think speaks to why teachers can’t really be good role models for kids when it comes to technology, well not all teachers but some. It went something like, an adult was having a problem with a computer and asked her 11-year-old neighbor to help. The kid comes over and helps and fixes the problem. The adult says what was wrong and the kid says you had a id 10 t error. So the adult asks, what’s an id 10 t error and the kid tells her to write it down and she’ll figure it out. So she does and realizes that the term id 10 t spells out idiot. So I mean that is about it there. Can you be a role model for someone if they think you’re an idiot?

An important point brought up in Hugo’s story is the role that respect plays in the ability of teachers to influence children in positive ways. This highlights the concerns that participants had about the impact of the growing digital divide between students and teachers on the effectiveness of adult oriented responses to ICT based issues.

Participants felt that those teachers who demonstrated a high level of technological literacy were more likely to be able to influence children. Emphasizing this point, Bob notes:

Well you need to understand the lingo and the students will respect you because they can see that you're tech savvy; they can see that you're in tune with it, maybe you've taught them something. If I can teach a student something that they did not know about technology, I am going to have their respect so when I warn them
about something they go you know what, I know this guy knows a lot about
technology, or he knows more than I do. So I think in that situation knowledge is
power, and having the upper hand on the student where they respect you as the
source of knowledge. But in today’s generation we have the students knowing
more than we know often, and that changes the balance of power and maybe
where they are going to take their technology advice.

An important element of Bob’s concern is the shift in the distribution of power from
adults to children when it comes to the in’s and out’s of technology. As a result,
participants felt that teachers who do not equip themselves with technical knowledge may
become unable to respond to the inappropriate use of ICT. As Diego notes, “I think that is
huge, because you know ignorance is bliss, some teachers do not even think it is possible,
so you're not going to find them doing things you do not think is possible for them to do.”

For some participants, the idea that some teachers were ignorant to the ways in
which technology could be used inappropriately served as a point of tension because it
involved questioning the professional knowledge of other teachers. When asked to
comment on this, Jasmin notes:

It is a tough question because as a teacher you’re like oh no, never. That (students
using ICT inappropriately during class time) would never happen to me. It is kind
of you’re questioning the integrity of my professionalism, so when you ask for
that, because no teacher would ever witness inappropriateness because that would
never happen but it does, so I think that kind of question it kind of throws people.

Jasmin’s comment highlights a professional tension that exists when some
teacher’s feel as though they are capable of dealing with ICT based problems when they
may not be because of having limited knowledge of ICT.

A consequence of the emphasis on technological literacy was the growing sense
of pressure that participants felt to develop their technological skills in order to be
prepared to deal with ICT based problems. Overall, participants felt that a teacher’s
digital literacy played an important role in their understanding of ICT based issues and
that if they were able to demonstrate technological aptitude, they would be more effective as role models for children. This concern is expressed clearly by Bob when he states:

I have to be honest; this has been a bit overwhelming because I never thought about all of these issues until now. It is actually pretty scary cause I feel now, like I do not know enough about technology to know what I do not know. You know? And kids are going to pick up on that. I mean they’ll listen someone who is tech savvy, and they’ll actually take advice from when they are being warned of all the pitfalls, whereas if I tried, my kids would laugh, I just got texting, I have a blackberry, you know? If I say anything they are like ‘whatever this guy’s a dinosaur’.

Bob’s point, although humorously stated, alludes to a sense of insecurity that some participants had about the impact of their technological literacy on their ability to have a positive impact on their students. Although this was not described specifically within an ethical context, participants identified the importance of being prepared to deal with the issues they faced as a primary responsibility in their role as teachers.

For some, however, the pressure to keep up with the pace of technological change challenged their understanding of this role and led to a feeling of being overwhelmed by the demands of a profession impacted by digital culture. As Roz explains:

I mean I think I am somewhat tech savvy, I am intelligent right, I have masters’ degrees, I am not out of the loop. But I just got text messaging on my phone 2 1/2 weeks ago because I felt this massive pressure dealing with different things. It happens so fast you know, everything changes so quickly, so you kind of feel coerced to get involved in technology but at the same to stay away from different technologies like Facebook and Twitter because of the problems it can cause. So how do I balance that?

Roz’s comments are indicative of the feelings that participants have about the inherent conflicts in trying to keep up with technology in their professional and personal lives and the potential problems that can arise when one commits to participating in digital culture.

The discussion about the ways in which participants respond to ICT based issues reveals a pattern of teachers acting independently as they address the complex problems
that they encounter within their practice. This approach is informed by a teacher’s personal intuition about the ethical nature of ICT based issues and characterized by use of direct instruction of moral values and the behaviour of the teacher as strategies for supporting the moral development of children. Although participants spoke confidently about their ability to handle individual cases of inappropriate ICT use, the consideration of broader ethical issues related to technology reveals a sense of insecurity about their own digital literacy and the degree to which teachers are prepared to address more complex issues.

4.5.3 Consideration of resources and supports that would help in responding to ICT based issues

Discussions about the importance of digital literacy in responding to ICT based issues led participants to consider the types of resources and supports that would be beneficial in helping teachers deal with ICT based issues. When asked what kinds of resources and supports they felt would be valuable in responding to ICT based problems, participants highlighted the importance of professional development, support from administrators and an increased presence of specially trained staff in the school as key supports that would help them to cope with ICT based issues.

When asked what supports they felt would be most beneficial for teachers in dealing with ICT based problems, participants first pointed to the importance of training and professional development. This followed from the discussion about the importance of technological literacy, and they re-iterated the point that if teachers had a better understanding of the potential of ICT, they might be better prepared to deal with problems that arise out of its use. As Deanne notes:
I think, more workshops, all the workshops are based on language and math, those are all the workshops that are covered for us, not much on tech. I wish they did more. Even when they do have a workshop, there is only minimal people that can register. I tried three times last year to take a smart board workshop, and each time it was booked.

The lack of access to workshops and training for issues related to technology issues led many participants to seek support through informal sources, such as their colleagues and administrators, for guidance on particular issues. As Jasmin notes, “So I think a lot of the information about technology I’ve kind of learned from other teachers and through my administration. Otherwise I would totally be oblivious to all these things.” For many, principals and vice principals played an integral role in providing support for teachers dealing with complex issues. When reflecting on his experience of dealing with a student who had received death threats over MSN, Hugo recalls:

I thought it was really good that when I told my old principal about the MSN issue she was the one that called the police and brought the community officer in. That principal she was very big on supporting her teachers, her staff, I have personally been okay but the one incident with the MSN thing I was pretty overwhelmed with that I was really scared for the girl so I told my principal I was really thankful that the principal took control of the situation. It is helpful if at least the administration has a protocol that they are aware of and that they are required to follow through on it to support the staff. So even if the staff doesn’t know what to do, then the administration should be there to support them.

The importance of having administrative support was particularly evident in cases where that support was missing. When asked if she felt that she received support from her principal in dealing with cyber-bullying problems, Roz notes:

I go back to my administration but I do not feel fully supported. I just mean that a lot of it would be left to me to contact the parents, like those initial steps would be my responsibility exclusively, it would up to me to probably start getting the ball rolling with guidance, and social work like a lot of it would ultimately become an extra responsibility. It would not be something that I, and I am not to say that I am trying to shirk my responsibility, it is just in the context of the school day, you have a lot going on, it would become another thing and I think I would take it seriously, so I would get things done but I think that kind of gets the ball rolling,
that is why so many people maybe ignore these kinds of things because it is just another very big taxing thing that is going to be added on to your schedule, if you have to address it appropriately, it really just becomes your responsibility which means phone calls, you do not have time to make them which means tracking down people, paper work, emailing your social worker, guidance counselor. That is what happens, so I think it boils down to manpower, and resources, we probably could use some more in-school support.

Deanne comments on the impact of an administrator adopting a passive approach when she shares:

My principal? He is more like “hands-off”; he’s not as proactive. He doesn’t really take control of things like that. I do not know what it is. I think he just assumes that we are all professionals and however we are going to deal with something is fine.

Deanne’s point also provides insight into a potential reason for why participants dealt with issues on their own as opposed to relying on supports within the school. In her case the belief that teachers should address issues as they see fit was not only encouraged but expected by leadership within her school.

In the absence of having support from the principal or vice principal, participants stressed the importance of having someone to go to for support. This led to an expressed desire to have a dedicated individual within each school who is trained to handle the inappropriate use of technology. As Belle requests:

I think we need experts in the schools. You know, here's the go-to person, or this is the list of people who can help you if you're in a situation that involves the inappropriate use of technology, with students in the school, in the community, these are the people you want to talk to, these are the people who can guide you and help you facilitate this because teachers have got a lot of things on their plate and for me to appropriately address any one of those issues would take up way more of the school day than I have to give. So this is not an issue you can address during a 15-minute recess break. Do you know what I mean?

The request for integrating technology specialists into the school community was also echoed by other participants as they reflected on the complex nature of some of the issues.
Bob continues:

It would be nice to have someone who was like a resource person in the area of information technology, media literacy. It would be nice to have that person at the board that you could email that would support you in those, like a resource teacher. Also someone that would be skilled at, you know, at facilitating these kinds of scenarios, that would be good, a resource person, even someone who would help inform our instruction, help us to teach the kids in these ways that our media literacy programs, I think they just skim the surface and I do not think we get to the crux of it and I think that would be helpful.

Interestingly, media literacy was attributed to the domain of expert staff who had received training, instead of being a responsibility of the regular classroom teachers.

Speaking from the position as the media literacy “expert” on her staff, Jamin notes:

I think media literacy is critical. Particularly in terms of even the ability of a teacher to be able to properly deal with these issues and teach children. We need to have people who are very tech savvy. Or specialists, or resource teachers in the school to teach this kind of thing or have one person in the school who has been trained on that who is willing and able to help other teachers. I mean, in my school, that is me, I am the teacher librarian right, I should know, but a lot of the time I do not and I think most teachers are just guessing.

Jasmin’s comment about having people who are “tech savvy” address issues such as cyber-bullying and software piracy, reflects the belief that teachers are not prepared for dealing with such issues and that topics of this nature requires input from “experts” from the field.

In addition to expressing a desire to have staff specifically trained to deal with ICT based problems, participants also expressed a desire to have specific guidelines about how to deal with technology related issues. For many, this took the form of policies or documents that would outline a step-by-step response to specific issues such as cyber-bullying or the use of cell phones in schools. As Jasmin notes:

I think sometimes teachers are naïve to the fact that maybe they do not really understand what’s appropriate and inappropriate, sometimes. So bringing that idea to the forefront and making it clear explicitly. That there is an online code of
conduct. That perhaps needs to come from the board level, and teachers need to be given the opportunity to understand what the guidelines are for technology and to be able to use technology appropriately.

The desire for a specific set of guidelines proves to be ironic given the general disregard for policies that participants shared when talking about how they currently respond to ICT based issues. However, the desire to have guidance and support is a point they discussed in relation to resources required for dealing with the unique challenges posed by technology.

Overall, participants tended to adopt an independent approach to dealing with ICT based issues that were informed by their personal judgment of the situations they encountered. These responses were characterized by the use of direct instruction of what constitutes appropriate use and belief that teachers were models for children. Participants also held the opinion that school and board policies are ineffective in responding to ICT based issues because they are reactive, as opposed to proactive in nature. Furthermore, participants express a desire to have further professional development in the use of ICT as a preventative measure for responding to ICT based issues as well as the integration of trained specialists within schools for dealing with the issues of security, privacy and safety.

