Buffering...Please Wait...
Policy as a Barrier to Effective Technology Integration in School

A Thesis Submitted in Partial Requirement for the Degree of
Master of Arts in Education (Literacy)
Mount Saint Vincent University

BUFFERING…PLEASE WAIT…

Abstract

Technology in our lives is pervasive. We rely on technological tools to perform many of our daily activities, from professional tasks and personal finances to transportation and social networking. So too, this pervasiveness finds its way into the educational spectrum. Students and educators alike find it within the halls of schools and hands of students in classrooms. To this end, the integration of technology in the learning environment has long been a topic of controversy and disagreement. Studies have pointed out a number of barriers associated with the successful integration of technology in school, such as time, money, resources, professional development and, attitudes and beliefs. The research presented here focuses on *policy* as a barrier to effective technology integration. Four documents from regional school districts are analyzed using a qualitative content analysis (QCA) method. The documents are coded under three main categories: *use*, *responsibility* and *other*. Major themes that emerge are: *the contextualization of technology as separate from education*, *policy documents as admonitions*, *technology as a liability* and, *technology as a privilege*.

Acknowledgments

I would be remiss if I did not thank several people in helping me produce the work presented in the following pages. First, I would like to acknowledge my parents, Delilah and Bernard, whom encouraged my educational pursuits at the outset of my post-secondary journey many years ago and, whom continue to do so today. Your love and support are immeasurable.

I would like to thank Dr. Carolyn Clarke and Dr. Andrew Manning for their professional guidance and wisdom, words of encouragement and, for keeping me focused when I needed it.

Finally, I wish to thank Sheena, my partner in all things, without whom I certainly would have not been able to accomplish this work. For your patience, love and support while juggling the demands of work and, our new family – often solo – I am both humbled and deeply indebted. I love you.

Table of Contents

List of Tables

List of Figures

BUFFERING…PLEASE WAIT…

Chapter 1: Introduction

1.1 The Current Climate

Today, students live in a world where technology is ubiquitous. Mobile devices such as smart phones, mp3 players, and tablets all have considerably more computing power than the desktop computer of a mere 10 years ago. The online experience has penetrated the daily menial tasks of the everyday consumer from bill payment to social networking. It is an online climate of daily collaboration, publication, and decentralized knowledge. Young people are both immersed in this environment and at the forefront of its use—being digital natives (Prensky, 2001). Digital natives are those that "…have spent their lives surrounded by and using video games, digital music players, video cams, cell phones, and all the other toys and tools of the digital age" (Prensky, p.1). To these young people the 'high tech' world is natural to them, it's their everyday lived experience.

This digital "high tech" world is not the world that many students encounter in schools. Curriculum documents point to the use of technology in instruction and general incorporation of technology into the classroom (Department of Education, 2016). Computers, interactive whiteboards (IWB), and tablets are a common sight around many school environments. However, there appears to be a sense of disconnect between the level of technology immersion and accessibility outside of school and of that within the school. Smart phones are generally discouraged; computers are separated from classrooms and into "labs" shared by many subject areas and classes; and infrastructure is often unreliable and/or underfunded. Add to this, situations where a teacher does double

duties as a school's information technology person, and we start to see an environment where students' access to the technology of their own lives is often checked at the school doors. It is in this area of accessibility that my proposed research is rooted—the barriers which obstruct accessibility to technology integration, and specifically, digital social media technologies. The intent is to investigate the extent to which technology usage, particularly by students, is shaped by policy through an analysis of public policy documents on the use of information communication technology. I hope to provide insight into how this specific barrier may inhibit effective, real-world technology integration.

1.2 Situating Me in My Research

Coming to the teaching profession relatively late, I saw a school environment far different than the one I left nearly 20 years earlier. If someone had mentioned the use of technology in the classroom back in those days, it would have surely referred to those glorified typewriters—and the typewriters themselves—that we punched away on in our efforts to grasp the new word processor that was taking the world by storm. Web 1.0 was in its infancy then, and dial-up—the way we connected to the greater outside cyber-world—was less evocative of its current "crankshaft" connotation.

The years I spent in undergraduate school and teaching abroad saw Web 1.0 break from its cocoon and develop into the Web 2.0 version we see today—the most evolved version to date. Within this 2.0 context, students are by and large, constantly connected to their peer groups and extended peer groups. They publish constantly and collaborate frequently (Lankshear and Knobel, 2007). They are connected to a peer group with which

they collaborate and exchange ideas that is exponentially larger in membership than the average teenage peer group of a mere 10 years ago. Technology has radically changed the face of the peer group and peer group communications. Smart phones—the present extensions of the connected individual—are providing constant access to a plethora of information 24 hours a day. Technologies such as Wi-Fi and fiber-optics allow individuals to gain access to ready-made information from nearly any location. Social networking sites and applications (apps) are allowing us to collaborate and create in ways not possible a mere decade ago.

Before I began my graduate studies in literacy education, I belonged to a group of teachers that viewed technology as an advancement that made students' and teachers' lives easier. I am referring to the then-new technologies such as interactive whiteboards (IWB) that allowed me to show video clips from my classroom computer without a separate setup of projector and screen. It also allowed me to do things like write class notes, save them, print them off for struggling students, add to them without erasing the previous content, and annotate a verse of poetry. This was considerably time-saving in an environment focused on standardized testing. Although I received little professional development on how to use an IWB, I learned quickly, and very soon after became a converted fan and full-time user. However, not every teacher took so emphatically to the use of their IWB. Many were older teachers who were less tech-savvy than myself and others, and were intimidated by their presence. Many saw it as a gimmick and pushed on with the old-faithful ways of doing things, like writing on a whiteboard or chalkboard. In

retrospect, it was a game changer. I cannot overstate that I thought it was the greatest technological advancement in classroom teaching in my recent memory.

In the years that followed, I watched with anticipation, expecting the technological floodgates to open. The Apple brand came of age and smart phones soon were found in many an adolescents' grip. Apps were developed that specifically targeted education. At present, there are thousands of 'educational' apps. Yet, many classrooms today are not so different than those of five years ago. The problem, as I perceive it, is connected to the overarching notion of accessibility; specifically, the individual barriers that make it difficult for the technology of our everyday lives to be seamlessly woven into the everyday experience of the school and classrooms. I am interested in the barriers to technology integration on a regular basis in the classroom. Specifically, my focus is on the policies accessible to students in selected schools in the province of Newfoundland and Labrador on the average day of any week.

BUFFERING…PLEASE WAIT…

Chapter 2: Literature Review

The following literature review is organized in two sections: New Technologies vs. New Literacies, and Technology Integration in the Classroom—Classifying the Barriers. In New Technology vs. New Literacies, I highlight the research of Lankshear and Knobel (2007) that addresses the difference between what is to be considered a new technology, and that which is to be considered a new literacy. In the second section, Classifying the Barriers, I provide a sampling of research that aims to classify the various types of barriers to technology integration, and present how these barriers are organized in relation to themselves. The research here encompasses barriers present at the teacher, administrative, and organization levels.

2.1 New Technology vs. New Literacies

Fourteen years into the Millennium, we no longer need to ask if there is a place for technology in the classroom. Conversely, we may ask how the classrooms of today fit into the technology of the twenty-first century. What technologies should be integrated in the first place, and for what purpose? The gratuitous implementation of technology for technology's sake may itself be a barrier to successful integration. Ideally, the presence and implementation of any technology must have its purpose rooted in both an enriched learning environment, and a broadened skill set. Ideally, this would prepare students for a technology-entrenched world by having them command a knowledge of its usage. Perhaps a more specific guiding question might be: What skills might today's learner need to be prepared for the twenty-first century?

BUFFERING…PLEASE WAIT…

According to Lankshear and Knobel (2007), there are two distinct categories of new literacies: new technical stuff and new ethos stuff. The authors contend that those digital technologies that serve as a new way of doing old things—such as Photoshop is to painting—fall loosely under the former. Those technologies that require a new value set—such as blogging and social networking—fall under the latter. Both require knowledge of the technology.

Those digital interactions with new *ethos stuff* display an emphasis on collaboration, participation, interaction, distribution, and production. If the new technology does not display the characteristics of both these delineations, then it is not to be considered a new literacy. It is the skills associated with these new literacies that are important for today's learners. For example, social networking sites like Facebook and Twitter allow students to collaborate with peers, publish their work, and give and receive feedback. In doing so, students learn how to use the technology—as well as other skills such as embedding, linking, editing, and sharing files. This new literacy skill set is part of the fabric of modern business and culture, and is becoming increasingly more prominent in our world. This then, would be a "good" type of technology to be introduced, and not simply introduced gratuitously. Facebook then, isn't the skill learned, rather the technology through which twenty-first century literacies are acquired. With so much emphasis on the acquisition of twenty-first century skills and literacies, we should be seeing it integrated more widely in the classroom. In order to explore this further, it will be useful to look at some of the barriers that prevent the implementation of a particular technology in the classroom.

BUFFERING…PLEASE WAIT…

2.2 Technology Integration in the Classroom—Classifying the Barriers

To understand what barriers to technology integration exist in the educational environment, we must first clarify what constitutes a barrier and the different sorts of barriers that give the issue its complexity. A barrier to technology integration may be defined as "any condition that makes it difficult to make progress or to achieve an objective" (Shoepp, 2005, p.2 as cited in Bingimalas, 2009). The study and organization of barriers to the integration of ICT, and technology in general, has largely been teacher and school-focused concerning barriers such as time, support, confidence, and access to resources such as websites, software, hardware or lack of IT personnel. Various authors have classified these barriers according to types. These are summarized in Table 2.

Author	Barriers that Focus on the Teacher **(**Beliefs, attitudes, biases, values confidence, and perceptions**)**	Barriers that Focus on the School (Support, resources, professional development, planning time, etc.)
Ertmer (1999)	Intrinsic	Extrinsic
Pelgrum (2001)	Non-Material	Material
Jones (2004)	Teacher-Level	School-Level
Balanskat et al (2006)	Micro/Meso	Macro

Table 2. Author Classification of Barriers to Technology Integration (Bingimalas, 2009)

Bingimalas (2009) presented the work of several authors who divide these barriers into categories. For example, Ertmer (1999) organized such barriers as being either intrinsic or extrinsic. Others looked at barriers from the perspective of school-level barriers and teacher-level barriers (Jones, 2004). Still others assessed these barriers from a micro and macro framework Balanskat, Blamire, and Kefala (2006). Pelgrum (2001)

differentiated the barriers in terms of material and nonmaterial barriers to successful technology integration.

Together, these approaches to classifying the barriers to technology integration afford us insight in discussing where in the educational framework these specific barriers might be addressed. The following section provides a closer look at these studies under the broad division of teacher-level barriers and school-level barriers, which broadly corresponds to Ertmer's (1999) classification of intrinsic and extrinsic. By intrinsic, I mean those barriers internally manifested by an individual. This includes research in teacher attitudes, beliefs, biases, and confidence. By extrinsic, I mean those barriers presented externally to an individual. This includes research into resources, support, professional development, and time, as barriers to successful integration. Many studies into the presence of barriers and their implications to technology integration often focus on the barriers themselves first and their classification second. Though these studies are addressing the same barrier in name, they are often given different labels (i.e. teacher attitudes as intrinsic, or teacher attitudes as teacher-level barriers). I thought it appropriate to highlight some of the research on the more common barriers broadly grouped under two sections.

2.3 Teacher Attitudes, Perceptions, and Beliefs

One barrier to successful integration of technology into the classroom lies with teachers' feelings toward literacy and technology integration. For Ertmer (2009), attitudes, beliefs, practices, and resistance, fell under intrinsic barriers (p. 48). Ertmer (1999) classified intrinsic barriers as second-order barriers. As the term implies, these

barriers exist within people, and represent things such as attitudes, beliefs, practices, and resistance. Here the barriers are seen from the perspective of the teacher.

Jones (2004) highlighted barriers such as lack of time, lack of confidence, and resistance to change as significant among the major barriers to technology integration and classified them under teacher-level barriers. In a cross-study impact report, Balanskat et al, (2006) looked at research on ICT as impacting learning outcomes as well as teachers' attitudes to technology and approach to technology. The report looked at both quantitative and qualitative approaches that were employed to reflect individual statements on the connection between ICT and learning outcomes. Teacher attitudes and perceptions are referred to here as micro-level barriers.

For some, what is included under the designation of an intrinsic barrier differs slightly. For instance, researchers such as Hendren, (2000, as cited in Bingimalas, 2009) have delineated intrinsic barriers as those connected to teachers, administrators, or individuals, and extrinsic barriers connected to organizations rather than individuals.

Lawrence and Calhoun (2013) suggest a disparity between teachers' perceptions of the role of technology in the classroom and what is actually happening in there. Furthermore, the literacy practices of twenty-first century learners outside the school environment is more prevalent than those practices within (Lawrence and Calhoun, 2013).

In what may be generally aligned with intrinsic barriers, Pelgrum (2001) presented non-material barriers related to the teachers' ICT knowledge and skills, the difficulty integrating ICT in instruction, and insufficient teacher time (Pelgrum, 2001).

BUFFERING…PLEASE WAIT…

Intrinsic barriers can be a major hurdle to the successful integration of technology into the classroom. In 2003, BECTA commissioned a review of the literature in addition to a teacher survey probed into the attitudes and possible hindrances of the integration of ICT by teachers. In a study, participants' questionnaires revealed a lack of confidence with technology to be a significant issue in integrating technology into the classroom.

