# PRINCIPALS' USE OF TECHNOLOGY IN ICELAND AND NEWFOUNDLAND AND LABRADOR

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# Principals' Use of Technology in Iceland and Newfoundland and Labrador

by
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A Thesis submitted to the
School of Graduate Studies
in partial fulfilment of the
requirements for the degree of
Master of Education (Leadership)

Faculty of Education
Memorial University

February, 2011

St. John's Newfoundland

# ABSTRACT

In Iceland and Newfoundland and Labrador, the principals of K-12 and compulsory schools have no alternative but to use technology. The onus is on them to use networks and web-based systems that provide their schools with an effective learning environment. If schools are to be able to function in today's society with its new and emerging technology, principals need to be able to lead the way.

The purpose of the study was to investigate the role of principals in Iceland and Newfoundland and Labrador, focusing on their use of technology. The research contributes to the knowledge in this area and by comparing the roles of principals, both jurisdictions obtain a new vision of how school administrators' use of technology can be developed and improved in the future.

This qualitative study uses a phenomenological design and the main sources are interviews with six principals, in the jurisdictions of Iceland and Newfoundland and Labrador. The emphasis of the study is to find out how principals enhance their role through technology, if they perceive that using technology makes them more effective, how they use technology in their everyday work, and if principals from both jurisdictions can learn from each other.

The findings indicated that principals in both jurisdictions need more support and constant training to perform their roles as technological leaders in schools. Moreover, it revealed that technology is one of the major cores in school principals' day-to-day job,

and that technology makes the work of principals more efficient in today's K-12 and compulsory schools.

**Keywords:** *Principals, technology, administration, effectiveness, technology use, technology training, technology support, professional development, K-12 schools, compulsory schools, education authorities*

## ACKNOWLEDGEMENTS

There are numerous individuals whom I would like to thank for their support and encouragement throughout the journey of researching and writing this thesis.

To my cherished supervisor, Dr. Jean Brown, I sincerely present my deepest thanks and appreciation for all the time she spent guiding me through the process of this project. Her confidence in me and my work, and her constant encouragement, gave me the strength to achieve my academic goals. Moreover, her friendship and emotional support helped me gain the enthusiasm needed to finish this work.

I would like to thank the six principals that participated in the study for their frankness and for the information that made this thesis possible. They added life and reality to the study and made the findings meaningful.

I express my utmost thanks to my friends, my family and my husband, whom all inspired my work and encouraged me to reach higher levels.

Additionally, I bring special thanks to my children for their constant love and for their endless ways of making me proud.

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# CHAPTER ONE

## Introduction

Over the last decades, technology has advanced in many ways and has become a main source of information in everyday life and work. In schools, teachers, administrators, and support staff members use technology in one way or another to do their jobs. Communication has been affected by technology in many ways. Computers and mobile phones are used to contact people and send messages. Face-to-face conversations have decreased and people sometimes even do not know or recognize who they are exchanging information with because all communication has been through the technological media. E-learning has become what people depend upon for instructional purposes. Universities work hard to provide their students with on-line courses as a means to recruit as many students as possible and to provide a broader range of possibilities to the learners. The basic occupation of principals in schools has become very technological and in the education system, leadership has become a very demanding technological profession. In Iceland and Newfoundland and Labrador, the principals of the compulsory, elementary, and high schools have no alternative but to use technology. The onus is on them to use networks and web-based systems that provide their schools with a cost-effective learning environment. Most schools are also supposed to use web-based programs that deal with student information, communication between parents and teachers, teachers and students, and teachers, staff, and administration in the schools. If the schools are to function, using all this

technology, the principal needs to be able to lead the way. However, a principal's job involves many aspects, technology just being one. Many studies have shown that principals have insufficient time to perform all that is required of them. Yet, the literature reveals the need for principals to have a sense of technology that improves their efficiency. The challenge is how they can become efficient users of technology while still performing all their other responsibilities.

Being a part of an administration team in a compulsory school in Iceland is one of the reasons for my interest in leadership and technology. For the last six years of my career as an administrator, I found that the need to use technology had increased greatly. Principals had to be able to use technology because teachers, in their daily work, depended upon their administrators to lead the way in the use of technology.

Today, many claims are made regarding the effectiveness of administrators using technology. Society is demanding efficient and fast ways for them to communicate. One way to do this is through technology. For this reason and because principals need to be a part of the huge technology advancement that is occurring in the world at present, I was interested in pursuing this topic further.

## 1.1 Statement of the Problem

The spark that lit my interest in the topic of principal's technology use was kindled at a meeting I attended in 2008 with the four directors of the school districts in Newfoundland and Labrador. It was clear that all were interested in the administrative use of technology. Because of my experience as an administrator and my membership in

the Icelandic Association of Head Teachers, I was aware that there was also interest in this topic in Iceland. Besides, my experience had shown me that there were differences in these two jurisdictions, and that administrators from each system might learn from each other. By interviewing principals from both jurisdictions and trying to understand their experience of their use of technology, more information would be added to the literature of principals and technology. As there seems to be a gap in the literature about principals in K-12 schools and their use of technology, this study should increase the exploration and understanding of the issue of principals' technology use. Therefore, the research will be valuable in providing information to fill the gap in the literature.

## 1.2. Significance of the Problem

Both in Iceland and Newfoundland and Labrador, it appears that principals use technology as a major part of their everyday work. Though there are differences in the principalship between these two jurisdictions, the demands on principals to use technology are common in both places.

This qualitative study investigates the role of principals in Iceland and Newfoundland and Labrador, focusing on their use of technology. The research contributes to the knowledge in this area and, by comparing the roles of principals, both jurisdictions will obtain a new vision of how school administrators' use of technology can be developed and improved in the future. All of the findings should be important to

principals, school boards, other government educational departments, and schools in general.

## 1.3 Purpose of the Research

Even though much has been written and many research studies have been completed concerning technology and administration, it appears that there is a gap in the research literature on how everyday work lives of K-12 and compulsory school administrators are affected by technology. Based on that, the main purpose of this research is to understand how the daily job routines of principals are affected by use of technology and how they use technology to facilitate their jobs. To be able to recognize the difference in expectations between the principal's job in Iceland and Newfoundland and Labrador, I will provide a comparison of issues connected to principals, from collective agreements, legislation, and other documents related to the subject, in the two jurisdictions.

Another purpose of the study is to give voice to principals in Newfoundland and Labrador and Iceland, and their perception of administrative use of technology. The principal's profession is demanding in many ways. By interviewing principals and studying their use of technology, the principals' perspective on the matter will be obtained and recorded. Also, the principals' viewpoint of the effectiveness of technology in their profession will be explored. Moreover, the interviews enable the principals to speculate on more efficient ways of performing the technological role of leadership.

## 1.4 Organization of the Thesis

The thesis is divided into eight chapters. Chapter one provides an overview of the thesis by stating the significance of the research problem, identifying the purpose, explaining the role of the researcher, recognizing the research's limitation, and by discussing definitions of terms and organization of the thesis.

Chapter two explores the literature related to this study. The chapter is divided into two sections that discuss the principal's profession, and principals and technology.

Chapter three chronicles the qualitative methodology of phenomenological design used in the research. In addition, selections of participants, data gathering methods, procedures and trustworthiness, such as validity and ethics, are explored.

Chapter four reveals the laws and legislation related to the principal's occupation in Iceland and Newfoundland and Labrador. Furthermore, it discusses the collective agreements in both jurisdictions along with professional frameworks and policies provided for principals.

Chapter five offers a description of the participants' technological environments. It provides details of equipment and software that the participants use in their day-to-day work, along with participants' background information.

Chapter six describes the information and communication technology used by the participants, and the effect it has on their everyday job routine. This chapter provides the reader with an insight as to the technology demands placed upon principals in today's working environment.

Chapter seven presents the discussion and analysis of the findings from the study. After serious reflection and interpretation of the data, the following five themes are presented: *time*, *efficiency*, *training and support*, *the principal's role* (in regard of technology), and *barriers* in technology use.

Finally, chapter eight presents a summary and implications from the findings discussed in relation to the literature. The chapter ends with recommendations and suggestions for future research.

## 1.5 The Role of the Researcher

Marshall and Rossman (2006) argue that "in qualitative studies, the researcher is the instrument" (p. 72). As Tite (2002) states, the researcher needs to be able to use explicit knowledge of a situation and in considering notes, to allow tacit knowledge to emerge. This means that the researcher needs to be capable of becoming a part of the world he or she is exploring, "while learning to attend away from specific words or actions to understand the meaning of them" (Indwelling/Connoisseurship, para. 2). Additionally, Tite (2002) asserts that the qualitative researcher

> must attend to people, words and events, while recognizing that it is not enough to simply notice or note them. One needs the ability to see the interplay of a qualitative relationship, and this ability is influenced by the researcher's prior knowledge, the history of the situation and its context. (Indwelling/Connoisseurship, para. 5)

As this research will be based on interviews and participants' experiences interpreted by the researcher, I, as the researcher, find it important to introduce myself.

I have been a teacher in the compulsory education system in Iceland for over 20 years. For a period of more than 15 years I have been linked to administration in compulsory schools (grades 1-10) in Iceland. In the beginning of my career, I taught in a rural school that had few students. In that school I had my first experience in administration as I worked as the principal's substitute. I immediately liked what administration embodied and since then, have been connected to administration in compulsory schools in one way or another.

Many things have led to my curiosity of how principals use technology in their work. I find that technology is one of the most important parts of a principal's profession today, and this research allows me to link two interests of mine, administration and technology.

## 1.6 Definitions of Terms

In Iceland, the term used for a school principal is head teacher. Other administrators include department heads and vice-principals. The department head positions are often full time, depending on the size and the administrative structure of the specific school. All these positions form the administration, and all these administrators belong to the Association of Head Teachers in Iceland. In Newfoundland and Labrador there are vice-principals whose role corresponds to the Icelandic positions declared above. However, the department head position in Newfoundland and Labrador is quite different from the one in Iceland, and is not taken into account in this study as that position is not considered a part of the administration as are principals and vice-

principals. In this study, the focus is on the role of principals and vice-principals. These two terms will be used for the Icelandic administrators as well. At times other synonymous terms such as administrators and leaders will also be used.

In Iceland it is mandated for children to attend compulsory school. Compulsory schools include grades 1 -10 but after that the education system offers various ways for adolescents to study. At the second education level (after grade 10), the municipalities are no longer responsible for education in Iceland. In Newfoundland and Labrador the province is divided into school districts that are responsible for education at the K-12 level (kindergarten to grade 12). At the post-secondary education level (after grade 12), adolescents make their own educational decisions. In Newfoundland and Labrador the Department of Education, through the school boards, runs the education system at the K-12 level. In this study these responsible parties, school boards, school districts and municipalities, will be referred to as local school authorities or local education systems.

# CHAPTER TWO

# Conceptual Framework

This chapter gives an overview of the literature related to the school principal's occupation. Starting with an outline of definitions of leadership, the chapter explores what the literature reveals about the professional requirements on principals and how technology affects their profession.

## 2.1 The Principal's Profession

Ward (2010) presents a simple definition of leadership, stating "that leadership is the art of motivating a group of people to act towards achieving a common goal" (Definition, para. 1). In his book, *The Principal as Leader*, Hughes (1999) states that even though studies about leadership have been going on for a great part of human history, "prescriptions about what leaders *should* do must not be confused with descriptions about what leaders actually *do*" (p. 5). In their speculations about leadership, Abramson and Bacon (2001) claim that "the complexity of the 21st century world now requires a dramatically different [from the hierarchical leader of the 20th century] set of approaches and skills – the ability to forge consensus and work across organizations, sectors, and national boundaries" (p. 2). While mentioning that leadership has hundreds of definitions, Matthews and Crow (2003) using Rost's (1991) definition, assert that "leadership is an influence relationship among leaders and followers who intend real changes that reflect their shared purposes" (p. 6). Moreover, they confirm that

leadership in school-based environment is reciprocal, and that all "changes reflect shared purposes toward creating a learning environment for *all* students" (p. 6). Closer to Ward's definition, DuBrin (2007) provides several definitions of leadership, one that states that leadership is "an act that causes others to act or respond in a shared direction" (p. 3). Leithwood (2007), on the other hand, states that the main issue of leadership is organizational improvement. He specifies the statement affirming that "it is all about establishing widely agreed upon and worthwhile directions for the organization and doing whatever it takes to prod and support people to move in those directions" (p. 44). In addition, he provides a generic definition of leadership, stating that "it is all about direction and influence" (p. 44), and claims that stability and improvement are the main factors of leadership.

Though these reflections are just a small segment of what has been written about the definitions of leadership, it is clear that no one definition can describe what that word embraces. Still, there are similarities in most definitions that lead to the conclusion that leadership has to do with directing people towards a mutual goal. In Newfoundland and Labrador and Iceland, principals have the enormous role of leading schools toward mutual goals related to curriculum, student success, human resources, collaboration, culture, vision, financial efficiency, and many other issues. Stewart (2005) states that "principals operate in environments that demand new understandings of school leadership and management, where there are ever-demanding community standards and demands and where there is an increased emphasis on new forms of

accountability" (p. 129). Moreover, he affirms that "schools ... have become increasingly complex and the management burdens imposed on principals ... have grown considerably in recent years" (p. 135). In other words, the professional responsibilities of principals are expanding. In regard to use of new and emerging technology, a new role has been thrust towards principals, seemingly without consideration of how to implement it. In Lile's (2008) article, *Leadership for a Successful Technology Initiative*, she mentions that technological leadership "must come from both the top down and the bottom up" (p. 55). Moreover, she states that "it is important that the leaders at the state level understand the goals that the schools are trying to accomplish with technology" (p. 55) because they have to be the first to identify the needs of the student population and how to meet those needs, therefore, "professional development is the driving force behind successful technology programs" (p. 55). Furthermore, Lile affirms that leaders at state level should provide principals with professional development opportunities which would include knowledge of new and emerging technology, how to implement changes in connection with technology, and how to use technology in their everyday work to get more efficient. Fullan (2007) in his article, *The* Future *of the Principalship*, states that

> it is not just the role of principals as instructional leaders and providing them with plenty of professional development. Ironically, as the role of the principal as key change agent is being recognized at all levels, more and more expectations are being added with little being taken away and little direct support. As the role of the principal becomes more and more important, the principalship is in danger of sinking! (p. 18)

Additionally, Fullan (2007) ponders about how the role of principals has been divided into two tasks, managerial and strategic, and how "the role of the principal entails putting school leaders in a realistic position to tackle" (p. 17) the deep agenda that both tasks claim of the principalship. Fullan concludes that "a radical change in the working conditions of schools" (p. 17) is needed and, therefore, also in the role of the principal. He offers that instead of using the term "professional development", a better phrase would be "personal learning", meaning that instead of using several workshops around the school year, all teachers and principals should learn every day individually and collectively. As well, he contends that the main focus of school leadership is instructional leadership, culture change, and internal and external collaboration. Therefore, principals need more financial support in the form of "business managers"; more collaboration with all levels of the system and inside the schools; and appreciation of the school reform as a system reform, because, "if we are serious about having school principals lead continuous improvement, we had better make it possible to do so" (Fullan, 2007, p. 18).

Devos and Bouckenooghe (2009) state that, "there is no such thing as a simple recipe for successful school leadership" (p. 174). In their study, the principals' thinking processes were investigated to understand why and how principals take action. In Devos and Bouckenooghe conclusion, they point out that educational leadership is dependent on how "school leaders think they can develop a concrete vision" (p. 192), and that "principals, who work in strong moving climates or environments that stimulate

professional learning are in general strong leaders" (p. 191). Dempster and Berry (2003) examined principals' ethical decision-making and point out that in many countries the principal's role has changed extensively in recent years. Restructuring has affected how school administrators are supposed to manage schools, increased the financial responsibilities of principals, assessment and curriculum duties and the principal's power of decision making. Dempster and Berry state that "the ethical landscape through which principals are now travelling contains difficult and troublesome issues derived from many different social, political and technological trends" (p. 461). They assert that accordingly there is a massive "need for appropriate professional programs to help principals accommodate the competing demands they encounter" (p. 461), and that stakeholders at higher levels should respond rapidly to the situation.

From this overview of the leadership role of school administrators, it is clear that the school principal's profession is complicated, wide-ranging, and demanding. Principals in Iceland and Newfoundland and Labrador are not being excluded from this complex and changing role. They are assuming leadership roles in the 21st century system innovations connected to new and emerging technology as well as leading other changes and implementations. Their experiences suggest that educational authorities, at the highest level, need to consider how principals are supposed to take on the new role of technological leaders, and how they are to be able to use technology in their own jobs to become more efficient. Section 2.2 will reflect on the principal's role in connection to technology and the impact technology has on the principal's occupation.

## 2.2 Principals and Technology

It is clear from section 2.1 that the leadership role of the principal is both complicated and demanding. It is also apparent that the quality of leadership may contribute to improvements of the school community. As mentioned before, Fullan (2007) concluded that, "the role of the principal should be re-examined to ensure that instructional leadership and changing the culture of the school toward greater internal and external collaboration is the paramount focus of school leadership" (p.18). He follows by addressing how structural change is needed in regard to the principalship, towards a more businesslike environment. Other research studies (i.e., Fullan, 2006; Hall and Hord, 2006; Harris and Lambert, 2003; Hoy and Smith, 2007), show that the focus is on the changing role of school leaders in a changing society and that the principal's role is a key to successful school transformation. Researchers such as Brockmeier, Sermon and Hope (2005), Haughey (2006), and Gosmire and Grady (2007), found that technology plays a huge part in schools and principals need to be able to lead the way in the use of it. With regard to technology, Serhan (2007) states, that "a positive attitude starting from the school leadership can spread to the teaching faculty in the school and hence to the classroom and the students" (Conclusion and recommendations for further research, para. 1). Besides, online schooling is getting more popular and principals need to function in that environment. In many studies the principal is found to play the key role in schools, and as Gurr (2001) concluded, information and communication technology (ICT) "has changed the work principals do by facilitating new types of work

and improve older work pattern" (New ways of working, para. 1). Snow (2003) describes technology and the school environment stating that "the internet alone has radically changed education" (p. 92). He asserts that the school's responsibility is to provide technology to teachers and students to make sure they become computer literate and able to pursue careers in the technology field. In addition, he affirms that "in order to manage a school with all of this new technological responsibility, the principal must stay current with educational advances in technology" (p. 92). In the same way, Creighton (2003) states that "a principal's mission must now include designing and implementing new strategies to help teachers recognize, understand, and integrate technology with teaching and learning in the classroom" (p. 2). He suggests that "the crucial task at hand now is to decide how to implement this technology effectively into instruction" (p. 2), and that "clearly, leadership plays a key role in successful reform" (p. 3). Creighton found that "effective leadership for technology planning must involve the principal as instructional leader supporting and driving the process forward, identifying issues for decision making" (p. 22). He also recommends that "the principal as technology leader must remain visible and involved in guiding the process of implementing technology, with teaching and learning as the driving force" (p. 23). The involvement of the principal in implementing technology makes the everyday work harder and more time consuming. Creighton assumes that leadership is related to technology in schools in many ways such as: leadership will experience transformation in the future because of technology; the school environment will change rapidly because of technology, and therefore the role of

principals as leaders; and, if there is lack of appropriate leadership, technology implementation might become a failure. Based on his research, Creighton (2003) concludes that "the potential of technology presents both the greatest opportunity and the greatest threat to schools and their leaders" (p. 93), and what is more, that "the answers lie with the technology leaders and teachers who will make the choices for the future" (p. 93). Creighton's research confirms how utterly important the principal is in connection with technology implementation in schools. Moreover, he claims that principals need to be able to adjust to technology in an easy way and be able to use technology in their jobs and as demonstrators to their teachers and staff. This new vision of the principal's occupation is rapidly emerging, he concludes, and therefore principals need both time and support to learn how to use technology for their own, and their schools' benefit.

