Technically Speaking:

Information & Communication Technologies in the History Classroom

By:

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Abstract

This research project explored the use of Information and Communication Technologies (ICTs) as a pedagogical tool within the Greater Toronto Area’s (GTA) high History school classrooms. Using relevant scholarly sources and data from semi-structured interviews with high school History teachers who are actively integrating ICTs, the findings of this study included some reportedly effective pedagogical tools to foster the learning of students, what factors are assisting in the progression of technologically assisted pedagogy the History teaching discipline, and what factors within a high school environment are reportedly preventing teachers from utilizing ICTs effectively for the purpose of student success. As well, this study also recommends teachers explore gaming in history, incorporate virtual tours of historical landsights, show videos, and use PowerPoint presentations as effective pedagogical methods and student-centered tools in the discipline of History. Finally, this study recommends that future research study the effectiveness of board-mandated ICT policies, as study findings suggest a significant level of disconnect and dissatisfaction between teachers and policy makers.
Chapter 1: Introduction

1.0: Research Context

The desire for technology integration in the Greater Toronto Area’s classrooms continues to grow in an effort to foster the development of students. In 2014, the Ontario Government Announced that there would be a 150 million dollar investment that would place Apple iPads into the classroom for student use (Rieti, 2014). As well, the Ontario Ministry of Education’s (2013) Canadian and World Studies Curriculum document identifies information and communication technologies (ICTs) such as digital cameras, websites, software and audiovisual equipment as tools that can significantly extend and enrich teachers’ instructional strategies and support student learning. Numerous school boards have identified this in their policy documents as well. For example, the Toronto District School Board (2012) have identified that student learning is changing and it’s important that we engage them using technology to enhance and enrich their learning.

The Halton District School Board on December 6th 2012 also released a document that revealed a multi-year plan to introduce technological tools in ‘needier’ schools across the board by up to 25% (Halton District School Board, 2016.) Beginning in the 2015-16 school year, these schools received a combined $910 000 per year and in total $2 010 000 overall towards this plan that sets goals such as providing WiFi in 95% of the school’s portable classrooms, 99% of school building classrooms, and also training teacher to understand and implement effective technology-based instruction multiple areas. This includes direct instruction with literacy, differentiated strategies for student engagement, learning goals, success criteria, feedback, use of high level questioning and critical thinking skills, and inquiry based learning (Halton District School Board,
2016). With curriculums in Southern Ontario acknowledging and recognizing how technology can positively affect a student’s ability to learn and the enhancement of in-class instruction on a teacher’s behalf, it appears as if provincial and municipal officials are working towards Ontario classrooms being more technologically integrated as a means of fostering the learning and nurturing the minds of Southern Ontario Students.

1.1 Research Problem

Although we know that students are using technologies and computers in the classroom it is important to know what these technologies are being specifically used for and how it affects a student’s learning (Hayes, Capo, & Orellana, 2011). More specifically, in the realm of History classrooms at the secondary level there appears to be limited if any mention of technology integration. In fact in the Government of Ontario’s Canadian and World Studies Curriculum document fails to acknowledge any specific Canadian/World Studies usage other than the use of ICTs in a geographical context (Government of Ontario, 2013). This curriculum document identifies how ICTs can be used in the inquiry process (a common form of instruction within history classrooms) however there is no specific reference to the History curriculum itself. In fact the rest of examples the Government of Ontario provides are geographically centered. For example the document identifies how students can develop spatial skills with the use of GIS and graphing programs, and how these tools can be utilized to align with the geography course’s expectations. With the government itself failing to specifically identify how technology can or should be used in a classroom, it is up to the instructor’s discretion how or even if technology would be used as a tool of fostering a student’s learning. As well, the curriculum identifies inquiry-based learning as gathering, organizing, and analyzing information, data, and evidence, and as they write, edit, and communicate their findings (Government of Ontario, 2013). However
following this approach would merely be a different visual presentation of information. With investments and plans such as the HDSB’s 2 million dollar plan and the Government of Ontario’s 150 million dollar investment that are being put forward, curriculum documents of Ontario do not acknowledge specific benefits to history classrooms or how to specifically utilize ICTs to foster learning and educational development. Therefore, although technology appears to be a beneficial tool in the eyes of Ontario’s education system, it is yet to be seen if there is. Instead, technology in history classrooms appears to be a neglected aspect of the Ontario Canadian and World Studies curriculum and is only appears to used as modernized way of projecting information to students.