4.6 Summary

The discussion of results identifies and examines the four categories of findings that have emerged in the study. Each of these areas is informed by the experiences and perceptions that participants have with ICT based issues and challenges.

The first category of findings reveals the primary concern that teachers have about the safety of children participating in a digital world. In this regard, the ethical nature of
these concerns is based on a focus on children’s privacy and well-being, which are challenged by the existence of problems such as cyber-bullying, exposure to inappropriate content, and online security threats. As teachers, participants place priority on the protection of children, a task that is challenged by the ability of ICT to transcend the boundaries of the school. Consequently, ICT based problems are understood to be ethical, dynamic, and complex, and pose serious threats to the safety and well-being of children both inside and outside of the school.

The second category of findings reveals the role that technology plays in aggravating existing issues related to academic integrity. Results suggest that incidents of academic dishonesty are increasing, and that participants share the perception that technology has played a key role in this increase. Participants also express concern about the impact that a lack of access to ICT, both within the schools as well as in the home, has on student learning, and the potential issue of inequity that can emerge when schools are not able to provide children with the skills necessary to participate in a digital world. Consequently, issues related to academics are understood to be ethical in nature and a strong priority for teachers to address within the scope of their practice.

The third category of findings suggests that ICT has also created new challenges for teachers as they consider the impact of technology on their professional identity. In this regard, teachers struggle to determine what constitutes appropriate use, both for themselves and for their peers, and place priority on maintaining their professional reputation by avoiding using technology in ways that could create conflict. As a result, the speed, ease of access and boundary-less nature of digital communication has created a sense of apprehension on the part of participants when they consider the impact of
broader technological trends on their professional identity.

The fourth category of findings examines the ways in which teachers respond to and cope with the ICT based issues. In this regard, participants show a disregard for school policies, respond based ICT based issues and challenges based on personal intuition and engaging in the direct teaching and modeling of responsible digital behaviour. In spite of this approach, they also express a general feeling of being unprepared and unsupported in dealing with ICT based issues that are complex and dynamic. As a result, participants highlight the role of school administrators in supporting teachers, the importance of professional development and the use of specially trained technology experts as resources that they feel would help them to cope with ICT based problems.

The evidence provided by these categories of findings illustrates three broad points about the perceptions and experiences that teachers have with ICT based issues. First, ICT based issues that are ethical in nature are occurring and are complex problems that impact teachers and students. Second, the ability of ICT to transcend the boundaries of time and space has led to increasingly complex issues that occur inside and outside of the context of the school. Third, there is a need for a structured and comprehensive approach to dealing with ICT based issues that is both preventative and responsive in nature and involves stakeholders both inside and outside of the schools. Each of these points creates a focus for discussing the findings within a scholarly context, which is presented in the following chapter and highlights the ethical nature of ICT based issues, the impact of these issues on the moral work of teachers and the moral significance of the ways in which teachers respond to the technology related challenges that they face.
Chapter Five: Discussion of Results, and Key Findings

This chapter provides a discussion of the key findings of the study and their connection to themes within relevant scholarship on the ethical nature of ICT based issues, the impact of these issues on the moral work of teachers and the moral significance of teacher responses to technology related problems. Within this context, three broad areas of discussion are addressed that illustrate the connection between the experiences and perceptions shared by participants and the broader research that exists within the literature on ICT based issues.

The first area of discussion involves the exploration of how teachers describe the ethical nature of ICT based problems, where participant concerns about student safety, well-being and academic integrity are connected to issues of privacy, identity, authorship and digital participation. The second area of discussion explores what is the relationship between ICT based problems and the moral work of teachers, including consideration of the role that teachers play as moral models for children, the importance of a teacher’s ethical knowledge in understanding the moral dimensions of ICT based experiences and the use of moral language in the articulation of the ethical nature of ICT based issues. The third area of discussion involves an examination how teachers respond to ICT based issues and the moral significance of these responses. This includes an examination of the morally subjective approach that teachers take in responding to the ICT based challenges they face; the tendency for teachers to avoid addressing the inappropriate use of ICT by other teachers, and the perceived deficiencies of ethical use policies for addressing complex academic and social problems.
5.1 Ethical Nature of ICT Based Issues

The findings of this study reinforce literature that highlights the ethical nature of ICT based issues (James et al, 2010; Langford, 2000; Moor, 2000; Postman, 1993), and examines the impact these issues have on schools (Bugeja, 2008; Burbules & Callister, 2000; Cuban, 2001; Flanagin & Metzger, 2008; Lenhart et al, 2011; Rowland, 2006; Shariff, 2009). Within this scholarship is a focus on how teachers define the ethical nature of ICT based issues, the moral sensitivity that teachers have about issues that challenge the safety and well-being of children and the ethical complexities that come with technology related problems that are boundary-less in nature.

5.1.1 Defining the ethical nature of ICT based issues: The focus on people

A primary consideration for participants was that ICT based issues are ethical in nature because they involve people. When asked about the ethical issues they felt existed in relation to technology, participants often talked about the ways in which digital culture affects people and challenges values such as respect. The focus that participants had on the human impact of technological interaction is characteristic of broader theories of digital ethics, and critical media theory, which understand the ways in which technologies impact human interaction and attempt to provide moral guidance for the commercial and private use of digital technologies.

In characterizing the ethical nature of ICT based issues James, Davis, Flores, Francis, Pettinghill and Rundle (2010) note five key ethical “fault lines” including issues of identity, privacy, ownership and authorship, credibility and participation. The common thread of each of these fault lines involves the impact that technology has on people within their daily lives and highlights the ethical nature of issues relating to
“respect and disrespect, morality and immorality, individual behavior, role fulfillment, positive (civic engagement) and negative (deception and plagiarism) behaviors” (James et al, 2010, p. 223). These “fault lines” are also representative of the complex nature of ICT issues, which are noted by many scholars to be further complicated by the dynamic and malleable nature of digital mediums (Baird, Ramsower, & Rosenbaum, 2000; Fischer, 2006; Maner, 1996; Moor, 1998; Scanlan, 2000).

Critical media theorists such as Fischer, (2006), McLuhan (1963) and Postman (1993) have long highlighted the importance of understanding the complex social issues that are aggravated by technology. Fischer (2006) notes that perhaps one of the greatest ethical challenges involves the ways in which technology shapes the way that people think and socialize. Similarly, Moor (2000) states that technology related issues are at their very core human related issues because all technology is touched by the principles of human interaction. Postman (1993) refers to this as the ecological nature of technology, which does not simply add to the functionality of our daily existence but changes everything about the way we think and behave.

The complexity involved in understanding the widespread impact of ICT was not lost on participants who openly discussed the challenging nature of issues related to technology. Participants often expressed a feeling of being unprepared for dealing with academic and social issues that are out of the scope of their professional practice, which highlights the importance of teachers having a deep understanding of the ethical nature of ICT based issues.

Research on the impact of ICT based issues highlights the challenges that teachers face in developing this understanding, and points to the scale and pace of digital
communication as well as the ability of ICT to transcend physical boundaries, as key characteristics that add further complexity to existing ethical problems (James et al., 2010; Langford, 2000; Steeves, 2012). Consideration of the increased scale and pace of communication, and the potential damage of immediate exchanges that do not allow for the deep processing of information are all concerns previously noted by scholars such as Fischer (2006), Postman (1993), and Wright (2001), who warn of unintended consequences of digital mediums.

The sentiments shared by participants who expressed a feeling of unpreparedness for dealing with the scope of issues related to technology are reflective of themes within the literature on the ethical challenges related to technology use. The concerns that teachers have about the boundary-less nature of ICT highlight the impact of “a loss of control over the boundary between the classroom and the outside world”, which is understood to “constrains the teacher’s ability to interact with students in an authentic way” (Steeves, 2012, p. 20). This loss of control is a by-product of what Sciadas (2006) suggests is the ability of technology to create changes in behavioural patterns and interpersonal relationships that are unanticipated. James et al. (2010) also point out that the task to respond to these unanticipated changes have been thrust upon educators as they attempt to adapt to the blistering pace of technological change.

Despite the challenges created by these issues, Edgar (2003) notes that educators have a responsibility to realize the social nature of digital media and understand its impact on people. Although the ICT based issues that teachers encounter are complex, they are worthy of continued deliberation because of the impact that they have on people and social interaction. As teachers, and scholars, continue to take on the challenge of
defining the ethical nature of ICT based problems, they support the development of a
deepen understanding of problems that are created, or aggravated by technology.

5.1.2 Teachers’ moral sensitivity to ICT based issues that challenge the safety
and well-being of children

The findings of this study also show that teachers show moral sensitivity about
ICT-based problems and tend to focus primarily on issues that involve children’s safety,
identity, privacy and integrity. This moral sensitivity, which is characterized by
Veugelers (2011) as the awareness that teachers have about situations that involve moral
values, is evident through the focus that participants have about the impact of technology
on children’s safety, identity, privacy and integrity. The emphasis on student safety was
one area that was highlighted by participants as being a primary concern for teachers.

The focus on protecting children from harm is reflective of Colnerud’s (1997)
finding that teachers place priority on the value of protecting children from physical and
mental harm, and that this value holds precedent over other values such as fairness or
autonomy when situations arise where the values may be in conflict. One example where
the emphasis on the value of protecting children from physical and mental harm is
participant concerns about the impact of cyber-bullying.

Participants consistently expressed concern about the negative impacts of cyber-
bullying on young children. Larger empirical studies that investigate the frequency and
impact of cyber-bullying highlight the increased focus that schools have placed on
preventing and responding to cyber-bullying incidents (Brown & Demaray, 2009;
Cassidy, Jackson, & Brown, 2009; Roher, 2007; Shariff, 2009). The perception that
dealing with cyber-bullying had become a priority for schools was also evident in
participant experiences.

One reason why cyber-bullying has become a priority for schools is that it is perceived by teachers as being more malicious and persistent than other forms of bullying. Many participants expressed a feeling that cyber-bullying was becoming a common problem that was worse than other forms of bullying because it could happen in any place and at any time. This perception is supported by other empirical studies such as those conducted by Shariff (2009) and Cassidy, Jackson and Brown (2009) who similarly found that the anonymous nature of digital communication was a contributing factor to the severity of digital attacks. As Shariff (2009) notes, “The anonymous nature of cyberspace first made it attractive to young people…because it allows for the targeting of classmates and/or teachers without easily being detected. Most cyber-bullying is anonymous because perpetrators are shielded by screens that protect their identity” (p. 32). The role that computers play in “shielding” cyberbullies was a common element pointed out by participants.

Their comments support Willard’s (2002) observation about the impact of feedback in digital communication wherein technology inhibits real time feedback and creates a virtual barrier between bullies and their victims. Cassidy, Jackson and Brown (2009) also note that the lack of appropriate feedback in online environments is a serious concern because it can support the development of attitudes that grow unchecked in closed online communities, which may eventually lead to more serious actions and harassment. One example that is noted within their study involves the development and persistence of homophobic beliefs within an online discussion forum, which eventually led to face-to-face bullying during school hours.
Overall, participants within this study show a heightened sensitivity towards the impact of cyber-bullying on the physical and mental well-being of children. Their experiences, as well as the results from previous studies, demonstrate the increased frequency and severity of cyber-bullying and its impact on children. Furthermore, findings indicate that ICT based issues, such as cyber-bullying, are unique from other issues that impact teachers and students because they extend beyond the boundaries of the school.