2.4 Time, Support, Access to Resources and Training

Ertmer (1999) highlighted barriers such as access, time, support, and training among the most common barriers to integration, and classifies these as extrinsic, first-order barriers (Bingimalas, p.237). In this sense, a first-order barrier is that which is likely to be encountered first in a hierarchy of barriers. Generally speaking, extrinsic barriers may be understood as those barriers that exist outside of teacher-held attitudes and beliefs. So too, Sicilia (2005) cited time as the biggest challenge reported by teachers in trying to integrated technology into their classrooms, particularly in Canada where teachers require more time to develop lessons around new ICT's than traditional lessons (Sicilia, 2005). Other studies have found that teachers' lack of confidence contributed to "fear of failure" in incorporating technology into classroom practice (Beggs, 2000, as cited in Bingmalas, 2009).

Studying the wider educational framework and the educational institution as a barrier to technology integration—and loosely aligned with Ertmer's (1999) classification, Balanskat (2006) grouped these barriers under meso-level and macro-level barriers. Similarly, Pelgrum (2001) referred to similar barriers, but labeled them material

barriers. These may be comprised of insufficient numbers of computers or out of date hardware (Pelgrum, 2001).

Jones (2004) also discussed the lack of effective training in solving technical problems, and lack of access to resources as significant barriers to technology integration. Here, the author distinguished these barriers as school-level barriers.

Bingimalas (2009) noted that one of the most prevalent barriers to technology integration that turns up in research literature is teacher training, and pointed to several researchers such as Pelgrum (2001) and Beggs (2001) who highlighted the lack of teacher training as a significant barrier. Pelgrum (2001) found that there was a lack of teacher training opportunities in ICT in the classroom environment.

Although significant research has been accumulated on both intrinsic and extrinsic barriers to technology integration, little exists on the study of policy itself in terms of an extrinsic barrier. I want to focus my analysis of the barriers to technology integration, specifically on policy documents or the absence of policy documents as an extrinsic or external barrier at the government, district, school, and teacher levels.

2.5 Policy as an External Barrier

In the Canadian province of Newfoundland and Labrador, policy—to one degree or another—may be set at the government level by the Department of Education, the district level by the Newfoundland and Labrador English School District (NLESD), at the school level by individual schools within the district, or at the classroom level by teachers themselves. The degree to which any particular technology is implemented at any one

time is determined by the interplay of one or more of these policies, with one or more intrinsic or extrinsic barrier present at any one time.

2.5.1 Government-Level Policy (Department of Education)

In terms of analyzing accessibility to technology at the district level, I examine the current policies that are in place and mandated by the provincial government. Specifically, I wanted to understand what documents exist that formally lay out the Department of Education's stance—if any—on the use of smart phones, tablets, or other personal mobile devices, as well as its position on the use of in-house technology such as computers found in classrooms or computer "labs."

The trending cultural climate is putting pressure on governments and school districts to put mobile technologies such as iPads in the hands of teachers and students. In recent years, many districts have—with financial support from government—placed Interactive Whiteboards (IWB) in most, if not all, schools in the province. However, this new technology may have more benefits for teachers than students. They are often used as glorified projector screens and note-saving, traditional whiteboards. These have largely become teacher-centered ways of doing old things in more convenient ways. Often, the technologies that find their way into schools and eventually into classrooms, are not used to produce new things. These government level issues are keys to understanding a wider picture of technology integration in schools.

2.5.2 District-Level Policy (Newfoundland and Labrador English School District)

In addition to examining the extent to which professional development time is allotted by the district to provide teachers and administrators with the knowledge and

experience to put specific technologies into practice, I focused on the district level documents that exist that address the implementation of ICT and mobile technologies in the curriculum and wider learning environment. Though there are glimpses of acceptable use policies, such policies are often laden with ambiguity and confusion. Additionally, such policies are often enslaved by connectivity and resource issues.

New district-adopted textbooks, especially those found in English language arts, support and highlight a variety of media, internet, mobile, and social media forms. Yet, these forms are largely absent from the instructional day to day activities of the classroom due to variety of barriers present at any time—not the least of which is the absence of a clear policy around the use of those technologies.

2.5.3 School Level Policy as an Extrinsic Barrier

Factors that affect access to technology at the government level are necessary to address, and also those that are particular to problems that arise at the school level. Clearly expressed school-based policies and the presence of things like a well-maintained, quality website reflect the values of, and a commitment to technology that a school holds. One problem that seems to be evident in schools lacking in this and other areas is that of financial and human resources. Many schools lack a person that is in sole charge of the day to day operation of the schools' internet infrastructure and its equipment. In many schools, it is a teacher that often wears the hats of both classroom teacher and computer trouble-shooter. This often happens while also handling a teaching load. The results are often seen in prolonged periods of time where equipment sits derelict and unusable as other issues get priority. Additionally, there is often an employee

that deals with the maintenance of hardware and the general upkeep of the physical technology. In this sense, there is more of a business model approach to the respective technologies; time is money, and downtime is lost revenue.

In addition, individuals in these school positions are largely given the responsibility to 'police' various web content and applications to be used by teachers and students alike. They are given much control of what comes in, goes out, and goes on. The result can be a cumbersome process of locating the individual, pleading a case for access to or the use of a particular application, and waiting for it to be downloaded onto teacher's and class sets of student devices.

Not least among factors connected to accessibility is the problem of "school-ifying" student practices outside of school (Luke, 2003). Once Twitter is used as a communication device for networking and disseminating information to the student body and caregivers, students become reluctant to use it. Parents may be more inclined to keep abreast of what iss happening in their child's life at school, but students may see it as an invasion of their out-of-school lives.

2.5.4 Teacher Level Policy as an Extrinsic Barrier

Similarly, teachers may provide barriers—albeit unwittingly—to issues of access to technology. Teachers who are not abreast of current trends in mobile computing or social networking are often reluctant to dive into a system of teaching in which they are uncomfortable. Many see themselves as more of a hindrance to the learning process, as there is a perceived learning curve that is too steep for them to reconcile while delivering the curriculum. Also, many teachers feel that the technology itself is a hindrance to

learning, especially while teaching in an increasingly standardized environment that emphasizes traditional paper and pencil evaluation and assessment. In addition, teachers who have amassed a paper-dominated resource library are inclined to fall back on what they have always done, and what they perceive as having always worked; there simply is no need to introduce a new technology. Additionally, the pen and paper context of standardized assessment supports a pen and paper approach that dominates student work.

While many teachers use smart phones, iPods, and tablets (such as the iPad) outside of school, many are not given ample instruction or professional development to confidently implement those technologies into their instruction. Many schools are allotted professional development days throughout the year, but most of these sessions are spent on issues that are deemed to be higher on the priority list, such as running record analysis, positive behavior support initiatives, and analysis of data from standardized tests. Few sessions are given time for "experts" to come in and share their knowledge and experience of particular applications in the classroom. Online teacher resources, managed by the school district, lack the breadth and variety of technology-infused lesson plans and activities for teachers to draw from.

Distinct among school teaching staff are those teachers who represent champions for technology. This is an important element in having a school-wide value system that encourages technology as a means of improving and supplementing instruction. A teacher champion is constantly advocating for the use of a variety of ways to reach students through technology. A school must have these champions in order to advance the plight for quality access to technology in schools. They are those teachers who are bringing new

technologies to other teachers and administration in hopes of improving learning experiences for both teacher and student. They are liaisons between the technology itself and the apprehensions or inclinations to use them by all. They get excited by new technologies to promote new literacies and show a willingness to have them implemented and shared.

The school represents a significant socialization element for students. However, the most subversive advancement in peer group relations is found within the sphere of internet technology itself, in the form of social networking. Today, Facebook is unknown to few adolescents in the developed world. Student restrictions to social networking sites in schools undermine a practice that many are immersed in outside of school. A quick scan of adolescents' use of smart phone apps reveal that what they are using most are social networking apps like Facebook, Twitter, and Instagram—a photo sharing site that allows users to edit photos and comment on friends' pictures.

Many students have their own smart phones, tablets, personal computers, and mp3 players and use them regularly outside of school. Of those users, many use iPhones, iPads, and iPods. Often when students bring these devices to school, they are not doing so because they feel it aids them in their schooling. It largely represents a comfort device; it is a way to stay personally engaged while at school, however they see fit. Those who are not from middle class environments are less likely to own or use these devices. That being said, student socioeconomic demographics play an important role in the digital divide in terms of accessibility to technology, in the ways they are using technology at home and bringing it to school. The home environments of students provide insight into

what technologies are used or even present at home. In addition, many rural communities still lack the high speed connectivity present in more urban centers in the province. In some cases, communities still lack broadband connectivity.

In the following chapter, I present an overview of methodological perspectives that inform qualitative research. I highlight those perspectives that align with my particular approach, and position teacher research within those perspectives. In addition, I outline some of the features that make teacher research distinguishable from other forms.

BUFFERING…PLEASE WAIT…

Chapter 3: Methodology

3.1 Philosophical Assumptions—A Worldview

In any research venture, the researcher's values and beliefs come to bear on both the approach to design, data collection, and interpretation. These values are both influential and guiding. Creswell (2009) in referencing Guba (1990) puts forth a definition of worldview as "a basic set of beliefs that guide action." In this way, the present research is propelled by a worldview that guides its design and shapes the interpretation of its results. Creswell (2009) highlights four general worldviews that span the majority of current research design. I give a brief overview of each in the following section.

3.1.1 The Post-Positivist Worldview

This worldview tends to be generally aligned with quantitative research involving a more 'scientific' approach. Deterministic in its philosophy, post-positivists subscribe to causal relationships in which causes probably determine effects or outcomes (Creswell, 2009). Post-positivists generally start with a theory first, then look for relationships among the data to support that theory. A significant feature of the post-positivist research is its reductionist nature, in which the goal is to reduce ideas into small units that are able to be tested and which comprise the core of the hypothesis, which in turn is either supported or refuted (Creswell, 2009).

3.1.2 The Social Constructivist Worldview

In this worldview, researchers are interested in meaning-making. Rather than starting with a theory and turning to variables among the data to support that theory,

social constructivists start with the data first and proceed to interpret meaning from it. They approach their research from a social context allowing the data—through observation or participant answers—to inform themes that may be taken from it. Social constructivists put the participants at the center of the research—participants' biases, attitudes, and meanings are used to construct understandings of themes and patterns that come out of questions and observations (Creswell, 2009).

3.1.3 The Advocacy and Participatory Worldview

In this worldview—which can be seen in either qualitative or quantitative research—the researcher's purpose in investigating a problem or research question is motivated by changing or improving the research environment. At the heart of the advocacy and participatory worldview is the research as a vehicle for giving voice to marginalized groups, or groups with little to no voice of their own (Creswell, 2009). These voices are often silenced by a political or socio-political climate. As the name implies, the researcher acts as an advocate for positive change. In doing so, the researcher collaborates with participants so as not to further compound problems or further marginalize participants (Creswell, 2009).

3.1.4 The Pragmatic Worldview

The pragmatic worldview aims to approach research design from a "what works best" perspective (Patton, 1990, as cited in Creswell, 2009). In this way, pragmatists may use a blended approach bringing together elements of both qualitative and quantitative study in what may be seen as the basis for a mixed methods approach. Rather than starting with theory and finding support for it within the data, pragmatists take what has

been already implemented as a starting point. As Creswell (2009) points out, "pragmatism as worldview arises out of actions, situations, and consequences rather than antecedent conditions (as in post-positivism)" (p.10).

3.1.5 Philosophical Worldview informing my own Research

My own worldview comes out of my personal experience in the classroom for the last decade. My worldview takes aspects of several worldviews discussed in the previous section. It comes out of hearing myself, other teachers, students, administrators, and parents voicing their opinions and concerns about technology as a tool for learning—its limits, and its possibilities. I'm interested in the stories of individuals, their histories, perspectives, and what they see as problematic in the sphere of educational technology. In this way, my worldview may be aligned with that of the social constructivist. Focusing on policy as an aspect to be investigated, themes arise and inform further narrowing of the questions or problems I start with. Also, I hope that my research will affect—in some way—change. In this way, my worldview may take on the characteristics of the advocacy and participatory worldview. Finally, as my research question or problem uses the current policy documents connected to the "appropriate use of technology", there is an element of the pragmatic worldview. Present in my research is the idea that more could be done or implemented differently to better improve the educational goals for all stakeholders.

3.2 Teacher Research as a Methodology

Teacher research proposes to investigate the environment in which teaching and learning occurs in order to better that environment. Simply put, teacher research is research conducted by a teacher in order to improve both the learning environment for the

student, and teaching environment in which the educator works. Though the research is ultimately concerned with what goes on inside the classroom, much can be ascertained by investigating broader contexts external of the classroom. Lankshear and Knobel (2004) conceptualize teacher research as being both quantitative and qualitative in its approach to research design, and note that it is not simply research by teachers of classrooms. Rather, teacher research "could be studies of policy, communities, social class, the work world, non-standard language varieties and so on" (Lankshear and Knobel, p. 7). In this way, teacher research is insider research and related to practice. Furthermore, rooting the investigation within a qualitative research design allows the research to be carried out in a naturalistic setting.

3.2.1 Qualitative Research Design in Teacher Research

The core of this research is rooted within the context of a qualitative research design. In Research Design—Qualitative, Quantitative, and Mixed Method Approaches (3rd Edition, 2009), Creswell offers a definition of qualitative research:

> Qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data" (p. 49).

Generally speaking, qualitative research employs an inductive approach to data through thematic interpretation, rather than numerically or statistically measuring the

relationship among variables (Creswell, 2009). An over-simplification of the difference between qualitative and quantitative research design might be that qualitative research is concerned with interpreting data through words, whereas quantitative research is concerned with interpreting data through a numerical process. The researcher is the predominant interpretive agent in the qualitative research process. That is not to say that other perspectives are not considered.

3.2.2 Features of Qualitative Research

Creswell (2009) outlines several identifying characteristics of qualitative research. Among these characteristics is the research in a natural setting, the researcher as key instrument, the analysis of data as inductive and, interpretive and finally, the research providing a holistic account of the research question. These characteristics are discussed in further detail in the following sections.