Ubben, Hughes, and Norris (2001) state that "technology planning must be a part of the overall school improvement plans" (p. 299). They continue by naming several "well-designed management information systems" (p. 304) that principals should be provided with in accordance to manage their duties. Financial systems, library systems, document and management systems, school calendar systems, as well as systems to analyze standard tests, are some of the mentioned systems. Networks and websites are also systems that schools are using as part of everyday life. The principals must be accountable for the use of all these systems and Ubben et al. assert that, "with the rapid advances in technology, teachers as well as other staff members must constantly be in

training in order to keep abreast of the advances" (p. 312), meaning that unless leaders and teachers are knowledgeable about technology they cannot expect students to advance in its use.

As technology leaders, principals play a huge role in the school environment regarding information and communication technology (ICT). According to Stuart, Mills and Remus (2009), "school leaders need to have a level of ICT competence" (p. 733), to be able to perform that role. In addition they state that "although school leaders may have formally mandated technology leadership responsibilities" (Stuart et al., p. 733) it can be problematic as they may lack either training or background to feel confident with technology. In addition, their study showed that professional development in relation to ICT is an important factor, and the more confident school leaders felt about their capacity of ICT, the more they were willing to participate in activities relating to ICT. A huge part of the principal's occupation is related to communication. Ärlestig (2007) asserted "that leadership does not exist without communication" (p. 263), and that "through communication, the principal leads and unifies ... staff members in the work necessary for academic results and school improvement" (p. 263). Additionally, Afshari, Baker, Luan, Samah, and Fooi (2009) presumed that, "the relationship between computer use and competence suggests that higher computer competence may foster principals' computer use in school" (p. 244). Therefore, in this age of new and emerging technology, it can be assumed, that principals need to be confident with using technology for communication.

Perry and Areglado (2001) discuss the impact principals have on the innovative use of technology in schools. They state that, "principals are at the center of the change process" and that "the process relies on high-quality leadership and excellent management from not only the principal but also others from the school" (p. 92). In other words, it might be presumed, that it depends on the principals if the infusion of technology into schools is effective or not. In their article, Lecklider, Britten, and Clausen (2009) make the point that the role school principals play concerning technology is very important. They declare that, by using support, and by creating a valuable vision of effective technology integration, the school administrator's role is of utmost importance. Besides, they state that "the role of the school principal is integral to effect technology integration" (p. 27), and that "principals have become leaders responsible for instructional progress, staff development and curriculum improvement" (p. 27-28) which includes the role of being technical leaders. Furthermore, they "consider technology integration as a component of all the work we do in schools, including technology use that supports learning" (p.30). In addition, the authors state that school administrators who are effective, set "the stage for technology use that supports instructional change and student learning" (Lecklide et al., p. 28), and, importantly, their "findings indicate that observed student technology skills, use, and access far exceed those of the teacher or administrator"(p. 32). That conclusion affirms that principals need much more technology training and support then they are getting at this point.

As principals need to be leaders in the technological aspects of schools, they also need to attend to their own development and technology use. In today's technological environment, administrators need to be aware of, and be able to use, all kinds of equipments, such as mobile phones, e-mail, and wireless networks. Hines, Edmonson, and Moore (2008) stated that,

> electronic communication is changing the way school organizations communicate. The amount of information at people's fingertips is exploding, and the role of the administrator is changing. Administrators have observed a steady increase in the number and types of electronic communication and have found that a growing amount of time to respond to electronic communication and an exploding amount of information is now required. This requires more time at the computer. (p. 277)

In today's school environment administrators need to be skilled as users of technology and be able to prioritize their time in regard to regular day-to-day management, and for professional purposes. Principals need to be aware of how to establish the best communication for their schools, and they also need to be able to recognize the right media for this communication as the effectiveness of the communication can alter from the media chosen. The time it takes to use the new and emerging technology is an issue and "electronic communication has made it easier, even necessary, to work longer hours" (Hines et al., p. 280-281). Even though Hines et al. found that principals spent more time in front of the computer in relation to communication; they also found that face-to-face interaction is an important factor in communicating with staff and parents. Moreover, their study shows that principals are more accessible than ever, but require

more time to finish their daily work, and more training in technology. In connection with technology training for principals, Dawson and Rakes (2003) state that "it is difficult to support an innovation about which one has little knowledge" (p. 30), and therefore principals need technology training to be able to promote technology use to teachers and staff. Furthermore, they assert that "principals require training that not only prepares them for their tasks as implementation leaders, but is also relevant to their specific needs" (p. 31). The researchers also found that "if principals are to model the use of technology for their staffs, they should learn to operate its equipment and software" (Dawson & Rakes, p. 44). The education system should be examining the way principals are prepared for the challenges and demands of managing today's schools. The programs offered to prepare principals "must help candidates to develop strategies to manage their time carefully, to effectively use their personal communication devices, to broaden their accessibility, and to better utilize their staff" (Hines et al., 2008, p. 288).

The literature reveals that the number of technical skills principals must possess are enormous. Apart from that, the time it takes to learn new technical skills and lead technical changes consumes a huge portion of the principal's workday. Furthermore, the literature shows that principals need more training and more support in connection with technology and technology implementation in schools. To become technology leaders fluent in technology use in their communication and day-to-day work, they need continuous training and they need to be able to work with the technological media collectively with teachers and staff.

The question remains, what do principals think? Where are their voices in all this transformation? How do they manage, or do they manage to take the responsibility of implementing and using technology in schools? Moreover, how do they enhance their own jobs through technology?

Though much research has been done in connection with principals and technology in schools, there seems to be a gap regarding the topic of how principals in K-12 and compulsory schools perceive their technology use in their daily work environment. Based on the above reflections, this study explores how principals in K-12 and compulsory schools, in Newfoundland and Labrador and Iceland, use technology in their everyday jobs; if technology makes their work more efficient or more difficult; if there are barriers to their use of technology; if either training or support is an issue; and if the two jurisdictions can learn something from each other.

# CHAPTER THREE

# Methodology

## 3.1 Research Questions

The primary research question of this study is: *How are principals in Iceland and Newfoundland and Labrador using technology in order to perform their role?* Sub-questions that guided the research as it progressed were:

A. Does legislation require principals to use technology?
B. According to what is observed, how are principals enhancing their role through technology?
C. Do principals perceive that using technology makes them more effective?
D. From the principals' perspective, how do they use technology to perform their duties?
E. What can principals from the two jurisdictions teach each other in connection with technology use?

As an English speaking Icelander I found myself in a unique position to research this topic. As an insider in the Icelandic Education System and as a master's student studying in Newfoundland, I was able to provide a fresh and unique perspective. In formulating the research questions, I related them to the basic purpose of the research. By linking legislation and collective agreements to the literature, more information was gathered about the differences of the principal's occupation in both jurisdictions, as well

as what expectations were required from them. In addition, some of the interview questions gave principals the chance to express themselves about their job, their use of technology, and how they would like to improve. During the interviews principals were asked about their training, professional development and support. Even though these issues were not, in the beginning, thought of as major focal points of the research, they emerged as important topics in regard to technology from the participating principals' perspectives. Therefore, these factors were added later to the research as part of the focal themes when interpreting the findings.

## 3.2 The Research Design

Qualitative Research can be described in many ways. Whitt (2009) uses an explanation, provided by Van Maanen, when asserting that qualitative research is

> at best an umbrella term covering an array of interpretive techniques which seek to describe, decode, translate, and otherwise come to terms with the meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world. (p. 407)

Qualitative research has many characteristics and designs, so, depending on the research project, researchers choose the design that best fits their study.

Phenomenology is one of the qualitative research genres that researchers use in education. According to the *Stanford Encyclopedia of Philosophy*, "phenomenology is the study of structures of consciousness as experienced from the first-person point of view" (Smith, 2008, Phenomenology, para. 1). Moreover, it is stated that "the focus of phenomenological research is people's experience in regard to a phenomenon and how

they interpret their experiences" (Smith, 2008, para. 4). Merriam (2002) states that "learning how individuals experience and interact with their social world, the meaning it has for them, is considered an *interpretive* qualitative approach" (p. 4). She furthermore identifies that if the research interest lies "in understanding a phenomenon" (p. 4), one of the design options is phenomenology where phenomenology represents the idea "that people interpret everyday experiences from the perspective of the meaning it has for them" (p. 37). By conducting a phenomenological research, the researcher emphasizes the subjective part of people's behavior in an attempt to understand the meaning of their participants' everyday world. As Merriam explains, "the overall purpose is to understand how people make sense of their lives and their experience" (p. 38).

In order to perform this qualitative research, phenomenological design was selected as it seemed to be congruent with the questions asked and the ways that were used to approach the analysis. The research design includes document analysis and interviews that were conducted with the study population. All interviews were taped, transcribed and assigned appropriate codes. Consistent with phenomenological research, the purpose of this type of interviewing was to "describe the meaning of a concept or phenomenon that several individuals share" (Marshall & Rossman, 2006, p. 104). Therefore, the interviews were semi-structured, as defined by Fontana and Frey (2000), in order "to understand the complex behaviour of members of society without imposing any a prior categorization that may limit the field of inquiry" (p. 653).

Field notes were taken during site visits and the interviews.

## 3.3 Participants, Permissions, and Ethical Considerations

In conducting a qualitative research, a thorough consideration must be given to choosing participants. In this study, participants in Newfoundland and Labrador were principals and a vice-principal who were seen as users of technology and were recommended for participation. In Iceland, the principals and the vice-principal who participated were contacts personally known by reputation as users of technology. In both jurisdictions the sample population was three participants, two principals and one vice-principal, from various schools. This is a narrow sampling. It is under the criteria based sampling techniques of typical and convenience (LeCompte & Preissle, 1993), as the research studies participant's experience of the given phenomenon, and as the participants were selected both as typical for the norm of the given population and based on the convenience of the researcher's access. Therefore, the sampling strategy meets the theoretical and practical concerns of the study.

The research required permission from the Eastern School Board, the Labrador School Board, and the consent of the supervisor of the Municipal Department of Education in Akureyri, Iceland (see Appendices C, D, and E). All these permissions were given.

The ethical considerations in performing this study were in three areas: informed consent, confidentiality, and the consequences of the research. Ethics approval for this

study was sought from the Interdisciplinary Committee on Ethics in Human Research (ICEHR) at Memorial University. The application included summary of the research and statement of ethical issues including the purpose of the study and the procedures of the interviews. The ICEHR granted the study full ethics clearance on April 26, 2010.

The welfare and integrity of individuals participating in this study were of utmost importance. Participants were provided with a letter of explanation and approval, and a clarification of the purpose and methodology of the research (see Appendices A and B). All participants were made aware of their right to refuse to answer questions during the interviews, their right to withdraw from the project, the confidential nature of the research, and the goal of the study, which was to write a master's thesis. In an effort to assure privacy, all interviews were conducted individually. Moreover, to protect the anonymity of participants no references were provided in the thesis that could identify the source. Pictures taken at the principals' schools were used as endorsement during analysis of the interviews along with field notes. In addition, it was explained to the participants that no individual was identified by quotations, and all participants were asked to sign a letter of consent (see Appendices A and B) containing the above information.

All documents, along with audiotapes, pictures and notes, will be maintained in confidence and kept in a secure area at the Faculty of Education at MUN, or in my private home office, for a period of five years after the dissertation has been approved. After that period of time, all notes, pictures, and audiotapes will be destroyed.

## 3.4 Data Sources and Collection Methods

In this study the data sources include document analysis and interviews. Wellington (2000) asserts that use of documents can provide an excellent additional source of data (such as to form an excellent means of triangulation or increase the trustworthiness). Likewise, Merriam (2002) states that, "the strength of documents as a data source lies with the fact that they already exist in the situation" (p. 13). The document sources used in this research are in the form of legislation, collective agreements, and other documents that contain information about the principal's role in Iceland and Newfoundland and Labrador, as well as field notes taken when visiting the sites and conducting interviews. From these documents, information of what is expected of principals was found and used as a basis for further research. The field notes provided information that was helpful in interpreting the interviews with the principals. However, the study focuses on how principals act towards and use technology in practice. Therefore, interviewing was the essential method of obtaining the principals' perspective of their technology use, and technology as a benefit for effectiveness in their profession.

Marshall and Rossman (2006) assert that "the primary advantage of phenomenological interviewing is that it permits an explicit focus on the researcher's personal experience combined with those of the interviewees" (p. 105). Moreover, they explain how the interviews focus "on the deep, lived meanings that events have for individuals" (p. 105) and how the experience can lead actions and interactions. As

stated, the major data source for this study was extensive interviews with participants (see Appendix F). These interviews took place in face-to-face meetings, were taped and coded to describe how several individuals experienced the phenomenon of technology in the principal's everyday work. The interviews generally took about one hour, and the participants agreed upon an additional interview if necessary and a follow up by e-mail. The interviews took place over the year of 2010. In Iceland, the interviews all took place in May 2010, but in Newfoundland and Labrador the interviews occurred during June and July 2010.

When the interviews took place in the participants' school environment, I made observations of current practices that were recorded in my field notes (see Appendix G), and also took photos of the principals´ technical environment to make the interpretation of the interviews more clear.

All data, both literature and interviews, were gathered before August 2010.

## 3.5 Data Collection Techniques

Wellington (2000) explains that documents can add value at various stages in a research process such as to open up and explore the field; to complement other research approaches; and to conclude or consolidate the research. Merriam (2002) clarifies that "documents often contain insights and clues into the phenomenon" (p. 13) and, therefore, they are of much value to researchers. In this study, I analyzed legislation, regulations, and collective agreements to get a deeper knowledge of the key problems and issues connected to the subject. Moreover, observation notes and photos

from the field provided a transparent idea of how the principal's environment was in reality and helped to provide a visual picture of the principals' profession.

In considering the data collection method of interviews, which is the primary source in this research, I studied and followed the recommendations of established researchers. For example, Wellington (2002) suggests that "interviewing allows a researcher to investigate and prompt things that we cannot observe" (p. 71). Marshall and Rossman (2006) describe interviews as conversations, where "the researcher explores general topics to help uncover the participant's views, but otherwise respects how the participant frames and structures the responses" (p. 101). The researcher needs to act in the way that the participants feel their views are valuable and useful, and therefore, the interviewer needs to establish an atmosphere where the participants feel comfortable and can talk freely. Even though interviews have the strength of yielding data quickly, Marshall and Rossman address the limitations and weaknesses of interviews as they "involve personal interaction" (p. 102). Based on that, they recommend cooperation between researcher and participants. In addition, Marshall and Rossman assert that the interviewer "should have superb listening skills and be skillful at personal interaction, question framing, and gentle probing for elaboration" (p. 102). These guidelines revealed the necessity for me to use good listening skills and to avoid interruptions during the interviews. Furthermore, they led the way to open ended questions which permitted the participants to speculate freely about the subject of their technology use.

In this study I adopted the participant-observer role, while documenting and recording what was happening. My experience as an administrator has given me the opportunity to create my own beliefs of administration and technology, and, therefore, I could be more understanding of the interviewed administrators. Based on that, I think that my experience and knowledge of the field was a positive factor during the interviews.

## 3.6 Data Analysis

I followed Marshall and Rossman's (2006) seven phases of typical analytic procedures: organizing, immersion, categorizing, coding, interpretation, understanding, and writing. The data analysis was also "simultaneous with data collection" (Merriam, 2002, p. 14), meaning that one could not be carried on without the other without the risk of losing the opportunity to gather more valid and reliable data along the way.

As mentioned before, I coded and categorized the emerging themes. Transcriptions of the taped interviews were completed as quickly as possible so that analysis could begin, and my field notes were scrutinized and coded in relation with the interviews so that themes could be clarified.

Using more than one source of data made the study more reliable, and by using a constant comparison approach (Glaser & Strauss, as cited in LeCompte & Preissle, 1993), more integrity was confirmed.

## 3.7 Credibility and Trustworthiness Features

Credibility in qualitative research suggests that findings must accurately describe the phenomena being researched (Cohen, Manion & Morrison, 2000). Furthermore, Whitt (1991) states (as cited in Lincoln & Guba, 1985) that "confirmability of the data is demonstrated by showing that the findings are based on the data and that the interpretations of the data are logical" (p. 413). This research establishes credibility and confirmability by studying the phenomenon of technology use in principals' everyday jobs and their leadership role, through their experience. Moreover, the study is divided into four distinct sections. First, using document analysis, I investigated the legal requirements for school administrators in the two jurisdictions to see if they were required to use new and emerging technologies, either through legislation or their collective agreements. Secondly, I reviewed the literature on administrative use of technology, and thirdly, I interviewed administrators in both Iceland and Newfoundland and Labrador to find out how principals use technology, and how technology affects their everyday job performance. Finally, I summarized the findings and made implications based on the literature and the results of the interviews.

In order to address validity in this research, I used triangulation. Marshall and Rossman (2006) address triangulation as "the act of bringing more than one source of data to bear on a single point" (p. 202). By using different data sources, including document analysis and interviews, the research shows richer description of reality as seen through the eyes of the participants. To make the study more trustworthy,

scrutinized field notes were provided along with documents and interview analysis. As the study contains description of the principals' role in use of technology, others will be able to recognize or identify themselves and apply the conclusions to their own settings.

A researcher needs to be aware of how his or her own perception and background shapes the research. As stated before, subjectivity is, therefore, needed to link meaning and interpretation from the research, or as Tite (2002) states, "subjectivity is the key to qualitative research. As qualitative researchers, we must recognize the value of our own subjectivity/subjectivities, and recognize that it lends credibility to our research" (The Object/subject Dichotomy, para. 8).

## 3.8 Limitations of the Study

Merriam (2002) states, that "in qualitative research, it is the rich, thick descriptions, the words that persuade the reader of the trustworthiness" (p. 15). In addition, Marshall and Rossman (2006) explain that all qualitative research has limitations that need to be addressed.

I have chosen the phenomenology approach for this study including triangulation to increase the credibility of the findings. Some subjectivity in the form of personal values and beliefs were involved while using codes and interpretation, as the researcher's background is linked to the topic. However, this subjectivity strengthens the findings as, because of the familiarity of the researched phenomena, it was easier for the researcher to explore and interpret the participants' interviews. A further limitation

of the study was the number of participants, because they only represent a small part of the population of principals. Despite that, I believe that the outcome can be related to most principals' situations in Iceland and Newfoundland and Labrador, and that the findings can be useful to others in similar settings.

# CHAPTER FOUR

## Principals in Iceland and Newfoundland and Labrador

Chapter four explores the laws and legislation in Iceland and Newfoundland and Labrador in connection with school principals and their use of technology. Moreover, the chapter observes the difference in the principal's job in the two jurisdictions in relation to legislation, collective agreements, professional frameworks, school policies, and commissions.

### 4.1 Laws and Legislation

The Schools Act (1997) states, that a principal in Newfoundland and Labrador shall "provide instructional leadership in the school" (S-12.2, 24. (3, a)), meaning that principals are responsible for leading all school activities. A similar statement is in the Icelandic Compulsory School Act (2008) where it affirms that "the compulsory school shall have a head teacher who is the director of the compulsory school, takes care of its administration, provides professional leadership and is responsible for the school's operations towards the local government" (Article 7). When comparing these acts it is quite clear that they are different in many ways. In Table 4.1, we can see the comparison of issues related to the principal's profession, taken from the Newfoundland and Labrador Schools Act and the Icelandic Compulsory School Act.