Scholars such as Shariff (2009), Stevens (2005) and Lenhart (2007) point out that, while real-world bullying occurs in a schoolyard or classroom, and teachers are often able to intervene, online bullying takes place off the radar screen, making it difficult to detect in schools and impossible to monitor off school property. This was also a concern for participants who talked about their ability to deal with cyber-bullying that occurred outside of the school. The extended reach of cyber-bullying also appeared in participant discussions about the role of social networks in cyber-bullying cases. The results of this study reveal an increase in the use of social networks for the purpose of cyber-bullying.

Participants comments on this issue reflect the findings of empirical studies such as those in the PEW Internet and American Life report (2011), which noted that, 88% of teens who use social media have witnessed other people being mean or cruel on social network sites (Lenhart, Madden, Smith, Purcell, Zickuhr, & Rainie, 2011). While the role that social networks plays in cyber-bullying and online cruelty continues to be defined, there is some early evidence in the scholarship, and within this study, that suggests that these environments are a concern for teachers.
5.1.3 ICT based issues that extend beyond the boundaries of the school:

**Concerns about privacy and identity**

The prominent role of online spaces in the social interaction of children was also a concern for participants when discussing ethical issues related to online identity and privacy. Within the discussions about identity and privacy participants reiterate their sensitivity to protecting children from harm and express concern about children’s vulnerability to online threats. This sense of vulnerability is reflected in the work of James et al. (2010) who note:

Play in the new digital media is fraught with different (and perhaps greater) ethical potentials and perils than offline play because participants can be anonymous, assume a fictional identity, and exit voluntary communities, games, and cyber worlds whenever they please. In short, accountability depends on the strength of ties within a given online community; where ties are weak, accountability may be rare. (p. 224)

The importance of this point is captured in Barb’s experience, where one of her students had lied about her age to engage in an online relationship with an older man.

The feeling that the issue of lying about one’s age online is “deeper than that” is also emphasized in research on online identity formation. In their study on the online behaviour of children aged 12-17, Lenhart et al. (2011) found that 44% of participants had reported falsifying their ages to access a website or sign up for an online account. As noted by Boyd (2007), there are broader messages that are conveyed to young people who are encouraged to misrepresent themselves online, and the use of deception, regardless of the circumstances, raises questions about the nature of online interaction.

James et al. (2010) also highlight the social harm done when “identity experimentation crosses over to deception and when explicitly harmful identities are explored. Additional perils to the self and more indirect harms to others arise when
youths’ identities become deeply fragmented, when self-reflection is overshadowed by self-promotion, or when youth become overly dependent on feedback from others” (James et al, 2010, p. 234). Consequently the perceptions shared by participants point to a larger concern about the impact of the online environment in the moral development of a child.

Within this context, social feedback plays an integral role in a child’s understanding of appropriate conduct. The importance of this feedback in this is highlighted by scholars such as Stern (2007) and Silverstone (2007) who point out that if the feedback that children receive is positive, then they may feel more confident about adopting certain identities; however, if the feedback is negative then they are more likely to cover their identities as many times as they wish.

The role of feedback and identity was also noted by participants in their concerns about the impact of digital participation on children’s privacy and the broader impact of the immediate exposure of one’s identity. Addressing privacy as a key ethical issue involved with digital media, Boyd (2007) identifies four key properties of digital media that compromise children’s privacy, including the replicability, persistence and searchability of online content, and the exposure to invisible audiences that online participation provides. Without using these specific terms, participants also demonstrate sensitivity to the impact of digital media on children’s privacy.

Perhaps most alarming for participants was the fear of “who’s watching”, which led many to consider how the culture of online disclosure can cause young people to form potentially dangerous relationships with other users. Participant concerns about the invisible audience and its impact on children’s privacy reflects the belief that privacy
breaches are ethical in nature because they involve violations of the users’ trust and put children in vulnerable positions.

The issue of trust is inherent in concerns of privacy because digital communication requires the development of trust in order to “allow the individual to cope with the complexity of digital relationships” (Introna, 2000, p. 193). When this level of trust is violated, children become vulnerable to threats within the online environment. As a result, privacy is a key ethical issue in the digital age because “young people may have fewer resources to protect themselves from unwanted materials and may exercise less experienced judgment in how they use digital technologies” (Burbules & Callister, 2000, p. 124). Similarly, James et al. (2010) note that, “Youth can harm themselves and others by failing to understand the public nature of the information that they share about themselves online” (p. 243). Results from this study echo these concerns, and highlight the belief that teachers are, in part, responsible for protecting children in online spaces.

5.1.4 Summary

Overall the findings within the study and the discussion about the ethical nature of ICT based issues reflect the focus on safety, identity, and privacy that is evident within the literature. Furthermore, the perceptions and experiences shared by participants highlight the complex and dynamic character of issues that are further complicated by the boundary-less and malleable nature of digital communication. Teachers are faced with ethical issues related to technology that extend beyond the scope of their classrooms, and even their schools.

Consequently, the ability of ICT based issues to transcend the boundaries of the school requires that educators to engage in a “critical reflection on the considerable
variation in the purposes and values that young people bring to their online activities” (James et al., 2010, p. 226). As ICT based issues and challenges extend into academic as well as social spectrums, members of the school community are also called upon to engage in reflecting on the ways in which the digital world is shaping the moral landscape of the schools and classrooms.

5.2 ICT Based Problems and the Moral Work of Teachers

The identification of teaching as a moral and ethical endeavour (Bergem, 1990; Buzzelli & Johnston, 2002; Campbell, 2003, Carr, 2000; Jackson et al., 1993) is understood to be further complicated by the emergence of complex ICT based issues that are, themselves, moral and ethical in nature. Findings from this study highlight the role that teachers play as moral models for children in their online behaviour and the importance of ethical knowledge in understanding the moral nature of ICT based problems. Findings also reveal gaps in teachers’ moral reasoning of ICT based issues and limitations in the moral language used to articulate the ethical dimensions of their experiences. These findings reflect trends in scholarship on the moral dimensions of schooling and illustrate the relevance of ICT based issues to the moral work of teachers.

Scholarship on the moral dimensions of teaching is extensive and assumes that teaching is unavoidably moral in nature, and that this moral nature is central to the overall purpose of schooling (Buzzelli & Johnston, 2002; Carr, 2000; Jackson et al., 1993). Furthermore, it is understood that the experiences that children have in schools forms the foundation of their understanding about socially appropriate behaviour. As a result, the influence of the “manner” (Fenstermacher, 2001), “dispositions” (Sockett, 2006) and actions of educators (Campbell, 2003; Jackson et al., 1993) on the moral development of
5.2.1 Teachers as models for digital citizenship

A key point discussed in the results of this study is the belief that teachers are role models for children and have an impact on their understanding of what constitutes appropriate online behaviour. Participants consistently expressed the belief that they have a primary responsibility to be models of appropriate behaviour for children in their online activities. Jasmin’s comments are reflective of participant perspectives of the role they play in teaching children what it means to be a member of a community, which in the context of online spaces is referred to as digital citizenship (Hollandsworth, Dowdy, & Donovan, 2011; Ribble, Bailey, & Ross, 2004). Participants emphasize the value of trust, and share the belief that teachers can be models for children for what it means to be a responsible member of an online society.

This focus on modeling is consistent with other research investigating teachers’ beliefs about their role in influencing the moral development of children (Campbell, 2003; Carr, 2000; Fenstermacher, 2001). As noted by Sanger and Osguthorpe (2011), the understanding of modeling as a central component of a teacher’s practice is a psychological belief that many teachers have prior to, and throughout, their professional lives. In their study on teacher candidates, they noted that 62% of respondents identified modeling as an approach used to teach children about moral development.

Within this study, modeling was identified by each of the ten participants when discussing the ways in which they deal with ICT based issues. Within these discussions participants also talked about the importance of providing children with an opportunity to make moral choices. The focus on choice is also consistent with scholarship that
highlights the role that adults play in encouraging responsible online behaviour of children. As noted by James et al. (2010):

Adult supports – parent role models, teacher mentors, and school curricula – can play decisive roles in young people’s online choices. Positive adult role models can provide resources to help youth buck the norms of the offline cheating culture and make considered choices online with respect to identity, privacy, ownership and authorship, credibility, and participation. If a young person’s parents engage in software piracy, they unwittingly reinforce the norms of the infringing culture. (p. 274)

For teachers, providing students with opportunities to make moral choices stems from the belief that children can be taught to be good and that teachers play a role as moral agents in this development (Sanger & Osguthorpe, 2011). The belief in the teacher’s moral agency emerged as a key point of consideration for participants as they reflected on the ways in which they respond to ICT based issues.

The awareness that participants had of the consequences of their actions, or in many cases inaction, reflects Campbell’s (2003) point that moral agency is a combination of the teacher as a moral person engaged in ethical conduct and the teacher as a moral educator, who teaches students the same core virtues and principles that he or she strives to uphold in practice. In this regard, Don discusses the importance of responding to situations that may not directly impact him because of the nature of his position within the school. As such, moral agency is understood as the inevitable result of a teacher’s professional duties and is “expressed and revealed in the daily practice of teachers who model, self-regulate, instruct, relate, admonish, and engage. It is the illumination of virtues and moral and ethical principles as they are woven through the intricacies of school and classroom life” (Campbell, 2008, p. 608).

The sensitivity towards the teacher’s role in shaping a child’s understanding of
appropriate online behaviour also reflects a sense of purpose that teachers have in expanding moral sensitivity that children have. Participant comments on this topic are also reflective of the principles of digital citizenship, such as the emphasis on the relationship of trust (Ribble, Bailey, & Ross, 2004), and the belief that the teacher has an influence on the moral development of the child. This is a significant point because it serves as an example of the understanding that what teachers do, or do not do, in responding to the ethical issues that they encounter, has an influence on the ethical dimensions of schooling. As Buzzelli and Johnston (2002) explain:

> In this view, teaching is an activity involving a deep awareness of the significance of one’s choices and how those choices influence the development and well-being of others. An awareness of the moral significance of one’s work enlarges the understanding of that work. (p. 120)

> The relationship between the caregiver and the child is of primary importance to moral development and is supported by engaging in an open dialogue about what constitutes “good” and “bad behaviour. Joseph and Efron (2005) characterize the relationship between moral agency and the world of ethical inquiry wherein, “moral education is a process by which students engage in moral conversations centered on dilemmas” (p. 6). Participants in this study consistently used “discussions” and “lessons” as strategies for teaching children about the ethical complexities of participating in a digital world, reflecting the belief that a teacher’s moral agency informs the ways in which he or she responds to problems experienced in practice.

> Interestingly, the strong belief in the role of teachers as moral models is also accompanied by a general feeling of apprehension, and the adoption of a position of self-preservation, when confronted by technology related issues. The adoption of a position of self-preservation was observed in participant responses regarding their personal use of
ICT, and its impact on their professional reputation, as well as in ICT based conflicts that challenged their professional relationships with colleagues.