3.2.1.1. Qualitative Research in a Natural Setting. In conducting qualitative research, the researcher's data is gathered in the context and location where it would normally be interacted with by the researcher. External data sources are not brought into the research, and instruments are not normally used to measure in the quantitative sense. What is studied, analyzed, and collected can be easily accessed in the natural environment of the research on a regular basis, without the delivery of surveys or other instruments (Creswell, 2009).

3.2.1.2. Qualitative Researcher as Key Instrument. At the core of this characteristic, the researcher acts as the primary instrument of data collection. Other instruments of measurement developed by other researchers are avoided. The researcher

gathers data himself, often through observation and examination of documents, behavior, or participants (Creswell, 2009).

3.2.1.3. Data Analysis as Inductive. The researcher organizes the data from the bottom up. The researcher develops increasingly more abstract themes through an inductive process, which involves a continuous revisiting of the data and a reworking of the categories and patterns extracted from it. In this way, the data provides patterns of organization from which themes may be developed, honed, or narrowed. (Creswell, 2009).

3.2.1.4. Interpretive Nature of Qualitative Research. A key characteristic of qualitative research is that it is interpretive. The researcher collects data and the researcher interprets the data based on what they see, hear, and understand. No attempt is made to separate researchers' backgrounds, history, contexts, or prior understandings, rather, the entire research product is interpretive. The report is interpreted by readers and participants, which add to the breadth of interpretation presented by the researcher (Creswell, 2009).

3.2.1.5. Qualitative Research giving a Holistic Account. Here, the qualitative researcher attempts to provide a complex picture of the research problem by presenting a variety of contexts and perspectives involved. In doing so, the researcher gives a wider sketch of the issue studied, rather than isolating and developing a single perspective for interpretation (Creswell, 2009).

BUFFERING…PLEASE WAIT…

3.3 Method

3.3.1 Qualitative Content Analysis (QCA)

The data generated for my research was examined using qualitative content analysis (QCA). Generally speaking, this is a method within qualitative research design, for analyzing qualitative data. Qualitative content analysis is document-based investigation. Lankshear and Knobel (2004) define this method within the context of qualitative research as "... [being] concerned with the kinds of messages texts send, and with what social norms and ideologies these messages encode" (p.333). Schreier (2012) articulates qualitative content analysis as "...a method for systematically describing the meaning of qualitative material. It is done by classifying material as instances of the categories of a coding frame" (p.1). Having its origins in communication studies, this method is commonly used in the social sciences (Schreier, 2012). It relies on the building of a coding frame by working through a process that may be either data or concept driven.

Unlike quantitative content analysis—which relies more on coding standardized meanings in data—qualitative content analysis provides an interpretation of non-standardized meanings within data (Schreier, 2012). For example, in a quantitative content analysis, one might compare the number of times a parent figure or adult appears in television advertisements for children's toys; whereas a qualitative content analysis might investigate the same advertisements where parent figures or adults are shown in "positive" or "supportive" roles. Both use the same data, but each method is specific to what is being investigated. In this example, the meaning of "positive" or "supportive" is

not standardized or certainly less standardized. In this way, interpretation of the meaning or meanings of the terms “positive” and “supportive” are both the basis for code-making, and the interpretive meaning the researcher gives to the terms.

3.3.2 Building the Coding Frame

The coding frame used in qualitative content analysis involves articulating, in a word or phrase, some theme recognized and interpreted by the researcher as the meaning communicated by a given word, sentence or block of text. Schreier (2012) highlights two elements of a coding frame. As mentioned earlier, the first step involves the creation of a tagging system using a word or phrase to identify textual meaning in what are called categories. These give focus to the analysis. Secondly, subcategories are created from the main categories. These give specificity to the main categories in a way that allows for a more thorough analysis of the data (Schreier, 2012). Categories may be created from prior or initial readings or observations of the data. In this way, the analysis is data-driven in an inductive way (Schreier, 2012). Categories may also be created by a process working from the opposite direction. In this way, categories are created from a prior concept or idea which the researcher starts with. This is what is referred to as concept-driven, and works deductively as opposed to inductively (Schreier, 2012). The analysis of data in the current research was both data-driven and concept-driven, working in both an inductive and deductive fashion.

Schreier (2012) highlights four requirements in building a coding frame. First, there must be unidimensionality. In this respect, only one aspect of the data should be captured. Second, coding categories must be mutually exclusive. In this way, a unit of

coded data may be assigned to one subcategory only. Third, categories must be exhaustive. The meaning here is that all coded data must be represented by at least one subcategory. Finally, coding frames ought to be saturated, meaning that all subcategories must be used at least once.

3.3.3 Why Qualitative Content Analysis?

This methodological approach provided the best fit for what was being investigated, in that it provided the opportunity to develop themes that appear across several documents of the same type and purpose. Additionally, it allowed these themes to be used to contextualize revisits to documents, and the ability to narrow and refine the themes themselves. As the research employed a thematic analysis framework for coding sections of primary data (policy documents) of major themes, qualitative content analysis (QCA) was determined to be well suited.

Using QCA, an analysis was undertaken of the policy documents that exist on the implementation and usage of information communications technology (ICT) that could be procured from the government, district, and school levels. Coding subcategories paid particular attention to social media applications and mobile technology. Consequently, documents procured from the department and district websites were analyzed in terms of the manifest and latent meanings (sub-textual messages they encode; the values, norms, and attitudes that they may communicate) with respect to the role of technology, its usage and integration.

BUFFERING…PLEASE WAIT…

3.4 Location

The research was carried out in the province of Newfoundland and Labrador, drawing on perspectives and documents collected from individual schools around the province and from the district itself.

3.5 Data Collection

The primary data collected consisted of individual school district policy documents addressing—in one way or another—acceptable use of technology within the educational setting. The documents were obtained through an online query of individual school districts' policies addressing the use of technology in the school environment.

3.5.1 Policy Documents

As education is under provincial jurisdiction in Canada, no national level documents were included in the sample. Also, similar policy documents were not available at the provincial level (Department of Education). Documents for the sample were collected at the school district level.

These documents were collected by accessing online the available policies around ICT acceptable use. The nucleus of my research was concerned with the existence—or nonexistence—of policies around the use of information communication technologies (ICT) and its integration within learning environments, paying particular attention to what was or was not being communicated in those policies. With this in mind, the majority of my data came from an analysis of policy documents specifically addressing the use of ICTs.

BUFFERING…PLEASE WAIT…

3.6 Data Analysis

The primary policy documents, four in total, were procured from internet links to each document found on the individual website for each school district. Each of the documents were coded using the method of qualitative content analysis (QCA) outlined by Schrieir (2012). The coding began initially as a concept-driven process following the gathering of the data (policy documents) and a reading of each. Each of the documents were coded under three broad categories: usage; responsibility; and other.

In the following chapter, I provide a more comprehensive picture of the analysis of the data. Within this picture, I explain the development of the coding frame, as well as the thought behind the creation of individual code categories.

BUFFERING…PLEASE WAIT…

Chapter 4: Analysis

Beginning with the category “usage”, each of the documents were coded noting instances of usage where it appeared throughout the document. Where each document was some form of an acceptable use policy, I thought it reasonable to use this as a starting point for the creation of initial category label of “usage.”

During the process of coding the instances of usage in the documents, a second category was added was added to reflect “responsibility”—another prevalent theme throughout the documents. The documents were re-read and coded for instances of this. Sub-codes within this category were conceived out of rereads of the documents and, consisted of district or department responsibility, student responsibility, teacher responsibility and, school responsibility. Sections of the documents which did not fall under either of these categories were coded under “other.”

A third broad category—named *other*—was added to reflect segments in the documents that neither fell under *Usage* nor *Responsibility.* This category consisted of a variety of sub coded data falling under: definitions of technology, consequences, liability, district beliefs or values and, rationale.

In a data-driven process, involving the rereading of the documents, two subcategories of coding were added under “usage.” These subcategories included use of technology and use of policy. Under use of technology, subcategories were added including school hardware, school software, websites, apps, personal digital devices, and cell phones. A single sub-code of social networks was added under websites and apps.

BUFFERING…PLEASE WAIT…

4.1 Building the Coding Frame

The coding approach consisted of creating three broad categories of themes: usage, responsibility, and other (Table 4). My reasoning behind this approach was simply that the documents themselves seemed to have two dominant purposes to them: to address which technologies are to be or not to be used by whom, and to address whom is responsible for enforcing or monitoring these usages. The documents were each considered individually, observations made on applicable lines of text within the document, and coded accordingly under one of these three categories. Where areas in the text fell under any of these three categories they were coded as use, responsibility or other.

Subcategories of codes were added in vivo while coding the documents under these two broad categories. To inform my creation of these subcategories, I looked at what—within the larger category—was being communicated directly. For example, within the category use, I looked at which particular technology was being addressed in terms of its usage. Taking this approach, I coded for areas referencing specific elements of technology usage.

Four subcategories were added: social networking, school software, school hardware, cell phones and personal digital devices. Similarly, while coding for responsibility, subcategories were added that reflected individuals or groups targeted. Simply put, my goal was to determine specifically who was responsible for either enforcing the use of particular technologies or the use of the policy itself.

BUFFERING…PLEASE WAIT…

Main Categories	Description
Usage	The focus is on what is being used, who is using it or, ought to use it.
Responsibility	The focus is on who is responsible for the use of the technology, or the implementation of the current policy on the use of the technology.
Other	Instances of text that did not fall explicitly in either use or responsibility.

Table 4. Definitions of the Coding Categories Usage and Responsibility

4.1.1 Usage

While coding for instances of usage, I made a distinction between usage of technology and usage of policy. Usage of technology refers to the particular technologies in the educational environment (phones, personal digital devices, digital devices in the school or classroom, personal computers, websites, applications, etc.) that the policy documents make reference to in terms of its use, and who is using it or ought to use it. I define usage of policy as the intended users of either:

1. The policy document currently being articulated.
2. The use of or reference made to other policy documents external to the one currently being articulated or investigated.
3. The reference to policies or policy documents that are to be developed by stakeholders outside of the current document being treated.

All documents were procured from the individual internet links to the former school districts. The focus in gathering the data (policy documents) was to gather policy documents related specifically to the use of technology in the classroom. Where there was no such document found for a region, the focus shifted to similar documents addressing the issue of technology use in the schools. If there was no such document

available, the focus shifted to procuring a similar document from the district level. In each of the following sections, the discussion of the emergent theme of usage in each document is discussed. The document's title and document number are given where applicable.

4.1.2 Responsibility

The second major coding category consisted of responsibility. Within this category, subcategories were added that defined the group appearing to bear responsibility. The categories of student responsibility, teacher responsibility, and school responsibility were added as sub-codes here. In terms of student responsibility, what I looked for were areas in the document where specific technologies and their uses were stated to be the responsibility of the student. Also, teacher responsibility indicates those same technologies and their uses that are deemed to be teachers' responsibility as either a result of their own use, or in overseeing the use of technology by students in their classroom. The category school responsibility was used in sections of the document where the use of technologies and technology infrastructures of the school or school district were referenced.

4.1.3 Other

Sections of documents which contained text that neither fell under the category of usage nor responsibility were coded under other. Typically, these sections of text did not have a clear purpose as to its message of usage, nor the target audience responsible for enforcing the policy or technology. What often showed up in the documents and were consequently coded under this category were references made to the role of twenty-first

century learning, and agreements between stakeholders and schools to sign off on an agreement of some sort. Common themes prevalent in this category were of definitions of technology, district beliefs or values, rationale and finally, consequences either in terms of violations of the policy, or in violations of agreed upon uses of technologies. However, sections of text in the documents were not required to meet this thematic criteria in order to be coded as other.

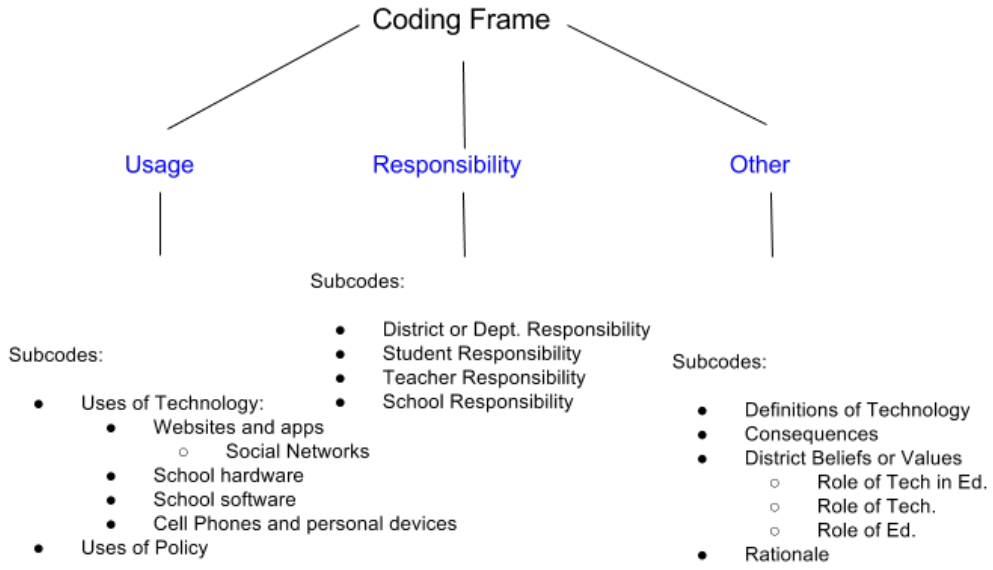


Figure 4. The Coding Frame

4.2 Document Analysis

The sections to follow provide an analysis of each of the four main documents in the former school districts, according to the three main coding categories set up during the creation of the coding frame. I worked from an analysis of use first. Next, I proceeded

with an analysis of each of the documents in terms of responsibility. Finally, I analyzed the documents according to instances of text coded under other. A screenshot of the document coding during the research is provided in Figure 4.1.