To be able to compare the principal's profession, one needs to realize that Iceland is an independent country but Newfoundland and Labrador is a province in

Canada. Iceland's total area of land is approximately around 103,001 $km^2$, while Newfoundland and Labrador's total area is 405,720 $km^2$ (Newfoundland-111,390 sq km, Labrador-294,330 sq km). The population and the structure of the government are also different. Iceland's population is around 320,000 people, but in Newfoundland and Labrador there is a population of around 510,000 people. Iceland has a National Government but Newfoundland and Labrador is a province within the Dominion of Canada.

> In Canada, there is no federal department of education and no integrated national system of education ... In the 13 jurisdictions — 10 provinces and 3 territories, departments or ministries of education are responsible for the organization, delivery, and assessment of education at the elementary and secondary levels, for technical and vocational education, and for postsecondary education. (Council of Ministers of Education, Responsibility, para. 1)

In Iceland,

> the Icelandic parliament is legally and politically responsible for the educational system. Local municipalities are responsible for the operation of pre-schools and primary and lower secondary schools. On the other hand, the state runs the upper secondary schools and schools at the higher education. (Iceland, 2002, p. 8)

This means that the provincial government in Newfoundland and Labrador has the highest authority in all that has to do with education in Newfoundland and Labrador and likewise the Icelandic government has the main responsibility. Therefore, there is a similarity in those two jurisdictions, as their highest authorities are responsible for

education. In both places, the responsibility is delegated to the districts or the municipalities.

While looking at the comparison in Table 4.1, it is apparent that Newfoundland and Labrador divides the province into districts of education while Iceland uses its municipalities to administer education.

**Table 4.1:**
***Comparison of the Principal's Role from the Icelandic Compulsory School Act (2008) and the Newfoundland and Labrador Schools Act (1997)***

| Topic | Iceland | Newfoundland |
|---|---|---|
| ***Government*** | Minister of Education, Science and Culture governs the affairs covered by the Compulsory School Act and ensures that local authorities fulfill their duties. There is no equivalent to the "school district" as found in Newfoundland and Labrador. | In Newfoundland and Labrador "the Department of Education is responsible for early childhood learning, the K-12 system, post-secondary education and skills training, and adult literacy" (Department of Education, 2010, para. 1). The Province of Newfoundland and Labrador is divided into school districts by order of the Lieutenant-Governor in Council. |
| ***Local Authorities*** | Local authorities are responsible for the operation and cost of the general compulsory schools in their municipalities. Local authorities shall formulate a general policy for school operation in the municipality and are responsible for cooperation between the schools and any third parties. Local authorities shall ensure that in its municipalities all children at compulsory school age receive | Each district shall elect a school board to run the affairs of education, approved by the minister, subject to the approval of the Lieutenant-Governor in Council. |

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| | education as stated in the Compulsory School Act.<br>Local authorities shall ensure that every municipality operates a school board. | |
| ***School Board*** | The school board is operated by the municipality on behalf of the government and takes care of compulsory school affairs according to law and regulations, as well as affairs assigned by the local government.<br>School boards are elected at the outset of each elective term.<br>The municipality's principals, teachers and parents shall elect their representatives to sit in on school boards' meetings.<br>The school boards:<br>• Ensure all children at compulsory school age receive education<br>• Confirm the annual operational schedule and the school curriculum for each individual school<br>• Monitor implementations and make proposals for improvements to the head teachers in individual schools<br>• Secure specialist services for pupils and schools<br>• Ensure appropriate facilities for teaching and outdoor activities for the schools<br>• Make sure that laws and regulations are fulfilled<br>• Encourage cooperation between preschool, elementary school, | The school board is an elected corporation and shall elect a chairperson amongst its members that holds office until the next general meeting of the board.<br>The school board divides its district into two or more zones and provides trustees from all zones to sit on the board.<br>A school board establishes an executive committee that acts in the place of and manages the affairs of the board between regular meetings.<br>This executive committee may exercise the powers and duties of the board.<br>The school board hires teachers for the schools in the district.<br>The school boards:<br>• Organize and administer education in their district<br>• Provide instructions for students<br>• Determine policy for all schools in their district<br>• Ensure that regulations of special education are followed<br>• Ensure adequate instructions for all students<br>• Develop a policy on employment equity and how to implement it<br>• Appoint and dismiss |

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| | compulsory school and upper secondary school | employees and duties of teachers<br>• Adopt personnel policies<br>• Formulate policies for evaluating employees<br>• Take care of financing<br>• Take care of school construction and maintenance<br>• Ensure all courses of study are provided so that all schools in their district maintain adequate programs and performance standards<br>• Establish policies for student evaluation and promotions<br>• Make sure the minister gets all records required by the Schools Act<br>• Are in charge of transportation, if needed, in their district's schools<br>• Are to be in good relationship with MUN and students enrolled in training for the purpose of observation and practice of teaching<br>• Are to be responsible to the minister for education in their district |
| ***Principal*** | The principal is the director of the compulsory school and takes care of administration and professional leadership.<br>The principal is responsible for the operation of the school and answers to the local government.<br>The principal: | The principal is appointed by a school board for every school in the district.<br>The principal is subjected to the direction of the board.<br>The principal:<br>• Provides instructional leadership in the school |

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| | • Encourages cooperation in the school's community<br>• Calls teacher meetings<br>• Calls staff meetings<br>• Makes proposals about administrative arrangements to the local government<br>• Determines the roles of other administrative staff<br>• Is responsible for the evaluation of the schools operation and the making of a report containing an improvement plan<br>• Guides the school council and summons a meeting once a year with the school council and the board of the pupils' association<br>• Is responsible for the foundation of a parent council and for taking care of its needs of assistance<br>• Is responsible for the foundation of a pupils' association<br>• Ensures the obligations of confidentiality according to the Child Welfare Act<br>• Formulates a plan on how the school will organize lifelong learning for its personnel in accordance to the school's emphasis, the local authorities and the National Curriculum Guide<br>• Administers daily supervision of school | • Ensures that the instructions given to students and the evaluation of the students are consistent to education programs and evaluation described in the Schools Act<br>• Is responsible for evaluating programs offered in the school<br>• Manages the school<br>• Is responsible for maintaining order and discipline in every school activity<br>• Promotes cooperation within the school community<br>• Is responsible for the placements of students in courses and the promotion and advancements of students<br>• Provides for evaluation of teachers in the school<br>• Provides an annual report with respect to the school<br>• Is responsible for student records being established and maintained<br>• Is responsible for promoting French culture' identity if needed<br>• Shall establish a school council, be a member of the council and report in writing to the director if that task in not fulfilled |

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| | buildings in accordance to the local authorities<br>• Supervises the municipalities transportation if appropriate in the school<br>• Supervises the operation of the canteen in school<br>• Determines the implementation of weekly instruction periods in consultation with the school council<br>• Is each year responsible for the school to issue a school curriculum and an operational plan and is also responsible for the implementation of these provisions as well as presentations to the whole school community<br>• Is responsible for the making of school rules and their presentation<br>• Shall determine if a pupil has concluded compulsory school education and is responsible for the students graduation<br>• Is responsible for establishing a pupils' welfare council to coordinate issues concerning individual student's services<br>• Is responsible for ensuring that students get primary health care in school<br>The principal shall "recruit Compulsory School teachers for | |

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| | temporary or replacement teaching, as well as other specialists" (Compulsory School Act, 2008, p. 4, article 12) and be responsible for their performances in accordance to the laws and legislations. | |

In Newfoundland and Labrador the school boards are given the authority to run the schools in their districts. They are run as independent corporations and the school boards' responsibility is to make sure that the schools are run properly, both financially and with respect to educational goals. The school boards participate in all activities related to administering the schools and take responsibility for a lot of the schools' activities such as transportation, facilities' maintenance, special education, and social support. Furthermore, they provide support for the schools in the form of training and technology assistance. The school district has an established hierarchy, with the director of the school district holding authority over school principals.

In Iceland, the municipality is responsible for education, but its elected school board does not interfere with each school's activities over the school year. Principals are directors of their schools and take care and assume responsibility of all activities that occur in school or in connection with the school. The principal gets a budget every year, from the municipality, to run the school and is responsible to report to the local authorities. The principal is responsible for all issues at school, such as finance, maintenance, hiring teachers and more. The municipalities operate an education office that offers support to the schools for, special education, financial advice, social support

and other third party sources, along with training and technical aid. The education office's department head is responsible for the operation of the education office and is next to the principal in the line of command in the educational hierarchy. Even though the position sounds similar to the school district's role in Newfoundland and Labrador, it is quite different because the Icelandic education offices do not interfere with the day-to-day operation of the schools.

## 4.2 Collective Agreements, Professional Frameworks and Policies

In legislation in both jurisdictions there is little or no mention of technology and how it affects principals and their jobs. Similarly, in the Newfoundland and Labrador Provincial Collective Agreement and in the Icelandic Head Teachers Collective Agreement (see Table 4.2) there is no reference to technology in connection with the principal's occupation. Even though there are lots of similarities in the acts and agreements from both jurisdictions, Table 4.1 and Table 4.2 show that there are also many differences in Newfoundland and Labrador and Iceland. Principals in Iceland have their own collective agreement while principals in Newfoundland and Labrador are mentioned in one article in the Teachers Collective Agreement of Newfoundland and Labrador.

Table 4.2 shows the few items that are mentioned in regard of principals in the Newfoundland and Labrador Collective Agreement and in comparison, it shows what the

Icelandic Head Teachers Collective Agreement mentions about the same issues, plus a statement about general obligations of principals.

**Table 4.2:**

***Comparison of the Provincial Collective Agreement of Newfoundland and Labrador and the Collective Agreement between the Association of Head Teachers in Iceland and the Municipalities' Salary Committee in Iceland***

| Topic | Iceland | Newfoundland and Labrador |
|---|---|---|
| ***Certificate*** | Nothing is stated about this in the Icelandic Collective Agreement for Head Teachers, but in the Compulsory School Act (2008) it is stated that, to be able to work as a principal, one needs to be the holder of a valid certificate of qualification from the Minister of Education, Science and Culture and "have acquired additional education in management or have experience as teacher at compulsory school level" (p. 4). | To be able to work as a principal, one needs "to be the holder of a valid certificate of qualification issued pursuant to the regulations governing teachers' certificate" (Provincial Collective Agreement, 2008 - 2012, p. 2). |
| ***Payment of wages*** | Principals receive regular monthly wages that are calculated on yearly bases. The wages are not affected by how much work is conducted every month but correspond to 1800 hours a year. | Principals are to receive their pay cheques every other week for twenty-six equal payments annually. |
| ***Vacations*** | Over a period of 9 months, principals shall take 20 days of vacation over the period of June-August.<br>Principals can use parts of these vacation days over the school months but that does not prolong their summer vacation. | The principals' school year is 195 days. |
| ***Contracts*** | New principals get a probationary contract for one year (two years at most). After that a permanent tenure is available. | To be hired as a principal, a tenured teacher needs to be appointed to the position by the school board and can be asked to "serve a probationary period of [up to] two years" (Provincial |

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| | | Collective Agreement, 2008 - 2012, p. 25) |
| ***Obligations*** | Skólastjóri stýrir skólastarfinu og ráðstarfar vinnu starfsmanna skólans til þeirra starfa og verkefna sem starfsemi grunnskólans kallar á. Hann skipuleggur skólastarfið í samræmi við lög, reglugerðir, kjarasamninga svo og reglur og samþykktir sveitarstjórnar. Sem forstöðumaður stofnunarinnar ber hann faglega og rekstrarlega ábyrgð á starfsemi skólans gagnvart sveitarstjórn og hefur það að leiðarljósi að skólastarfið verði sem árangursríkast fyrir nemendur. [A principal is a general manager of education the school and allocates the work of teachers and staff as fits the school. A principal organizes all school activities in consistence with laws and legislations, collective agreements and policies that have been approved by the local authorities. A principal is both a professional leader of the school as well as a financial manager answerable to the local government. The main goal of a principal is to make students' education both productive and successful.] (Author's translation from Kjarasamningur Launanefndar Sveitarfélaga og Kennarasambands Íslands fyrir grunnskóla vegna Skólastjórafélags Íslands, 2008, p. 6, retrieved April 15, 2010 from, http://new.ki.is/lisalib/getfile.aspx?itemid=6588 ) | No obligations are mentioned and no job descriptions for principals are provided in the Provincial Collective Agreement in Newfoundland and Labrador, but, like mentioned before, the Schools Act (1997) provides a list of principal's responsibilities (see Table 4.1). |

The main difference seems to be that in Iceland a principal is expected to be the chief executive officer of the school, responsible for leading all schools activity, including budgets, professional development, implementation, hiring teachers and staff, and

more. The principal is accountable to the municipality's department of education that is accountable to the elected school board which is a part of the municipal council. They are then accountable to the Ministry of Education. In contrast, in Newfoundland and Labrador, the principal is responsible for leading all school activities, but has less authority, while many responsibilities are assumed by the school board and the district office. The school district is then accountable to the Department of Education in the province. Moreover, a statement in the Newfoundland and Labrador Schools Act shows that it is required that the principal shall perform her/his work, subject to the direction of the school board (see Table 4.1). The Icelandic legislation, on the contrary, asserts that each and every school shall have a principal who is responsible for the school as a whole, but also answerable to the municipality's education office.

The Canadian Association of Principals (CAP) has developed a professional framework for the development of school-based administrators. That framework features a statement that describes both qualities and capabilities that administrators need to possess to be able to provide the school-based community with educational leadership. Although not required, it states expectations as developed by CAP members. The statement is divided into sections that emphasize: strategic leadership, instructional leadership, assessment and evaluation, professional development and human resources, student recourses, community and media relationship, management and supervision, interpersonal relationship, financial management, and information systems and technology. When reading through the CAP statement it is obvious that the role of

Canadian principals is great in magnitude and very demanding. Not only does the principal need to be able to develop a shared vision and create a learning culture, but must also lead students, staff, and the whole school community in collaboration, to become a learning community. According to the statement, these duties are followed with responsibilities such as, attending to the media, supervising the management and, last but not least, focusing on the information systems and technology. The CAP statement specifies that regarding technology, administrators need to:

- Use technology to enrich curriculum and instruction.
- Assess the current use of technology in the business (finance, plant etc.) operations of the school.
- Establish and monitor a long-term technology plan for the school.
- Make extensive use of technology to assist adult learners to stay or return to school.
- Integrate the introduction of technology with the School's Improvement Plan. (Information systems and technology, para. 1-5)

When reading through the list provided by the CAP statement, it is apparent that principals are expected to be aware of new and emerging technology to be able to fulfill their role. The statement mentions that principals shall use technology in relation to the business operations and for instructional leadership. It is a very general statement and one could think that more accurate instructions should be provided to administrators by each province in the country. Still, according to the CAP statement, it is clear that the onus is on principals to use technology, even though there is no mention of it in legislation or the collective agreement (see chapter four).

In Iceland, the Association of Teachers (FG) and the Association of Head Teachers (SÍ) have developed a school policy statement for all compulsory schools. The policy statement (Skólastefna KÍ, 2008-2011) declares, among other things, that administrators shall: use instructional leadership and lead professional development along with assessment, evaluation and structural leadership; use democratic administrative practice and empowerment; get continuous professional development; develop a shared vision and school policy that corresponds with the National Curriculum Guidelines; be independent in regard to financial operations; develop and execute a policy for human resource that promotes individual growth; develop professional learning environment; support student welfare and needs; make sure that all accommodation, both for students and staff is satisfactory; and be the link between the school and the school community. In the statement, there is no mention of technology. It seems as though that part of the principal's role is thought of as inevitable and therefore, something that does not need to be addressed. Still, there are demands in the Icelandic National Curriculum Guidelines for Compulsory School (Aðalnámskrá grunnskóla, 1999) for schools to use technology and students are supposed to be taught how technology works and how to use it. Consequently, it seems a little peculiar that there is no mention of technology in legislation, the collective agreement (see chapter four), or the educational policy, concerning school-based administration.

In Iceland, the municipalities are supposed to lead the way in education and most of them have developed a commission or a letter of employment for their

principals. In those commissions, all duties and responsibilities of the principals are stated in coherence with the legislation and the collective agreement. For example, the municipality of Akureyri has its own letter of employment for principals where it is stated that,

> skólastjóri er forstöðumaður grunnskóla, stjórnar honum, mótar og viðheldur staðblæ og menningu hans með tilstyrk starfsmanna skólans. Hann ber ábyrgð á starfi skólans og veitir honum faglega forystu. Skólastjóri gætir þess við stjórnun skólans að dreifa forystu, valdi og ábyrgð meðal starfsmanna eftir því sem best samræmist þörfum og hagsmunum skólastarfsins á hverjum tíma.
> [The principal is the manager and the leader of the school, and is supposed to maintain the school culture in collaboration with all appropriate parties. The principal is responsible for all school activities and for leading all professional work. Moreover, the principal is to empower teachers and staff in coherence with the needs of the school environment at all times]. (Author's translation from Erindisbréf fyrir skólastjóra grunnskóla Akureyrar, 2002, article 2, retrieved April 28, 2010 from, http://skoladeild.akureyri.is/is/page/starfslysingar)

This article in the letter of employment is general and gives an overview of the main purpose of the principal's role. The letter then states all duties of the principal's job, mentioning professional development, assessment, staff, financial management, health care, school buildings and grounds, school council and much more. However, again there is no mention of technological issues.

When all this information about administration in school-based environment in Iceland and Newfoundland and Labrador are summarized, the main difference in the principal's profession in the two jurisdictions, as mentioned before, seems to be that the Icelandic principals have greater decision-making powers than the principals in

Newfoundland and Labrador. It is also clearly noticeable that, in both jurisdictions, technology in the principal's occupation appears to be thought of as something inevitable without considering how time consuming it is for principals to follow up on new and emerging technology, or its effective use in their everyday work.

Yet again, the similarities in the principal's profession in Iceland and Newfoundland and Labrador are also recognizable when looking at the legislation and collective agreements. In Table 4.3, similarities of the principal's role in Iceland and Newfoundland and Labrador from legislation, collective agreements, and other statements are summarized.

**Table 4.3:**
***Similarities in the Principal's Profession in Iceland and Newfoundland and Labrador***

| Issues | In both jurisdictions principals shall: |
|---|---|
| ***Certificate*** | Hold a valid certificate of qualification |
| ***Community*** | Encourage cooperation in the school community |
| ***School council*** | Work with and be a part of the school council |
| ***Annual report*** | Be in charge of the school's annual report |
| ***Leadership*** | • Provide professional/instructional leadership<br>• Be responsible for the operation/management of the school |
| ***Students*** | Be responsible for all students' activities and advancements |
| ***Curriculum*** | Assure that all education is consistent with the Schools Act/Compulsory School Act |
| ***Evaluation*** | Be responsible for all evaluation of students and school operation |

This is not an inclusive list of the professional role of principals in the two jurisdictions, neither is it a complete comparison of the principal's role in Iceland and Newfoundland and Labrador, but a summation of the main similarities in the principal's profession.

When taking a quick look at Table 4.3, it seems that there is not very much in common because of the short list, but when looking closer, it is clear that the statements in the legislation and the collective agreements are very general and can be interpreted in coherence with most school-based situations.