The desire to protect oneself from the potential hazards of ICT was of particular concern for participants when talking about their use of social media in their personal lives. In this regard, participants expressed concern about the ways in which their online identities could impact their professional reputation and decided that the best approach would be to avoid using social media in any way that would be harmful to their professional identity. This is consistent with other studies where teachers show a heightened sensitivity to the impact that digital communication can have on professional boundaries. As noted by Steeves (2012), “Many of our informants chose not to create a Facebook account to avoid the pitfalls of not being able to control the boundary between their professional lives and their personal lives; the rest used high privacy control settings and refused to accept friend requests from current students” (p. 21).

The significance of Steeves’ (2012) findings, and the results from this study, is that although teachers believe that they are role models for children in their online behaviour, the teachers themselves show a tendency to avoid using technology in a way that may create problems for them in their role as teachers. This raises questions about the impact that a teacher’s digital experiences has on their understanding of the moral nuances of online environments.

5.2.2 Teachers’ ethical knowledge about ICT based issues

Given the moral influence that teachers may be seen to have, it is essential that they possess a thoughtful understanding of how their decisions and actions will affect the children in their care. The development of ethical knowledge on the part of teachers is a
central component of their ability to support children in their moral development. The concept of ethical knowledge as a virtue based construct that is rooted in an understanding of moral principles such as fairness, honesty, kindness, empathy, respect and integrity (Campbell, 2003). This knowledge is developed when teachers see how such moral and ethical principles apply to their practice in their day-to-day interactions with members of the community. Unfortunately, scholarship on the moral work of teachers suggests that the ability to articulate ethical knowledge is not universal, as many teachers are often uncertain of moral messages implied in their actions towards children (Campbell, 2003; Jackson et al., 1993; McCadden, 1998).

The findings of this study add further strength to this position as participants showed an inconsistent understanding of the moral messages that they send in their professional practice. This was particularly evident when discussing their perceptions about issues related to plagiarism and copyright infringement. For example, while many participants felt strongly about academic plagiarism because it represented a form of stealing that was dishonest, they did not apply the same conviction to other issues of copyright infringement. In these cases, the contradictory perspectives shared by participants are indicative of a gap in their ethical knowledge and moral judgment of ICT based issues. As such, the primary focus on the ethical nature of copyright infringement relates more to the direct impact it may have on a child’s well-being, rather than on a concern with honesty and theft.

The tendency to apply the same degree of moral judgment inconsistently across different situations that involve violations of intellectual property serves as an example of a moral “blind spot” (Buzzelli & Johnston, 2002) where a teacher’s ability to perceive all
aspects of moral situations can be obscured. Fortunately, some scholars also note that while the perception is that a teacher has a direct influence on a child’s moral development, this impact may not be as salient as many teachers assume (Campbell, 2008; Osuthorpe, 2006).

The individual subjectivity represented within the discussion about copyright infringement, are also reflective of Strike’s (1999) concept of moral pluralism, wherein the tension between competing values makes it difficult to adopt a fixed moral position. In this regard, participants show a greater concern for the well-being of students than the legal principles that protect copyright and rationalize their use of copyright materials as a means of supporting student learning, which they also relate to the overall well-being of the student.

The experiences of participants reflect the point that teachers engage in acts that involve ethical conflicts, such as the need to balance professional obligations to uphold principles of academic integrity with their commitment to support students and student learning. As they interpret and prioritize moral values, such as principles of honesty and integrity, they make decisions that may be conflicting and compatible at the same time. These experiences provide an example of the wide spectrum of morality discussed by Strike (1999) in his articulation of the balance between predictability (rules) and flexibility (rule accommodations) that he suggests is inherent in moral reasoning. For participants, the predictable rule against stealing is placed against the priority of student learning and, as a result, teachers justify using pirated materials to support student learning because they believe that they are serving the greater good, the needs of the student.
5.2.3 Teachers’ use of moral language in articulating the ethical nature of ICT based problems

A key component that is missing in the reasoning that participants apply to the ethical issues that they faced is the moral language used to describe these situations. As noted by Strike (1995), moral language involves the conscious articulation of the ethical dimensions of inherent in our experiences. In this regard, a person’s moral vocabulary is considered to be a reflection of his or her ability to understand the ethical nuances of his or her experiences. Scholars have noted that although teaching is a moral profession, many teachers lack the ethical language and moral vocabulary to recognize and articulate the moral dimensions of their practice (Bergem, 1990; Colnerud, 2001; Sockett & LePage, 2002; Strike, 1995).

This finding is supported by the results of this study as well, as participants consistently struggled to articulate a rationale for why they felt issues like cyber-bullying and plagiarism were ethical in nature. Participants use terms such as respect and hurtful to articulate their sense of why cyber-bullying is wrong, without stating that it is unethical. This is indicative of the point made by Sockett and LePage (2002) that moral language is distinct from moral sensitivity, which is limited to the sense of moral discomfort, because it involves the use of vocabulary that captures the moral significance of our experiences. As a result, participants express a moral sensitivity to cyber-bullying without using the moral language to identify it as an ethical issue.

For some participants, the identification of values, such as respect and fairness, were seen as being separate from the discussion of ethics. For example, when speaking about why she felt access to technology was an ethical issue Belle notes, “It is definitely
an ethical issue. I do not think it is fair. So maybe it is not an ethical issue but a fairness issue. Does that make any sense? Wait, can you define ethical for me?” Similarly, when asked to provide a rationale for why she felt that a student having a lack of access to technology in schools was an ethical issue Jasmin responds, “I do not know if it is an ethical issue but I feel like it is morally wrong. Like it is just wrong on so many levels cause, it is bad because you’re setting the kids up for failure, down the road and that is unfair, but sometimes that is what the system does.” The hesitation shown by Belle and Jasmin in the articulation of their perspectives on the issue of accessibility, are indicative of the limited vocabulary that participants used to conceptualize the ethical nature of the ICT based issues that they faced within their practice.

Although the lack of moral language does not indicate a lack of moral sensitivity to ICT based issues, it raises questions about the depth of understanding that teachers have about the moral complexity of issues related to technology. This is significant when considering the relationship between ICT based issues and the moral work of teachers who, as a result of their role within the school, serve as models for children and support them in their moral development. Consequently, in the face of new and unpredictable experiences, a teacher’s moral vocabulary serves as a component of his or her ethical knowledge and as such, should also “involve the intersection of intuitive perspectives with a “deliberative awareness of one’s practice” (Campbell, 2008, p. 605). Consequently, teachers need to possess the moral vocabulary to articulate the ethical complexities of their work as well as the ethical knowledge required to respond to these complexities in a morally responsible way.

5.2.4 Summary
The demonstration of moral sensitivity about ICT based issues is an important part of addressing problems related to technology. However, the awareness of the moral nuances of ICT based issues, and moral language used to describe them, is limited. This is an important point because the ability to be a moral model for children involves a degree of moral sophistication that is influenced by a teachers understanding and articulation of the ethical dimensions of their practice. As noted by Sockett and LePage (2002), the development of “moral sophistication is a profound struggle, but a requirement for teacher educators and a pre-requisite to the intellectual development of teachers (p. 170). As ICT based issues grow in their frequency and complexity, teachers will require an increased degree of moral sophistication and ethical knowledge in order to respond to ICT based issues and support the moral development of children in a digital age.

5.3 The Moral Significance of Teacher Responses to ICT Based Issues

The third area of discussion that emerges from the study involves the moral significance of current approaches to dealing with ICT based issues. The results of the study reflect three broader themes in the literature that include the independent and morally subjective approach that teachers use to understand and respond to the challenges they face, the tendency for teachers to avoid addressing the inappropriate use of ICT by other teachers to avoid collegial conflict, and the perceived deficiencies of technology related policies for addressing complex academic and social problems.

5.3.1 The morally subjective nature of teachers’ responses to ICT based problems
Results from this study suggest that when faced with complex ethical issues related to technology, teachers respond in an independent manner that is justified by an individualized moral perspective about the ethical nature of the situations they encounter. The statements made by Deanne and Don are indicative of the morally subjective position that participants took when determining the ethical nature of the problems they faced and the appropriate course of action for responding to these problems. For participants, the use of an approach that is morally subjective is accompanied by a personalized understanding of applied ethics in understanding what constitutes appropriate responses to ICT based issues.

Participants express both a desire to address situations from their own perspective and a belief that this perspective is indicative of a standard of ethics that most people have. In a comment that reflects this, Bob states, “I think most people rely on their own common sense and moral judgment, and consider what the prudent man or person would do in response.” The belief that understanding the ethical nature of ICT based issues was a matter of “common sense” and “obvious” was a shared notion held by participants who expressed a belief that a personal sense of morality was sufficient in guiding one’s response to ICT based issues.

The comments made by participants reflect the “common sense” approach that teacher’s use when dealing with ICT based issues. Furthermore, the use of terms like “prudent person” alludes to the assumption that all teachers have a shared sense of ethics, although this is not connected to a standard of professional ethics.

The adoption of an individualized approach for dealing with ICT based problems prompts further discussions about the awareness teachers have about the ethical nature of
the issues they face, or as Campbell (2003) would suggest, the ethical knowledge they possess. Many of the responses provided by participants appear to be morally subjective in that there is a denial that there is any standard of moral judgment about ICT based problems. This is characteristic of a position of moral relativism where the judgment of the ethical nature of an experience is dependent on the context of that experience (Maxwell, 2010). This is a point of concern when considering the impact of teacher responses on professional ethics because it reflects the adoption of a subjective and relativistic position on ethical issues that may or may not align with the more objective and core principles of applied professional ethics in teaching (Campbell, 2008; Carr, 2000; Nash, 1996; Sockett, 2006; Strike & Ternasky, 1993).

The findings of this study regarding the beliefs that participants have about the appropriate ways to respond to ICT based issues are reflective of previous empirical research that examines the beliefs teachers hold about the appropriate way to deal with ethical issues encountered in their professional practice (Campbell, 2003; Carr, 2000; Kieltyka et al., 2008; Osguthorpe, 2006). In discussing the moral work of teachers Osguthorpe (2006) notes that the adoption of a subjective approach is characteristic of the autonomy that teachers have within the context of their teaching. However, as Campbell (2008) notes, a teacher’s ethical knowledge “while rooted in an individual’s sensibility and experience is also an expression of applied professional ethics in teaching” (Campbell, 2008, p. 604).

Given the moral significance of the teacher’s role in supporting the moral development of children and scale of impact of technology related problems, the use of an individualized and subjective approach may prove to be insufficient for dealing with
the complex nature of ICT based issues. Participants within this study express concerns about the limitations of their understanding of the ethical nature of the issues. Using terms like “unprepared” (Belle) and “overwhelmed” (Jasmin) to describe their initial reaction to complex issues such as cyber-bullying and digital addiction, participants rely on personal intuition to respond. This type of approach is taken in the perceived absence of a universal standard of professional ethics that would provide support for teachers in dealing with ICT based issues.

5.3.2 Digital applied ethics and the value of acceptable use policies in dealing with ICT based problems

The findings in this study highlight the point that teachers generally deal with ethical issues they encounter in an independent and morally subjective manner, as opposed to using the guidelines of professional ethical standards. One area where this is particularly evident is in the views that participants had about the value of acceptable use policies, which are standards put in place by schools and boards to establish guidelines for the appropriate use of ICT in schools.