Rather than explicate the micro-nuances of each document, I aimed to address the major themes of each, and highlight some of the differences between them. The purpose is to capture the overall flavor of each document that differentiates it—however slightly—from the other documents in the study.

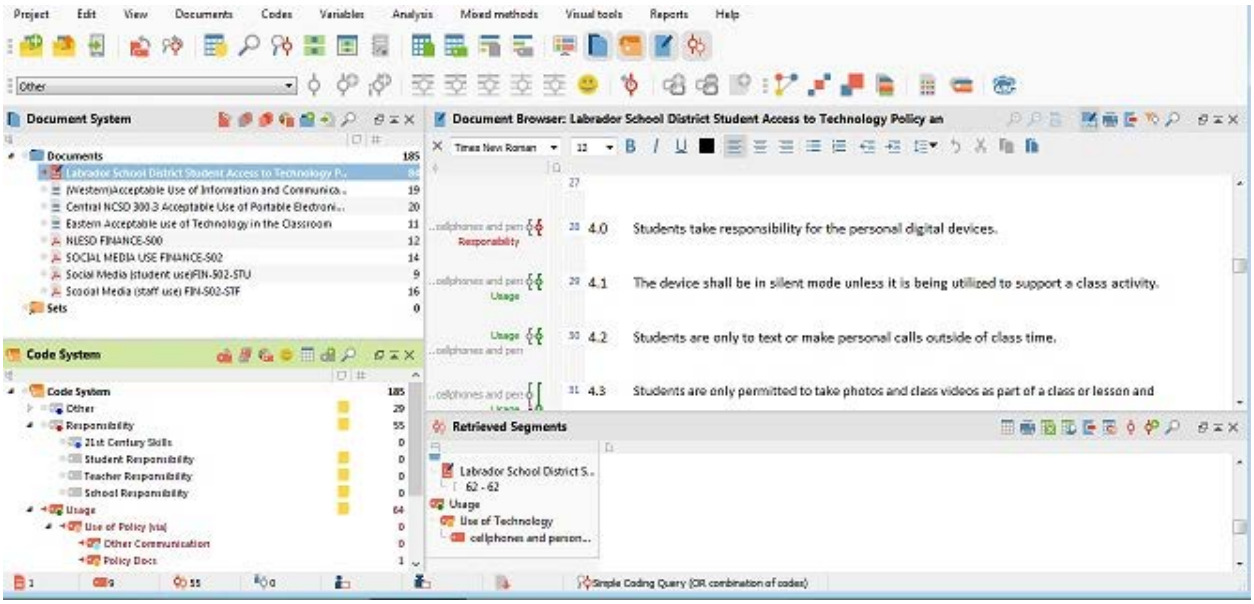


Figure 4.1 Screenshot of Document Coding at Early Stage in the Research

4.2.1 Usage in the Documents

The four primary documents of all four major school districts were coded for usage using the distinction between usage of technology and usage of policy. This distinction informed the creation of separate and distinct sub-codes of the same names. As seen in the Table 4.1, the majority of coded segments of usage leaned heavily on the use of technology.

BUFFERING…PLEASE WAIT…

Occasionally in a document, reference was made to a previous document which was being replaced by or the basis for the present one. The majority of coded instance of usage of policy was in direct reference to the use of the present policy document being put forth. Consequently, there was no distinction; therefore no distinctive sub-codes were added to the category usage of policy. In total, 90 instances of usage were coded across four policy documents. A summary of the coded instances of usage is provided in Table 4.1.

Code Category (Usage)	Labrador	Western	Central	Eastern	Total
Usage of Policy	7	3	4	2	16
Usage of Technology	39	18	8	9	74
Total Usage	46	21	12	11	90

Table 4.1. Number of Coded Segments of Usage across Documents

4.2.2 Usage of Technology in the Documents

Prevalent in the coding of usage of technology was the emphasis on personal digital devices and cell phones. Under this category, four major sub-codes were created: websites and apps; cell phones and personal digital devices; school hardware; and school software. According to the frequency rate of coded segments found in Figure 4.2, the major concern in the documents appears to be the use of personal digital devices and/or cell phone usage.

BUFFERING…PLEASE WAIT…

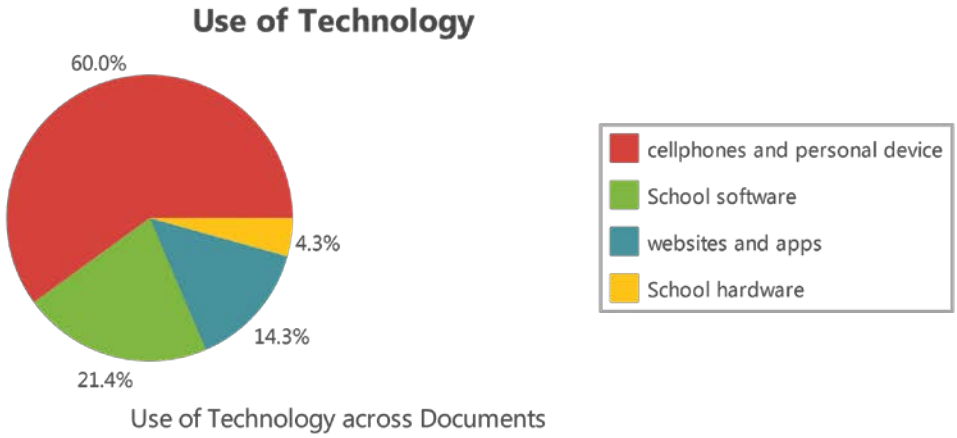


Figure 4.2. Frequency of Coded Segments of Usage of Technology

4.2.2.1 Labrador Region- Student Access to Technology Policy and Agreement Form. Forty six instances of use were coded in the document either as a general statement of usage or as a specific statement made about a specific element of technology usage. Of the 39 coded instances of usage of technology, 30 were instances of specific reference made to the usage of cell phones and/or personal digital devices. A summary of the instances are provided in Table 4.2 and Figure 4.3.

Code Category	Frequency	Percentage	Percentage (valid)
cellphones and personal device	30	76.92	76.92
School software	4	10.26	10.26
School hardware	3	7.69	7.69
websites and apps	2	5.13	5.13
Total	39	100.00	100.00
Missing	0	0.00	-
Total (Valid)	39	100.00	-

Table 4.2. Coded Segments of Usage of Technology Labrador School District

BUFFERING…PLEASE WAIT…

The document collected from the former Labrador school district website, puts a significant emphasis on the use of personal digital devices (Figure 4.3) such as cell phones and other personal devices that are able to capture images or record sound.

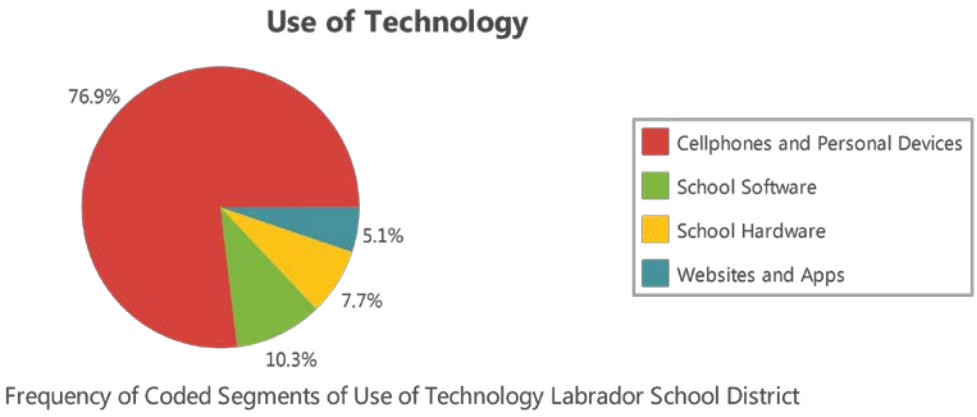


Figure 4.3. Frequency of Coded Segments of Use of Technology Labrador School District

The document was prefaced by the recognition of regular technology implementation in the classroom enhancing the learning environment, as it supports the acquisition of skills for the twenty-first century learner. In the same paragraph, it was noted that, “Access to technology must be tempered with the need to have students trained in the responsible use of technology, and the realization that technology is a device to support twenty-first century skill acquisition, and not an end in itself.”

The document puts forth the conditions of technology usage with the assumption that students will have completed the Passport to the Internet and My World digital literacy tutorial offered by Media Smarts (Figure 4.4), an organization committed to teaching digital literacy.

BUFFERING…PLEASE WAIT…

Figure 4.4. Media Smarts Website

Notable in the document, was the presence of a student technology use agreement. This agreement—culminating in the required signatures of both parent and student—detailed the specific uses of technologies (not the technologies themselves) by students in the school environment, with special emphasis put on personal digital devices, such as cell phones.

Many of the coded instances are of the agreement component of the policy document where individual itemized ways of using the technology are given in *I will, I will not,* or *I am aware of* statements. Here, the student is required to check each item outlining expectations of their technology usage in the school. This is part of the BYOT (Bring Your Own Technology) initiative. As a requirement for using their own technology, students are required to sign this document before doing so. In addition, a parent or guardian must also sign the agreement. Particular emphasis is placed on the responsibility of the student to govern the use of his or her own personal device.

BUFFERING…PLEASE WAIT…

4.2.2.2 Western Region- Acceptable Use of Information and Communications Technology. Unlike the previous document, the Western school district policy document does specifically reference the use of particular social networking tools such as Twitter and Facebook, and asserts that its use on school networks are prohibited. This is the only coded instance in the document of a particular reference to a social networking service. The document itself provides a list of five acceptable uses and thirteen unacceptable uses.

Code Category	Frequency	Percentage	Percentage (valid)
School Software	10	58.82	58.82
Websites and Apps	6	35.29	35.29
Cellphones and Personal Devices	1	5.88	5.88
School Hardware	0	0.00	0.00
Total (Valid)	17	100.00	100.00
Missing	0	0.00	-
Total	17	100.00	-

Table 4.3. Coded Segments of Usage of Technology Western School District

A marked break in focus from the previous document, the Western school district policy document places relatively little emphasis on student use of specific personal digital devices such as cell phones—a single instance was coded in the document (Table 4.3). What it does place emphasis on is the use of websites and school networking resources (Figure 4.5). Specifically, the document stresses the issue of congestion on school networks and the tying up of activities that stresses the functionality of its resources.

Ten instances of school software were coded in the document (Table 4.3). The majority of these instances spoke to the usage of networking resources such as email, and behaviors such as downloading or social network chatting as behaviors that were not in

keeping with acceptable usage practice. The document articulates that the more users that are using the network at one time, the more congested the network becomes.

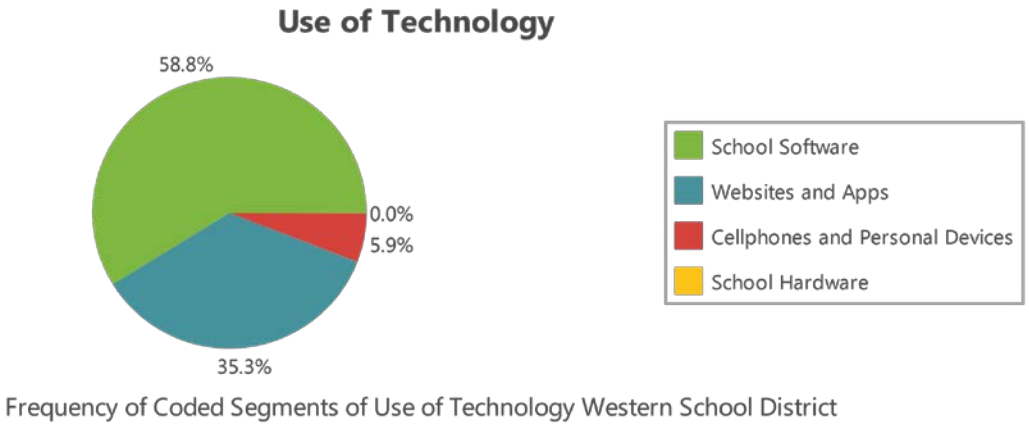


Figure 4.5. Frequency of Coded Segments of Use of Technology Western School District

Twenty one instances of usage (technology and policy) were coded in this document. Of these instances, 17 focus specifically on technology usage. Within this subcategory, most focused on the general behavior of users while online or using the technology resources of the school or district. Other instances directly referenced use of school network resources such as servers and physical computers within the educational environment, including the school or off-school sites where district network infrastructures were accessed by students or staff. A summary of the frequency of coded segments is provided in Figure 4.5. Like that of the Labrador school district policy, the policy document of the Western school district requires a student's signature and a parent's signature at the end of the document.

The Western region document was procured from the Western region school district website prior to its amalgamation with the other three districts in the province of Newfoundland. This document—like the other documents in the study—purports to give

a guideline to teachers, staff and students on what is acceptable behavior in terms of the usage of online resources and computer related services within the schools in its district.

Within the policy statement portion of the document, the school district asserts technology as a "privilege rather than a right", and that the purpose in providing technological resources is to "support student learning, enhance communications, and to conduct the business of the district." Here, the provision of technological resources are given equal weight between the practical functioning of the district's "business" and technology's role in the classroom.

4.2.2.3 Central Region—Acceptable Use of Portable Electronic Devices by Students. In gathering data—in the form of policy documents—from the former Nova Central school district, no policy that dealt with acceptable use of technology or simply technology was found to exist. In its absence, what was retrieved was the current document on use of portable electronic devices. The length of this document attributed to the comparatively lower coded instances, and likewise in the coded instances of usage.