For example, one could ask what it means to be in charge of the school's operation or management. Is there a difference between operation and management? Does it matter what kind of professional leadership principals are supposed to use? To be able to answer those kinds of questions it would be necessary to complete another study, but the short summary shows that the profession of principals in both Iceland and Newfoundland and Labrador is focused on students, evaluation, and improvements in respect of the schools, and in compliance with educational laws and legislation.

Moreover, in the two jurisdictions principals are supposed to take on the demanding role of creating and developing a learning environment in collaboration with all school-related parties, and as well be in charge of, at least a part of, the financial management of the school. To be able to perform that demanding role, principals need to use technology. Still, in legislation and the collective agreements there is no mention of technology in regard of the principal's occupation. The questions that remain are:

Does technology affects principals in Newfoundland and Labrador and Iceland? If so, in what way? The next two chapters will explain the technological context of the six interviewed principals, their use of technology, and how technology affects their day-to-day job.

# CHAPTER FIVE

# The Context

In order to make the findings and conclusions of the research more comprehensible, it is essential to get basic knowledge of the research population and environment of the study. As the population is limited to six participants and the research is anonymous, all information of participants and their school surroundings are general and without any specific identification. Despite that, the profile will provide a clear overview of the context of the research.

## 5.1 The Principals' Background and School Environment

As already stated there were six participants; four principals and two vice-principals. This group included two males and four females. All participants were known as technology users and, for that reason, asked to take part in the research. They all use technology in their everyday jobs. Their education, years in education, and years in administration, were elements asked about in the interviews, as was the range and the type of the schools where they worked as administrators. To be able to recognize the difference, the following tables, Table 5.1 and Table 5.2, show the alteration in those variables.

Reading through Tables 5.1 and 5.2, it is clear that the participants had administration experience that ranged from one to 15 years, although, most of them had over five years of experience. Moreover, all of them stated they had been linked to

administration, in one way or another, before taking the responsibility of a leadership occupation.

**Table 5.1:**
***The Principals' backgrounds***

| | Years in Education | Years in Administration | Education |
|---|---|---|---|
| All Principals | | | B.Ed. degree |
| Principal 1 | 10 – 20 years | 1 year | M.Ed. in Ed. Leadership |
| Principal 2 | 10 – 20 years | 7 years | Diploma in Ed. Leadership |
| Principal 3 | 20 – 30 years | 9 years | Diploma in Ed. Leadership |
| Principal 4 | 10 – 20 years | 12 years | M.Ed. in Ed. Leadership |
| Principal 5 | 20 – 30 years | 12 years | M.Ed. in Ed. Leadership<br>M.Ed. in Curriculum<br>PhD (Completing dissertation) |
| Principal 6 | 30 – 40 years | 15 years | M.Ed. in Ed. Leadership |

**Table 5.2:**
***The Schools***

| | Approximate Number of Students | Grades in School |
|---|---|---|
| Principal 1 | 300 | 7-12 |
| Principal 2 | 520 | 1-10 |
| Principal 3 | 420 | 1-10 |
| Principal 4 | 199 | 1-8 |
| Principal 5 | 300 | K-4 |
| Principal 6 | 600 | 7-9 |

The participants' education was similar. They all had completed B.Ed. degree and added post – graduate leadership education. More than half of the participants had a M.Ed. degree in educational leadership, and one was completing doctoral studies in Educational Leadership.

The schools were in the K-12 or compulsory education system. Only two of the schools had similar structures (same grades), which shows how principals need to be versatile and able to work with differing student populations and structures in the K-12 or compulsory education system. This could be a factor in the way principals manage technology use in their schools, as it could matter if a principal is leading students at the primary school age, or the high school age. Technological tools and software might need to vary depending on the age group in the school, and moreover, the use of technology could differ. Even though this could be so, this study assumes a similar approach to management and the use of technology in the schools of the participating principals.

The student population ranged from around 200 to 600 students, which again, could be a factor in how principals lead their schools. With more students, there is a need for more equipment and that can affect the budget of the schools. Yet again, it is assumed that this difference is not an issue that needs to be attended to in this research, though it might be a topic for further study.

## 5.2 Technology Equipment in the Principals' Schools

All participants were asked what kind of technology was available and in use in their schools. Many different types of equipment were mentioned and Table 5.3 illustrates a summary of the technology tools that were pointed out as being the most used equipment in the schools.

**Table 5.3:**

***Technology Equipment in the Schools***

| Equipment | Remarks |
|---|---|
| **Laptop Computers** | -Some schools had laptop carts with 10-15 laptops that could be carried around the school for students' use<br>-Some schools had laptops in the community hall |
| **Desktop Computers** | -All schools had at least one desktop computer in every homeroom/classroom<br>-Some schools had desktop computers in the special service classroom<br>-Some schools had desktop computers in the community hall<br>-Some schools had desktop computers in the staff room/rooms<br>-All schools had desktop computers in their offices |
| **LED Projectors** | -Several schools had more than 10 projectors in the school<br>-Some mentioned they had movable projectors<br>-Several schools had projectors in the community hall |
| **SMARTBoards** | -Some schools had SMARTBoards in every homeroom<br>-Several schools had SMARTBoards in some classrooms<br>-Some schools had no SMARTBoards |
| **Smart Responses*** | -Only mentioned at one school |
| **Ritþjálfi**** | -Only mentioned at two schools |
| **Monitors***** | -Some schools had several Monitors around their schools |
| **Elmos****** | -One school had 4 Elmos |
| **Digital/Video Cameras** | -All schools had digital and video cameras |
| **Macintosh Computers** | -One school used Macintosh computers |
| **Voice Recorders** | -One school mentioned having 3 voice recorders for students' use |
| **Classroom Audio-Enhancement Systems******* | -Several schools had systems in up to 15 classrooms |
| **TV/DVD's** | -Several participants mentioned TV's and DVD players |
| **Printers** | -All schools had printers |
| **Scanners** | -All schools had scanners |
| **Photo copiers** | -All schools had photo copiers |
| **Public Address System** | -All schools had public address systems in their schools |
| | *SMART Responses are small remotes that give the students the ability to respond to the teacher on the SMARTBoard, which again provides instantaneous feedback to the students.<br>**Ritþjálfi is an Icelandic device used to teach students fingering and Icelandic spelling.<br>***In this case the monitors were screens (such as TV screens) that hug high on the walls and displayed information or pictures of current events in the schools.<br>****Elmo is equipment that hooks up to projectors or SMARTBoards, and is then shone down on the piece you want to show. It then magnifies the piece onto the screen, in color.<br>***** Classroom Audio-Enhancement Systems allow the teachers to talk into a microphone connected to speakers, so that all students in the classroom, including the hearing impaired, can hear without the teacher having to raise their voice. |

When looking at Table 5.3 it is clear that the schools slightly differ in the amount of technological equipment they use. It is also apparent that many of the same devices are used in all the schools. The most popular piece of equipment is the computer, both desktops and laptops. For example, one of the participants stated that the school had one computer per 0.3 students, which is quite impressive, as other schools, on average, had one computer per 0.4 - 0.5 students. All participants indicated that they tried as hard as they could to update the technological tools in the urge to try and keep up with new and emerging technology.

But what kind of equipment do principals have for their own use in their everyday job? The next section looks more closely at what devices the participating principals used in their day-to-day work.

## 5.3 The Principals' Technology Equipment

Even though principals need to know and be involved in all technological devices used in their schools, they do not always use all of them themselves. When asked about what kind of technology tools the principals used in their everyday job, there was a different answer in comparison with what devices are used overall in the schools. Table 5.4 summarizes the pieces of equipment the principals referred to as their most used technological tools. As seen, by quickly taking a look at Table 5.4, computers are what principals mention as their most valuable technology tools.

**Table 5.4:**

***Technological Equipment the Principals Use in their Everyday Jobs***

| Equipment | Remarks |
|---|---|
| **Computers** | -All principals used laptop computers<br>-Some principals also used desktop computers, others used keyboards and monitors that were hooked up with the laptops |
| **Mobile phones** | -All principals used either cell phones or smart phones |
| **LED Projectors** | -All principals used LED projectors, hooked up to computers, for presentations |
| **Public Address System** | -All principals used the public address systems from time to time |
| **Printers** | -All principals used printers |
| **Monitors** | -Some principals mentioned supervising monitors around the school |
| **Photo copiers** | -Several principals mentioned photo copiers |
| **USB sticks** | -Several principals mentioned USB sticks as one of their key device |
| **Scanners** | -Some principals mentioned using scanners |
| **SMARTBoards** | -Only one principal used SMARTBoards in administration |
| **Tele/videoconference Equipment** | -Used by some principals |

Even though not all of the principals referred to using all of the devices listed in Table 5.4, it is likely that most of them used this equipment at some point. In both jurisdictions principals talked about the computer as an absolutely fundamental device in their everyday job. One principal stated that "all administration is subject to technology," and continued, "if my computer would be removed, I would feel immobilized". Another principal stated that "the computer is number one, two, and three". Many of them used laptops that they carried around to meetings and other events. Others mentioned, in relation to the computers, that the USB sticks were crucial devices. Some of them asserted that they had more use of desk top computers and USB drives, than laptops. "I don't think it is necessary to have a laptop; I'd rather have a regular desktop computer and use the USB stick", one of the principals affirmed. Another principal even thought

that the laptop was a frustration and a tiny laptop or a notebook of some kind would be more effective in the everyday routine. "I save all my data to a jump drive and I travel with my jump drive so I don't need a laptop".

The device many of the principals mentioned as their second most essential thing was the mobile phone. Combined with the computer it seems that the mobile phone is becoming the equipment that principals rely on to be available most of the time. The majority of the principals stated that they needed to be reachable and, for that use, the mobile phone was a very handy device. "I've got a regular cell phone. I use it to be available, always. If I'm in school, I connect the phone to my cell so that when someone is calling, I can be reached wherever I am in the building". Another principal affirmed this stating, "if I don't carry one [mobile phone], how am I accessible?" Moreover, a principal said:

> I have been able to access my e-mail and my telephone [through the mobile phone] at any given time. Teachers have widely come to terms about how wonderful it is that I have an access to a Blackberry, because they've all been very pleased and surprised how quickly I've been able to respond to their needs.

In terms of having a mobile phone these principals did not see how they could work without it. As an example, one of them said: "If I was to take which piece of technology I would have to not go without, it would be my Blackberry". All the principals were provided with mobile phones by the school system. In Newfoundland and Labrador it is the decision of the school boards and the principals if that device should be provided or

not. In Iceland it is the decision of the principal to take money from the school budget to provide for the administrative mobile phones. In this matter, technology is clearly related to the school budget and it also is apparent, that it is costly to use technology. However, in today's society, the administrators strongly argued that it was very difficult for the education system not to take part in the emerging technology evolution. They believed that mobile phones seemed to be one of the devices becoming necessary equipment for most people, not just principals. The question raised was, who should pay? That question will not be answered here, but for the principals, the mobile phone was an essential device to do their job.

Other pieces of equipment mentioned by the principals, such as projectors, printers, monitors, address systems, and others, were more of devices that came along with technology, but were not used as widely and relied upon as much as the computers and the mobile phones. Still, the evidence made it clear that the principals needed to know how to utilize those tools and be confident in their use. Notably, most of these apparatuses are not operated without being linked to a computer, and from now on will be thought of as one part of the technology discussed in this dissertation.

SMARTBoards were mentioned by the principals, mostly in Newfoundland and Labrador. It was noted that the education authorities had made it a priority to provide the schools with SMARTBoards in every classroom, and that decision made the principals involved in the implementation of these new devices. At the time when this study was performed, only one principal used this equipment in the everyday

administrative work, as the process was at a beginning stage in connection with schooling and implementation, and the principals had not been given the opportunity to get training in the use of SMARTBoards. In Iceland, there was less mention of SMARTboards. The principals stated that SMARTBoards were too expensive and because of that they had not been taken into use in large quantity. Even though some schools in Iceland use SMARTBoards in teaching, the participating schools in this study did not utilize SMARTBoards for teaching or in administration.

## 5.4 Software the Principals Use

Although technical tools are essential for principals in their everyday jobs, it is learning the software they use that takes most of their time. During the interviews all principals were eager to explain the software they made use of and all of them had spent a lot of time to master their use of it. Table 5.5 shows the most common software used by the principals. Even though the two jurisdictions did not use the same software, the software used was similar in both areas or had the same purpose. The e-mail was crucial along with systems or programs that included information about students, scheduling options, conduct reports, and more. The Internet was widely used and as one of the principals put it: "The Internet has just opened up a whole host of opportunities, 'cause whatever it is that you want, you can find on the Internet".

Another principal talked about the changes the Internet had accomplished:

> When the Internet came, it changed so many things. Now you can look for information ... on anything, as before you needed to read books. You can work on your education wherever you are in the world, and look for

information, and you don't need to have books shipped out to you. We live in a different world from what it used to be.

**Table 5.5:**

***Software the Principals Use***

| Software | Remarks |
|---|---|
| **E-mail systems** | -All kinds of e-mail systems were in use |
| **Microsoft Office (Word, Excel, Power Point, Publisher and more)** | -Software used by all principals |
| **Microsoft Open Office** | -Free online software that has similar actions as Microsoft Office |
| **Mind Manager** | -Software to make notes and presentations more visual |
| **Matartorg** | -Online software that tracks all documents of students meals during the school day and after school guarding for children 8 years and younger<br>-Used in Iceland |
| **Synervoice** | -An online phone system. Can be connected to Win School<br>-Used in Newfoundland and Labrador |
| **Role Rotary** | -A program for scheduling time tables and so forth<br>-Used in Newfoundland and Labrador |
| **Win School** | -An online program that does scheduling, tracks attendance, behavior, and contains information about students, such as emergency information and conduct reports<br>-Used in Newfoundland and Labrador |
| **First Class** | -An online programmed system that provides e-mail postings, groups and conferences, and offers scheduling options for labs, libraries, and so on<br>-Used in Newfoundland and Labrador |
| **Students' Achieve** | -An online program that tracks attendance and students' marks, and provides a profile of K-12students<br>-Used in Newfoundland and Labrador |
| **Mentor** | -An online programmed system that provides e-mail postings, groups and conferences, scheduling for timetables, labs, libraries and so forth. Tracks attendance, behavior, and contains all information about students. Provides access for students and parents on homework, allows formative assessment, and students' assessment. Keeps track |

| | |
|---|---|
| | of information on school development and work reports for teachers and staff, and so forth<br>-Used in Iceland |
| **Accounting/Managing systems** | -Several accounting systems mentioned such as: SAPP and T-Cast |
| **Internet** | -The schools' websites<br>-All kinds of other websites, Google searches, PD360, and many more |

## 5.5 Summary

In summary, the principals' schools had similar equipment that was used on a daily basis. The principals used comparable devices and had access to identical technology. Two principals mentioned using Facebook as a tool for teachers and administration to communicate and thought of a further use in the future. Others stated they did not use it because it was too time consuming and some did not mention Facebook at all. Most of the principals used texting as one part of their mobile phone usage, even though it was not a feature in much use. MSN and Twittering were aspects not mentioned during the interviews as elements used by the principals.

The essential device in their everyday job was the computer, both laptops and desktops, along with mobile phones and USB drives. The most crucial software for the principals was e-mail, followed closely by student based programs and programs that featured scheduling such things as time tables. These technology devices are essential in the principals' work as their job relies on these tools and their function.

# CHAPTER SIX

# The Principals' Use of Technology

Chapter five looked at the background of the principals, what equipment they used, and what kind of software was the most popular among them. Chapter six reveals the interviewed principals' use of technology and how it affects their everyday job.

## 6.1 Information and Communication Technology

**6.1.1 E-mail.** During all the interviews, the principals could not stress enough the importance of e-mail in their everyday job. When talking about their daily work, e-mail was what came to their minds first and foremost. "The e-mail system is what I use most" one of the principals stated and continued:

> I use the e-mail for communication with parents, to communicate with teachers. I have around 40 teachers and it is much easier to send e-mail. I've got a lot of groups in my system both in my own school and other schools. I get e-mail about everything that is connected with the school, letters and other things. My secretary posts to me all information that arrives to the school's e-mail address. I use e-mail to maintain oversight of all teaching materials, I use e-mail for newsletters, and to forward information to teachers.

Another principal added:

> Obviously e-mail is a huge part of what we do and how we operate. E-mail has become ... a very much everyday part of our routine and schedule. E-mail is very much a part of how we do business. First thing I do when I get in my office in the morning – check my e-mail, and depending on how many things you have to respond to, or read or whatever, that could take half an hour or more. Sometimes things just have to kind of sit there and you go on and you do something else and

> you come back to it. I find that my e-mail is always open and always there.

All the principals had similar things to say about their e-mail use. They state that in their daily job they primarily use e-mail, in connection with technology.

> E-mail is the very existence, alright, I mean totally. Throughout the run of the day, on average, they go up and they go down, but on average, 40 to 50 e-mails a day, alright, from parents, from outside groups, from the board, to personnel. And you know, they have to be responded to. Some of them are just simply yes, or no, others require substantial time to investigate or research and come back with an answer.

More than ever before, the principals rely on e-mail in connection with communication, and spend a massive amount of their time either answering or sending e-mail in all school-related categories. They depend on the e-mail systems in their work, and use e-mail in many situations instead of phone calls, face-to-face meetings, regular mail, and faxes. Still the principals state that these more traditional kinds of communication are important and that "e-mail cannot necessarily replace everything, but it certainly has helped to speed up everything". Many more situations were mentioned where the principals use e-mail as their communication form. One of the principals pointed out that, "all information to the staff and teachers goes through" the e-mail systems and it "is just wonderful to be able to use this system for communication". Providing people with information took less time and was easier than before and gathering information was more effortless than it used to be. In many ways, being able to use e-mail communication allowed the principals to utilize time in different ways. One of the

principals talked about sending out notes to teachers every Sunday, which reflected on upcoming events and provided information. Because of this communication the principal was able to use the time that otherwise would have been used for a staff meeting, for special development opportunities, where the staff could share information or training on any particular subject.

The principals made note of many other aspects of utilizing the e-mail. They used e-mail for sending information to parents with weekly newsletters, and to distribute information for teachers and staff on weekly, or more frequent basis. Almost all of the principals used e-mail for conferencing and sharing information with their colleagues. Moreover they used e-mail to deliver information about individual students to their parents, and to communicate with parents for various purposes. Furthermore, they used e-mail to attend to miscellaneous management business, for ordering supplies for the school, for selected communication inside the educational system, and they even got training from the educational authorities, through e-mail.

Many of the principals used their e-mail systems as a diary or a planner. A principal proclaimed; "I really use the e-mail as a planner or to make a schedule. What is at the top of the e-mail list, are the projects that I haven't finished, and when I have finished that particular affair, I put it in a folder, so, the e-mail works as a planner". Going through the e-mail that awaited the principals in the morning took a lot of time, and therefore they needed to prioritize. "You've got to basically look at everything that comes at you and put it into one or several categories. Top one being, 'must be

responded to now', bottom one being, 'it's not necessary to respond to it [at the moment]'", a principal asserted. One of the principals said: "I would die if I couldn't use the schedule in that system or the 'to do' list. I don't use a pen and a diary or a planner, everything is on the computer". To be able to schedule a meeting, put a Power Point document in the computer and a 'to do' list, all at the same place, was, to this principal, the most efficient system of all. Furthermore, some of the principals stated that the e-mail systems allowed them to schedule plans and projects into the future, and to make a list of goals for themselves, along with a daily work schedule. It is, therefore, obvious that principals need a lot of time to be able to deal with all the necessary communication and work based on e-mail. They need to manage their time well if they are to perform their role as instructional leaders as well as school managers.