Overall, participants disregarded the policies put in place by schools and boards and preferred to address ICT based issues on their own terms. For some, this disregard was an extension of the belief in the autonomy that teachers have in dealing with problems they experience within the context of their classrooms. While some participants shared the perspective on the value of a personalized approach, other participants cited the deficiencies of the policies as a reason for not applying them in practice. This alludes to a key point identified by scholars in the field of digital ethics, who note that the pace of technological change serves as a barrier for the effective development of ICT based
policies. ICT based policies have little chance of being effective because “new computer applications can emerge for which we are unprepared ethically, legally or socially” (Moor, 2000, p. 35). Roz’s experience with Facebook serves as a poignant example of an application that has quickly emerged as a ubiquitous social platform and is now creating issues that would have been unanticipated by policy makers only a few years ago.

Along with the inability of policies to keep up with the pace of technological change, participants also expressed concerns about the inconsistent application of school policies and identified this as a key reason for disregarding them. Many participants, such as Janet, shared experiences where school policies about the use of PED were either mis-communicated to both teachers and students or haphazardly enforced by school administrators. These experiences are consistent with previous research that highlights the impact that misconceptions about policies can have on their effective implementation (Burnam & Kafai, 2001; Dill & Anderson, 2003). This is compounded by the concerns shared by participants about the inconsistent application of the policies both within schools and across boards and also reflect the overall findings in empirical studies that highlight the ineffectiveness of school policies in dealing with technology related issues (Kafai, Nixon & Burnam, 2007; Taylor, Whang & Tettegah, 2006).

The disregard of acceptable use policies has led teachers to adopt their own strategies for responding to challenges related to technology. As noted by Carpenter, (1996), the reactive nature of the PED and other technology related policies as well as their inconsistent application within schools and across boards, are key reasons why policies are seen as being insufficient for dealing with ICT based issues. As a result the individualized and subjective approach taken by the teachers reflects concerns put forth
by scholars in the field of digital ethics, which call for a unified approach to dealing with ICT based issues. Within this field, it is understood that responses to ICT based problems should be informed by existing ethical frameworks that are applied in a flexible manner in order to adapt to the pace of technological change (Langford, 2003).

The field of digital ethics promotes the development of a universal set of guidelines that are informed by ethical principles such as honesty, integrity and respect and used to establish standards (Edgar, 2003). Although this is understood to be a complex task, a unified approach is understood to have value because it provides a standard of appropriate conduct within online environments that children, teachers and schools can follow in their articulation of what it means to be a morally responsible digital citizen (Burbules & Callister, 2000). While schools have begun to develop policies that address this goal, it is evident that teachers view these policies as having little to no value in determining how to respond to ICT based challenges that they face.

5.3.3 The moral significance of teachers’ responses to inappropriate use of ICT by colleagues

The tendency for teachers to rely on the own moral reasoning when determining how to respond to ICT based problems is reflective of a morally subjective approach that involves a flexible application of moral values. As noted by scholars, this approach is problematic because ethical principles that are supported in one experience can be disregarded in another (Maxwell, 2010). One key area where this degree of subjectivity impacted the nature of participant responses involved the inappropriate use of technology by other teachers.

Findings from this study show that participants do not apply the same moral
reasoning to their responses to the inappropriate use of ICT by other teachers as they do to ICT based issues that involve students. Overall, participants demonstrated a tendency to avoid addressing their colleagues’ inappropriate use of ICT, regardless of the moral implications. The implications of this inaction were not lost on participants such as Jasmin, who noted that because of her role as a teacher librarian, and her previous comments regarding the importance of teaching children that it is morally wrong to steal ideas from other people, her lack of response subverts her effectiveness as a role model for children.

The tendency to avoid confronting other teachers about unprofessional conduct is common in empirical research that explores how teachers resolve ethical dilemmas that they experience in their practice. Studies such as those conducted by Colnerud (1997), Gajewski, Lennie, and Campbell (2008) and Campbell (2003; 1996) show that, when faced with situations involving the unethical and unprofessional behaviour by their peers, teachers are more likely to ignore, or in some cases, cover up, for the indiscretions out of respect for their colleagues and feelings of “collegial loyalty” (Campbell, 1996). The lack of a response in addressing the inappropriate use of technology by teachers also highlights the point that, even though many ICT based issues are understood to be ethical in nature, the motivation to do what is morally right can be easily overthrown by a desire to preserve one’s professional relationships.

The focus on loyalty to the relationships that teachers had with their peers was also accompanied by a belief that addressing another teacher’s conduct would be overstepping a professional line. When asked why she would not approach her grade partner, who was allowing her students to play adult rated video games during lab time,
such as Grand Theft Auto™ and Call of Duty™, Belle shared the belief that it was not her place to address her colleague’s conduct. Don shared this perspective when discussing why he did not address a colleague who was watching music videos on YouTube during math class. Participants commonly held the belief that teachers are limited in their ability to respond to the unprofessional use of ICT by other teachers because of their position, which is reflective of the rationale that many teachers provide for why they ignore unethical and unprofessional behaviour of their peers (Mahoney, 2009).

Another factor that impacted participants’ willingness to approach their peers who were observed engaging in the inappropriate use of ICT was the desire to maintain collegial relations. Within this perception is the belief that, if they were to approach their peers about their inappropriate use, there would be tension in the professional relationship. Jasmin made comments that illustrated the priority that teachers place on the relationships that they have with their peers, even if this comes at the cost of other professional responsibilities. In Jasmin’s case, a part of her responsibility as the teacher librarian within the school is to promote academic integrity, which she neglects in order to maintain rapport with her colleagues and avoid future conflict.

This reasoning is reflective of the perspectives held by many participants, and is compatible with Colnerud’s (1997), finding that the focus on collegial loyalty can often come into conflict with other professional values, such as the duty to care, which causes teachers to prioritize the value of loyalty over the value of care. Campbell (1996), also points out that, “In the name of collegiality, unprofessional behaviour may be seen as that
which threatens solidarity, and professional ethics in a collegial sense become concerned primarily with how individuals relate to colleagues” (Campbell, 1996).

Interestingly, the willingness of participants to approach colleagues about their inappropriate conduct was often connected to the closeness of their relationship with that colleague. Findings show that participants were more likely to address the inappropriate use of technology with a colleague with whom they had a close relationship, which raises interesting questions about the flexible and adaptable application of moral judgment in situations involving conflict. As Hare (1997) notes, the goal of supporting professional and ethical ideals is often subverted by contextual factors, including the subjective moral judgment that many teachers exercise when faced with ethical issues.

The adoption of a subjectivist position on ethics is concerning for teacher professionalism because it enables a sidestepping of a teacher’s ethical responsibilities to the young (Mahoney, 2009). As with other ethical challenges that teachers face in their practice, responses to ICT based issues require the full capacities of a teacher’s moral agency (Campbell, 2008), which includes both an awareness of the moral significance of ICT based issues and the application of professionally appropriate strategies that support core ethical virtues, such as fairness and integrity, and reflect the teacher’s position as a moral educator for children.

5.4 Summary

The discussion of the themes and findings in this study serves as an exploration of the research topic and provides a descriptive account of the experiences and perceptions of participants. The focus on the ethical nature of ICT based issues, the impact of these issues on the moral work of teachers and the moral significance of strategies that teachers
use to respond to these issues, connect the experiences of participants in this study with those in other empirical students that are relevant and identify the moral significance of the teacher’s role in influencing digital culture. Overall, it is evident that the ICT based issues that teachers are experiencing have implications on the moral work of teachers, and that the complex and dynamic nature of these issues is creating challenges for teachers as they attempt to identify morally responsible ways to respond to the challenges that they face.
Chapter Six: Implications of the Study and Recommendations for Future Research

This chapter provides a summary of the findings of this study and the implications of the perceptions and experiences that teachers have with ICT based issues. This summary is framed through an analysis of the primary research questions and identifies the contributions of the results to scholarship relevant to the impact of ICT on teachers and children. The chapter also identifies recommendations for future research on ICT based issues, challenges and conflicts within the K-12 environment.

6.1 Primary Conclusions and Implications of the Study

The purpose of this study was to explore the experiences and perspectives of K-12 teachers on ethical issues, challenges and conflicts that exist as a result of, or in relation to ICT. This investigation has been informed by the primary research questions, which are:

1. How do teachers describe the ethical nature of ICT based issues and conflicts that they experience in their practice?
2. What is the relationship between ICT based issues and the moral work of teachers?
3. How do teachers respond to and resolve ethical issues and conflicts involving ICT?

Using these questions as a guideline, ten practicing teachers participated in an analysis of the ethical challenges they experienced in relation to technology, and shared their perspectives on the impact of digital culture on their students and on their teaching practice. Results from the study highlight the impact that complex ethical issues related to technology have on the moral work of teachers and prove to be significant to scholarship on teacher professionalism, digital ethics and citizenship and policy development relating
to ICT based issues. A discussion of the contributions of the study as they relate to these three relevant areas is presented below.

6.1.1 Implications for teacher professionalism and the moral work of teachers

The experiences shared by participants about the academic and social issues that they face prove to be significant to scholarship on teacher professionalism and the moral work of teachers because they illustrate the complex new challenges that ICT have introduced into the teaching profession. Findings from this study highlight the moral complexity inherent in teacher experiences with ICT based issues, which involve a wide range of problems that include, but are not limited to, cyber-bullying, Internet addiction, software piracy, sexting and the inappropriate use of ICT by students and teachers in school. The experiences are reported in response to the first research question about the experiences that teachers have with issues and conflicts involving ICT and highlight the morally complex nature of academic issues, such as plagiarism and cheating, and social issues, such as cyber-bullying and the exposure of children to inappropriate content.

The academic and social issues described by participants are understood to be complex because digital technologies have aggravated and transformed existing ethical issues, as well as created new challenges that impact teachers and students. Reflecting on their experiences, participants note that longstanding issues, such as plagiarism, have been made worse by the malleability of digital information, while issues such as bullying had been transformed by the boundary-less nature of digital communication. Further to this point, the scale of exposure provided by the Internet has also transformed concerns about children’s privacy and vulnerability to sexual predators. This transformation is
further compounded by the emergence of new issues, such as the use of cell phones in schools and a pattern of digital addiction evident in the daily behaviours of students.

The experiences shared by participants have significance to considerations about the impact that ethical issues related to technology have on the moral work of teachers. Existing scholarship on the moral work of teachers highlights the ethical complexities inherent in the teaching profession (Fenstermacher, 2001; Hansen, 1993) and the implications of ethical issues that teachers must navigate within their professional practice (Campbell, 2008; Colnerud, 1997). In this study, participants demonstrate a moral sensitivity to the impact of technology on their work as teachers and discuss the challenges that come with trying to protecting children from negative online experiences and preparing them for participation in a digital world. Findings show that issues such as cyber-bullying challenge teachers in their desire to protect children from negative online experiences, while issues such as a lack of access to ICT in their teaching, creates barriers to fairness and academic integrity. Consequently, ICT aggravates existing problems that teachers have to cope with as they try to protect children from harm and maintain fairness and equity in their teaching practice.

In the face of these challenges, and other complex issues identified in this study, teachers require an extended professional knowledge that needs to include ethical knowledge about the moral dimensions of online environments. As noted by Campbell (2008), ethical knowledge is the foundation of teacher professionalism and requires a deliberate awareness of the moral significance of one’s actions that is “cultivated when teachers develop the capacity to identify how moral and ethical values and principles are either exemplified or undermined by their own actions, words, choices, and intentions”
(Campbell, 2008, p. 604). Moor (2000) notes that a sensitivity to, and understanding of, the moral aspects of technology is an essential component of successful participation in digital culture.