Code Category	Frequency	Percentage	Percentage (valid)
Use of Technology	8	66.67	66.67
Usage of Policy	4	33.33	33.33
Total (Valid)	12	100.00	100.00
Missing	0	0.00	-
Total	12	100.00	-

Table 4.3. Coded Segments of Usage Nova Central School District

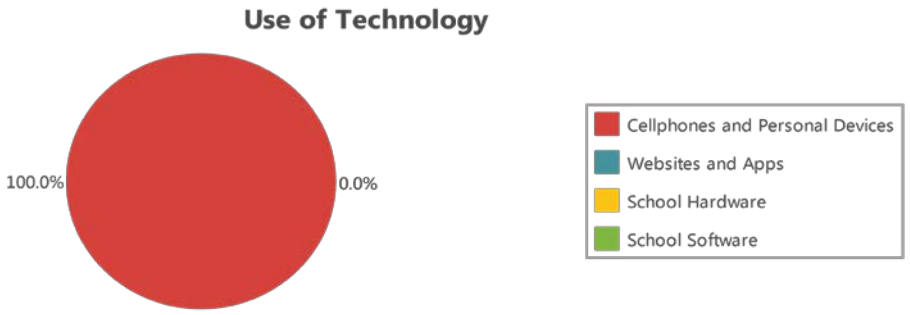
Significantly shorter in length and more narrow in scope than the other documents, the emphasis here is solely on portable electronic devices and cell phones

that, among other things, are able to capture images and have recording capability. Specific cautions are articulated pertaining to the presence of personal digital devices and cell phones in examination rooms and on school grounds, extending to field trips and in busses. Nine instances of use were coded in the document. Of these nine instances, eight instances were coded as use of technology and all as relating to personal digital devices or cell phones (Table 4.4).

Code Category	Frequency	Percentage	Percentage (valid)
Cellphones and Personal Devices	8	100.00	100.00
Websites and Apps	0	0.00	0.00
School Hardware	0	0.00	0.00
School Software	0	0.00	0.00
Total (Valid)	8	100.00	100.00
Missing	0	0.00	-
Total	8	100.00	-

Table 4.4. Coded Segments of Usage of Technology Nova Central School District

These instances represented one hundred percent of the coded instances of use of technology under the broad category of usage (Figure 4.6). This was not surprising given the scope and focus inherent in the document's title. Four instances of usage of policy were coded pertaining to the school's implementation of its own specific policy on technology usage.



Frequency of Coded Segments of Use of Technology Nova Central School District

Figure 4.6. Frequency of Coded Segments of Use of Technology Nova Central School District

BUFFERING…PLEASE WAIT…

The policy document of the former Nova Central school district avoids the specificity of the other documents in terms of behavior and acceptable usage. There is a distinction made between educational and non-educational technology, where cell phones would presumably fall into the latter category.

As in the other documents, the policy articulates that individual schools "shall establish their own policy" around technology usage that is to be enforced and follows the current policy from the district. It is also noted in the document, that exceptions to the current policy may be made to accommodate students with a specific individual education plan (IEP) where specific technologies are incorporated.

4.2.2.4 Eastern Region- Acceptable Use of Technology in the Classroom. Similar in length as the previous document, the policy document of the former Eastern school district outlines a seven-point procedure governing the use of technology in the classroom. As indicated in the document title, the district appeared to target technology use specifically within the classroom environment. Eleven instances were coded for usage in the document. Of these instances, nine were coded as use of technology, and two were coded as use of policy (Table 4.5).

Code Category	Frequency	Percentage	Percentage (valid)
Use of Technology	9	81.82	81.82
Usage of Policy	2	18.18	18.18
Total (Valid)	11	100.00	100.00
Missing	0	0.00	-
Total	11	100.00	-

Table 4.5. Coded Segments of Usage Eastern School District

BUFFERING…PLEASE WAIT…

Of the coded uses of technology, half were coded as relating to the usage of cell phones and personal digital devices, while one third related to the use of websites and apps (Figure 4.7).

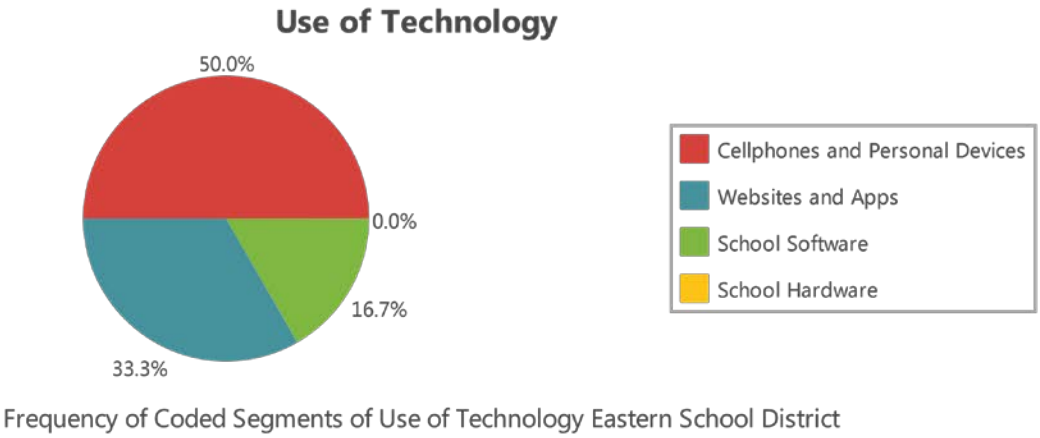


Figure 4.7. Frequency of Coded Segments of Use of Technology Eastern School District

Within the context of the rationale given for the document, the former Eastern school district differs slightly from the other documents in terms of what it articulates to be necessary in the integration of technology:

> The Board acknowledges the need to enable teachers and students to be comfortable with and proficient in accessing, manipulating, and communicating through diverse technology formats. In this way, students will graduate with the lifelong learning skills necessary in an information-driven society. The use of technology in the classroom must be a natural and complementary element to sound instructional practices focused on curriculum outcomes and sensitive to instructional time.

BUFFERING…PLEASE WAIT…

Here, there is a shift from technology as a potentially disruptive element to the learning environment, to that of a complementary tool in the attainment of twenty-first century skills. In addition, the district makes reference to the necessity for both students and teachers to become "knowledgeable and proficient" in these technologies.

Equally unique in the document, is a more varied form of technology in terms of what is to be included in the definition. Here, the emphasis on student-centered technology such as cell phones, is broadened to include classroom and teaching resources, such as interactive whiteboards:

> Technology is defined as any device or application encompassing: radio, television, video/audio recorders, video/audio players, cameras, calculators, electronic responding units, cellular phones, projection units, PDA, interactive whiteboards, computer hardware and software, as well as the various services and applications associated with them, such as videoconferencing and distance learning.

As we can see here, the emphasis isn't on cell phones or student-centered technology, but rather all technologies in use within the learning environment. It is uncertain if policies at the individual school level deem it unnecessary to provide specific admonitions in a district-created document. However, it does not seem to include the focus of other documents in this regard.

4.3. Responsibility in the Documents

Across the policy documents, a total of 60 instances were coded for Responsibility. Sub-codes of the category consisted of student responsibility; school

responsibility; district or department responsibility; and teacher responsibility. As seen in Table 4.6, of these sub-codes, many—keeping in mind the depth of the various documents—were coded as instances of student responsibility.

A total of 34 instances were coded for student responsibility. The majority of these instances were found in the Labrador school district document with Western, Central, and Eastern following respectively.

Code Category (Responsibility)	Labrador	Western	Central	Eastern	Total
Student Responsibility	21	9	3	1	34
School Responsibility	4	1	5	1	11
District or Dept. Responsibility	2	2	4	2	10
Teacher Responsibility	1	2	1	1	5
Total	28	14	13	5	60

Table 4.6. Number of Coded Segments of Responsibility by Region.

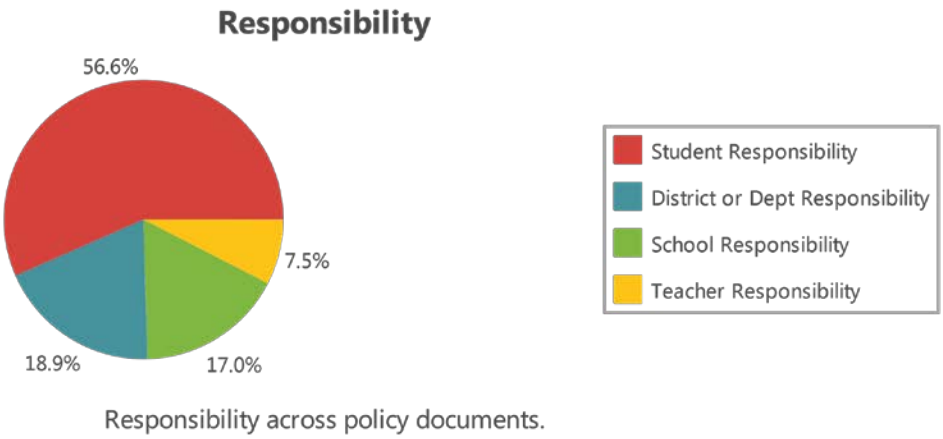


Figure 4.8. Frequency of Coded Segments of Responsibility across Documents

BUFFERING…PLEASE WAIT…

4.3.1. Labrador Region—Student Access to Technology Policy and Agreement Form

Twenty-eight instances were coded for responsibility in the Labrador region document (Table 4.6). Each were coded according to one of the four sub-codes previously outlined: student responsibility; school responsibility; district or department responsibility; or teacher responsibility (Figure 4.9). In addition, the document communicates that each of the schools in the district is responsible for establishing its own policy regarding technology usage, as well adherence to the present policy being articulated.

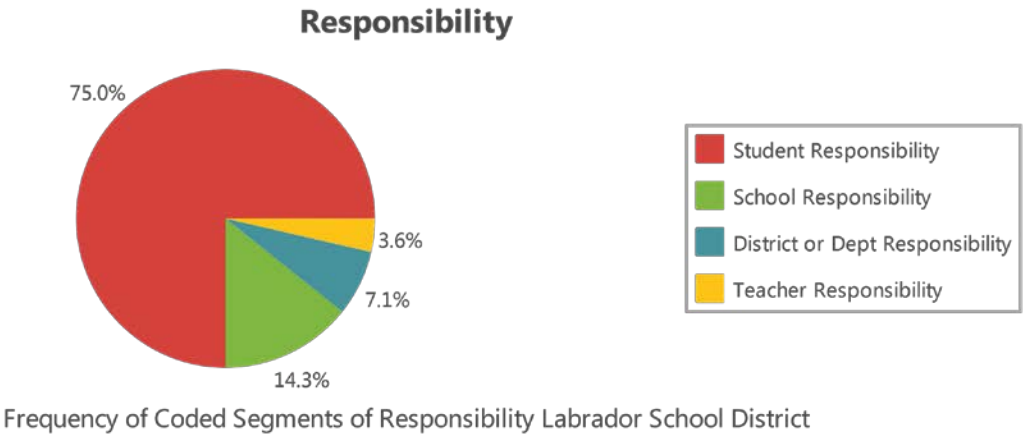


Figure 4.9. Frequency of Coded Segments of Responsibility Labrador School District

With respect to personal digital devices and cell phones, the document stresses that the responsibility for safeguarding against theft and security, as well as the use of these technologies in the classroom and in school settings falls predominantly on the student. The document also iterates that students are responsible for signing a user agreement which includes completion of technology education programs called Passport

BUFFERING…PLEASE WAIT…

to the Internet, and My World. A teacher signature is required verifying that the student has completed one of those programs.

Embedded in the policy document is a BYOT agreement form and protocol for the use of technology in schools. This itemized agreement form outlines particular student responsibilities, with a required signature at the end for students and parents.

4.3.2 Western Region—Acceptable Use of Information and Communications Technology

Fourteen instances were coded for responsibility in the former Western school district document (Table 4.6). These instances ranged from responsibility for monitoring network utilization to specific technologies in the classroom setting. Specifically, the document articulates the responsibility for teachers and administrators to monitor the usage of technologies in use in the learning environment at any given time.

Most instances of responsibility were coded as belonging to the sub-code of student responsibility (Figure 4.10). Of these instances, most concerned students' responsibility for personal devices, and adhering to school policy governing the usage of these devices.

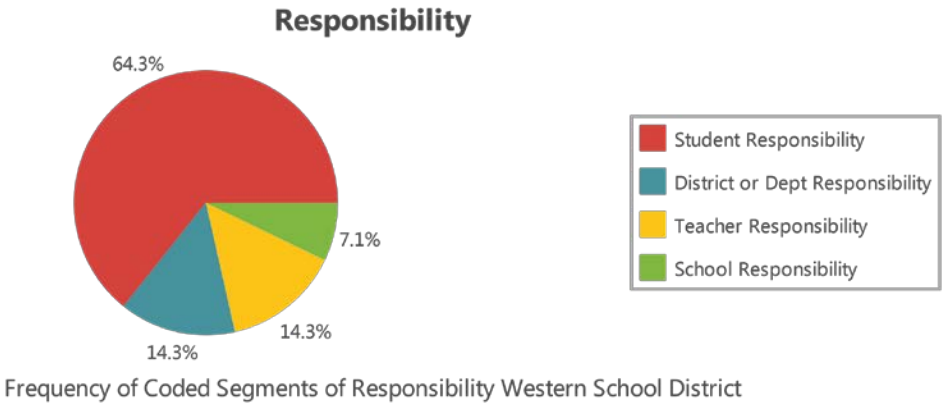


Figure 4.10. Frequency of Coded Segments of Responsibility Western School District

BUFFERING…PLEASE WAIT…

Additionally, the document states that under the direction of the school's principal, the school's network administrator is responsible for limiting future connection to the school's network if a student is deemed to have violated the technology usage policy.