**6.1.2 Mobile phones.** The mobile phone is another device mentioned, by the principals, in connection with communication technology. The principals used their mobile phones a great deal and thought that in the future it would even be of more use. In the principals' everyday job, the mobile phone was linked to the e-mail, as some of them had Blackberries and therefore accessed their e-mail through their mobile phones. For the principals, being reachable (or accessible) was one of the important issues in their profession, and for that purpose the mobile phone was practical. The mobile phone, along with e-mail, was fundamental to perform their job. The principals felt that the local education authorities, teachers, staff, and the school community expected them to be available and reachable at all times. At the same time, it could be very time-

consuming for them to answer phone calls at all times. Therefore, as some of the principals pointed out, they needed to be able to prioritize and respond to both phone calls and e-mail, at a time that suited them.

**6.1.3 Other communication devices.** Even though e-mail and mobile phones were widely used by the principals, some of them used other devices or software just as much. The Internet was one of the media frequently mentioned. All kinds of websites were used by the principals and they depended on search engines, such as Google, for getting a variety of information. "Communication, knowledge, it's everything, and you depend on it for everything, like something as simple as a phone number", one principal explained about the Internet. The principals used the Internet for gaining knowledge about their profession and to expand their horizon. "I'm all the time looking for good sites. Being an instructional leader, you want to share as much professional development as you can, and time is limited", one of them described. Sharing information with their teachers and staff was one of the reasons they used the Internet. Being able to obtain time by searching for information via the Internet gave the principals additional time to share and, for example, offer further professional development for their staff.

Another use of the Internet focused on school web sites. Many of the principals used their school web site to provide information for parents, students, teachers, and others linked to the education system. For example, the web sites contained information of the school goals and vision, development projects, school policies and rules, and

homework calendars for students. Moreover, the sites provided information of what was on the school's agenda, important dates for students and parents, student projects, what students were accomplishing, as well as pictures taken at school events or activities. Mostly, the principals assigned a teacher to manage and supervise the web sites.

All these devices, and most likely many more, were used by the principals on a daily basis. It takes a lot of time to master the use of this software and equipment, but somehow the use of technology has emerged as part of the principal's occupation without being addressed properly by the educational authorities. The onus is on principals to manage the technology part of the job as well as all other aspects of their occupation, even though it is not dealt with in their collective agreements, in the Schools Act, or the Compulsory School Act, (see also chapter four).

## 6.2 Miscellaneous Technology

**6.2.1 Management.** The difference in the principal's role in Newfoundland and Labrador, and Iceland partly lay in the dissimilarity of the management part of the occupation. In Iceland the principals had more power to make decisions concerning the budget and management, such as authority to hire teachers and staff. Yet, all the principals had responsibilities in management. Similar to many other aspects of the profession, the management part had been computerized and therefore the principals needed to be aware of how to use the particular devices along with the software for the

job. When applying for a job in the education system, all paperwork was on line, and the principals needed to be knowledgeable of how that system worked. Accounting was also done through online-based programs, and the principals needed to be comfortable using those programs perfectly. "I have to file all bills through computers. I can take a look at the financial situation of the school at any time, just poke a couple of buttons, and I can see the situation as it is at that moment", one of them stated. According to the principals, the management part of the principal's occupation had increased substantially over the last several years, which meant the principals needed to be more aware of all kinds of programs that dealt with managing. One principal clarified the increased requirements:

> It has changed a lot, very much actually. Everything is moving more and more towards using computers and I've been learning how to use all kinds of software that I'm supposed to know how to use, things have become more required.

The other principals agreed. The school authorities required the principals to use online systems and programs for management and for maintaining students' data. These systems preserved all information about the management in the schools, and all records of students. Moreover, the programs tracked information of miscellaneous schedules, reports, and other school-related details.

Other software programs that dealt with management were also in operation. "We use technology for example in the creation of time tables", stated one of the principals. Also, they needed to take care of teacher and staff attendance and use of

substitute days through computerized management programs. Based on that, it can be stated that there is a lot of technology involved in management and principals need to learn how to use all that technology in an efficient way.

**6.2.2 Student based programs.** In addition to the management part of the principal's job, there is the part linked to students. That part, as well as other features of the job, has been computerized. All programs used to track students' attendance, marks, assessment, and provide a profile of students, were electronic, both in Iceland and Newfoundland and Labrador. Moreover, the use of these programs was assumed as the districts and municipalities expected principals to use them, even though it was not stated in any legislation. Principals needed to be aware of how these programs worked, as they often supervised them in their schools. In some of the schools the principal was the person who overviewed the programs and controlled their use. "Yes, I'm the administrator of the program. I do the setup and installation of the system, it's just one more thing to do", said one of the principals when talking about the students' based program. Others had the good fortune, as they stated, to be able to hire a technology person to supervise those programs. All the principals were really pleased with the capability of the student-based software. The programs could be linked to the schools' web sites, and to the online phone systems, and by doing so made their work less complicated. Parents, teachers, principals, and students could use the programs to gain information associated with the schools. Tracking attendance, getting information about homework, viewing assessments, collecting schedules, inspecting student behavior, and

communicating, was what these programs provided for the principals and other school related personnel. Despite the efficiency of the software, being able to manage these systems took a lot of time and training, and was yet another expectation of the principal.

**6.2.3 Technological equipment.** The principals asserted that taking care of the technological equipment was a huge issue. Being able to use all the technological tools and being able to have them working correctly at all times was a challenge they needed to focus on. The schools had computer labs that needed to be taken care of and some had laptop carts. The schools had computers in every homeroom or classroom and, of course, there were the computers at the secretaries' offices, in the staff room, and at the administration offices.

Even though many of the schools had a technologically advanced teacher supervising the equipment and software, it was the principals' responsibility to make sure the equipment and the software was fully functioning, and therefore, they needed to be knowledgeable about the technology that was in use. Moreover, the principals had support from the municipalities or school boards concerning technology but that support was not instant and sometimes the principals needed to wait for days. Apart from this part of technology supervision, some of the projects that ended up on the participating principals' list were: using the library programs, running the monitors, connecting projectors to computers, installing SMARTBoards, and even managing the ventilation system.

In summary, the issues that appear in connection with technology in schools, place many demands upon principals. They are expected to work with technology and to supervise others in its utilization. In addition, to be able to do that, they need to be knowledgeable about how technology and technological equipment work. Furthermore, they are required to quickly get support in connection with technology failures, and to provide for proper technology supervision for teachers and staff.

# CHAPTER SEVEN

# Technological Themes

## 7.1 Introduction

In this chapter findings from the research are analyzed and interpreted. It was interesting to see how alike the responses were from principals in both jurisdictions regarding the matter of technology use. It might have been guessed from reading the literature and gathered data, that the principal's profession in Iceland and Newfoundland and Labrador would be different in that concern. However, the principals' reactions and answers were almost in complete agreement with each other, regardless of where, in what kind of school, or in what administrative position they worked. The methodology of the study focused on technology as a phenomenon that affects most sections of the principal's everyday work. For that reason, it was interesting to see the enormous influence technology actually had on all the principals and their profession. Not only did it affect their day-to-day job, it seemed to have become a fundamental element in their professional existence. In consideration, it is therefore worth noticing, that nowhere in the collective agreements or legislation, is technology even mentioned as part of the principal's occupation.

Although programs, software, and equipment are crucial in technology use, many other issues appeared when the principals were asked about their own use of technology. Chapter five summarized what technology the principals could access, and

chapter six reviewed their main use of technology. Going through the data gathered for this study several obvious overlapping themes emerged. *Time, efficiency, training and support,* and the *principal's role* in regard of technology, were themes that dominated the interviews along with *barriers* in technology use. This gives an overview of what the principals talked about as their main concerns in terms of technology. Chapter seven discusses these major themes that emerged from the interviews. The findings based on these themes are looked at as the focal point of the research and the conclusions are based on them in association with the gathered literature data.

## 7.2 Time

In today's society many people seem to lack time to do all the things they long to do. New and emerging technology attracts people and navigates them in many different directions while using up time. In the world of school principals, technology is becoming a major part of their work. There is no question that technology takes a lot of the principals' time, even though it is also making their job more efficient.

The interviewed principals saw their greatest role as being an instructional leader. For example, one principal wanted to "bring differentiated instructions for them [teachers and staff] to witness in action" how to use all kinds of technological tools, as part of instructional leadership. Because of that, a large part of the principals' time went into searching and learning from the Internet. They claimed that the attempt to provide professional development resources with teachers and staff took a lot of their time. At

the same time it created opportunities for the teachers and the staff to use their professional development time effectively, as many of the principals had already searched, and frequently, come up with issues and practical ways of using that professional development time. In connection with professional development, one of the principals said:

> I try to be a leader in technology, making things easier for teachers to use, easier for the students, because a lot of times I find people do things in the most complicated manners when there are short cuts, and I think that's important for time.

Some of the principals stated that teachers were the people that made technology work in their schools. Many of those teachers did not get extra pay for their technological work and therefore the principals wanted to provide them with as much support and time as possible. In that relation, all of them stated that more time was needed to implement technology and to get comfortable with it, as one of the principals commented, "what helps you the most is to use the software and figure out how it works... it is just that I need more time to dig into it, that's what I need, more time".

Another part of the time issue, the principals agreed upon, was that they spent a huge amount of time in association with e-mail. All of them stated that they started the mornings by checking their e-mail and attending to the urgent matters that came through that media. Many of them used the e-mail to organize the day or to schedule their work, even further ahead. Most of them expressed that they needed to be very careful in how much time to spend in connection with e-mail, and that they needed to

be able to throw e-mail away, and prioritize what to look at closer, what to respond to immediately, and what to save for a later response. "I've got to manage what I'm doing and therefore, you know, become prioritized", said one principal. Another principal was more specific about e-mail and time, and said:

> Probably that [e-mail] is the most time consuming thing because there are so many affairs that needs to be taken care of... but it would take much more time if I had to use the phone or... yes, a whole lot. I mean I think it saves a large amount of time.

The third principal stated that "if you leave your computer, let's say for an hour... you've got between 17-30 e-mails" when you come back and, "it takes a lot of time to answer all [that] e-mail and go through it". Some principals pointed out that they used a lot of 'non school hours' to attend to e-mail. "You end up doing a lot in your own time", stated one of them. The other principals agreed on that and talked about spending evenings at home attending to e-mail to minimize the workload the next day at work. Despite that, the principals spent a lot of their time in front of the computer and in an attempt to estimate; they figured that the time they used working at the computer, could go up to four or five hours a day, approximately. This inordinate amount of time spent at a computer is worthy of further study. It is worth noting that the principals were surprised themselves when they realized how much time they actually spent at the computer. In spite of this fact, they were not complaining and said they loved their work.

Management, technology, and time were factors the principals agreed were linked to each other. The management part of their work had increased with more

advanced technology. They stated that a lot of time went into accounting, bureaucratic communication, getting supplies and material for the schools, overseeing the schools' web sites, filing reports to higher authorities, and many other issues. On the other hand, the principals thought that they were generating much more management information today than before because of technology.

The principals mentioned that it was very easy to get caught up by technology and to convince oneself that all things needed to be done immediately. The expectation that principals were available and would respond at all times was enormous, and increasing with more and improved technology. As mentioned before, the part of the working day where principals spent their time in front of the computer had increased in recent years. The distinction or the balance between being a visible instructional leader at school, and being the bureaucrat who sits by the computer all day, was a task the principals needed to knowingly deal with. "If you don't consciously make that effort to be out and visible and around ... it would be extremely easy for all your time to be spent at your computer", one of them asserted in that connection. However, there was another part of technology and time that was more positive.

Without technology, one stated, "I couldn't do a number of the things in this job that are expected of me today, that probably weren't expected of administrators years ago when the technology wasn't there". This evolution of the principal's role was one of the matters that appeared during the interviews. "With the whole evolution process of technology implementation, there has almost been a natural passing of some things so

that they've evolved into other things", another principal stated, meaning that by using new technology, many aspects of the school's management work has been simplified. Working with electronic accounting programs and electronic students records instead of having to write the information on paper and then file it in folders, were things pointed out in the interviews as things that have been simplified by using technology, and that saves plenty of time. All six principals concurred about the paradox about how time consuming and time saving technology could be. Even though their workload had increased, all the principals were in agreement that technology saved a lot of time in many aspects of their day-to-day routine, and that they could not do without it.

## 7.3 Efficiency

As pointed out in section 7.1, technology is time consuming in many ways. Nevertheless, the principals were all in agreement that technology also saved a lot of time and made their job much more efficient. The administrators were in one accord that over the last several years there had been a great enhancement of technology for administrators. "It is our main source of communication in school in terms of being able to access information, provide information to the teachers; it is the quickest and easiest form", one principal observed about efficient communication. E-mail systems have transformed the principal's occupation with all communication and even though the principals were in agreement that it took a lot of time to attend to e-mail, it still made them much more efficient and saved time. They all felt that the instant flow or distribution of information would be much harder without the e-mail systems.

Moreover, being able to access the Internet gave an opportunity to get, and distribute, information very swiftly. In addition, one of the principals pointed out that not only did it matter to principals, teachers, and staff, but "this flow makes information more accessible to everyone in the school community". Similarly, another principal highlighted the efficient use of newsletters through the technological media, and how instant and simple it was to reach the attention of the school community through technology.

"The main stay of any school in September is to make sure you've got a very viable, efficient, and affective time table created", a principal asserted. The others had similar statements, as they found that the time table was one of the major factors in the principal's job, because it materialized the whole existence of the school. To be able to use new technology to make the creation of time tables easier was a huge advantage for all the principals. Additionally, all kinds of other systems made their job more effective. Using technology made the principals more resourceful in matters such as, scheduling, accessing and working on students' records, attendance, and behavior. Likewise, it made it more effortless to handle teachers' time tables, oversee employment records, and work on financing and accounting.

Nevertheless, efficiency from technology also had a negative side to it, according to the interviewed principals. "Because people can access me day and night, the expectation is that I'm available day and night", stated one principal. What was happening was that the new and wide ranging technology had made the principals more

accessible, and the demand of instantaneous respond was affecting their personal life. All principals mentioned working after hours, either at school or from home. Using the e-mail systems, the Internet, or other technology systems, all of them took time from their personal life to attend to school business in an effort to make their job more effective. Some of the principals found this natural and thought of it as a part of the job. Others were more reflective, and wondered if this was the right thing to do, or if their job description needed to be looked at in relation to all this new technology and their changing profession. One of the principals summarized these thoughts quite well by stating:

> I think that all this new and emerging technology that is appearing needs to be involved in the job of principals. The school and the educational system need to be in the same rhythm as the community, and I think we need to involve this new technology and use what is positive about it.

Despite this, all the interviewed principals agreed on the effectiveness of technology and stated that without it their jobs, as assumed today, could not be completed. The time they saved by using computers in filing and folding was enormous and all communication was faster and more effective without the need to write everything down on paper and then file it to a folder. Even though the new technology the principals were provided with made their job more wide-ranging than before, additionally, it made it easier and more efficient.

## 7.4 Training and Support

For the principals, training and support in consideration with technology, was a topic of major interest. One of the interview questions handled with the issue of training and over all, the principals' answers were quite similar. Other questions dealt with what kind of training and professional development the principals wanted and still, the answers were comparable. What made this finding worthy of note was that the principals, all but one, stated that they did not get enough training from the local authorities, or through their education. For that reason and for further research, it might be logical to assume that this issue needs to be attended to in a different manner from how it is dealt with at the present.

When asked if they had had any technology training, most of the principals smiled and said, no. A few smiled and said they had gotten "some" training in regard to technology. A great deal of new technology has emerged in schools and in the principal's job; therefore, it could be speculated that principals need technology training to become better instructional leaders. In contrast, most of the interviewed principals did not receive the training they felt they needed to act as technology leaders in their school community.

Implementing new technology involves an introduction to the prospective user. "An implementation doesn't happen overnight", stated one of the principals, and added; "we all know that with an implementation process there should be a continuous

training". In all of the schools, the principals were implementing new technology which was required from higher authorities to make the schools more effective and more accessible for the school community. In numerous cases, principals, teachers and staff were offered workshops and seminars about the new technology. Nevertheless, "for all those workshops or seminars, if you don't use the software immediately and very much, you forget how to use it", one principal pointed out. Another corresponded by stating: "It's not enough to state that you need to know how the technical systems work; you also need to have the time to learn how to use them". A third principal coincided by saying that, "we all know, that the one day thing is not going to do it, it needs to be repeated and followed up so... we need to have other sessions that would help to develop and advance the implementation". In a similar way a principal talked about implementation and lack of principals' training stating: "Here I am in a school that has more [technology devices] in a building than most, and I don't know how to use them. And I hate that it's true". There was one principal who thought that the school authorities offered enough workshops or seminars, but all the others affirmed that they were in the need for much more training. Some reported that authorities handed principals new administrative tools and then asked them to learn on their own how to utilize them. Furthermore, they stated that it took time and training to be able to use such things as new technology programs or equipment. In that connection, one principal said:

> There is nothing that allows the principals to be in-serviced or taught all the various types of technologies that they could utilize more effectively

> in their jobs... if principals knew how to utilize certain programs, what programs to purchase and put in their schools, they would have a much better picture of what's happening in their schools.

Another principal pointed out that by getting trained in the use of technology, the principals' comfort level would increase and they would therefore become more efficient in all technology use. In the same sense, a principal declared that there had been no offerings of professional training in technology for the administrators and that very often the management part got left out, even though principals were supposed to be responsible for the management in the schools. "There is nothing offered for me as an administrator from the...educational system", a principal added, "but still there is this demand that I'm supposed to be capable of helping teachers and others in operating these systems". "I'm responsible and I don't know how to do it", another principal added. Moreover, the principals often referred to the fact that their training was probably more self-directed, out of interest and necessity. In that relation, many principals talked about how they learned from each other and how much time was needed when they had to figure things out all by themselves. They mentioned getting help from their secretaries, former and present colleagues, and even their spouses. They revealed that inside their schools they had a lot of strength that they put to use in favor of professional development and technology. Collaborative learning between principals, and between principals and their teachers or other staff members, often resulted in efficient use of technology in the schools. The principals even thought this way of learning in collaboration and from each other sometimes produced a deeper

understanding of the use of technology. Still, that kind of self directed learning took much more time than was available for both teachers and principals. Teachers did not always want, or were not able, to spend that time and energy in training outside their work day, and the administrators did not have endless time to spend in figuring out how to operate technology on their own. Their day time work mostly did not allow for that kind of utilization, which meant they needed to use the evenings and weekends, and that was not always an option. The principals believed that the responsibility for a proper training for leaders should be in the hands of educational authorities in the jurisdictions, and that principals absolutely needed more and steadier training than they were getting at that point, or as one of them stated: "I find that I need more [knowledge] to be able to function as a technology leader".

In consideration of the principals' education they stated that nowhere in the higher education system were they supposed to learn about technology. All the principals had either master's degrees or diplomas in educational leadership. While they studied for their degrees, no technology courses were required for them to finish their degrees, and the universities seemed to assume they had enough knowledge about technology and how to utilize it.