1.2 Purpose Of The Study

The purpose of this study is to investigate the experiences of GTA History teachers who integrate ICTs. Past research has revealed success in varying practices to facilitate learning while integrating the use of technological advances in social studies instruction (Maccini, Gagnon & Hughes, 2002). For example certain tools such as computerized study guides and map tutorials has been shown to increase academic performance of students both with and without various learning disabilities in secondary school History classrooms (Boon, Fore & Rasheed, 2007). Thus, technological instruction and integration within secondary classrooms appears to have success. Not only is it important to see how exactly technology can further invest students within the subject of History but also how it can affect their overall academic development. This is also echoed by the Canadian/World Studies Curriculum documents of the Government of Ontario (2013) as they identify information and communication technologies as tools that can significantly extend and enrich teachers’ instructional strategies while supporting the learning of students. These documents also believe that technology can easily be integrated into social
science classrooms (Government of Ontario, 2013). In the case of History, they provide the example of using computer technology and/or websites to gain access to museums, galleries, and archives in Canada and around the world for the access of historical secondary and primary resources.

A further purpose of this study is to report and share the practices being used by History teachers within the greater Toronto area that are reportedly effective in promoting and encouraging academic achievement amongst their students. The subject of History uses literacy, argumentative, and analytical skills that can be transferred over to numerous different disciplines. By studying how information and communication integration affects the academic performance of students in History classrooms further initiatives and curriculum suggestions can be put in place that can not only be instilled within History classrooms but others throughout Ontario as well. With optimism, this research will reveal a way to positively integrate technology in History classrooms that other educators can instill within their own classrooms to further their students’ engagement and promote academic achievement.

1.3 Research Questions

The primary question guiding this study is: How are Greater Toronto Area secondary teachers reportedly integrating ICTs? Sub questions that will further explore this inquisition include:

- What are these teachers’ beliefs about ICTs within a classroom?
- What indicators of learning do these teachers observe as a result of their ICT integration?
- What resources support these teachers with their technological integration (if any)?
- How did these teachers begin to use technology within their classrooms?
• What barriers do teachers face when in implementing ICT?

This research project also aims to broaden the perceived capabilities of information and communication technologies to other educators in order for students to receive a more differentiated and successful learning experience within the History classroom.

1.4 Background Of The Researcher

As a student who graduated from High School in 2011, I have seen the advancement of technology used in schools as I progressed from the first grade to the end of my undergraduate degree. From elementary school through university, I have been a fan of historical content and received engaging and exciting instruction within my History classes. Although I have used overhead projectors, chalk boards, power point presentations, DVD players and various other modes of information and communication technology in my studies, I believe there is further room for ICT’s to aid students in their development. Personally I believe that it is in the instructor’s hands to take the material and foster students to think critically and develop academically, but I also believe that technology is a valuable tool that can greatly engage students in the current age. As a teacher candidate, a former high school student, and an avid technology user myself, I am very interested in seeing how students actually use electronic devices and software to benefit their thinking and learning skills.

1.5 Overview/Preview

This research project is divided into five separate chapters. Within Chapter 2, I review literature pertaining to the utilization of ICTs by both students and teachers within History classroom settings. In Chapter 3 of this research project, I describe the research methodology that I have used to organize and collect data from this study’s participants. As well, I provide short
limited bios on this study’s participants to put into context of this study. In Chapter 4 I then report on this study’s findings and their relevancy within the study of ICTs in History classrooms. Finally in Chapter 5, I review the implications of this study’s findings make future recommendations for both researchers and high school History teachers.
Chapter 2: Literature Review

2.0 Introduction

In this chapter, I review literature pertaining to teachers’ integration of technology into classrooms, teachers’ reported practices of utilizing information and communication technologies as pedagogy and the response from their classroom. I will also review varying definitions of academic success and learning development within a History classroom. Finally, I will review varying tested History teaching practices that have been implemented to foster historical education at the high school level.

2.1 Teachers’ Integration Of Technology Into Classrooms

Information and Communication Technologies range from a variety of forms. According to Sahlin (2016) recently in education numerous schools have begun to implement information and communication based learning devices such as laptops, tablets, mobile phones, and smart boards within the classroom in order to maximize learning outcomes. This displays that there are numerous outlets of technology that are making their way into classrooms under the merit of these technologies’ fostering numerous forms of cognitive and educational development amongst youth.

However just as there a number of different ways to integrate ICTs into the classroom, there are also numerous approaches to studying their effectiveness. Firstly subsection 2.1.1. explores literature that dissects the stigmas and preconceived notions that are associated with integrating ICTs into their classroom. Upon revealing who holds these stigmas and what exactly they are, this subsection then elaborates on how stigmas can affect a teacher’s ability to properly integrate various technologies. Secondly within section 2.1.2., this study looks at literature that discusses how different types of beliefs held by teachers can carry over into their classroom
environment and impact how ICTs can be integrated. Lastly, within subsection 2.1.3., this study reveals significant scholarly evidence that highlights how integrating ICTs into a high school History classroom can be a valuable pedagogical practice.