In light of the importance of these points, the findings of this study raise questions about the awareness that teachers have about the moral and ethical values inherent in digital communication and the impact that a teacher’s perceptions has on his or her ability to serve as a moral exemplar of responsible online behaviour. For example, participants within this study showed a moral sensitivity to ethical issues such as plagiarism, which compromised academic integrity, while at the same time being oblivious to the moral significance of using pirated materials in their instruction. The inconsistent application of moral and ethical values across these two situations, which both involve a consideration of respect for intellectual property, highlights the gaps that exist in teachers’ ethical knowledge of the moral dimensions of ICT.

The significance of these gaps in teachers’ ethical knowledge of the moral dimensions of online spaces is particularly relevant given that teachers intend to serve as moral models of responsible online behaviour. Scholarship on the moral work of teaching highlights the role that teachers play as moral exemplars for children (Osguthorpe, 2006). The findings of this study reiterate the belief that teachers, due to their position of trust and authority, are role as models for responsible online behaviour. Participants consistently made reference to the importance of providing guidance to children in their online activities and modeling appropriate ICT use. However, given the inconsistent application of ethical values that teachers deploy in understanding and responding to issues, such as violations of intellectual property rights, questions emerge about the
capacities that teachers have to serve as moral exemplars for children as they develop their understanding of what constitutes morally responsible online behaviour. Further to this point, many participants expressed insecurity about their understanding of digital technologies, referring to themselves as digital immigrants, and shared a belief that this impacted their ability to respond to ICT based issues. Given the moral subjectivity that teachers apply to their understanding of ICT based problems, and the limitations of their knowledge of digital environments, the degree to which teachers can provide moral guidance to children in matters of digital culture comes into question.

Overall, the academic and social issues experienced by participants reflect the broad impact of ICT. While the exact nature of this impact is difficult to define, these experiences provide insight into the diverse and complex digital challenges facing children and teachers. The moral significance of experiences shared by participants re-iterates Rowland’s (2006) recommendation for the adoption of a relational view of technology that would allow for a deeper understanding of the ability of ICT to change the ways in which people think, behave and interact with one another. Furthermore, the ways in which ICT has aggravated, transformed, and created new challenges for teachers highlight the need for further consideration of the value of extending a teacher’s ethical knowledge to include the moral dimensions of online environments. This is an important consideration given the potential role that teachers can play in guiding children in their understanding of what it means to be responsible digital citizens.

6.1.2 Implications for digital ethics, digital citizenship and media literacy

In responding to the second research question about the perspectives that teacher
have about the ethical nature of ICT based issues, participants place emphasis on the moral values inherent in digital communication and online environments. Overall, participants shared a strong belief that ICT based problems are ethical in nature because they impact the well-being of children and compromise moral values such as integrity, safety, privacy and identity. This belief was evident in spite of the fact that participants often lacked the moral language necessary to describe the ethical nuances inherent in the challenges that they faced and applied a subjective interpretation of ethical principles. The need to further address and define these perspectives has significance to the fields of digital ethics and digital citizenship because it re-iterates the need to place emphasis on the values inherent in online communication and draw attention to the importance of an individual’s responsibility to the broader digital community.

For the teachers in this study, the ethical nature of ICT based issues is framed by an understanding of the impact that the use of technology, and the emergence of digital culture, has on the safety and well-being of children and the integrity of academic work. Priority is placed on the values that are compromised by social issues such as cyber-bullying, which threaten the value of respect in interpersonal communication, and on academic issues, such as plagiarism, which challenge principles of honesty as it relates to academic work. This is reflective of findings in other empirical studies that explore the ethical nature of ICT based issues that challenge school communities. Projects such as the study of Young Canadians in a Wired World (Steeves, 2012), and the PEW Report on Internet and American Life Project (Lenhart, 2007, 2009; Lenhart et al., 2010), highlight the ways in which technology challenges principles of respect, integrity, privacy, and security. Within these studies, emphasis is placed on the importance of virtues in framing
the ethical nuances of ICT based problems.

The emphasis on virtues in understanding the moral nature of digital environments also reflects work in the fields of digital ethics (Edgar, 2003; Johnson, 2003; Langford, 2003) and critical media theory (Fischer, 2006; McLuhan, 1963; Postman, 1993), which highlights the importance of understanding the ways in which technology shapes human interaction. At its core, digital ethics focuses on the human impacts of technology, and attempts to establish a universal standard of morally responsible online behaviour by emphasizing the duty that individuals have to one another in online spaces (Edgar, 2003; Fischer, 2006; Langford, 2000; Moor, 2000).

As noted by Maner (1996), ethical issues related to the use of technology should be informed by objective moral values because of the dynamic nature of issues relevant to computer ethics. Placing emphasis on values, such as respect and integrity, helps to ground the ethical implications of ICT by focusing on the ways in which people are impacted by technology. This objective characterization of the ethical dimensions of ICT based problems is reflective of frameworks in cyber ethics such as Johnson’s (2003) three priorities of online interaction, which include privacy, respect for property and the appropriate use of ICT and James, Davis, Flores, Francis, Pettinghill and Rundle’s (2010), GoodPlay model, which places priority on virtues of honesty, integrity, and respect as requirements for morally responsible digital participation.

This emphasis on the human elements of digital interaction was a key point of concern for participants in their articulation of the ethical nature of ICT based issues. Using cyber-bullying as a primary example, participants highlight the concerns they have about the safety of the child and the importance of respect in digital communication.
This is consistent with the growing field of scholarship devoted to social issues impacted by technology that includes an empirical focus on cyber-bullying (Cassidy et al., 2009; Shariff, 2009; Steeves, 2012), the privacy and protection of children (Bucy, Kim, & Park, 2011; Burbules & Callister, 2000; Edgar, 2003; Shoemaker, 2010) and the impact of digital immersion on children’s cognitive and socio-emotional development (Fisher & Barak, 2001; Hughes, 2001; Media Awareness Network, 2005; Ropelato, 2005).

The perspectives shared by participants also highlight the emerging emphasis on digital citizenship as a framework for understanding the moral dimensions of online participation. As noted by Ribble, Bailey and Ross (2004), digital citizenship involves the development of a morally responsible digital culture where each member of the online community understands the ethical, cultural and society issues related to the use of technology. This framework is guided by ethical norms, such as respect, integrity, honesty and reciprocity, which inform the understanding of digital participation as a fundamentally moral endeavour (Jenkins, Clinton, Purushotma, Robison, & Weigel, 2006). The emphasis placed on developing this understanding is supported by the findings about the perspectives that teachers have about the ethical nature of ICT based issues. In their discussions, participants consistently made reference the importance of teaching children the importance of using technology in appropriate and morally responsible ways. As an example, plagiarism was noted as a key issue for teachers to address where the primary goal was to teach children about the value of academic honesty and respect for the intellectual property of others.

The experiences and perceptions that participants had about the importance of being a responsible digital citizen in one’s academic work highlights the important role
that schools play in developing the media literacy capacities of both children and teachers. It is understood that teaching research skills that help students to navigate complex digital information sources could help prevent incidents of plagiarism and other forms of academic cheating (Media Awareness Network, 2005). This is an important point because for most participants, experiences with incidents of plagiarism were seen as a result of students not having a good understanding of how to use the Internet for the purpose of research as opposed to students being dishonest and intentionally trying to cheat on their work. Consequently, developing a deeper understanding of the nature of digital content, which is a goal within the media literacy curriculum (Ontario Ministry of Education, 1995), may help to ameliorate issues related to academic integrity.

The same approach can also be applied to social problems, such as cyber-bullying, where media literacy can be used to develop children’s interpersonal capacities in online spaces. As noted by Fischer (2006), participation in online environments requires a diverse digital literacy, where skills such as the development of virtual empathy, which involves the ability to understand the impact of one’s actions on another person in a digital interaction that lacks non verbal feedback, helps people to develop a deeper understanding of the social nature of ICT. Consequently, the development of these types of skills can help students in understanding the nature of digital interaction, which is an important point given that most participants felt that the primary cause of the malicious nature of cyber-bullying was the inability of children to see the impact of their actions on others.

While participants characterize the ethical nature of ICT based issues in terms of the values that are involved, and place emphasis on the importance of children
understanding what it means to be a digital citizen, they gave little consideration to media literacy as a strategy for developing moral capacities of children in online spaces. This raises questions about the awareness that teachers have about the media literacy curriculum, and its integration into their daily teaching practice. As noted by, Buckingham (2003) and the Canadian Centre for Digital and Media Literacy (Media Smarts, 2012), the ability of students, and teachers to engage in a critical analysis of their online experiences is a fundamental component of developing online communities that support the healthy development of children. Consequently, the development of the digital capacities of children, and teachers, is fundamental to developing a deeper understanding of the ethical nature of complex ICT based issues.

6.1.3 Teacher responses to ICT based issues and implications for ICT based policy development

Given that teacher’s focus on values in their understanding of the ethical nature of ICT based issues, it is reasonable to assume that their responses to these issues would be informed by the objective principles inherent in digital ethics. However, an analysis of the discussions relating to the third research question about the ways in which teachers cope with ICT based challenges, reveals that teachers respond to ICT based problems in a morally subjective manner and use using personal intuition and judgment to determine the appropriate response to ICT based issues. Furthermore, the strategies that teachers use to cope with the issues they experience are characterized by responses to individual cases where the direct instruction of moral values and modeling serve as primary mechanisms for teaching children appropriate online behaviour. The use of this approach is significant to the development of ICT based policies because it suggests that teachers rely on their
own moral sensibilities in understanding and responding to ICT based issues and, consequently, ignore policies put in place to establish guidelines for the appropriate use of ICT in schools.

When asked what describe the moral reasoning, they used to determine the appropriate way to respond to the complex issues they faced, participants stated that they used their own judgment and relied on common sense. This led to the inconsistent application of moral judgment to ICT based issues that were considered to be morally complex. For example, participants felt strongly about the need to teach students that it is morally wrong to plagiarize from the Internet in the schoolwork but had little reaction when they observed students sharing pirated materials. Similarly, participants emphasized the responsibility that teachers have to respond to be models for children in their online behaviour but ignored the inappropriate use of ICT by teachers. Consequently, the subjective and relativistic moral reasoning that teachers apply to determine whether or not to respond to ICT based issues, led to inconsistencies that potentially undermine the effectiveness of teachers in addressing these problems.

When asked to describe the strategies they used when they did respond to incidents of inappropriate use, participants noted that they act alone and address situations on a case-by-case basis. Within this context, teachers utilized talking as the primary strategy for teaching students about the consequences of their actions and lectured children on the importance of respect, integrity and honesty in online conduct. This strategy is consistent with previous studies that highlight the tendency of teachers to engage in the direct instruction of moral values when teaching children about issues that are morally complex (Grant, 1996; Osguthorpe, 2010).
The significance of the subjective approach taken by teachers is that participants disregarded acceptable use policies put in place by the school or board in their consideration of what constituted the inappropriate use of ICT, and the strategies to be used to respond to ICT based issues. Participants consistently expressed a belief that current ICT policies were inefficient for dealing with the challenges that they faced in their daily practice and in many cases ignored the policies entirely.