The assumption, that administrators know how to exploit technology, seems to be happening, as well, in the K-12 or compulsory school education system in connection with principals and technology. One principal addressed the issue stating: "We're just supposed to use technology. It kind of happened automatically and it became a part of

our job without any implementation. It just happened and maybe it is more like a social thing, it happened all over". The other principals addressed this issue in a similar way and were thoughtful of how to change this notion in a positive way to make the implementation and use of technology more efficient for the schools and for principals in their daily work. Still, none of the principals had a solution in this matter and therefore this assumption, that principals just know how to utilize technology, remains unsolved. For all the principals, technology was so hugely evolved in their everyday work that they, from time to time, needed to concentrate very hard to be able to scrutinize their technology use. One of them stated: "The problem is that I guess it [technology] has become such a natural part of the day that you don't realize what it is that you're doing". As stated before, the time the principals spent in front of the computer and in relation with technology was growing to be the majority of their working time. By working hard to overcome all technological parts of their job, without addressing the increased workload, and without getting enough training and support, they themselves sustained the assumption that principals know enough about how to utilize technology and that they did not need more support. Therefore, it could be presumed that perhaps the local education authorities, in both jurisdictions, do not realize how much more professional development and assistance the principals really need to be able to function as technology leaders in their schools. On the other hand it could be assumed that the local authorities need to put more effort into assisting principals and providing them with a wider range of continuing professional development.

Support was a topic the principals frequently mentioned when talking about training and utilization of technology. The principals all received technical assistance from the municipalities or school boards and all of them were thankful for that support and thought it essential for the schools to work properly. Despite that, they were not in unison about if that support was enough or not. Two of the principals thought that they got mostly enough technological assistance, even though both stated that in regard of learning from experience they needed more time. The other principals had another story to tell, and stated they needed more support on a regular basis and support that was constant and reliable at all times. Most of the principals had teachers that were well versed in technology and worked as supervisors of technology in the schools. Still, a great number of issues occurred while working with technology that these teachers could not deal with. The supervising people from the municipalities or school boards were vital in that regard. Yet, as some of these technological supervisors were shared between schools, it could take a while for them to get to the problem.

Technical equipment does break down and sometimes does not work properly. As well, the network systems, now and again, do not work, or are not accessible. In such cases, the principals were expected to bring things together again. If support was lacking and the principals or the technology teachers were not able to fix what was wrong, that created "frustration and you need someone who can analyze the problem and fix it as quickly as possible", one of the principals indicated. The principals thought they were not technically knowledgeable enough to take care of those system failures and even if

they were, they lacked the time to do it. In frustrating situations, such as system failures where there was no support available, the administrators, along with their teachers, sometimes tried to be creative and find ways of getting around things. However, the principals wondered if they should have to figure out ways on their own instead of getting more proper support from the education system.

The principals greatly desired more support and training than was offered to them, in utilizing technology. They affirmed that the support they currently received had improved over the years, but because technology advanced so quickly, more resources were needed for them to maintain their leadership role, and that support needed to come from the education system in the form of "cash outlet for materials, but also the human resources", as one of the principals put it. They stated that they could ask for support from the local authorities, but even though they asked for help they did not necessarily receive it, and sometimes it was not even available. They longed for support that was offered systematically from the local authorities and that encouraged administrator, teachers, and staff to use technology in a positive and efficient way. The principals noted that they struggled to provide as much technology as possible in their schools and with more technology, more technology assistance was required. Many ways of getting the training and support they needed were mentioned. Using a combination of leave time and terms during regular days was one of the ideas that came up. Using evenings and weekends, or a few days of professional development time during spring, summer, or fall was an option that the principals noted as a possibility.

However, these options are more or less already in use in the education system and the principals all believed that continuous training throughout the school year would do more than one seminar or workshop. By using technology persistently, they felt people got comfortable with it and therefore more effective in its use. The resources the principals had in their work came from the municipalities and the school boards, and they found the need for more systematic support and continuous training essential to be able to become more efficient in technology use and to become advanced technology leaders in their schools.

## 7.5 The Principal's Role

Regardless of formerly addressed topics, being a good instructional leader in technology was a role all the principals wanted to honor. One of the questions asked during the interviews concerned the principal's role in connection with technology. A wide range of speculations went into this question on the principals' behalf, and it was fascinating to see when they realized what a huge role they, as principals, played in their schools' technology usage. They discovered what a major part technology played in their day-to-day job. One of the comments about the principal's role in technology describes the positive image the interviewed principals had of technology use.

> I think my role is to make sure that technology is in progress and maintained, and to hire someone to take care of that. My role is to keep up with technology, in collaboration with that person, be positive when teachers want to try something new in technology, and try to make things possible.

Moreover, they stated that their role was to "move the agenda further", "direct the technical use", and to "make it happen", meaning they needed to encourage technology use in their schools and make sure teachers had what they needed to be able to become efficient users. As leaders in technology the principals found that they had "to provide to teachers the opportunity and time, to be in-serviced to learn the technology, to watch and experiment with it, and to find out the best practices for its use". One of them argued that opportunities were needed for principals to be able to act as leaders in technology. As one principal asserted, the demands were on them to "keep up with technology, to find new technology, and to implement it appropriately". Moreover, they needed time and in-service to learn how to utilize technology and to become instructional leaders in technology implementation. Other demands on principals for technology were that they were supposed to be knowledgeable and to be able to use it all, both software and equipment. One of the principals addressed this issue stating:

> The teachers make that demand on my behalf that I provide help so that their time can be valued, and also that I, myself, know how to use these systems. This means that I as an administrator am required to know how to use all these systems and that I need to be able to lead the way in their use.

The demand also comes from the education system as principals are required to use software that provides and reserves student information, and all management issues related to the schools. Principals are supposed to know how to use these programs and lead the way in their use in their schools.

Some of the principals thought of themselves as leaders in technological progress that the school was undertaking. They mentioned being the person with the overview of what was going on and the need to be able to know about everything that was ongoing so they could answer questions and distribute information.

A big part of the principals' role had to do with equipment and devices. Some of them played the role of supervising technology in school and needed therefore to be experts in how to repair and hook up the wireless network system, set up and install systems on the computers, oversee the school web site, be a leading person in the use of certain programs, make technology more accessible and user-friendly for teachers, and, above all, take responsibility for the technology to work properly in school. The principals argued that a large part of their job was to make things work, "because, as a school everything needs to be up and running", one of them claimed. As stated before, they also contended that it was their role to hire someone to supervise technology in the school and work with that person to make things happen, along with the assisting person from the municipality or the school board.

Other technical obligations the principals needed to attain were supervising the library software, operating monitors around the schools, being control manager for the students' program software, and phone related devices. Moreover, they thought of it as their leading role to be able to instruct their teachers and staff in the operation of technological devices and being able to demonstrate technology use. This they thought of as being a good instructional leader in technology.

One role that occurred in connection with technology in Newfoundland and Labrador was the part of the principal as a fundraising supervisor. "As principal you're always pushing the agenda and trying to move it forward. So, fundraising and trying to get people organized for fundraising committees" is one of the roles principals in Newfoundland and Labrador need to undertake. In Iceland principals are not supposed to fundraise for their schools. They are not allowed to ask parents or other parties for money, and therefore, this is not a role that they take on in relation with technology. Balancing the budget was a challenge the principals needed to conquer, and technology is very costly. It is the principal who controls "the purse string of the school, so in the end the final signature" comes from him or her, as one of the principals put it.

Society has moved forward in technology use with a rapid speed and one of the roles the principals needed to tackle was keeping up with society. "I feel there is a moral responsibility to do something with technology because it's such a huge part of society", a principal claimed. Others concurred and stated that not only was technology a huge part of society, but it had become the main part of the principal's role in today's schools. The principals claimed that all their work was related to computers and as one stated: "All administration is subject to technology. Everything would be so much more difficult without it. Everything would take so much more time". Furthermore, they continued, if technology would be removed from their job, it would bring them to a halt and stop them in the attempt to get more efficient and modernized.

The role of principals in regard to technology is multifaceted and complicated. They need a lot of experience, support, and training to be able to be instructional technology leaders. Some of the interviewed principals found their lack of technology knowledge too great to be the leaders they really wanted to be, and believed they were still in the process of getting there. One principal declared:

> I am a technology leader when you think about it from the perspective of trying to get as much technology usage available for staff and students, trying to make things happen, see to it that things are functioning, and make it as seamless as possible.

All the others agreed, and even though they felt they needed more training, they were all very positive in respect to further use of technology in schools, where they would lead the way towards more advanced utilization of technology. "The principal's role is to make sure that the school is using the positive things about technology, which means that the principal needs to know how things work", was how one of the principals looked at the role. Furthermore, another addressed the matter stating:

> I think one of the biggest roles of an administrator today is instructional leadership. We have all these types of technology and I think that any administrator who is a good instructional leader is more knowledgeable in the ways of technology than their staff.

Though the principals did not see themselves having reached that point when the interviews were taken, they aimed for the goal "to be a guiding light and a supporter", and all wanted to evolve further to become advanced technology leaders.

## 7.6 Barriers

One of the interview questions was: "Do you see any barrier/s in your use of technology?" Although that question was asked, the principals mentioned a variety of barriers throughout the interviews. When summing up the issues most frequently referred to as barriers, the major topics that materialized were: workload and time, training and support, usage of the system, technology failures, and budget.

**7.6.1 Workload and time.** Since all this new and emerging use of technology has arrived into the principal's occupation, it seems that the workload has increased greatly. To be accessible and available all the time is a hard task to take on, even for the most active people. The expectations of quick and constant responses along with immediate actions, can wear people out. The principals mentioned that sitting at the computer, responding to e-mail or searching web sites for information, took a significant part of their time at work, and that in the evenings and on weekends, it was easy to login, check e-mail, and see what was happening. They asserted that sometimes it was done unconsciously, but "it has probably increased the workload, created a type of frustration, I suppose, because then you're working longer than probably or perhaps you should be, but you feel compelled ", one of them stated.

The management piece is also a barrier in the way that the responsibilities have become enormous and have grown over the years. Principals are supposed to file most things electronically, and because of that they spend a tremendous amount of time in

front of computers. A principal affirmed that the time spent in front of the computer could appear as a barrier to the ability to become the best possible instructional leader. Time spent at the computer made the principals regret that they were then not visible and taking part in the school's activities. Still, they believed that if they prioritized their work, it was controllable, up to a point, to handle both parts of their job, the professional and the managerial. Time was the barrier most often mentioned in relation to technology and the principal's day-to-day work. They stated they needed more time for technological management, training, and communication. Despite that, they frequently talked about how time saving and efficient technology could be in connection with these formerly addressed issues. Based on that, it seems that the time issue is a paradox, in connection with technology in administration in schools.

**7.6.2 Training and support.** As mentioned before, most of the principals found they needed more training and support to be able to become more efficient. "I mean, obviously there are certain things that I don't know how to do and so I need training in order to do that, so I could become more comfortable with technology", stated one of the principals. This obstacle played a huge part in the principals' everyday work as they sometimes did not have the knowledge to proceed with certain jobs or in leading the initiative progress. On the other hand, they also mentioned that "principals can't possibly know everything", and therefore they needed to be able to call upon others to solve problems that appeared. That, again, meant it was essential for them to get support that was reliable and satisfactory for the situation. That kind of support was not

always what the principals could obtain and, therefore, inevitably they felt as they were vulnerable in some situations that occurred during their day-to-day job. Such situations made them feel uncomfortable and all of them were ready to learn more and become advanced in technology use.

Implementation of technology in their schools was an ongoing process and the principals felt the need to be ahead of it. Moreover, the issue of technological equipment appeared as a barrier, as the principals noted that it was not enough to install a certain device if no one knew how to work it. Therefore, they thought that the implementation needed to be thrust forward to match up with the new devices that were emerging very quickly in society, and which schools needed to use. Without more training and support, the principals could not observe how they would be capable of implementing all the new and emerging technology into the schools and into their everyday job. The need to look at the big picture and to look into the future regarding technology was a huge issue, and as one of the principals asserted, "we get caught up in the moment in terms of this new piece of technology or new way of doing things, but then we don't properly service or show teachers or administrators how to use it". As a result, the implementation might fail; the equipment could stay unused either in the classrooms or at the principals' offices, and no one profits from that situation. Built on that, the principals strongly advised more constant training and more support in all things associated with technology in their schools.

**7.6.3 Usage of the system.** Linked to training, the principals testified that one of the barriers they had been trying to overcome was the teaching staffs' usage of technology. Although the principals found technology efficient in terms of reaching people with more information in a faster way than before, the assumption that people read their e-mail was not always dependable. Even though the principals required their teachers and support staff to read their e-mail and newsletters, some of them found that this was not happening. At times, the teachers and supporting staff did not even know how to use e-mail, which caused a lot of frustration and problems in communication. Some of the principals had an opportunity to get workshops for their staff in the usage of e-mail. Despite that, it was difficult to assume that everyone was utilizing the media in the right manner. Regardless, the principals continued to require their teachers and support staff to use e-mail and student based programs as the onus was on the schools to utilize this software. Based on this, it was a problem if people did not use the media in the way they were supposed to, and the efficiency that technology brought in the form of faster communications and easier flow of information, decreased. Regardless of that, all the principals thought that technology was providing a more proficient way in all communication and information flow, and with more education, training and support, it would get even more useful in the future.

**7.6.4 Technological failures.** Another matter that provided the principals with discomfort was the maintenance of the tools needed to work with technology. "We are absolutely contingent on technology in so many ways", stated one of the principals

when talking about the equipment. Not only are demands on administrators, teachers and staff to use technology programs, but they also need to be able to work with the equipment and tools that make those systems workable. Administrators need to be knowledgeable of all kinds of apparatuses, such as photo copiers, monitors, printers, phones, and other instruments that are used in schools' activities. The principals' work was more or less based on and related to technology and therefore it mattered a lot if the devices were operating or not. If the tools stopped running, the principals were responsible for making things run again, as quickly as possible. Teachers relied on them to fix the problems and it was up to the principals if the school work continued smoothly or not. In that kind of situation, reliable support was needed as most of these technical problems could not be solved by the principals themselves. Still, the need to move fast was the responsibility of the administrators and this worried them, if they lacked the assistance they needed.

A different issue, related to the equipment, was that in today's technological society, not only does new technology materialize very rapidly, but technology tools also become obsolete quickly. A computer bought two years ago can easily be outdated today. Each day, new technology emerges and society changes in a blink. The schools need to follow these changes and it is the responsibility of the principals to prioritize and decide how, if, and what technology equipment and software to update.

**7.6.5 Budget.** All formerly mentioned barriers have one thing in common; they all depend on money! What the principals mentioned as the most difficult barrier to

work with was the budget. Technology "is like that huge big black hole, has been and probably always will be" stated one of the principals in connection with technology and money. The others made similar comments and brought up concerns such as; "unfortunately the financing is not there to become a high tech school". Likewise, they were worried about the school's capability to keep up with society as it involves the technology cost factor, which can be overwhelming. As mentioned in Section 6.5.4, technology stales quickly and needs to be updated regularly. The cost factor is huge in association with that matter, but what is more, the need for the schools to buy new equipment and software takes a vast toll of the budget. Financing this branch of the school was the principals' task and a lot of their time was spent in figuring out how to prioritize and get more money, by fundraising, negotiating money from the municipality, or by applying for grants to be able to renew technology and buy new devices. What made this duty even harder was that most years, principals were asked to save money and cut the budget as much as possible. As technology was becoming apparent and more important in the principals' daily work and the school's activities, the concern with the budget still remained. "Keeping technology up and running is the owner's task that never ever really finishes", was one of the statements from the principals. They compared the issue of the budget to a constant battle that never ends, and their feeling was that "there has to be more resources, time, effort and money go into it" to make it possible for the schools to take part in the continuingly emerging technology innovation.

## 7.7 Summary

Chapter seven focuses on the main technological themes that appeared in the interviews with the six principals in Newfoundland and Labrador and Iceland. Time, efficiency, training, and support were all themes that occurred along with the role the principals' play in regard to technology and what kind of barriers they found most agitating. All the issues mentioned above overlap each other and some even are paradoxical from the principals' points of view. Time was a subject that affected the principals immensely, and they frequently referred to technology as both efficient and time consuming. Training was an issue that concerned the principals as they found that they needed more constant training to become advanced in the technology side of their job. Support was a topic that they were both content with and concerned about. Some thought they had enough support from the education system, but others needed more and found it frustrating not being able to access it more consistently. The principals thought their technology role was both wide and complicated, even though they found it an inevitable and enjoyable part of their job. They felt the need to keep things going, and to be a leading force in technology use in their schools. They thought that making things possible was their main role, along with guiding their schools' innovation of technology, and its utilization. Some barriers such as, lack of time, training and support, technology failures, and the budget, were linked to the principals' use of technology, but overall, they enjoyed the technology part of their work. They stated that without technology they would be put out of action, and that technology was, and would

continue to be, the foundation and the subsistence of the principal's job in today's society.

# CHAPTER EIGHT

# Conclusion

This study raises questions about principals' use of technology in two jurisdictions, Iceland and Newfoundland and Labrador. It examines the principals' awareness of their technological utilization, whether they assume that technology makes their profession more efficient, if they need more training, how technology affects their everyday job, and what their role is in connection with technology. The implications of the research are based on the perception of the six participating principals and provide the voice of K-12 and compulsory school administrators, to the subject of principals' technology use. In this chapter, I discuss the purpose and the methodology of the study, recapitulate the main findings of the research, link them to the literature and make recommendations. Finally, I make suggestions for further research.

## 8.1 Overview of the Study

Initially, this research set out to examine the effect that technology had on the jobs of principals in Iceland and Newfoundland and Labrador. The research question that directed the study was: *How are principals in Iceland and Newfoundland and Labrador using technology in order to perform their role?* Moreover, the study was meant to gain a deeper understanding of how principals perceive that technology affects their everyday job and if, in their view, it makes them more efficient. Also, the study was

intended to show the difference in the principal's occupation in Iceland and Newfoundland and Labrador, and if technology affected the principal's job differently. To gather information on what principals thought of technology in relation to their day-to-day work, I interviewed six principals in the two jurisdictions. As well, I gathered data (i.e., from legislation and collective agreements) connected to principals and technology in the two jurisdictions. This made it possible to link the findings from the interviews to the legislation and make the implications more consistent and dependable. Furthermore, I took field notes during the interviews to make the interpretation of the findings more precise and reliable. Finally, I gathered data from literature that could elucidate the relationship between administrators and technology and could therefore be connected to principals in K-12 and compulsory schools and their everyday job.

This qualitative study uses the design of phenomenology, focusing on technology use of principals. The interviews with the six principals are the most important resource and by using the rich data gathered from the interviews, the study provides the reader with the voices of principals in today's society. Because it is a small study and the participants only represent a part of the K-12 and compulsory school principals, the conclusion has its limitations. Despite that, the findings are consistent and combined with the literature, the implication can be most valuable to educational authorities and for others linked to education. As the gathered data were transcribed, scrutinized and coded, several focal themes appeared that were used to direct the thesis and by

interpreting the findings and linking them to the literature and legislation, a number of implications presented themselves.

## 8.2. Summary and Implications

The interviews with the six principals reveal findings that stress the importance of technology in the everyday job of today's school principals. It is captivating to see how the principal's occupation has converged with technology and as the job of principals has changed into being more administrative than before, technology has become a major part of their day-to-day work. At the same time as the findings show that technology is involved in mostly all duties of school principals, it is remarkable to find that nowhere in legislation (Schools Act, Compulsory School Act, or collective agreements as mentioned in chapter four) is technology in connection with the profession of school principals addressed. Furthermore, the findings of this study demonstrate that principals spend a considerable amount of their time working with technology, and that their technology related duties are, in fact, affecting their personal time. Moreover, the findings underscore the assumption that principals are presumed to be capable of being instructional technological leaders, without getting efficient training and support from the local school authorities or from their background education.