2.1.1. Stigmas of ICT integration

As technology has progressed within the teaching discipline, preconceived notions and stigmas have presented themselves and affected the ability of teachers to integrate ICTs effectively. Haydn (2001) identifies that there is a tendency to view the process of education principally as a matter of transmitting and passing along information, and that there is an underestimation of the complexity of the processes involved in teaching and learning. In such a case, Haydn’s study of History classrooms in the United Kingdom found that there is a stigma amongst technological integration of computer technologies within classrooms, which depicts ICTs as an extended process of simply passing along information at the hands of an instructor. Yet as Tondeur et al (2008) found, ICT use in schools is generally subject to the variables of the class level, accessibility, and the instructor’s proficiency. In fact, within Tondeur’s findings, only 12 of 53 principals within their surveyed schools had a school-wide ICT policy in effect that included clear goals and proper usage of ICTs within the classroom. As this survey alludes to, if no ICT policy is placed within a school the use of information and communication technologies is extremely subjective to the instructor in terms of how it should be used and the merit of it’s ability to foster educational development amongst students. As a result of this detached relationship between information technology and in school policy, and effectiveness of ICTs in a classroom there is a stigma about the integration of ICTs in a school setting. This stigma appears to be that ICTs are not a pedagogical tool that brings additional value to the teaching discipline.
Additionally, this stigma echoes the sentiment that ICTs are simply an extended process of information relay that does not need to be explicitly accounted for in educational policies.

2.1.2. Beliefs of teachers towards ICT integration

As there are numerous foundations, principles and styles of teaching, there of course as a result are numerous different types of teachers who hold various beliefs that carry over into their classroom environment. This can impact many aspects of their classroom, including the integration of technology, as it is widely accepted that culture shapes individuals’ perceptions of innovations that bear directly on their lives (Sang, Valke, van Braak, Tondeur & Zhu 2011). For example as Sang et al. (2011) found, if a teacher has constructivist beliefs regarding teaching and learning, they are more likely to be willing to adopt student-centered approaches and other innovative instructional approaches involving ICTs to maximize student benefits. Sang et al. (2011) provide evidence for this displayed by the way teachers integrate computers and other technologies within their classroom. It was found that instruction seems to be strongly mediated by the studied teachers’ belief systems and motivations.

As Prestridge (2012) has discovered, a teacher’s beliefs about learning and teaching are critical factors in how ICTs is incorporated into the classroom. Loveless (2006) conducted research on teachers in Australia and found that wider cultural and social spheres affect teachers’ perceptions of ICTs. This then influences their situation within the professional settings in which they practice. After this, Loveless (2006) organized the perceptions the studied teachers into three groupings. The first was ICTs in society: which displayed how teachers perceived the importance of ICTs, how teachers perceived society’s reliance on ICTs, and their impact on children’s future working lives. The next grouping was ICT capability. Teachers discussed
capabilities and skills of ICTs that students may require in order to be used use as a cross curricular tool. Lastly, Loveless (2006), grouped perceptions into the category of ICTs in schools. This section discussed how teachers talked about ‘new’ technology in schools and how the lack of resources has influenced their integration. This displays how important a teacher’s perception of this pedagogical tool can be.

This also ties in to an important idea that Govender (2009) brings light to, which explains how teachers have the challenging task of adapting to educational systems and current times. Govender also points out that educational systems are under increasing pressure to integrate information and communication technologies so students have the knowledge and skills required in the 21st century. Therefore by adopting ICT in a classroom setting Govender found that some teachers can feel pressures from an outside source (i.e., Ministry, principal, etc.) to adapt and change their methodology. In order to do this properly, Govender (2009) points out that a teacher must have a high level of self-efficacy, specifically pertaining to adopting ICTs as a tool for fostering education and instruction. This displays that there are numerous factors that can affect why, and how well a teacher implements ICTs within their classroom. This is something that this study will evaluate. As a result, teachers can respond to these challenges in highly personal ways.

2.1.3 ICT integration within History classrooms

According to Hillis and Munro (2005) over the last 25 years there have been tremendous advances in within ICT development that can be directed towards History teaching. There has also been a noticeable increase in the usage of ICT for History teaching and learning (Hillis & Munro, 2005). This is something Hillis and Munro (2005) emphasize, as they make note of how
many History courses now require students to conduct web-guided research. As well when preparing for university, course lecture notes and supportive resource materials are often mounted on virtual learning environments (VLE) to help students learn at their convenience (Hillis & Munro, 2005). By being integrated into History classrooms, Hillis and Munro (2005) prove how ICTs are an essential means of learning the subject in today’s day and age.