This belief emerged as a result of their experiences where policies had been inconsistently applied, causing confusion amongst teachers and students. Furthermore, policies were understood to be reactive in nature and easily circumvented by students with any degree of technological aptitude. The perceived deficiencies in the effectiveness of ICT based policies for addressing issues related to technology is reflective of scholarship that suggests ICT based policies are ambiguous in nature (Burnam & Kafai, 2001; Dill & Anderson; 2003; Taylor, Whang, & Tettegah, 2006) and disconnected from practical circumstances (Boynton, 2004; Carpenter, 1996; Moor, 2000). As such, the findings of this, and other studies, raise questions about the ways in which policies that address the use of technology are developed and implemented within a school context.

The disregard for acceptable use policies shown by teachers raises questions about the feasibility of a universal code of ethics that would guide online behaviour. As Moor (2000) notes, there is a policy vacuum wherein ethical codes that are developed to respond to issues related to the use of technology become obsolete almost as quickly as the technology itself does. Similarly, Fischer (2006) points out that the pace of technological change serves as the primary barrier to the adoption
of guidelines for its use because policies that are written today cannot account for the capabilities of technologies that will exist tomorrow. The thoughts of these scholars reflect the sentiments shared by participants that policies tended to be reactive in nature and as such, had little value in preventing ICT based issues from occurring in the first place.

This serves as a significant point of consideration for policy makers when developing guidelines for appropriate ICT use. The findings of this study suggest that ICT based policies would benefit from a broader emphasis on principles of morally responsible online behaviour and should be implemented in a manner that is consistent within schools and across boards. Furthermore, policies must be flexible enough to quickly adapt to new challenges that emerge in a way that promotes responsible digital use. One example where this could prove to beneficial is in the consideration that schools have about the use of personal electronic devices in schools. The findings of this study indicate that PED policies are prevalent in schools and approach the issue by banning devices such as cell phones and mp3 players entirely (CBC News, 2011). Research suggests that this approach is neither effective in preventing issues related to the use of cell phones (Kiedrowski, Smale, & Gounko, 2009; Saritzky & Connolly, 2008), nor consistent with trends in educational reform that call for the increased integration of technology in learning (Slotta, 2010). As a result, PED policies will need to be re-examined in order to serve as an effective resource for teachers coping with ethical issues related to ICT.

Overall, the findings of this study highlight the complex and dynamic nature of ICT based issues and the impact that they have on teachers and students. As the
frequency and complexity of ICT based issues continue to increase, it is imperative to develop a deeper understanding of the ways in which these issues impact teachers, students, and to a broader extent, school communities. Schools play an integral role in preparing young children for participation in a digital world and, as such, have a responsibility to “to adapt to a rapidly evolving technological society, address emerging challenges, and guide children to become civic-minded individuals” (Shariff & Johnny, 2007, p. 42).

ICT has added a layer of complexity to the moral work of teachers by aggravating, transforming and creating new ethical issues that challenge teachers in their professional work. Furthermore, the perspectives that teachers hold about the ethical nature of ICT based issues have implications for defining concepts of digital citizenship and integrating digital ethics within the context of education. Finally, the ways in which teachers respond to ICT based issues motivate a re-examination of the use of acceptable use policies as a systematic response to ICT based issues, and highlights the need for an approach that promotes the development of digital ethical knowledge that would inform morally responsible online behaviour for teachers and students.

6.1.4 Recommendations and implications for future research

This study has highlighted the complex and diverse nature of teacher perceptions and experiences with ICT based issues. It illustrates the ethical nature of these issues, and the ways in which technology aggravates, transforms and creates new challenges for teachers and students. Furthermore, it has explored the ways in which teachers deal with the challenges they face within their daily practice and the impact of ICT based issues on
the moral work of teachers. While the results of the study provide insight into the impact of ICT on teachers and students, they also present various gaps that would benefit from further empirical investigation.

Opportunities for future research in this area may begin with a more extensive examination of teacher beliefs regarding the impact of ICT on the moral work of teachers. This could start with an examination of the primary research questions across a larger sample of participants, in order to further validate the perspectives and experiences of teachers with ICT based issues. Also, given the dynamic nature of ICT and the pace of technological change, there would be value in examining the research problem over a longer period of time, in order to observe how teachers cope with new issues that emerge in relation to digital culture.

This study also raises interesting questions about the moral reasoning that teachers apply to understanding the moral nature of ICT based issues. While issues such as plagiarism, which compromised academic integrity, and cyber-bullying, which causes harm to children, were clearly understood as being ethical in nature, other issues, such as digital piracy and digital addiction were not only seen as having no ethical implications, but were understood as a normal part of digital culture. Consequently, further examination of the moral reasoning that teachers apply to their interpretation of what constitutes the ethical nature of an ICT based issue would provide insight into the role that digital ethics can play in preparing teachers to deal with the variety of ethical issues that occur as a result of, or in related to ICT.

In addition to a continued examination of the perspectives and experiences of teachers, it would be beneficial to explore the issues from the perspectives of other
stakeholders within school communities, including school administrators, parents and children. Of particular interest would be the perspectives that children have on ICT based issues, which could provide insight into the ways in which they experience and perceive issues such as cyber-bullying, plagiarism, and the impact of digital immersion on their own behaviour. This examination could help to confirm, or deny the perspectives that teachers have about the impact that online experiences have on children.

The results of the study also raise questions about that impact of digital culture on the social lives of children. More specifically, further investigation is required to examine the nature of ethical issues that relate to the use of social networks, such as Facebook, and its impact both inside and outside of the school context; issues related to the emerging presence of mobile devices within schools and classrooms and their impact on the moral climate of those environments; and the unintended consequences of digital immersion on the cognitive, social and emotional development of young children. As each of these areas is explored further, deeper questions about the impact of ICT can be addressed.

Finally, the educational community would also benefit from a consolidated examination of the development and implementation of acceptable use policies targeted at ICT based issues. This is a key point of concern because while the results of this and other studies show a disregard by teachers for the effectiveness of these policies, they are emerging as a primary resource for responding to ICT based issues. As a result, further examination about the best practices for the successful development and integration of ICT based policies into school environments is required.

Overall, the significance of this study rests in its contribution to the understanding of the frequency and complexity of ICT based issues that teachers face, the impact of
these issues on the moral work of teachers and the impact of teacher responses to these issues on children’s development as digital citizens. As digital culture continues to change the ways in which people think, communicate and interact, teachers take on a key role in supporting children in their understanding of how to participate in a virtual world. Consequently, a teacher’s pedagogical knowledge must be complemented by digital literacy about the dynamic nature of ICT and moral sensitivity to ethical complexities inherent in their, and their students’, participation in a digital world. Although this is a significant responsibility, it is one that must be undertaken in order to support the sustainable development of healthy online communities.
References


Activy Healthy Kids Canada. (2008). *It is time to unplug our kids: Canada's report card on physical activity for children and youth*. Active Healthy Kids Canada.


237


*Paper presented at the Annual Meeting of the Canadian Pediatric Society, Quebec City.*


http://www.bizreport.com/2010/01/npd_group_digital_downloading_starts_age_6_and_under.html


districts: Myth or reality? In S. Tettegah, & R. Hunter, Technology and Education:
Issues in Administration, Policy, and Applications in K12 Schools (pp. 115-123).
Emerald Group Publishing Limited.

mixed methods. Research In Schools, 13(1), 12-28.

Thomas, M. (2009, Dec 7). Teen Hangs Herself After Harassment For a 'Sexting'
http://www.courthousenews.com/2009/12/07/Teen_Hangs_Herself_After_Harassm
ent_For_a_Sexting_Message_Parents_Say.htm

Tirri, K., & Husu, L. (2002). Care and responsibility in the best interest of the child:
Relational voices of ethical dilemmas in teaching. Teachers and Teaching: Theory
and Practice, 8(1), 65-80.

education: Two worlds apart? British Journal of Educational Technology, 38(6),
962-976.


http://www.google.com/publicdata?ds=wb-wdi&met_y=it_net_user&dim=country:CAN&dl=en&hl=en&q=internet+penetration#ctype=l&strail=false&nseml=h&met_y=it_net_user&scale_y=lin&ind_y=false&rdim=country&dim=country:CAN&tdim=true&hl=en&dl=en


Appendices

Appendix A: Online Survey

How many years have you been teaching?

1 □ 2 □ 3 □ 4 □ 5 □ Over 5 □

Do you have experience teaching in grade five, six, seven, eight or nine?

Yes □ No □

If so, how many years have you taught in the following grades?

5 □ 6 □ 7 □ 8 □ 9 □

How many years have you been using information and communication technologies? (Computers, the Internet, mobile devices etc.)

Less than one year □

1-2 Years □

2-4 Years □

4-6 Years □

More than 6 years □

Please check under each column to indicate that you have/have no access to the following information and communication technologies:

Please indicate if and where you have access to the following:

<table>
<thead>
<tr>
<th>At Home</th>
<th>In School</th>
<th>In Public</th>
<th>Mobile</th>
<th>No Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Computer □</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>Internet □</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>
Mobile device

Please rate your expertise in using the following:

<table>
<thead>
<tr>
<th>Expertise</th>
<th>Excellent</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>No Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word processing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spreadsheets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation tools (PowerPoint)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emailing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet browsing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statistical tools</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web page designing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programming</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Database management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blogging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Networking (eg: Facebook)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How often in your teaching practice do you use ICT tools (Internet, computers, mobiles, tablets etc) for the following purposes?

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Daily</th>
<th>Weekly</th>
<th>Monthly</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching-learning for specific subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching computer skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Finding/accessing information and educational materials
Making presentations/lectures
Preparing lessons
Communicating with students
Communicating with other teachers
Communicating with parents
Assessment and evaluation
Preparing reports
Further personal or professional development
Others, please specify

Do you think that there are ethical issues, problems or dilemmas related to the use of information and communication technologies
Yes ☐ No ☐

If you answered yes, identify some of the ethical issues or problems that you are aware of

Have you ever observed or experienced any of the following within your school community?

Cyber-bullying ☐ ☐
Sexting ☐ ☐
Software piracy ☐ ☐
Illegal downloading or distribution of music or other media  ☐ ☐

Plagiarism from the Internet or other electronic resources  ☐ ☐

Inappropriate use of school computers  ☐ ☐

Inappropriate use of mobile devices (cell phones, smart phones etc)  ☐ ☐

Signs of Internet addiction  ☐ ☐

Internet pornography  ☐ ☐

Online gambling  ☐ ☐

Other (please describe)  ☐ ☐

Have you ever observed or experienced any of the following outside of your school community?

Cyber-bullying  ☐ ☐

Sexting  ☐ ☐

Software piracy  ☐ ☐

Illegal downloading or distribution of music or other media  ☐ ☐

Plagiarism from the Internet or other electronic resources  ☐ ☐

Inappropriate use of school computers  ☐ ☐

Inappropriate use of mobile devices (cell phones, smart phones etc)  ☐ ☐

Signs of Internet addiction  ☐ ☐

Internet pornography  ☐ ☐

Online gambling  ☐ ☐

Other (please describe)
If you have ever experienced an issue, problem or dilemma involving the inappropriate use of ICT please describe the situation. (if you have more than one situation to describe please use the additional boxes.

Situation 1:
Situation 2:
Situation 3:

Would you be interested in participating in two follow-up interviews for the purpose of this study?