4.3.3 Central Region—Acceptable Use of Portable Electronic Devices by Students

Thirteen instances of responsibility were coded in the former Nova Central school district (Table 4.6). The document refers to several entities bearing responsibility for both the communication of the current policy, as well as developing its own particular policy regarding the use of technology in the learning environment. However, the majority of coded instances appeared to rest the burden of responsibility upon the individual school (Figure 4.11).

The document opens by revealing the governing department responsible for creating the present policy—in this case, the Department of Finance and Administration via the manager of information systems. The document gives authority to teachers and administrators to confiscate personal digital devices including cell phones, in the event that the policy has somehow been violated by a student:

> School administrators are delegated the authority to confiscate electronic devices from students as determined necessary for the effective functioning of the school, and to return to the student or notify the parent/guardian that the device may be picked up from the school.

BUFFERING…PLEASE WAIT…

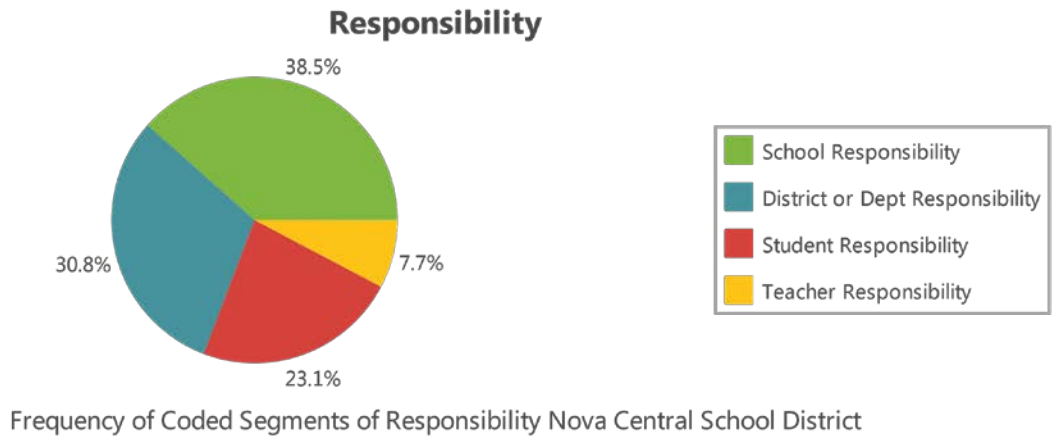


Figure 4.11. Frequency of Coded Segments of Responsibility Nova Central School District

Outlined under roles and responsibilities, the document states the role of the manager of information systems is responsible for the "...implementation, monitoring and revision of this policy." Also entailed in the document are the responsibility all administrators and managers to: a) Ensure that staff, volunteers and students are aware of this policy; and b) Develop and oversee the implementation of school policy as required.

Generally, the theme in terms of responsibility in the document, is placed primarily on both students and school administrators for ensuring that student-owned technologies are limited in its use in the classroom and, that personal digital devices are taken care of by any particular student on any given day.

4.3.4 Eastern Region- Acceptable Use of Technology in the Classroom

Five instances of responsibility were coded in the document of the former Eastern school district (Table 4.6). The document differs substantially from the other documents in terms of its depth of treatment. The document takes a less specific approach to addressing responsibility. The policy document stresses the district's own responsibility

BUFFERING…PLEASE WAIT…

(Figure 4.12**)**. Though it references the responsible use of technology by teachers and administrators, it places much of the responsibility for providing a safe and caring environment for students and teachers in its own hands, by articulating the establishment of "administrative regulations" to be "reviewed by the CEO/Director of Education in collaboration with the district administrative staff." The document consists of seven statements articulating general positions on the place of technology in the classroom.

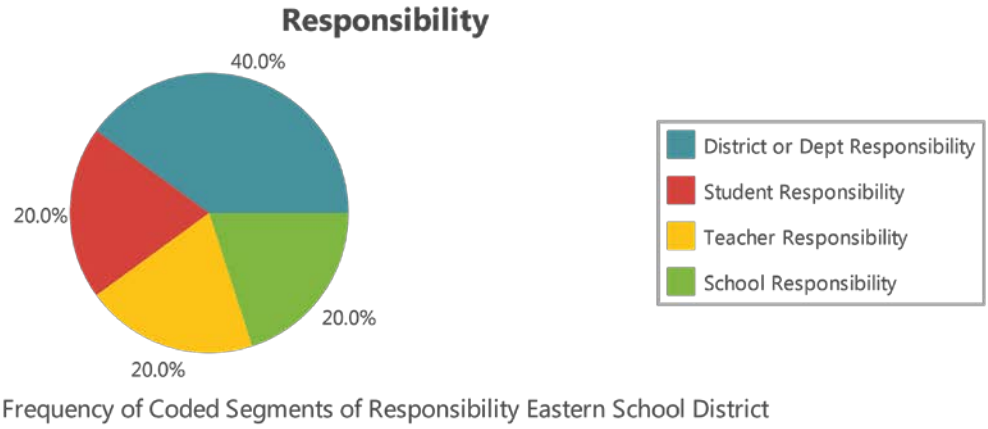


Figure 4.12 Frequency of Coded Segments of Responsibility Eastern School District

4.4 Other in the Documents

There were several areas in all four of the policy documents that did not fall under the coding categories of usage or responsibility. This is to say that several areas were coded as other (Table 4.7).

BUFFERING…PLEASE WAIT…

Code Category: Other	Labrador	Western	Central	Eastern	Total
District Beliefs or Values	5	2	2	4	13
Consequences	5	2	1	0	8
Definitions of technology	2	0	1	1	4
Rationale	1	1	1	1	4

Table 4.7 Number of Coded Segments of Other by Region

As seen in Table 4.7 and Table 4.8, four subcategories of "other" were created. Coded segments dealt with statements pertaining to a variety of issues or factors ranging, from definitions of technology to the rationale in creating the document itself. Also included in this category are statements relating to beliefs about the place of technology in the school or wider educational framework, as well as references to consequences. The following section gives a more specific analysis of each document's reference to these instances under "other."

Code (Other)	Frequency	Percentage	Percentage (valid)
District Beleifs or Values	13	44.83	44.83
Consequences	8	27.59	27.59
Definitions of technology	4	13.79	13.79
Rationale	4	13.79	13.79
Total (Valid)	29	100.00	100.00
Missing	0	0.00	-
Total	29	100.00	-

Table 4.8. Number and Frequency of Coded Segments of Other across Policy Documents

BUFFERING…PLEASE WAIT…

4.4.1 Labrador Region—Student Access to Technology Policy and Agreement Form

The Labrador region student access to technology policy and agreement form contains several areas in the document that were coded as other. Seven instances were coded under this category. One of the predominant themes that appears under this category in the document, is the district's articulation of the consequences of misuse of technology and its beliefs about technology's role in the educational framework **(**Figure 4.13).

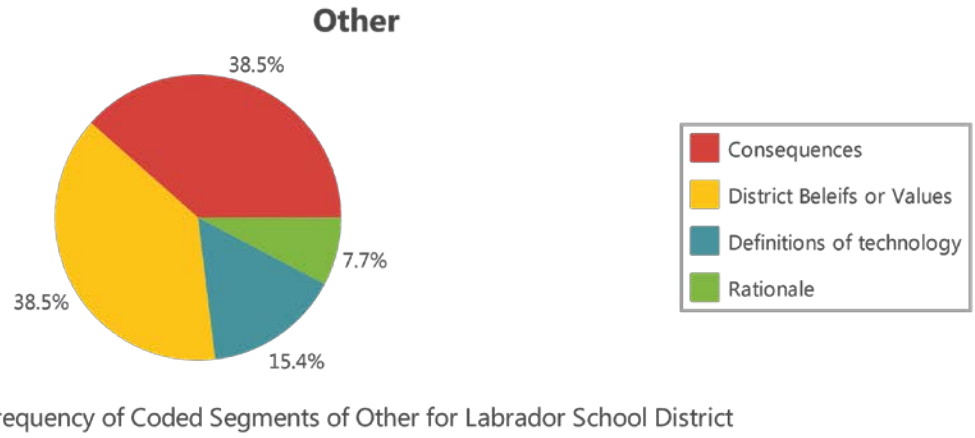


Figure 4.13. Frequency of Coded Segments of Other Labrador School District

The preamble in the document elaborates on this statement by emphasizing technology as a "tool" to acquire this skills and not 'an end in itself.' In addition, it states that

> …access to technology must be tempered with the need to have students trained in the responsible use of technology." The Labrador School Board recognizes that incorporating technology into everyday classroom practices enhances the learning environment for students, as it supports the acquisition of skills necessary to excel with the twenty-first century learning. Access to technology must be tempered

> with the need to have students trained in the responsible use of technology, and the realization that technology is a device to support twenty-first century skill acquisition, and not an end in itself.

Present here as well is the admission that "incorporating technology into everyday classroom practices enhances the learning environment for students" with a caveat that its use must be 'tempered.'

Another predominant theme that appears under this category lies within the document's definition of technology. The definition seems to focus on those technologies brought into the school by students themselves, with particular attention paid to student-centered electronic mobile devices with the ability to record sound or images:

> For purposes of student access to technology, "technology" means a wireless and/or portable electronic handheld equipment that includes, but is not limited to, existing and emerging mobile communication systems and smart technologies, portable internet devices, handheld entertainment systems or portable information technology systems that can be used for word processing, wireless internet access, image capture/recording, sound recording and information transmitting/receiving/storing, etc.

In addition to the document's emphasis on defining technology, another theme emerges that focuses on students' adherence to the policy and the consequences for failing to do so. Connected to this theme is the adherence to the policy on the part of teachers, and the actions taken by teachers in the event of non-compliance by students.

BUFFERING…PLEASE WAIT…

The document itself is buttressed at the end by an agreement form to be signed by teachers, parents, and students that confirms that they have read the policy, and agree to the parameters of behavior outlined within. It also serves the purpose of communicating the consequences of "non-compliance" to this same group, which, it is noted, is based on the philosophy of progressive discipline.

Commonly referenced throughout the document is the notion that technology can often be a hindrance or distraction in the classroom or general learning environment. This is mentioned again in the agreement form section of the document.

4.4.2 Western Region—Acceptable Use of Information and Communications Technology

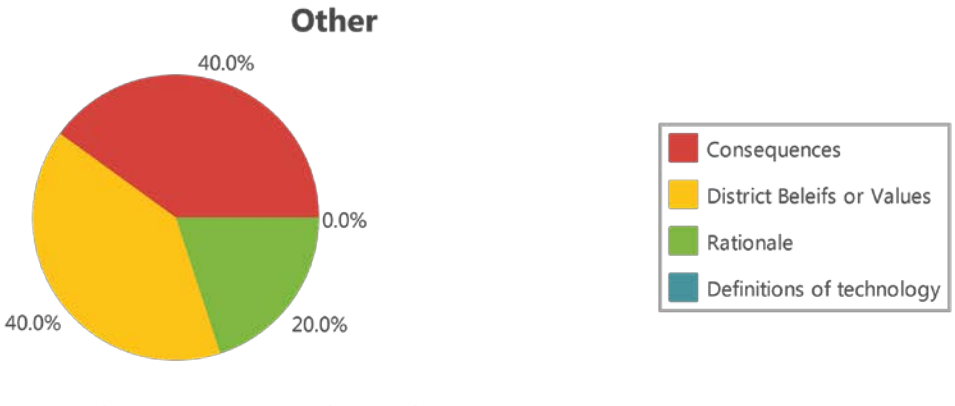


Figure 4.14. Frequency of Coded Segments of Other Western School District

Seven instances of other were coded in the document. The document placed equal emphasis on articulating its own beliefs and values, as well as outlining consequences for failing to adhere to the acceptable uses outlined within the document (Figure 4.14**)**. The policy document of the Western region prefaces with a policy statement outlining its purpose in providing technological resources and the purpose of the present document:

BUFFERING…PLEASE WAIT…

> The Western school district provides technological resources to support student learning, enhance communications, and to conduct the business of the district. The use of technological resources is a privilege, not a right, and all use is to be conducted in an ethical, legal and efficient manner in accordance with laws and district policies, whether during or outside regular school/business hours.

Unique in this document, is the mention of technology as an instrument in conducting the business of the district, and mentioned in the same line as its role in supporting student learning. The document, like others in the study, articulates technology as a privilege rather than a necessity or right.

Major themes coded under this category include technology as a possible burden on the network systems of the district or school, and as causing congestion if not monitored, owing to the networks limited capacity.

The document differs from other documents in the study in terms of its mention of specific peer to peer sharing services such as Bit Torrent and LimeWire and social networking sites such as Twitter and Facebook.

BUFFERING…PLEASE WAIT…

4.4.3 Central Region—Acceptable Use of Portable Electronic Devices by Students

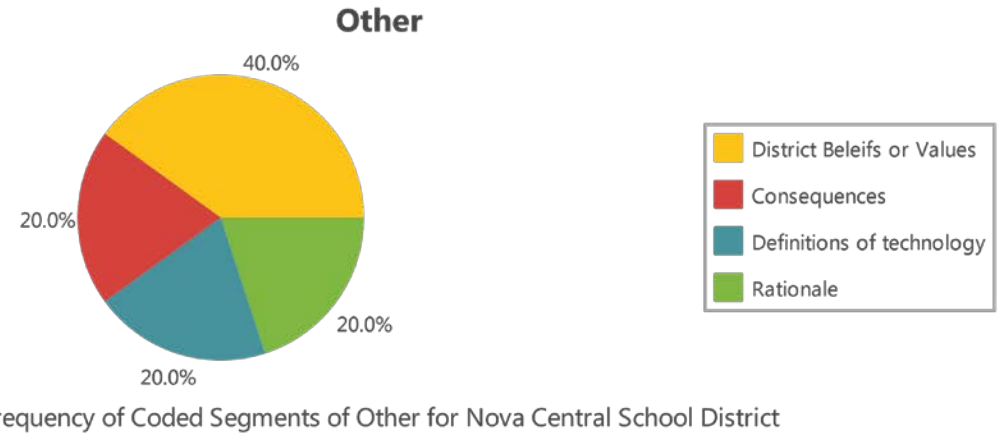


Figure 4.15. Frequency of Coded segments of Other Nova Central School District

Five segments of the document were coded for instances of other. For the most part, the document spends most its time—when not establishing unacceptable use or responsibility—articulating the district's beliefs about technology and its role in education (Figure 4.15).