As the study of the historical discipline advances, the discovery of relevant historical sources versus irrelevant incorrect sources will continue to be difficult for students, as millions of pieces of Historical information are available on the Internet. As Firmin (2013) has found, this has led to a second driving force behind the changing of pedagogical programs relating to ICT integration within how History is taught. These changes emphasize the proper selection and distinction of references between primary and secondary sources. As well this distinction is brought forward so students can understand these sources and their use within the context of developing knowledge, understanding, and research skills (Firmin, 2013). These skills can be broadly categorized as investigative, ranging from planning and carrying out the task to reviewing and reporting how these separate sources can be used (Firmin, 2013). As a result, the integration of technology within a History classroom displays that there is an essential need of ICTs to properly investigate topics within academic parameters in order to decipher which sources are relevant in an academic setting (Caroll, 2012).

2.2. Reported Practices Of Utilizing ICTs As Pedagogical Tools Within History

Preferred practices of utilizing ICTs as pedagogical tools are often subjective to the instructor or school board. The Toronto District School Board (2008) has taken initiative within a curriculum documents for grades k-12 specifically outlining template forms of practice that
utilize information and communication technologies as pedagogical tools. More specifically, this document displays how the Toronto District School Board provides explicit guidelines of how to utilize ICTs as instructional tools. Examples include: student organized storyboards, original work using word processing, mind mapping, or comic creation software (Toronto District School Board, 2008).

As well the Government of Ontario’s Canadian/World Studies Curriculum (2013) follows suit with similar implementations that recommend and suggest how to use ICTs within instructional parameters. ICT tools are useful for teachers in their teaching practice, both for whole-class instruction and for the design of curriculum units that contain varied approaches to learning in order to meet the diverse needs of students (Government of Ontario, 2013).

2.2.1. Student-centered learning

By and large educational technology has been found to contribute to a student-centered learning environment that opens doors for multiple opportunities of student-centered learning and pedagogy (DenBeste, 2003). As DenBeste, 2003 conveys, presenting information in new ways that incorporate ICTs instead of traditional blackboard writing, handouts, or textbook work accomplishes this. Multiple examples of this student-centered approach include not limiting class material to the classroom setting (i.e., teacher web pages), providing immediate feedback for students via e-mail, allowing students to work in groups with their peers within both the classroom and online setting, and creating a classroom environment that allows a teacher to facilitate learning rather than lecture and scribe course content (Firmin, 2013).

Studies have shown that students both with and without learning disabilities are in favor of information and communication technologies as well. Boon, Fore, and Rasheed (2007)
conducted a study that students of grades 9-12 completed. With a six item, three choice student satisfaction survey (agree, undecided, disagree) these students expressed their experience of graphic organizing software, and guided notes instruction to increase content knowledge of world History information (Boon, Fore, & Rasheed, 2007). Results revealed that both students with and without disabilities were positive toward the use of the software and the guided notes format (Boon, Fore & Rasheed, 2007). In terms of learning more world History content with online-guided notes, 61.22% of students believed they had successfully done so, with only 2.04% disagreeing. This displays that, by using different varieties of software and information access, there is a possibility of students being more centered and interactive within an ICT-integrated History classroom.

However, online resources are not the only form of ICT integration that has proven to be found useful within an educational domain. The interactive whiteboard (IWB) is a branch of ICT that has played a huge part in transforming today’s classrooms. Sometimes referred to as a SMART board, the IWB is large touch-sensitive board that controls a computer that is connected to a digital projector that allows for multiple touch-triggered reactions. As a result, teachers with IWBs within their classrooms now have a more presentable and accessible gateway to the internet, Microsoft PowerPoint, and other office utilities to provide exemplars for students, and multiple other interactive software’s that are at teacher’s disposals (Bidaki & Mobasheri, 2013).