During the research it was obvious that technology is a matter that cannot be ignored and needs to be focused on in a much wider perspective, in connection with the principal's job, than it has been in the past. Additionally, the findings confirm statements

from the literature in multiple ways, and what the interviewed principals assert about their technology use supports research findings from the last decade at least. Yet, this study reports new findings that suggest that education authorities need to review the school principal's occupation in connection with technology use, and in regard of the role of principals as technology leaders.

**8.2.1 Legislation.** By observing the legislation, laws and collective agreements (see chapter four) I found that the principal's profession in the jurisdictions of Iceland and Newfoundland and Labrador is different in connection with management and decision making. Principals in Iceland have more power in regard to daily decision making and also in running the schools. The hierarchy in the educational system is also slightly different, as in Newfoundland and Labrador there are schools boards that take more part in day-to-day school actions, while in Iceland the school boards do not partake in the schools everyday happenings. Apart from that, the education system in these two jurisdictions has similar goals and the profession of principals has more similarities than differences.

The study was set out to observe if and how technology affected the everyday work of principals in the previously stated jurisdictions. Consequently, the collection of the data was aimed at finding information that had to do with principals and technology. What is surprising when reviewing the gathered data from legislation, is that throughout the records in both jurisdictions, almost nowhere is there any mention of technology in

relation with the principal's job. Even though the Icelandic National Curriculum Guidelines for Compulsory School (Aðalnámskrá grunnskóla, 1999) and the Curriculum Guidelines for K-12 schools in Newfoundland and Labrador (Newfoundland and Labrador, Department of Education, 2010) both state that technology instructions shall be offered for students, the Schools Act (1997) and the Compulsory School Act (2008) do not mention how or in what form technology shall be implemented or utilized for administrative purposes. As pointed out in chapter four, the principals in Iceland have their own collective agreement. In that collective agreement, technology is not referred to at all. Likewise, the collective agreement in Newfoundland and Labrador does not include the issue of technology use in relation with administration. Technology is not even referred to in the principal's job descriptions examined. When looked at, in relation to the findings, it is remarkable that nowhere in these documented data is there any protocol for technology. Notable also is that it was not discussed as an emerging factor in principals' daily work. All participating principals declare that the use of technology is a major part of their day-to-day job, and moreover, that without technology they feel that they will be unable to effectively perform what is required of them in today's society. The principals insist that technology has become a big section of their existence and will continue to be so in the foreseeable future.

In the course of doing the interviews and taking field notes, it became apparent that countless aspects of the principal's job link to technology in one way or another. The operation of the schools depends on functional technology and the principal's job is

in many ways governed by technology. The participating principals spent the majority of their working hours at computers and many other aspects of their profession (such as staff meetings, presentations for parents and countless communication) had linkage to technology or technological tools. It is therefore significant for the education authorities to review the descriptions for the principal's occupation and to recognize the effect that technology has had, and will have in the future, on the day-to-day job of principals in K-12 or compulsory schools.

This study reveals that, if principals are required to become advanced users of technology and to become technological leaders, who implement technology in their schools, it is crucial to review their occupational duties and change their job descriptions to be consistent with the requirements of today's technological society. Moreover, the findings show that the magnitude of new and emerging technology in the principal's work day is becoming immense. In addition, it might be assumed that to facilitate school principals reaching the goal of becoming instructional, professional, and efficient technology users, thought should be given to time management for principals, and the administrative structure in schools should be investigated.

**8.2.2 Difference in technology use.** The difference in the principals' technology use in the two jurisdictions is mostly in the form of various types of software. Still the software has the same purpose even though it comes from different companies or software corporations. The variation in connection with technology tools is that in

Newfoundland and Labrador the schools have adopted SMARTBoards more widely, even though the principals, except one, did not use these devices as part of their administrative actions at the time this research was done. Apart from that, the administrative technology use is quite similar in both jurisdictions, and only diverges in respect of financial management in the schools. The principals in Iceland are more predominant in that area.

Technology tools are equally used by principals in both jurisdictions. Mobile phones, computers and other equipment play a big role in the administrators' everyday work. Being able to manage these tools is crucial for principals and, moreover, they need to know how to utilize software that is needed to operate these devices.

**8.2.3 The principal's role.** There is a strong similarity of the participating principals' perceived thoughts and the literature. As revealed in chapter two, the literature showed, (i.e., Dempster and Berry, 2003, Fullan, 2007, Hall and Hord, 2006, Harris and Lambert, 2003, Hoy and Smith, 2007, and Stewart, 2005), not only that the role of principals is changing with new and emerging technology, but also that principals need to be the leading force in the implementation and the positive transformation of technology in schools. Correspondingly, the principals state that their job has been changing over the last several years, in connection with technology. Because technology changes rapidly, so does the principal's occupation as it relies on technology in so many different ways. The principals comment that the transformation has somehow happened

automatically, both in schools and society, without implementation of any kind, and that the demands on them as administrators have occurred simultaneously as more technology requires additional knowledge of how to utilize it. The findings continue to link to the literature as the principals assert that their role in regard of technology is to lead the way in the school society. Some researchers (e.g., Creighton, 2003, and Snow, 2003) have confirmed that principals need to guide the way in technology use in schools and that they have to combine the role of visible professional leaders to the one of instructional leaders that blaze the trail in technology use. Likewise, the principals compare their role to a "guiding light" that keeps the implementation and integration of technology into schools rolling smoothly for further development and technical efficacy. Based on that it might be assumed that K-12 and compulsory school principals need to be immensely advanced in the knowledge of technology as they are supposed, not only to make efficient use of it in their own management and professional job, but as well to oversee and navigate the use and implementation of technology in their schools. For principals to be capable of that performance, they need to be thoroughly educated and regularly trained, thus to become advanced technology users and to be ready to grow to be instructional technological leaders in their schools.

**8.2.4 Professional development and assistance.** The interviewed principals affirm that to develop into technology leaders in their schools, they need more professional development, constant assistance, and provision of resources. Ubben et al. (2001) shared cohesive findings as they stated that administrators must constantly be in

training to keep up with technology and to be able to become technological instructional leaders. Additionally, based on the literature and the findings, new technology that emerges in today's society affects administrators in various ways. For principals to be capable of combining technology and other parts of the administrative job, further training and continuous assistance are essential. Even though the six principals are content in many ways with the support they get, they expressed a desire for more assistance and for further professional development and aid to be constantly available. Afshari et al. (2009) found that,

> considerable continuing professional development opportunities need to be provided for principals to fulfill their role as technology leaders. Training needs to be ongoing so principals can continue to learn how to use hardware and software applications within the context of their administrative and instructional responsibilities. (p. 243)

Likewise, other researchers such as Dempster and Berry (2003) and Fullan (2007) have found that the need for ongoing professional development for principals in connection with technology is fundamental for the implementation of technology in schools. In the same vein, the six principals state that as their role is to be instructional leaders in technology use in their schools, they need continuous training and continuing support to be capable of reaching that goal. It is therefore clear that local education authorities need to provide principals with added support that is reliable and timely. Moreover, principals need constantly to be offered professional development in technology use and the time to practice in its operation.

**8.2.5 Technology use.** The use of technology occurs in countless different areas in the principal's occupation. Managing schools requires knowledge in many diverse sections such as working with financial online programs, using student based online programs, operating technological equipments and communicating through the media. Communication in the principal's occupation has changed because of technology. The participating principals declare that information communication technology (ICT) takes up an enormous part of their everyday duties. Using e-mail systems for communication has enveloped other ways of communicating and being capable of using that technology with confidence is one of the crucial parts of their jobs. The flow of information, in the principal's job, is massive and being able to manage, both receiving and delivering such colossal part of their job technically, calls for a great amount of self-efficacy and knowledge on the principal's part.

The literature voiced a similar view as Stuart et al. (2009) found that without confidence in technology use, principals might not be able to handle their required technology leadership. Moreover, the literature pointed out, that as the flow of information is changing and the principals' way of utilizing their work is transforming into more management and computerization, "the time required to work at a computer is increasing significantly as computers play larger roles in the day-to-day duties of principals" (Hines et al., 2008, p. 286).

Similarly, the interviewed principals address the issue of spending an unbound part of their time in front of the computer for all kinds of duties, such as communication, operation of the school, or for professional purposes. They state that using technology takes vast amounts of time and becoming confident and efficient takes both practice and training, which again requires time.

**8.2.6 Time.** The findings show that time is a factor which the principals think of as a paradoxical issue in relation to their profession and technology. Even though they agree that more time is needed to get more training and to get more comfortable in technology use, they also thought of technology as a time saving feature. As the role of the principals has changed towards more operational tasks, the time spent at managing the school is easier and more efficient with technology. In contrast, the principals feel that with all the new and emerging technology features, it is easy to spend too much time with numerous technology issues such as communication systems and financial programs. Therefore, it seems that technology is both time consuming and time saving for principals in the K-12 and the compulsory education system. It might even be assumed that principals require more training in time management, to become more capable of being efficient technological users.

**8.2.7 Efficiency and education.** One of the topics mentioned by the principals, in relation with time, efficiency and technology, is workload. It is clear that with the changing technology role of the principals they feel that their workload has increased.

Not only are they required to use technology in connection with management, student records, and communication, but they also need to be the leaders in introducing and putting into practice the use of technology in their schools. Moreover, they feel they need to be regularly available and reachable through technology, and because of this their work life has intruded more into their personal lives.

The literature (i.e., Hines et al., 2008) states that as principals have become more accessible, more time is required to work and train. The principals share the same view as they find that the workload is too much for their regular working hours and therefore all of them use the evenings and weekends to tend to their jobs. Despite that, the principals think that technology makes their job more effective in many ways. Electronic programs that can be used to file students' records and profiles, financial programs, programs for making time tables, and many more, made their work both easier and more effective. What bothers the principals is that, in some areas of this technological environment they need more training, education, and support to be capable of exploiting time more effectively.

Legislation identifies education as one of the most important parts of our society. The research literature supports the view that the role of the principal in K-12 and compulsory schools is crucial in leading the fundamental education for students. This study confirms that new technology is a phenomenon that in recent years has multiplied and grown, and is influencing the principal's job in many ways. Principals interviewed

expressed the need to use technology to be more efficient. They wished to implement technology in their schools in the best way possible. For that to happen, their education needs to be addressed. Even though this study did not look into what kind of graduate education is offered for educational leaders, it is clear from the findings that principals with diplomas or master's degrees in educational leadership are not required to take any technology courses to graduate as leaders in education. This study suggests that this issue needs further examination, as the future, for principals in schools, is bound to be associated with technology in every part of their day-to-day work.

It is also worth considering if the local education system should offer principals further programs, specialized for K-12 and compulsory school principals, to prepare them for their changed technological role, to help them make the most out of their time, and to become effective technology users and leaders.

**8.2.8 Technological requirements.** It became clear during the interviews that the principals are required to use technology in their job. Moreover, it is apparent that the local education authorities assume that principals know how to utilize technology and that they are more than capable of implementing its use. Even though the principals agree on the matter that they need more constant training to be able to perform the technological role that is required from them, and that more assistance is a necessity, they still make every effort and are strongly committed to make everything work effortlessly and profoundly in connection with technology in their schools, without

asking for further help. It may therefore be questioned if the principals are working against themselves by trying to make technology work in their schools without the needed professional development and assistance. The situation might possibly improve, if they were provided with added support and training, without them having to constantly ask for it. Based on legislation (see chapter four), where it is stated that school districts (in Newfoundland and Labrador) and municipalities (in Iceland) are responsible for all general operations of schools, the obvious way in attending to this issue is for local education authorities to provide principals with continuous training and constant aid in connection with new and emerging technology. In addition, this is supported by researchers such as Dempster and Berry (2003), Fullan (2007), and Lile (2008) who declare that more professional development for principals is needed and that education authorities should provide principals with technology training that accommodates the requirements that are claimed from them.

Accordingly, it seems quite clear that local education authorities need to attend to the issue of personal learning in technology use for principals and to be more thoughtful in providing them with the required support in order for them to work with and implement new and emerging technology into schools.

**8.2.9 Resources.** Based on the findings it is apparent that K-12 and compulsory school principals need more resources in connection with technology use. This includes additional financial support to keep up-to-date with technology that advances quickly.

Additional support in the form of human resources is also called for, and as the principals point out, further collaborative learning within the schools would enhance better understanding of technological utilization. One way of providing more resource towards schools is collaboration between all levels of the education system, schools, authorities and universities. In the search for technological efficacy in the school system, such collaboration could bring constant professional development, not only to principals, but also to the schools overall, and might bring more coherence between all levels of education. Furthermore, it could make the job of school principals more efficient and productive in connection with technology.

Findings in this study, consistent with the evidence reported elsewhere (i.e., Dawson & Rakes, 2003, Hines et al., 2008, and Lecklider et al., 2009) reveal that principals are the leading force in schools in connection with technology. Moreover, they need confident, regular training, and support to grow to be the instructional technological leaders they are required to be. The emphasis on providing continuous resources to principals, guiding them and creating learning time for them to become the requested technological leaders, along with the attempt to combine their technological role with their administrative and professional part of their occupation, could bring better efficacy into the principal's job. In addition, the principals would get more confident in their utilization of technology and therefore be more capable of leading their schools towards a successful implementation of technology.

**8.2.10 The future.** All of the interviewed principals are ready for further technological education and enthusiastically desire to develop their technology skills, and become instructional technological leaders. They are positive that the future contains multifarious technological issues they need to deal with and they are ready to take on that role of technological leadership. "We cannot stagnate, because we live in a social community that is developing. Technology is also developing and we have to follow up", comments one of the principals. Another adds, "I want to be technologically advanced because I think that that will make my job easier and that I will be more beneficial as an instructional leader if I can help my teachers more with technology". The third principal summarizes the thought stating, "we need to figure out how we can use technology to make our job more efficient, and that is something I think is on the go today".

This study confirms that local authorities need to make use of the opportunity that is provided with new and emerging technology, and review the principal's role in that connection. As today's school administrators are heavily involved in technology, it is vital that support and guidance be provided. Creighton (2003) explained that technology could both be the greatest opportunity and threat to schools and administrators as the implementation needs to be thorough and in harmony with what is happening in schools and society. The interviewed principals also address that concern as they state that local authorities need to provide proper implementation plans that embrace continuous practice for teachers and administrators, so that new and emerging technology can be

used effectively in schools and in the principal's work. It is therefore crucial that local education authorities provide the resources needed for principals to make implementation, utilization, and integration of technology possible.

## 8.3 Recommendations

Derived from the findings and the literature it can be presumed that principals in today's K-12 and compulsory schools are more than ready to take on the role of a technical leader. Still, they need more professional development, support, financial aid, and human resources to take on that enormous responsibility. The need for collaboration between levels in the education system is crucial for the principal's occupation, and constant training in technology use along with the ability to work collectively with their teachers, staff, and colleagues, is essential. Alternatively, principals need to become advanced in the use of technology to be able to communicate and implement technology in their schools and throughout the school community.

Local education authorities need to provide principals with stable support and assistance. Technology devices need to be regularly updated and kept functional for effortless operation that lessens frustration and reinforces innovation. It is crucial that technology implementation for school administrators and for schools all over is persistent, in harmony with the school community, and in a concurrence with society.

Education for principals needs to be looked at in light of the changing technological role of K-12 and compulsory school principals. The foundation in their

education needs to be modernized and revised technologically. Moreover, universities could bring a whole new perspective into the professional development of principals, and by working collaboratively with local education authorities, the implementation and utilization of technology could become easier and more effective at all education levels.

As the role of school principals has changed towards being more administrative, technology is an indispensable part of the principal's occupation. The need for confidence in utilizing technology is essential for principals and therefore proper training and support have to be provided. As technology seems to be both time saving and time consuming, time management is a factor that might add to the principal's efficacy in connection with technology use. Moreover, the administrative structure in schools needs to be looked at as it could be assumed that more secretarial assistance might be needed for principals to gain the time they need to tend to their instructional professional role.

An important implication based on the findings is that in today's ever changing society, technology has taken its place in the jobs of principals in K-12 and compulsory schools in Iceland and Newfoundland and Labrador. Technology has changed the principal's occupation and in some ways made it more time consuming. Still, technology pushes the principal's work in all directions, makes all communication easier, and makes the principal's job more efficient. It is therefore essential that the principal's job descriptions and collective agreements be reviewed and modified in reference to the

changing technological role of principals. Local education authorities need to evaluate the principal's occupation in cooperation with administrators and their unions, modernize it and make it more functional and efficient in today's world of technology.

## 8.4 Suggestions for Further Research

Technology has put its mark on almost all parts of the daily jobs of principals in K-12 and compulsory schools. Over the last two decades new technology has emerged rapidly in schools and as a result, principals have changed their work patterns in an attempt to employ this new expertise. Although the findings of this research are quite clear, several issues are raised about principals' use of technology, which might need further study. The first suggestion for further research is associated with training and education. Most of the principals state that more training, professional development or education is needed for principals to be able to take on the role of technological leaders. Therefore, it would be wise to carry out a research that investigates in what format local education authorities could offer constant technological training and assistance, for principals in K-12 and compulsory schools, for them to become advanced technological leaders.

The findings show that principals spend a great amount of time in front of computers and with other technological devices. It might evoke a question on how this affects the role of principals as instructional leaders. Founded on that, another suggestion concerns an investigation that explores the question of time management,

which is a constant battle in the principal's everyday work. Moreover, that research could examine what kind of administrative structure is preferable in schools and if more secretarial assistance is needed.

The third idea would be to conduct a survey that seeks to figure out how universities can modify their programmer in educational leadership studies, for graduates to be appropriately prepared to take on the important role of technology leaders in today's schools.

The fourth suggestion of future reflection is to consider how the education system will contend with the new and emerging technology in schools. How it is possible to provide schools with added new technological equipment and how it can be effectively updated. In that connection, as one of the most important barriers that the principals need to tackle is the budget, it might be worth consideration how much budget is needed for the schools, to enable them to engage in the changing and developing culture of technology. Moreover, that study could link to an investigation that observes if the school sizes, the magnitude of students' population, or if the schools' stage in the system, affects the budget in one way or another, and how the education system can react to that.

Finally, the most surprising finding of the research is that almost nowhere in the gathered legislation is technology, in connection with the principal's occupation, mentioned, even though it is obvious, from both the findings and the literature, that

technology is involved in almost every action of school principals. Therefore, it is most valuable to investigate how and in what way new collective agreements or new job descriptions can be altered in context to the new and changed technological role of principals in today's K-12 and compulsory schools.

# Epilogue

The six principals that participated in this study were selected as known technology users. They all have an enthusiastic desire to use technology to its fullest in their everyday jobs. As the findings show, they talk about the need for more continuous assistance, training, and time to be able to utilize new and emerging technology in their work. All of them are confident that they can develop their technological skills in the future. They are all very capable instructional leaders, who take pride in doing their jobs in the utmost professional way and therefore, long for more knowledge in the area of technology use. At the same time, they feel they can assess their further needs and address the barriers that need to be tackled for them to reach their goals. Overall, the principals are amazed by technology and feel that they would not be able to perform their day-to-day jobs without it.