Though the title of this document is Acceptable Use of Portable Electronic Devices by Students, the subject field in the document provides insight into the main area being targeted; technological resources/cell phones. The governing divisional authority of the document is identified as Finance and Administration. The document strays little outside its articulations of usage and responsibility. Like other documents in the study, it gives an obligatory policy statement highlighting the role of technology in the educational framework:

BUFFERING…PLEASE WAIT…

> Nova Central School District recognizes that technology is an integral resource in the delivery of educational programming and in the operations of the district. However, non-educational electronic devices are detrimental to the teaching and learning environment because they interrupt instruction and learning; compromise the privacy of individuals; may be used to store, retrieve and access information during exams; and, add to the administrative workload of school personnel. The district recognizes that there is a need to limit student use of such devices.

The document articulates technology as an important tool for educational programming, yet acknowledges it as a possible detriment to the learning environment, as well as a possible strain on the administrative workload of school personnel. This theme—as in other documents—repeats itself. In addition, the document articulates technology as an integral resource in the operations of the district. Also notable, is the distinction between educational electronic devices and non-educational electronic devices.

BUFFERING…PLEASE WAIT…

4.4.4 Eastern Region—Acceptable Use of Technology in the Classroom

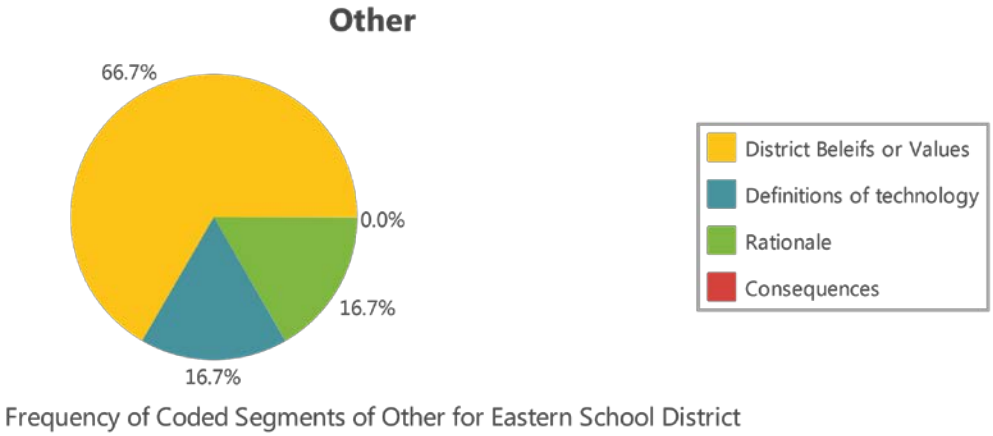


Figure 4.16. Frequency of Coded Segments of Other for Eastern School District

The document of the Eastern region was coded for seven instances of "other." Similarly, this document—in terms of its coded segments of other—spends significant time articulating its beliefs about technology, education, or the role of technology in education (Figure 4.16).

Significantly shorter in length, a major theme found in this document was the recognition of technology as an important tool in education and, specifically, as one instrumental in the acquisition of skills for the twenty-first century learner. The document articulates the important role of the district in training and equipping both teachers and students with the knowledge needed to use these technologies, to support teaching and learning in a diverse learning environment:

> The Eastern School Board recognizes that the personal and functional use of technology has become widespread and commonplace in society and in our schools. The Board acknowledges the need to enable teachers and students to be

comfortable with and proficient in accessing, manipulating, and communicating through diverse technology formats.

The document states that technology "...must be a natural and complementary element to sound instructional practices focused on curriculum outcomes and sensitive to instructional time." As in the other documents, a caveat follows that highlights the need to temper the use of technology, so as to restrict its possibility of being a distraction in the classroom. In the procedures section of the document, the policy articulates that, "Technology cannot be disruptive to the teaching and learning environment." Similarly, the district leaves its individual schools responsible for the development of its own particular policy on technology.

BUFFERING…PLEASE WAIT…

Chapter 5: Discussion and Conclusion

In the following section, I attempt to provide an overview of the thematic patterns that emerge out of the analysis of the district policy documents. I discuss those themes associated with the main categories of coding which correspond to use, responsibility, and other.

5.1 Usage

The four primary documents were coded for instances of usage of policy and, instances of usage of technology. A significant concentration of instances fell into the latter category. It would appear then, that—certainly insofar as the documents are concerned—more emphasis was placed on the technology that is used in schools and school spaces, rather than the policies, which took a secondary role.

5.1.1 Use of Policy

As previously mentioned, there were no sub-codes created under use of policy during the initial reading of the documents or in subsequent readings. This was due to the lack of formal distinction that could be made about which policy, or how the policy should be used. Since the only mentions of "policy" in the documents were in direct reference to the one presently being discussed, it was not seen as a distinctive feature, and therefore not sub-coded into smaller thematic units. Generally, in terms of use of policy, the most common contextual articulation was that 1) the present document ought to be acknowledged and heeded, and 2) that schools ought to develop their own policy on the use of technology in schools. These were reiterated throughout the documents.

BUFFERING…PLEASE WAIT…

5.1.2 Use of Technology

Sixty percent of all coded instances of use of technology across the documents were of instances of use of cell phones and/or personal digital devices. This was a prominent theme throughout the documents and appeared to be the driving force behind the creation of the documents in the first place. To one degree or another, documents outlined the appropriate acceptable behavior of use of these devices with particular emphasis on student use. Often, a particular document would outline unacceptable uses with specificity, including behaviors related to texting in class, using camera functions, and recording capability.

Another common theme was the notion of technology in the learning environment as a possible hindrance to learning. In this way, there appeared to be the presupposition that technology—specifically, student-owned portable devices—was often a hindrance to educational goals and the day-to-day function of the classroom.

The idea of the school environment as a safe and caring one was a feature that reappeared in the document. This feature appeared mainly in the preface or rationale section of the document. This appeared to serve the function of giving legitimacy to the creation of the document.

5.2 Responsibility

Four major groups were identified as bearing responsibility in the documents. These were the student, the district, the school, and the teacher. Of these groups the concentration of instance fell on the group identified as students. In one way or another, the documents articulate that initial responsibility of this group was to acknowledge the

policy currently being articulated, or to acknowledge a similar policy created and introduced by the student's specific school.

The students' responsibilities ranged from being responsible for the physical whereabouts of his or her own personal device, to the specific times and places within the school setting that the usage of the device was deemed appropriate. Following this, the documents target the responsibility of the student in using specific functions of the device. Least mentioned in terms of responsibility, were particular technologies such as social networking services like Twitter or Facebook.

5.3 Other

Codes for other fell into one of four categories; consequences, definitions of technology, beliefs or values, and rationale. Of these, many instances fell into the category of district beliefs or values. Consequences, definitions of technology, and rationale followed in frequency respectively. A significant portion of the documents spent much of the time giving explanations of rationale, definitions of technology, and articulations of the importance of technology in the learning environment. However, little direction was given as to what technologies ought to be used, or how these were to be systematically implemented in the school or curricula.

5.4 Conclusion

In the previous section, I discussed the major themes that emerged from the analysis of the policy documents. In the following sections, I provide insights about these themes and extrapolate some meaning from them. Some observations are of sub-textual messages in the documents, while others are observations of less subtle communication.

BUFFERING…PLEASE WAIT…

First, I discuss the contextualization of technology in the documents as something separate from education. Next, I discuss the notion of technology as a privilege that appears in the documents. From there, I address the documents' communication of technology as a liability. Finally, I speak to the policy documents as admonitions.

5.4.1 Technology as Separate from Education

The way in which technology is contextualized within the discourse of the documents, communicates the view of technology as something separate from education. The idea of technology as a separate "tool"' in learning still pervades the role of technology in the policy documents. Technology is often worded as something to be "incorporated into" classroom practice and whose use must be tempered, as seen in the Labrador school district document:

> The Labrador School Board recognizes that incorporating technology into everyday classroom practices enhances the learning environment for students, as it supports the acquisition of skills necessary to excel with the twenty-first century learning. Access to technology must be tempered with the need to have students trained in the responsible use of technology, and the realization that technology is a device to support twenty-first century skill acquisition and not an end in itself.

Evident through statements like these is the implication that we have yet to reach a full integration mindset. If technology was already a fully integrated feature of the classroom, there would be no need to address its incorporation into daily classroom practice—we would already be there.

BUFFERING…PLEASE WAIT…

A particular feature of the separation of technology and education is embodied in its role as a business tool as well as an educational tool. The provision of technology is often articulated as something having an equally, if not more, important role in the operations or "business" of the district as evident in the document of the Western school district: "The Western School District provides technological resources to support student learning, enhance communications, and to conduct the business of the District." As seen here, the role of technology in the business of the district was given equal weight in the sentence as "support student learning." The Nova Central school district also made an effort to articulate this idea in its own policy document: "Nova Central School District recognizes that technology is an integral resource in the delivery of educational programming and in the operations of the district."

The Nova Central school district document was also unique in terms of revealing the governing department responsible for the creation of the policy document. For example, the policy document identifies the responsible authority as the Department of Finance and Administration. Conventional wisdom here would likely put technology usage under the jurisdiction of Programs rather than that of Finance.

The document of the Eastern School District also reveals the same sense of separation when outlining general rules of thumb for incorporating technology into the classroom: "The use of technology in the classroom must be a natural and complementary element to sound instructional practices focused on curriculum outcomes and sensitive to instructional time."

BUFFERING…PLEASE WAIT…

The implication here is that the use of technology in the classroom may not be or may not have been a "natural and complementary element to sound instructional practice focused on outcomes and sensitive to instructional time." This implication points partly to the creation of the documents.

5.4.2 Technology as a Privilege

An important characteristic common across the documents, lies in the way in which technology is contextualized. As previously mentioned, one way is in terms of technology as something separate from education that presents itself in the discourse of the document. Another way is how the documents contextualize technology as a privilege rather than a right. In this context, the privilege is able to be taken away by teachers or administration in the event of non-compliance, as evidenced in the document of the Labrador school district:

> …the use of technology devices to support educational experience is not a necessity, but a privilege. With respect to the rules, this privilege will benefit the learning environment as a whole. When rules are abused, privileges will be taken away.

We see this idea repeated later in the same document when the consequences of inappropriate use are being outlined; "The policy is to be based upon the philosophy of progressive discipline, which may involve loss of privileges to suspension." Similarly, the policy document of the Western school district also speaks in terms of technology as being a privilege: "The use of technological resources is a privilege, not a right, and all use is to be conducted in an ethical, legal and efficient manner in accordance with laws

and district policies." Here, the statement references to the use of technology being "in accordance with laws and district policies." At the time of research, no "laws or district policies" were found other than that of the policy being studied. Similarly, no laws or policies were found at the Department of Education level, nor at the level of the provincial government.

Although the Nova Central school district document avoids the dichotomous language of privilege versus right, it does express a marked distinction between educational technology and non-educational technology:

> However, non-educational electronic devices are detrimental to the teaching and learning environment because they interrupt instruction and learning; compromise the privacy of individuals; may be used to store, retrieve and access information during exams; and, add to the administrative workload of school personnel. The district recognizes that there is a need to limit student use of such devices.

Similarly, the policy document of the Eastern school district refrains from the use of "privilege" but stresses that, "Technology can only be used during class time if its use is planned, supervised and supports the achievement of provincial curriculum outcomes." Here then, there is an implication that technology uses in the learning environment has been found to be, at some point, "unplanned," "unsupervised," and "unsupported" in its achievement of provincial curriculum outcomes.

5.4.3 Technology Use as a Liability

A common feature implied in the documents is the sense of liability. Specifically, documents point to the notion that without a working policy document around technology

usage there is a liability. Often found in the preamble to the body of the documents, there is an articulation that individual schools must develop or incorporate a use of technology policy of their own.

One of the initial goals apparent in creating the documents would seem to be in the interests of students' and staff safety and protection. This is articulated several times throughout the documents in the variety of *rationale* statements. An underlying motivator that appears to be veiled by this intention is the threat of liability—which underlies one of the documents' purposes.

Additionally, each school is responsible for referring to the current district-created document in creating their own acceptable use policy. This process then, while covering off potentially damaging complaints of misuse, breaches of privacy, and lost or damaged school and/or student-owned technology, defers significant responsibility and subsequent liability, to the individual schools. This is seen in parts of the Labrador school district's summation of procedures:

- Each school shall develop and communicate a policy to all stakeholders on the issue of non-compliance.
- Each school shall not fail to incorporate the Student Access to Technology policy and procedures into their school practice.
- All students utilizing technology shall be required to sign an Acceptable Use Agreement or a BYOT Acceptable Use Agreement.
- Students take responsibility for the personal digital devices.
- Students are only permitted to take photos and class videos as part of a class or a

> lesson and must have the expressed consent of the participants. Permission shall include compliance with the requirement for a parental consent form for pictures and images.