2.2.2. Gaming in History

The use of video games to teach History at the high school level has a strong body of literature supporting the practice (McCall 2011; McMichael 2007; Squire 2011; Steinkuehler, Squire & Barab 2014; Watson, Mong & Harris 2011). Widespread examinations regarding the
use of computer and video games in History education has been designing and studying educational activities, and the studies that have been conducted show success in engaging students in historical thinking (Spring, 2015). There are multiple popular History-based video games such as the Assassin’s Creed series, the Total War series, Rockstar’s L.A. Noire and Red Dead Redemption, Paradox Interactive’s Crusader Kings II, and the Europa Universalis series. These games have all been used in academic study as examples of how to create a scholarly video game (Spring, 2015). Each offers an aspect of potential genres, rethinking of historical events, and construction of historical narratives, and ideas for developing a historical lens for students if properly monitored by parents and teachers (Spring, 2015). For example, the Assassin’s Creed franchise clearly demonstrate the rich historical detail in details such as the art, architecture, and the more basic aspects of life such as indoor lighting, furniture and utensils put a player into a historical moment throughout historically centered cities such as Damascus, Jerusalem, Florence, London, New York, and Paris during the French Revolution (Kapell & Elliot, 2013). In a scholarly aspect, to fully assess the possibilities of a game iterative research must be completed on behalf of the student in order to explore the translating historical scholarship from the discipline of History into game play. Therefore video game offers far greater potential for the creation and presentation of History than any other entertainment or interactive media (Spring, 2015).

2.2.3. Technology positioning

Observational studies have shown that although a school’s infrastructure is an important condition for ICT integration in general, the positioning of information and communication technologies within a school can also foster or hinder specific teaching and learning activities depending on their placement (Tondeur, Van Keer, van Braak, & Valcke, 2008). Tondeur et al’s
(2008) findings provide a specific example regarding computers within classrooms. This example displays that there is a correlation between the availability of technology within classrooms and computers as effective learning tools. These findings also show that if these technologies are placed within the classroom (i.e. as opposed to a computer lab) there is more of a likelihood of technology being used as a positive learning tool (Tondeur, Van Keer, van Braak, & Valcke, 2008).

However, it is not merely what is placed within the learning environment that is pivotal, but certain spatially specific strategies have been proven effective to maximize learning with technologies. Technological devices such as computers or interactive whiteboards can enable or hinder one’s pedagogical approach depending on the use of these technologies (Tondeur, De Bruyne, Van Den Driessche, McKenney & Zandvliet, 2015). As a result, the shape of a room, the technology’s location and layout of classrooms is related to the pupils and teachers occupying the space and the use of technology (Tondeur, De Bruyne, Van Den Driessche, McKenney & Zandvliet, 2015). As Tondeur et al (2015) make note of, the arrangement of the school desks in single rows, in U-shapes, and groups allows different events and types of learning to take place within their respective layouts. In a study conducted with seven different classrooms of similar grades, Tondeur et al (2008) found via teacher interviews that the classroom with the highest efficiency, attention, and productivity was the classroom with the highest amount of accessible computers at the students disposal. Under this form of technological integration, opportunities for different instructional and pedagogical approaches are more accessible.
2.3 Conclusion

Throughout this chapter I reviewed literature pertaining to teachers’ integration of technology into classrooms, teachers’ reported practices of utilizing information and communication technologies as pedagogy and the response from their classroom. I also looked over varying definitions of academic success and learning development within a History classroom. Lastly, I reviewed varying tested History teaching practices that have been implemented to foster historical education at the high school level. In doing so, I have accumulated concluding responses on the outlook of ICTs within History classrooms.

As well, this chapter also revealed a correlation between intrinsic beliefs of a teacher and the internal factors teachers knowingly or unknowingly possess and ICT usage in education. Sang et al (2011) suggest this through their findings by saying that if a teacher has constructivist beliefs regarding teaching and learning, they are more likely to be willing to adopt student-centered approaches and other innovative instructional approaches such as ICT integration to maximize student benefits. This displays how a teacher’s perception of ICTs and their effectiveness, as well as their beliefs and value systems can affect ICT integration as a pedagogical tool.

In terms of how ICTs are used, this literature divulges how the discipline of History has become more increasingly engrained with technologies of many forms. Using technologies such as Interactive White Boards for information displays and activities, video and computer games as a means of interactive and research intensive historical inquiry, as well as multiple programs and data bases that can help distinguish the differences between and aid in the selection of primary and secondary sources, section 2.2 of this literary review divulges how ICTs can be an effective
pedagogical tool in History classrooms. However it is not only the act of using ICTs as tools that makes them effective, but also the positioning of the classroom. By arranging the classroom in a way that provides the highest amount of technological accessibility, scholarly evidence has revealed that a high school History classroom will have increased opportunities for differentiated instruction, increased efficiency, attention, and productivity.

Although studies within this literature review point towards how ICTs have potential to be tools that foster the learning of students with high school History classrooms, it is important to realize that these studies have not been conducted under Ontario curricula. This could result in possible deviation during the qualitative research process. In the next chapter, I will outline and explain the methodological practices of this study, and how they impacted the findings.
Chapter 3: Research Methodology

3.0 Introduction (Chapter Overview)

In this chapter I explain the research methodology, identifying the various methodological decisions that I have made, and my rationale for these decisions. I will justify these decisions by identifying how my approach properly ties into my questions using support from scholarly sources, and then I will describe my main instrument of data collection. Following this I will identify the participants of the study, the sampling criteria I will use, and a description of my sampling procedures. As well, I will be providing background information on these participants. Following this I will present how I have analyzed the data I have collected while also commenting on issues that have been considered and dealt with. Finally, I will reflect on the methodological limitations of this study while also acknowledging the strengths and successes it has brought forward.