Yes □ No □

If yes, please provide the following contact information

Name:

Preferred method of contact

Phone: □ Email: □ Letter: □

Phone #: Email:

Mailing Address: (only provide if you wish to receive a paper letter of invitation)
Appendix B: Letter of Invitation

Dear Participant,

Please accept this letter as an invitation to participate in the second stage of the research study entitled, *Ethical Complexities in the Virtual World: Teacher perceptions of ICT based Dilemmas*. This stage will involve two individual interviews between yourself and the researcher that will follow up on your responses to the recent survey that you participated in.

You are receiving this invitation because you indicated on the survey that you have an interest in participating in the individual interviews. As an experienced teacher, your perceptions and experiences will be an invaluable part of the research study. The purpose of the study is to explore the perspectives and experiences of teachers who deal with issues relating to the inappropriate use of information and communication technologies. The study will also examine the professional practices that teachers employ to cope with the ethical challenges they experience and examine the resources and supports in place to help with these situations.

If you accept this invitation you will be asked to participate in two, 60-minute individual interviews exploring the perspectives and experiences you have on ICT based dilemmas. Data from the interviews will be recorded, transcribed, reviewed and analyzed as part of the study. Only the researcher and research supervisor will have access to the data that are collected, and at no time will any names be identified. All raw data will be kept secure; will not be shared with anyone other than those described above and destroyed five years following the completion of the study.

Risks and Benefits of Participation:
There are no direct risks or benefits of your participation in the study. Your contribution to this research study, however, may have a beneficial influence on literature relating to the research topic and the development of acceptable use policies supporting the appropriate use of information and communication technology in schools. There are only minimal risks related to your level of comfort in being interviewed, although interviews will not include questions that are sensitive or evaluative in nature, and you have the right to refuse to respond to any questions you would prefer not to answer. Participation in this study is completely voluntary, and you may withdraw at any time without explanation or penalty. If you choose to withdraw from the study, none of the responses you provided during the interview will be analyzed or used in the results of the study.

There is no compensation for participating in the study.

If you are willing to participate in the study, please complete this letter of informed consent.

Informed Consent:

I have read the invitation to participate in the study entitled Ethical Complexities in the Virtual World: Teacher Perspectives of ICT based Dilemmas and understand the purpose and conditions of the research project.

I agree to be a participant in the study according to the descriptions and terms specified in the letter. I give my permission for Shawn Lennie to potentially use my responses in his reporting on the data and understanding that this may take the form of a thesis and may result in future scholarly articles or presentations.
In any reporting, please note that there is no risk involved and that all names will be changed to pseudonyms to ensure anonymity.

I also understand that I can change my mind and withdraw from the study at any time without penalty, in which case, none of my responses will be used as data.

Signature of Consent:

Please complete the following:

Name: ___________________________________________________

Email: ___________________________________________________

Signature: _________________________________________________

Date: _____________________________________________________

Thank you very much for considering this request to participate in my study. If you have any questions about the study, please feel free to contact my supervisor or me at any time at the contact information provided below.

Researcher:
Shawn Lennie
Ph. D. Candidate
OISE/UT

Supervisor:
Dr. Elizabeth Campbell
Professor, Department of Curriculum, Teaching and Learning
OISE, University of Toronto
252 Bloor St West

Toronto, Ontario, M5S 1V6
Appendix C: Protocol for Individual Interview #1

Interview #1: Guideline

Before starting the interview participants will be thanked for participating in the study, reminded of the overarching goals of the study, asked to state their first name and division clearly for the tape. They will also be assured that their names will not be used in written reports, analyses etc. and reminded of their right to withdraw from the study at any time.

Preamble:

Thank you for agreeing to participate in this interview. During this interview I would like to you think about and reflect on any ICT based issues, problems, conflicts or dilemmas that you have experienced in your time as a teacher. These experiences can include those occurring both inside and outside of the school and related to ICT use for academic or non-academic purposes. I would also like you to consider whether or not you feel that these experiences are ethical in nature and would qualify as an ethical issue, problem, conflict or dilemma.

For the purpose of this interview we can define an ICT based issue, problem, conflict or dilemma as a situation involving the use of ICT in an inappropriate way that challenges principles of moral agency and applied professional ethics. This may include an ethical problem, issue or tension that arises from situations or behaviour that conflict with moral principles such as fairness, honesty, kindness, empathy, respect, and integrity. It should be noted that we are not using an absolute definition of the term ethical dilemma, which is to say that it need not include an ethical paradox where one must decide between two moral imperatives. Rather it need only to involve situations “...where one must
somehow assess the relative importance of conflicting moral principles and try to balance ethical ideas against contextual factors and consequentialist concerns…” (Hare, 1997).

**Guiding Interview Questions:**

These questions are divided into three sections based on ICT use:

1. Use of ICT by students
2. Use of ICT by teachers and other school administrators
3. Use of ICT by other members of the school community (parents, community organizations etc.)

For each of the questions the participant will be asked to respond to the following:

i. Describe what happened?
ii. What do you think were the issues involved?
iii. Do you consider this to be an ethical issue or dilemma? Why or why not?
iv. How was the issue resolved?

v. How did you feel about the situation? How did you respond to it?
vi. Do you think that the response to the situation was appropriate? If not, what would you have done differently?

**Section 1: Use of ICT by Students**

1. Have you ever experienced an issue, conflict or dilemma relating to the academic use of ICT that occurred inside the school?
2. Have you ever experienced an issue, conflict or dilemma relating to a non-academic use of ICT that occurred inside the school?
3. Have you ever experienced an issue, conflict or dilemma relating to the academic use of ICT that occurred outside of the school?
4. Have you ever experienced an issue, conflict or dilemma relating to the non-academic use of ICT that occurred outside of the school?

Section 2: Use of ICT by Teachers and other school administrators?

1. Have you ever experienced an issue, conflict or dilemma involving your colleagues that related to the academic use of ICT by your colleagues that occurred inside the school?

2. Have you ever experienced an issue, conflict or dilemma involving your colleagues that related to a non-academic use of ICT that occurred inside the school?

3. Have you ever experienced an issue, conflict or dilemma involving your colleagues that related to the academic use of ICT that occurred outside of the school?

4. Have you ever experienced an issue, conflict or dilemma involving your colleagues that related to the non-academic use of ICT that occurred outside of the school?

Section 2: Use of ICT by other members of the school community?

1. Have you ever experienced an issue, conflict or dilemma with parents or other members of the school community that related to the academic use of ICT that occurred inside the school?

2. Have you ever experienced an issue, conflict or dilemma with parents or other members of the school community that related to the non-academic use of ICT that occurred inside the school?
3. Have you ever experienced an issue, conflict or dilemma with parents or other members of the school community that related to the academic use of ICT that occurred outside of the school?

4. Have you ever experienced an issue, conflict or dilemma with parents or other members of the school community that related to the non-academic use of ICT that occurred outside of the school?
Appendix D: Protocol for Individual Interview #2

Before starting the interview participants will be thanked for participating in the study, reminded of the overarching goals of the study, asked to state their first name and division clearly for the tape. They will also be assured that their names will not be used in written reports, analyses etc. and reminded of their ability to withdraw from the study at any time.

Preamble:

Thank you for taking the time to participate in the study: Ethical Complexities in the Virtual World: Teacher perceptions of ICT based Dilemmas. The purpose of this study is to explore the perspectives that teachers have on the ethical issues, dilemmas and conflicts that exist as result of, or in relation to the use of ICT in schools. This is the second interview that you have agreed to participate in and it will focus specifically on case scenarios involving the use of ICT in schools. For each of the scenarios you will be asked to make a judgment on the appropriateness of the behaviour involved and provide an indication of how you, as a professional educator, would respond in the given scenario.

Scenarios:

1. John is having trouble with poetry in his English literature class. The teacher has asked each student to write a poem and bring it to read in class. John had some extra time, so got on a computer in the school library and found a terrific poetry site on the Internet. John then copied a poem that John knew was from a modern poet who was not well known, and used this poem for his class.

2. Albert wants to impress his friends with his computer skills. He thinks of making a website but he cannot figure out how to make it look cool, so he browses the web on his home computer, finds some awesome web sites, and copies material
into his own site. This material includes text, fonts, animation, and pictures. When he is finished compiling these resources he feels proud enough to show it to his friends.

3. Two female sixth-graders, Katie and Sarah, are exchanging malicious instant messages back and forth because of a misunderstanding involving a boy. The statements began as trivial name-calling but escalate into inflammatory statements including death threats.

4. Chester is a tall, skinny teenager who feels embarrassed when he has to change into gym clothes in the boy’s locker room at school because of his physique. His friends notice Chester’s shyness and decide to make fun of him in a lighthearted way. With their camera enabled cellular phones they covertly take pictures of Chester without his shirt on. One of his friends posts the picture on his Facebook page and soon the pictures get circulated around the school. Now when Chester walks down the hallways he hears boys and girls calling him “Chicken-Legs Chester” and “Stick Boy.”

5. Mr. Jones lets his students use Photoshop in class, but only for class assignments. He cannot afford to purchase a school copy and uses the free trial download for his students. Since he knows that the free trial only lasts for 30 days, Mr. Jones wipes his directory clean each month so that he can continue to use the free trial beyond the 30 days.

6. Liz is an elementary school teacher. She receives an email stating that one of her colleagues, Mrs. O’Brien, is having an affair with a science teacher at another school. Both teachers are married and have children attending the school district
in which they are teaching. The email contained an attached file claiming that it contains a document showing a copy of an intimate letter sent from Mr. Miller to Mrs. O’Brien, talking about how much he enjoyed his last encounter with her, and a picture of the two teachers together.

7. Mike is a senior high school student who likes to break into other people’s computers to read their email. While going through emails of other students in his school Mike came across the email account of Matt, a fellow student. Matt’s email was to one of his friends asking for advice on what to do with the feelings he has about taking his own life and the lives of other students in the school. If Mike tells the principal or the authorities about this email, then they will accuse him of spying and of unauthorized hacking. If he does not, then Matt might carry out his plan to kill himself and other students.

8. Nancy is a smart high school student who is fond of electronics and computers. She managed to reprogram the memory chip in her mobile phone to enable her to make free calls without paying for it. She is proud of her ability to make free calls and tells her friends and teachers about her technological skills. She also offers the use of her cell phone to her friends and her teachers if they want to use it to make long distance calls.

**Scenario Discussion Questions:**

NOTE: Participants are encouraged to identify the scenarios that they identify with the most and provide responses to those issues based on the following questions:
1. Do you think the scenario involves the inappropriate use of ICT? Why or why not? *Examples from scenarios?*

2. What do you think are some of the main issues in the scenario? *Examples from scenarios?*

3. Do you think the scenario is ethical in nature? Why or why not?

4. How would you respond to the scenario?

5. What perspectives do you think students would have on the scenarios?

6. Do you think that a scenario like this is common? Why or why not?

Once the above topics are addressed the participant will be asked the following:

1. What type of supports do you know of that are in place to help educators when they are faced with issues, problems or dilemmas that arise as a result of, or in relation to the use of ICT in schools?

2. What resources have you identified as being valuable in helping you deal with the issues that you have faced in your own practice?

3. What types of resources or supports do you think should be implemented in order to help teachers and students cope with issues, problems or dilemmas that arise as a result of, or in relation to the use of ICT in schools?

At this point in the interview the participant will be asked if they have anything further to add.