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# APPENDICES

## Appendix A – Letter of Consent

## Letter of Consent

*Research on how principals in Iceland and Newfoundland and Labrador are using technology in order to perform their role*

March, 2010

Dear Principal/Vice-Principal

My name is Eyrun Skuladottir and I am an Icelandic Graduate Student at Memorial University, St. John's, Newfoundland, Canada. I am conducting a thesis research to complete my master's degree in Educational Leadership Studies. This letter introduces the research and is your invitation to participate in the study as you have been recommended as a principal, seen as a user of technology.

The study is designed to examine the topic of principals' use of technology, both in Iceland and Newfoundland and Labrador. The goal of the study is to get more insight into the principal's role in the use of technology in their everyday work, how technology affects the job, and if it makes it more or less efficient. Additionally, the study will provide a comparison between principals' use of technology in Iceland and Newfoundland and Labrador. The study consists of document analysis, field observations and interviews. The interviews will be the main source of the study as they seek to determine the use principals employ regarding technology during their everyday job.

The interview needs to take place at your school/office at a time that suits you during the dates of , 2010. The interview will take about an hour and will consist of me asking questions and taking notes. You will be asked for permission to record/tape the interview, and if I decide to take photographs of the environment, I will also seek your consent.

All information from the interview will be kept strictly confidential and will only be read/listened to by the researcher and her supervisor. After the dissertation has been approved, the notes will be kept in a safe place and in five years they will be destroyed. To protect your anonymity, you will be given a pseudonym that will be used in the thesis instead of your real name, and if direct quotes from the interview will be used in the thesis, the researcher will contact you in order for you to verify the accuracy.

Your participation in this research is entirely voluntary. You may refuse to answer questions or end the interview at any time. You can also decide not to allow observation during the interview or for photographs to be taken. When the interview is over, further information might be sought after, if needed, by e-mails or phone calls, if you give your consent for taking part in this study.

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research (such as the way you have been treated or your rights as a participant), you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at (709) 737-8368.

If you have any questions about the research, please contact:
Eyrun Skuladottir at (709) 749-8987, or by e-mail eyrunskula64@hotmail.com , or her supervisor, Dr. Jean Brown at (709) 737-4847, or by e-mail jbrown@mun.ca

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**Participant's Agreement:**

I am aware that my participation in this interview is voluntary. I understand the intent and purpose of this research. If, for any reason, at any time, I wish to stop the interview, I may do so without having to give an explanation.

The researcher has attentively reviewed all objects of my partaking in the research. I know that by my consent I agree on taking part in the interview, that the researcher will observe and take notes during the interview, tape/record the interview, and may also take photos. Additionally, I have been offered a copy of this consent form that I may keep for my own reference.

If I have any questions about this study, I am free to contact the student researcher Eyrun Skuladottir at eyrunskula64@homtail.com or her supervisor Dr. Jean Brown at jbrown@mun.ca .
I have read the above form and consent to participate in the interview

Date: _____

Participant Signature: _____

## Appendix B - Translation of Letter of Consent

# Samþykki á þátttöku í rannsókn vegna meistaraprófs

*Rannsókn á því hvernig skólastjórar á Islandi og Nýfundnalandi og Labrador nýta sér tækni í daglegu starfi*

29. apríl, 2010

Kæri skólastjóri/aðstoðarskólastjóri

Ég heiti Eyrún Skúladóttir og er nemandi í meistaranámi við Memorial University, St. John's, Newfoundland, Canada. Til að ljúka meistarverkefni mínu í stjórnun menntastofnanna þarf ég að taka viðtöl við nokkra íslenska skólastjóra og með þessu bréfi bið ég þig að vera þáttakandi í rannsókninni sem skólastjóri sem notar tækni í daglegu starfi. Einnig skýri ég hvers konar rannsókn er á ferðinni.

Rannsókninni er ætlað að athuga hvernig skólastjórnendur á Íslandi og Nýfundnalandi og Labrador, nýta sér tækni í daglegu starfi. Markmið rannsóknarinnar er að fá meiri innsýn í daglega tækninotkun skólastjórnenda, hvert hlutverk þeirra er varðandi tækni, hvort tækni hefur jákvæð eða neikvæð áhrif á daglegt starf og hvort daglegt starf verður skilvirkara með meiri eða minni tækninotkun. Þar á ofan bætist síðan við samanburður á notkun skólastjóra í umdæmunum tveimur.

Í rannsóknina verða notaðar heimildir, viðtöl og athuganir á staðháttum. Viðtölin eru þó grunnur rannsóknarinnar þar sem þau sýna raunverulega tækninotkun skólastjórnenda í daglegu starfi. Viðtölin verða tekin á bilinu 17.-20. maí 2010 í þínum skóla og eru þannig uppbyggð að þau taka um klukkustund og verði í formi spurning og svara. Einnig mun ég biðja um leyfi til að; skrá minnispunkta vegna athugana á staðháttum; til að hljóðrita viðtalið; og til að taka myndir til auðveldunar á úrvinnslu. Auk þess bið ég um leyfi til að hafa samband við þig aftur, vanti mig nánari upplýsingar seinna á ferlinu, ef þú samþykkir að taka þátt í rannsókninni.

Allar upplýsingar sem safnað verður á meðan á viðtalinu stendur eru trúnaðarupplýsingar og verða eingöngu meðhöndlaðar af mér og Dr. Jean Brown, sem er ráðgjafi minn við gerð meistaraverkefnisins. Gögnin verða geymd á öruggum stað í fimm ár, en að þeim loknum mun öllum gögnum verða eytt. Til að koma í veg fyrir að

þátttakendur þekkist mun ég nota dulnefni í ritgerðinni og ef ég nota beinar tilvitnanir úr viðtölunum, mun ég hafa samband til að þú getir staðfest tilvitnunina.

Þátttaka í þessari rannsókn er af fúsum og frjálsum vilja. Þú getur neitað að svara spurningum þegar þú vilt og ákveðið að enda viðtalið þegar þér hentar. Þú getur einnig ákveðið að leyfa ekki athuganir á staðháttum og/eða myndatöku.
Áætlun vegna rannóknarinnar hefur verið samþykkt af The Interdisciplinary Committee on Ethics in Human Research at Memorial University og af Dr. Jean Brown. Ef þú hefur einhverjar siðferðilegar spurningar er þér velkomið að hafa samband við The Chairperson of the ICEHR með tölvupósti icehr@mun.ca eða í síma +(709) 737-8368.

Allar nánari upplýsingar gefur:
Eyrún Skúladóttir í síma +(709) 748-6008, í tölvupósti eyrunskula64@hotmail.com, eða Dr. Jean Brown, í síma +(709) 737-4847, í tölvupósti jbrown@mun.ca

Með vinsemd, virðingu og fyrirfram þökk,
Eyrún Skúladóttir,
Graduate Student,
Memorial University,
St. John's, NL, Canada

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**Samþykki þátttakanda:**

Ég geri mér grein fyrir að þátttaka mín í þessari rannsókn er af fúsum og frjálsum vilja. Ég skil innihald og markmið rannsóknarinnar og veit að ef ég vil stöðva viðtalið get ég gert það hvenær sem er án skýringa.

Rannsakandinn hefur farið gaumgæfilega í gegnum allt sem viðkemur þátttöku minni í rannsókninni og meðal annars gert mér grein fyrir að ég gef leyfi til skráninga á staðháttum, hljóðritun viðtals og myndatöku með undirskrift minni. Mér hefur einnig verið boðið afrit af samþykki þessu til eignar.

Ef einhverjar spurningar vakna get ég haft samband við rannsakandann, Eyrúnu Skúladóttur - eyrunskula64@homtail.com , eða ráðgjafa hennar, Dr. Jean Brown - jbrown@mun.ca .
Ég hef kynnt mér innihald þessa bréfs og með undirskrift minni samþykki ég að taka þátt í rannsókn þessari.

Dagsetning: _____

Undirskrift þáttakanda: _____

## Appendix C – Letter of Approval, Eastern School Board

# Letter of Approval

*Research on how principals in Iceland and Newfoundland and Labrador are using technology in order to perform their role*

March, 2010

To: Dr. Max Trask,

Assistant Director, Rural Education and Corporal Services, Eastern School Board

My name is Eyrun Skuladottir and I am an Icelandic Graduate Student at Memorial University, St. John's, Newfoundland, Canada. I am conducting a thesis research to complete my master's degree in Educational Leadership Studies. This letter introduces the research and is also a request of approval to conduct interviews with one principals and one vice-principal in your District.

The study is designed to examine the topic of principals' use of technology, both in Iceland and Newfoundland and Labrador. The goal of the study is to get more insight into the principal's role in the use of technology in their everyday work, how technology affects the job, and if it makes it more or less efficient. Additionally, the study will provide a comparison between principals' use of technology in Iceland and Newfoundland and Labrador. The study consists of document analysis, field observations and interviews. The interviews will be the main source of the study as they seek to determine the use principals employ regarding technology during their everyday job (see attached copy of proposal for ethics review).

Participants will be asked for permission to record/tape the interview. All information from the interviews will be kept strictly confidential and five years after the dissertation has been approved, the notes will be destroyed.

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research, you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at (709) 737-8368.

I herby seek your approval to allow this study to take place in your District, provided that participants give their consent to take part in the study.

With regards,
Eyrun Skuladottir
Graduate Student,
Memorial University,
St. John's, NL, Canada,
(709) 749-8987,
eyrunskula64@hotmail.com

## Appendix D – Letter of Approval, Labrador School Board

# Letter of Approval

*Research on how principals in Iceland and Newfoundland and Labrador are using technology in order to perform their role*

March, 2010

To: Dr. Bruce Vey,
Director of Labrador School Board

My name is Eyrun Skuladottir and I am an Icelandic Graduate Student at Memorial University, St. John's, Newfoundland, Canada. I am conducting a thesis research to complete my master's degree in Educational Leadership Studies. This letter introduces the research and is also a request of approval to conduct an interview with Principal Rose Neville.

The study is designed to examine the topic of principals' use of technology, both in Iceland and Newfoundland and Labrador. The goal of the study is to get more insight into the principal's role in the use of technology in their everyday work, how technology affects the job, and if it makes it more or less efficient. Additionally, the study will provide a comparison between principals' use of technology in Iceland and Newfoundland and Labrador. The study consists of document analysis, field observations and interviews. The interviews will be the main source of the study as they seek to determine the use principals employ regarding technology during their everyday job (see attached copy of proposal for ethics review).

Ms. Neville will be asked for permission to record/tape the interview. All information from the interviews will be kept strictly confidential and five years after the dissertation has been approved, the notes will be destroyed.

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in compliance with Memorial University's

ethics policy. If you have ethical concerns about the research, you may contact the Chairperson of the ICEHR at icehr@mun.ca or by telephone at (709) 737-8368.

I herby seek your approval to allow this research to take place in your District. Ms. Neville has already given her consent to take part in the study.

With regards,
Eyrun Skuladottir
Graduate Student,
Memorial University,
St. John's, NL, Canada,
(709) 749-8987,
eyrunskula64@hotmail.com

## Appendix E - Translation of Letter of Approval

# Samþykki á viðtölum vegna meistaraprófsrannsóknar

*Rannsókn á því hvernig skólastjórar á Islandi og Nýfundnalandi og Labrador nýta sér tækni í daglegu starfi*

3. maí, 2010

Hr. Gunnar Gíslason,
Deildarstjóri Skóladeildar Akureyrarbæjar

Góðan dag, ég heiti Eyrún Skúladóttir og er nemandi í meistaranámi við Memorial University, St. John's, Newfoundland, Canada. Til að ljúka meistarverkefni mínu í stjórnunarfæðum menntastofnanna þarf ég að taka viðtöl við þrjá íslenska skólastjóra/aðstoðarskólastjóra og með þessu bréfi fer ég fram á leyfi til að taka þessi viðtöl og einnig skýri ég hvers konar rannsókn er á ferðinni.

Rannsóknarspurning verkefnisns er: *Hvernig nýta skjólastjórar á Íslandi og Nýfundnalandi og Labrador tækni í daglegu starfi?* Markmið rannsóknarinnar er að fá meiri innsýn í daglega tækninotkun skólastjóra, hvernig áhrif tækni hefur á daglegt starf þeirra og hvort tækninotkun gerir þeim starfið auðveldara eða erfiðara. Þar á ofan bætist síðan við samanburður á umdæmunum tveimur. Rannsóknin verður gerð með því að greina heimildir, taka viðtöl og athuganir. Aðalgrunnur rannóknarinnar verða viðtölin, sem áður hafa verið nefnd, þar sem þau kanna raunverulega tækninotkun skólatjóra í daglegu starfi. Viðtölin verða tekin á bilinu 17.-20. maí 2010. (Ef þörf er á nánari upplýsingum um rannsóknina, get ég sent afrit af áætlun vegna meistararitgerðarinnar, á ensku).

Þátttakendur verða beðnir að samþykkja þátttöku í viðtölunum, upptökur á þeim og athuganir á staðháttum. Öll viðtölin verða í trúnaði, gögn geymd á öruggan hátt, og fimm árum eftir að meistaraverkefnið hefur verið samþykkt, verður gögnunum eytt.

Áætlun fyrir rannsóknarritgerðina hefur verið samþykkt af Interdisciplinary Committee on Ethics in Human Research at Memorial University og af Dr. Jean Brown. Ef einhverjar spurningar um siðgæði vakna er bent á að hægt er að hafa samband við Chairperson of the ICEHR með töpvupósti icehr@mun.ca eða í síma +(709) 737-8368.

Allar nánari upplýsingar gefur:
Eyrún Skúladóttir í síma +(709) 748-6008, í tölvupósti eyrunskula64@hotmail.com, eða Dr. Jean Brown, í síma +(709) 737-4847, í tölvupósti jbrown@mun.ca

Með von um leyfi til að biðja þrjá skólastjóra á Akureyri að taka þátt í rannsókn þessari.

Kær kveðja,
Eyrún Skúladóttir
Graduate Student,
Memorial University,
St. John's, NL, Canada,
+ (709) 749-8987,
eyrunskula64@hotmail.com

# Appendix F – Interview Protocol

## Interview Protocol

*Research on how principals in Iceland and Newfoundland and Labrador are using technology in order to perform their role*

---

**Time of Interview:** _____

**Date:** _____

**Place:** _____

**Interviewee:** _____

**Code**: _____

Introduction

- ✓ I am a master student at MUN, St. John's, NL, Canada, doing a study for my thesis on how principals in Iceland and Newfoundland and Labrador use technology to perform their role.

- ✓ The goal of the study is to get more insight into the principal's role in the use of technology in their everyday work, how technology affects the job, and if it makes it more or less efficient. Additionally, the study will provide a comparison between principals' use of technology in Iceland and NL.

- ✓ This study has been approved by the Interdisciplinary Committee on Ethics in Human Research at Memorial University. It has also been approved by the Eastern School District in NL and the Supervisor of the Municipal Department of Education in Akureyri, Iceland. Your written consent is needed to continue (see Consent Form). The interview will take about an hour and with your permission it will be taped. By taping the interview it will make all process easier and more precise. Please read and sign the Consent Form and note that I ask for permission to contact you later for further information if necessary, that you allow me to take notes of observation during the interview and take photos, and that your approval will be sought after if direct quotes from the interview will be used in the thesis.

Preamble: My focus is on how administrators use technology for their everyday work, in other words, **administrative use of technology**, such as for scheduling, etc.

Questions:

1. Tell me about yourself and your experience as a principal/vice-principal.
2. Has your use of technology changed over the past years or since you've become an administrator? How? Why/Why not?
3. Describe what your role is in regard to technology.
4. Have you had any technology training? If yes, tell me what you have done and how it has prepared you to use technology in your profession.
5. How much professional development opportunities have you been offered?
6. What kind of professional development would you like?
7. Tell me what kinds of technology you use? Why?
8. Explain to me if you need more technical support or if you are content with what you get.
9. Do you think that technology use has made you more efficient? How? Why/ Why not?
10. Do you see any barrier/s in your use of technology? What? Why?
11. What is the most time consuming part of your technology use? Explain. Does technology help you conserve more time in your everyday job? Why/ Why not? How?
12. Do you see yourself as a technology leader? If so, how?

13. What are your future goals regarding technology? Why?

14. How do you see your future use of technology (as a principal/vice-principal?

Additional Comments:

# Appendix G – Interview and Observation Guide Sheet

## Interview & Observation Guide Sheet

*Research on how principals in Iceland and Newfoundland and Labrador are using technology in order to perform their role*

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This guide sheet or 'to do list' will be used by the researcher for taking field notes on the environment, on the interview, and on any other information needed to make the process of the thesis more clear and reliable. The researcher might alter this document for the purpose of making the field notes more understandable and dependable.

**School:**

- ☐ What do I see, when I walk into the school, that relates to technology?

| |
|---|
| |

**Office:**

- ☐ Furniture
- ☐ Decorations
- ☐ Other:

| |
|---|
| |

**Technology Devices:**

- ☐ Computer/s
- ☐ Phone/s
- ☐ Printer/s
- ☐ Fax
- ☐ Other:

**Introduction - opening statement – discussion – comments/questions from participants:**

**Comments from participants on Questions:**

**Additional Comments from participants:**

**Researcher Comments & Reflective Notes:**

## Appendix H – Letter of Verification

# Letter of Verification

*Research on how principals in Iceland and Newfoundland and Labrador are using technology in order to perform their role*

December 10, 2010

Dear principal,

Thank you so much for participating in my study, for my Master's Degree, on principals everyday use of technology in Iceland and Newfoundland and Labrador. The interview you took part in back in [additional month] 2010, has been very useful for my research. As stated in the Letter of Consent that you signed, I hereby contact you in order for you to verify the accuracy of direct quotes from our interview, which I tend to use in my dissertation.

Please read through the following list, and if you have any comments or questions, please get back to me by December 16, 2010 via e-mail: eyrunskula64@hotmail.com

If I don't hear back from you by that time, I will consider my use of the direct quotes from our interview as verified and approved of.

With regards,
Eyrun Skuladottir
Graduate Student,
Memorial University,
St. John's, NL, Canada,
(709) 749-8987,
eyrunskula64@hotmail.com

## Appendix I - Translation of Letter of Verification

# Staðfesting á notkun beinna tilvitnana

*Rannsókn á því hvernig skólastjórar á Islandi og Nýfundnalandi og Labrador nýta sér tækni í daglegu starfi*

10. desember, 2010

Skólastjóri.

Þakka þér innilega fyrir þátttöku þína í rannsókn vegna meistararitgerðar minnar, sem fjallar um notkun skólastjóra, á Íslandi og Nýfundnalandi og Labrador, á tækni í daglegu starfi. Í bréfi sem var undirritað við töku viðtals í [tiltekinn mánuður] síðastliðnum, tók ég fram að haft yrði samband við þig ef beinar tilvitnanir úr viðtalinu yrðu notaðar í ritgerðinni. Bréf þetta er beiðni um staðfestingu á þeim tilvitnunum.

Listinn hér að neðan, inniheldur beinar tilvitnanir úr viðtali okkar, þýddar yfir á ensku. Vinsamlega líttu yfir þær og ef þú hefur einhverjar athugasamdir, bið ég þig að hafa samband við mig fyrir 16. Desember, 2010, í tölvupósti á netfangið: eyrunskula64@hotmail.com

Ef ég heyri ekki frá þér fyrir þann tíma, lít ég svo á að þú hafir samþykkt notkun tilvitnananna í því formi sem þær eru á listanum.

Með bestu þökkum og kærri kveðju,
Eyrun Skuladottir
Graduate Student,
Memorial University,
St. John's, NL, Canada,
(709) 749-8987,
eyrunskula64@hotmail.com