3.1 Research Approach And Procedures

This study was conducted using a qualitative approach, including a review of existing literature that supports the use of qualitative research within my topic – teachers’ experiences of ICT integration in secondary History – and its relevance to the interviews that will be conducted. In reviewing such literature, it has been acknowledged that there are numerous complications that a researcher must be aware of when using qualitative research. Tracy (2010) identifies that qualitative research is often argued over because the criteria for legitimate and relevant data can be subjective due to varying theories, paradigms within different social science domains, and the varying end goals of these studies. This is because qualitative research portrays and gathers multiple personal experiences on a specific topic of study, thus resulting in a wide range of
varying answers (Canella, 2015). However, the process of conducting qualitative research has been argued to be challenging because qualitative methods are a combination of strategies that rely on inference, insight, logic, and hopes of results emerging as a coherent whole, leaving substantial room for interpretation (Morse, 1994). However, qualitative research seeks to understand what and where participants’ interpretations of a specific topic stem from (Merriam, 2002). Outlining and acknowledging why the subjects of a study have specific interpretations regarding the phenomena they are being interviewed about can successfully complete this.

Building on the benefits previously stated, scholars argue that the practice of qualitative research allows for in-depth responses and findings to be generated as opposed to statistics that only provide numerical results (Marshall, 1996). Qualitative research uses variability in data to dismiss assumptions and challenge well-accepted ideas, stereotypes and common misconceptions regarding complicated topics (Tracy, 2010). This is carried out by meticulous data collection that often exposes little-known trends within studied phenomena, and exposes misconceptions that a reader might carry with them. Therefore, because I sought an in-depth understand of how and why ICTs are being implemented in greater Toronto area secondary History classrooms, the qualitative research approach allows for in-depth reasoning and responses that statistics cannot measure, as well as possibly eliminating pre-conceived notions about technology integration in secondary school classrooms simultaneously.

3.2 Instruments Of Data Collection

The main instrument of data collection that this study used was qualitative interviewing. Qualitative interviews are commonly utilized for collecting qualitative data (DiCiccio-Bloom & Crabtree, 2006). This method is usually preferred in qualitative studies because qualitative
interviews investigate questions in a format that allows for in-depth expanded answers to how and why questions. This allowed participants to elaborate on the topic of study, provided greater depth and insight, and provided a humanistic element to these answers (Marshall, 1996). This study sought to discover how teachers are implementing information and communication technologies within History Classes in Greater Toronto Area Secondary Schools. As a result of this specificity, my data collection was the sole data source for this study. This is why used the semi-structured interview protocol.

The starting point of a semi-structured interview is the creation and organization of open-ended questions by the researcher (O’Keefe et al., 2015). Semi-structured in-depth interviews organize series of open-ended questions in an order that the researcher believes is appropriate pertaining to the topic. However, because of the open-ended nature of these questions, semi-structured interviews also allow interview participants to expand on their personal experiences, and allow for unrehearsed questions that still pertain to the topic of study. This allows the researcher to be possibly exposed to various aspects of their topic that they had been previously uninformed of (O’Keefe et al., 2015). The semi-structured interviews that I organized for my sample were performed only once for each participant, and took approximately an hour to complete. By using the semi-structured interview I believe that the questions were flexible enough to gather data on the participants reality in History teaching, which differed from my expectations and experiences as both an interviewer and student teacher.

In addition, using a semi-structured interview protocol, I was able to see if there are patterns within this variability. Within semi-structured interview data, patterns are found by first organizing the series of questions in a manor that will spawn responses regarding sub-topics within the general field of study (Paine, 2015). These sub-topics would be covered in the flow of
an organic conversation, this generates a sense of awareness and provides the researcher with a greater pool of data to compare and contrast (O’Keefe et al, 2015). Following this process, numerous insights on the topic were made available, thus making finding patterns within the data easier, and relatable to scholarly literature that has already been reviewed. Some of the questions I asked (as found in Appendix B) of my sample included:

1. Have you integrated ICTs within your History classroom? If so how?
   a. Why have you (not) integrated ICTs within your History classroom?
2. IF YES to question 1, have you felt a response from post-ICT integration students? If so, describe this response.
3. How do you perceive ICTs as an educational tool?