The policy document of the Western district is presented as being applicable to "school board trustees, students, staff, volunteers and contractors," yet the language of the document is stylized in a significantly legal way, in keeping with the air of liability communicated in the document. This is seen in the document's policy statement:

> The use of technological resources is a privilege, not a right, and all use is to be conducted in an ethical, legal and efficient manner in accordance with laws and district policies whether during or outside regular school/business hours.

Similarly, the document of the Nova Central school district in its own policy statement, shifts responsibility to individual schools, saying, "Each school in Nova Central School District may establish its own policy and practices regarding the use of portable electronic devices by students, as required."

In terms of liability, the document of the Eastern school district puts forth student safety as a major concern in its focus articulating that, "The use of technology in schools shall be based on a philosophy of education which respects the uniqueness of each student in a safe and caring learning environment." In addition, the document stresses technology, "must be in keeping with provincial and federal regulations and legislation." The document, like the others, seems concerned with technology interfering with the on-task activities of the classroom and curricula, and the potential liability that may result as a consequence of this interference. This is evident in its statement that, "Technology can

only be used during class time if its use is planned, supervised and supports the achievement of provincial curriculum outcomes." Consequently, the statement acts as a way of warning—specifically teachers—that the use of technology in an improper or "unsupported" way may be viewed as a liability in delivering sound educational experiences in the classroom. In this way, the documents can be seen as admonitions.

5.4.4 Policy Documents as Admonitions

The policy documents serve, in part, as an admonition. They warn stakeholders that there are a variety of unacceptable uses of technology within the context of the school. One of the major roles the documents have in common is that of being an admonition to stakeholders in the district.

Each document to varying degree, attempts to warn students, staff and administrators of common misuses of common technologies in schools, while making reference to accountability. For example, the document of the Labrador school district in its preamble, highlights a list of unacceptable student uses of technology in the section on student use of technology expectations.

The language of the documents—insofar as their titles are concerned—is presented as acceptable use of technology. However, documents place most of their emphasis on unacceptable student use of technology. There is a prominent view of technology as a disruption that precludes its uses. This provides the basis of assumption that prefaces each of the documents in some way, and sets the tonal undercurrent for the remainder of each document. The documents focus particular energy on student-centered

mobile devices. Generally, the documents are less about “technology” use and more about student ‘device’ use.

Postscript

Since the initial gathering of data for the current research, the four individual school districts of the public education system in Newfoundland and Labrador have amalgamated into one district, the Newfoundland and Labrador English School District (NLESD). This new iteration has its own policy document regarding the use of technology, which was provided on their website and procured for separate analysis as an addendum to the present research. A notable addition to the new district’s technology policy is a recent document that specifically addresses social media use. This document was not gathered as new data for this study.

The document, simply titled, Acceptable Use of Technology, is a condensed treatment of technology use that appears to take the “best bits” of the previous four in one amalgamated document. The policy document was coded using the same coding parameters as the other documents in the study. Similar themes emerged from this document and are discussed below.

A notable similarity in the document to those in the previous portion of the study lies in the document’s responsible authority. This document is governed by the Division of Finance. Here, the notion of technology as something under the domain of Finance speaks to technology as a tool in the financial functioning and in the administering of education, therefore somewhat separate from education itself. Similar to other documents in the study, the issue of technology as an outside force being a strain on existing

infrastructure remains a concern, as seen in one of its policy directives: “The NLESD reserves the right to block, limit, or disallow any application, website address, or protocol deemed inappropriate and/or that place a burden upon the district’s ICT infrastructure.”

Another peculiarity in the document is the apparent need to define the terms “Internet” and “ICT.” According to the document, both terms are defined “for the purposes of Acceptable Use of Technology Policy.” One feature of separation that these definition of terms points to, is the generational divide among policy makers and policy followers. Both in this regard and in the discourse of the document, it appears that the target audience is not young people. For many young people today “computer” is used synonymously with and often, in place of “internet”. So too, “ICT” seems to be a term that is rarely mentioned in conversation as much as simply “network.”

The document avoids the polarizing language of right and privilege in terms of student use. However it does so when referencing its own obligations, and provides clear statements about the provision of its ICT systems, such as an example found in one of its policy directives: “The NLESD reserves the right to block, limit, or disallow any application, websites address, or protocol deemed inappropriate and/or that place a burden upon the district’s ICT infrastructure.”

With the generational gap mentioned previously in mind, it is difficult to imagine here that the authors of the policy know much about which applications place what amount of “burden” on its ICT infrastructure. That being said, the policy clearly articulates the district as having the *right* to control how its technology is being used. This is a theme that remains across the documents in the study. It is easy to see then, how

technology is contextualized as something of a privilege that has been afforded to its users and, can easily be taken away.

A theme that continues to appear in this recent document is the notion of *liability*. As with the other documents in the study, there is a motion to shift the frontline responsibility to the schools themselves. However, slightly different with this document is how it articulates that, "each school shall incorporate the Acceptable Use of Technology Policy and administrative procedures/regulations into their school practice." Rather than having the schools develop their own policy on specific technology, the move here is to use the current district policy as the main policy to be incorporated into school practice.

Similarly, the discourse of the document indicates a legal obligation to stakeholders putting their privacy and safety as its major concern: "The NLESD acknowledges that the need to protect the integrity of all ICT systems and the security, privacy and safety of all students and staff is of paramount importance." The document appears to absolve itself from liability as a result of creating the document and providing it to stakeholders: "As such, the NLESD requires acceptable, ethical, legal and responsible use of all District ICT systems."

The current iteration of the acceptable use of technology policy similarly serves as an admonition to stakeholders—primarily staff and students. Again, the document outlines a variety of uses that may constitute revoking or limiting privileges to users whom are found to contravene the acceptable uses of the district's technology resources, stating. "The NLESD retains the right to access, inspect, investigate and monitor all use

of its resources, including all data files, communication networks and information created on, with, or transmitted using its ICT resources, and including e-mail, text messages, internet usage, and any other communications or information."

The document goes on to list several scenarios by which the district is able to investigate specific users and/or revoke privileges. Several of these scenarios are listed below.

a. There are reasonable grounds to suspect abuse, non-compliance with district policy/procedures, or improper or illegal activities.

b. It is required by subpoena or court order.

c. It is required in order to respond to an access to information request or suspected privacy breach under the Access to Information and Protection of Privacy Act (ATIPPA).

d. It is necessary to conduct an audit or ensure the security and operating performance of ICT resources.

As seen here, the document serves as a warning to users that the district has the authority to monitor the activities of users, should they have grounds to do so. Of particular note, one of these pre-conditions is to "audit" to ensure the 'operating performance of ICT resources.' The emphasis on particular technology uses as a burden on the performance of its resources is mentioned again in its policy directives stating, "…the NLESD reserves the right to block, limit, or disallow any application, website address, or protocol deemed inappropriate and/or that place a burden upon the District's ICT infrastructure." This is a common feature across the documents.

BUFFERING…PLEASE WAIT…

References

Alwani, A., & Soomro, S. (2010). Barriers to effective use of information technology in science education at Yanbu Kingdom of Saudi Arabia. *E-Learning Experiences and Future,* 35-46.

Balanskat, A., Blamire, R., & Kefala, S. (2006). A review of studies of ICT impact on schools in Europe: *European Schoolnet*.

Beggs, T. A. (2000). Influences and barriers to the adoption of instructional technology. Paper presented at the Proceedings of the Mid-South Instructional Technology Conference, Murfreesboro, TN.

Bennett, S., Maton, K., & Kervin, L. (2008). The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology, 39*(5), 775-786.

Bingimlas, K.A. (2009). Barriers to the successful integration of ICT in teaching and learning environments: A review of the literature. *Eurasia Journal of Mathematics, Science & Technology Education, 5*(3), 235-245.

Buabeng-Andoh, C. (2012). Factors influencing teachers' adoption and integration of information and communication technology into teaching: A review of the literature. *International Journal of Education & Development using Information & Communication Technology, 8*(1), 136-155.

Charles, A. S. (2012). Cell phones: Rule-setting, rule-breaking, and relationships in classrooms. *American Secondary Education, 40*(3), 4-16.

Coiro, J., Knobel, M., Lankshear, C., & Leu, D. J. (2011). *Handbook of research on new literacies*. Hoboken: Taylor and Francis.

Coiro, J., & Moore, D. W. (2012). New literacies and adolescent learners: An interview with Julie Coiro. *Journal of Adolescent & Adult Literacy, 55*(6), 551-553.

Creswell, John W. *Research design: Qualitative, quantitative, and mixed methods approaches*. Los Angeles: Sage, 2009.

Education and Early Childhood Development. (n.d.). Retrieved April 03, 2016, from http://www.ed.gov.nl.ca/edu

Ellison, K., & Matthews, C. (2010). Virtual history: A socially networked pedagogy of enlightenment. *Educational Research, 52*(3), 297-307.

BUFFERING…PLEASE WAIT…

Ertmer, P. A. (1999). Addressing first- and second-order barriers to change: Strategies for technology integration. *Educational Technology, Research and Development, 47*(4), 47.

Gilgen, R. (2005). Holding the world in your hand: Creating a mobile language learning environment. *EDUCAUSE Quarterly, 28*(3), 30-39.

Greenhow, C., & Gleason, B. (2012). Twitteracy: Tweeting as a new literacy practice. *Educational Forum, 76*(4), 464-478.

Hammonds, L., Matherson, L.H., Wilson, E.K., & Wright, V.H. (2013). Gateway tools: Five tools to allow teachers to overcome barriers to technology integration. *Delta Kappa Gamma Bulletin, 80*(1), 36-40.

Hew, K.F., & Brush, T. (2007). Integrating technology into K-12 teaching and learning: Current knowledge gaps and recommendations for future research. *Educational Technology Research and Development, 55*(3), 223-252.

Jones, A. (2004). *A Review of the Research Literature on Barriers to the Uptake of ICT by Teachers: British Educational Communications and Technology Agency (BECTA).*

Kirkscey, R. (2012). Secondary school instructors' perspectives on the integration of information and communication technologies (ICT) with course content. *American Secondary Education, 40*(3), 17-33.

Knobel, M., & Lankshear, C. (2007). *A New Literacies Sampler.* Peter Lang.

Knobel, M., & Lankshear, C. (2006). Discussing new literacies. *Language Arts, 84*(1), 78-86.

Knobel, M., & Lankshear, C. (2008). Remix: The art and craft of endless hybridization. *Journal of Adolescent & Adult Literacy, 52*(1), 22-33.

Knobel, M., & Lankshear, C. (2009). Wikis, digital literacies, and professional growth. *Journal of Adolescent & Adult Literacy, 52*(7), 631-634.

Ladell-Thomas, J. (2012). Do-it-yourself information literacy: Self-directed learning at a distance. *Journal of Library & Information Services in Distance Learning, 6*(3-4), 376-386.

Lam, W. S. E. (2012). What immigrant students can teach us about new media literacy. *Phi Delta Kappan, 94*(4), 62-65.

BUFFERING…PLEASE WAIT…

Lankshear, C., & Knobel, M. (2003). *Implications of "new" literacies for writing research*

Lankshear, C., & Knobel, M. (2007). Researching new literacies: Web 2.0 practices and insider perspectives. *E-Learning, 4*(3), 224-240.

Lankshear, C., & Knobel, M. (2006). *New literacies: Everyday practices and classroom learning.* Open University Press.

Lawrence, S.A., & Fraser Calhoun, M. (2013). Exploring teachers' perceptions of literacy and use of technology in classroom practice: Analysis of self-reported practice in one school district. *Exploring Teachers' Perceptions of Literacy and use of Technology in Classroom Practice: Analysis, 14*(1), 51.

Lebens, M., Graff, M., & Mayer, P. (2009). Access, attitudes and the digital divide: Children's attitudes towards computers in a technology-rich environment. *Educational Media International, 46*(3), 255-266.

Lewis, E. C., & Chandler-Olcott, K. (2012). Using a text-based verbal protocol to elicit secondary English teachers' perspectives on new literacies. *Literacy Research and Instruction, 51*(3), 196-213.

Merchant, G. (2007). New literacies: Everyday practices and classroom learning (2nd Ed.) by Colin Lankshear and Michele Knobel. *Literacy, 41*(3), 177-179.

Merchant, G. (2009). Web 2.0, new literacies, and the idea of learning through participation. *English Teaching: Practice and Critique, 8*(3), 107-122.

Merchant, G. (2012). Mobile practices in everyday life: Popular digital technologies and schooling revisited. *British Journal of Educational Technology, 43*(5), 770-782.

Morgan, B. (2010). New literacies in the classroom: Digital capital, student identity, and third space. *International Journal of Technology, Knowledge & Society, 6*(2), 221-239.

Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the Horizon, 9*(5), 1-6.

Prestridge, S. The beliefs behind the teacher that influences their ICT practices. *Computers and Education, 58*(1).

Professional development for technology and education: Barriers and enablers. (2006). *Technology, Pedagogy and Education, 15*(2), 139-141.

BUFFERING…PLEASE WAIT…

Sadaf, A. Exploring factors that predict preservice teachers' intentions to use Web 2.0 technologies using decomposed theory of planned behavior. *Journal of Research on Technology in Education, 45*(2).

Schoepp, K. (2005). Barriers to technology integration in a technology-rich environment. *Learning and Teaching in Higher Education: Gulf Perspectives, 2*(1), 1-24.

Schriever, V. (2011). Research and practice: Influences and barriers to ICT use in the primary classroom. *Primary & Middle Years Educator, 9*(3), 3-10.

Tan, E. Informal learning on YouTube: Exploring digital literacy in independent online learning. *Learning, Media and Technology, 38*(4).

Tierney, R. J. (2009). Shaping new literacies research: Extrapolations from a review of the "handbook of research on new literacies". *Reading Research Quarterly, 44*(3), 322-339.