3.3. Participants

This section of the research paper outlines the History teachers who I have recruited for this study, the criteria that I used in selecting these History teachers, and the methods I used during my sampling process.

3.3.1. Sampling criteria

The following criteria was applied to all participants within this study:

1. Participants were licensed by the Ontario College of Teachers
2. Participants have taught at least 3 secondary History courses since 2010 (both academic and applied) within a Greater Toronto Area School Board to provide insight the specific area this study aimed to investigate.
3. Participants are actively integrating ICT practices into their own History classes
First, I interviewed OCT certified teachers who have taught at least three History courses since 2010 to provide both generally recent and reflective insight on different classroom environments and uses for ICTs within History.

3.3.2. Sampling procedures/recruitment

Sampling is the collection process of those who will provide data to investigate a specific topic for a research project (Gentles, Charles, Ploeg, & McKibbon, 2015). For this qualitative study, I chose the two methods: purposeful sampling and snowball sampling, and their relevance to my study is in that order. Due to the presumed nature of these teachers’ networks, I believed that participants who provide excellent depth into this topic were able to recommend similar colleagues. I did not seeking numerical values. I sought in-depth analysis on how and why these teachers conducted their ICT practices the way they did. To deeply understand each person’s relation to a topic is extremely time-intensive (Kearney, 2007), and thus purposeful sampling allowed me to stray away from people who may only provide simplistic answers that could have squandered valuable time in the research process. Purposeful sampling searches for participants who are most likely to provide quality and in-depth insights into the understanding of a topic and participate within the full parameters of a study (Marshall, 1996). This method of sampling was useful in recruiting teachers who have are avid users of ICTs within their classrooms.

However, only relying on purposeful sampling could have been difficult in acquiring numbers, as I was not familiar with multiple History teachers in the GTA who frequently use ICTs. This is why I used another methodology of sampling called snowball sampling. Snowball sampling is a method of sampling that begins with a single participant of the study providing the researcher with the name and/or names of other possible participants (Baltar & Brunet, 2012). By
extracting willing subjects from social networking, this methodology allows the researcher to tap into a pool of data that otherwise would be difficult to obtain. In doing so, snowball sampling often provides similar results as the initial participants interviewed who began this snowball effect. By using the resources of sampled and interviewed teachers and fellow teacher candidates I was able to use two elements of this method to my advantage. Using the small network of teachers, I approached a single teacher who I knew integrated ICTs within their History classroom. I then asked if they knew of any other teachers who would meet my criteria and be willing to participate in this study. After they recommended one candidate, I then asked this candidate to provide me with the name of another suitable candidate for the study. After completing this process I was then left with two participants that I will elaborate on in the next section.

3.3.3. Participant bios

Both of this study’s participants identify as middle-class males. As well, both of these participants work within a Catholic school board in the Greater Toronto Area. David has been teaching History for 15 years, while teaching History for almost ten years. Mark has been a teacher for 10 years, while teaching History for almost all of that time. Both participants identified themselves as individuals who are proficient with ICTs within the classroom and in everyday life.

3.4 Data Analysis

After sampling and collecting data, the next step was data analysis. Qualitative interview data is commonly just words and responses from participants, so these words and responses must first be organized into larger thematic categories or sections so patterns can be found. This
process is known as coding (Seers, 2012). Through this organizational process, researchers give codes either manually or with software to sort data into categories and then further assemble the data into major themes (St. Pierre & Jackson, 2014). As the data collected was overviewed, I reviewed each interview transcript and found similar words, phrases, and sub-topics that provided patterns within the data. By being organized, conscious and attentive to every finding within the study, quality data analysis in qualitative research stems from a researcher’s ability to recognize how interview transcripts both blend together and contrast (Seers, 2012).

This is the protocol that I followed after the collection of data from this study’s participants. This lead me to various themes regarding ICT integration in History classrooms that emerged from the data that I have collected. This allowed me to identify which sections of the data that I collected to be irrelevant to the study, while simultaneously discussing themes and discrepancies comparatively. Dividing key words into different sections, I created two larger categories in my coding process. These words and phases I divided into these categories were “Factors Affecting Teachers’ Relationship Towards ICTs” and “Limitations of ICT integration in Greater Toronto Area Schools”. However due to these broad overarching themes, I needed to continue to create memos and notes on these interview transcripts to divulge smaller sub-themes within the two greater themes listed above. Once this was complete, I divided the separate pieces of data into their respective sub-themes so my findings could be revealed.

3.5 Ethical Review Procedures

Firstly within the qualitative research process an ethical concern that arose was the issue of consent on behalf of the research participants to be represented within the study. This is an issue that arises with qualitative interviews, as research participants should be granted autonomy and agency when it comes to how they will be represented within the study (Townsend, Cox &
Li, 2010). This means that as a researcher, it is our responsibility to ensure that those being interviewed understand exactly what will be disclosed within the study (i.e., identity, wording of answers, etc.) and why exactly they are being interviewed. The issue of autonomy on the participants’ part can also be raised if a researcher does not remain neutral in their use of questioning. As Townsend et al. (2010) explain, participants in a qualitative study may be vulnerable to a possible agenda that the researcher has, and risk the possibility of not having their experiences and answers properly shared and represented. Gathering each story and response and recognizing their significance does this, as they each bring with them an insight into the studied field (Townsend, Cox & Li, 2010). An interviewer is supposed to obtain information while listening and encouraging another person to share insight on a topic (Warren, 2002). As a researcher, it was my responsibility to ensure that whenever interviewing participants in my study, I maintained a neutral approach when extracting anecdotes of all forms in relation to ICT use within History classrooms.

Another danger that I had to be aware of within qualitative interviewing is the role that identity can play within the process. In order to have a subject be comfortable within the interviewing process, a researcher cannot ‘act’ or take on/present an identity that would be threatening to the honesty and answers of the research participant (Lavis, 2010). This includes being sincere, truthful and adaptive to each research participant as they all represent a different area of a specific field of study (Lavis, 2010). As well, as a researcher it is important to understand that these identities can be carried on from a range of socially and culturally constructed ideals, and as a qualitative interviewer, it is important to not allow these ideals seep into the interviewing process (Lavis, 2010).
In the case of my study, the nature of the research questions investigated ICT use within History classrooms. As a result, the only true ethical dilemma that could have possibly developed was the altering of answers by an intrinsic feeling that ICTs must be used within today’s classroom. To avoid this possible dilemma, I encouraged honest answers instead of the seeking for right or wrong, as I am simply just explored the reality of the situation. As well when dealing with a teacher’s practice, participants could have been sensitive when being questioned on their craft. As a student in a teacher education program who is yet to be employed, and is still currently going through the practicum process, I had to stress that I was in no position to comment on the validity of practice or choice of methodology conducted by any of the teachers I interviewed.

3.6 Methodological Limits And Strengths

The methodology of in-depth interviewing was used to discover shared understandings of this study’s participants. According to Lamont & Swilder (2014) interviewing allows researchers to collect data not only about behavior, but also about representations, classification systems, boundary work, identity, personal ideals, as well as emotional states. This is extremely useful to divulge an in-depth understanding of a subject as these complexities that go into a subject’s expertise and understanding of a topic can create an interesting and sometimes contradictory projection of a topic (Lamont & Swilder, 2014). This characteristic of in-depth interviews is valuable when a researcher is not asking simplistic closed-ended questions, but instead open-ended questions that have a wide variability in responses (Fisher, 2012). This is what my study sought to accomplish throughout the interview process.
However the qualitative interview process is not without its limitations. One specific limitation deals with the interviewer/interviewee relationship. Social roles of the interviewer and interviewee as both positions within this form of communication and data collection can often be individualized due to race, class, gender, or sexual orientation (Lamont & Swidler, 2014). This poses a problem, especially since the interview process can encourage both the researcher and readers to try and rationalize and understand the testimonies that interviewees have provided (Lamont & Swidler, 2014). As Rao and Perry (2003) highlight, the validity of qualitative interviewing can be affected if answers are taken in a broad view to suit a general population. This means that all answers should be taken as equally valuable individual experience. In the case of this study, I was aware that I was not in any position as a student of the teaching profession to critique the choice of practice by established teachers with extensive teaching experience. This caused me to plan my questions accordingly. Specifically within the greater Toronto area, there are numerous experiences specific to different cultures and areas of the city that are possibly not relatable from one subject to the next. In order to not generalize, I left room for subjective and possibly clashing opinions on ICTs to allow my research to be as reflective on my participants’ experiences as possible.

As well within this process, there are also concerns regarding the validity of testimonies that academic sources have addressed. For example, as Roulston (2010) identifies the quality of a qualitative interviews data relies heavily on the credibility and accuracy on a participant’s interview testimony and the researcher’s ability to accurately represent the retrieved data. Although it was certainly difficult to dictate whether or not a participant is embellishing their experiences regarding ICT integration, it was my responsibility to ensure that whatever these
experiences were, I recorded and accumulated them verbatim to accurately assemble the data I collected.

### 3.7 Conclusion

Throughout this chapter I have thoroughly explained the methodology of research that will be conducted to answer my research question. Beginning with the research approach and procedure I have chosen, I outlined exactly what qualitative research is, the differences it has in comparison to quantitative research, and why it would be applicable for my study on ICT integration with History classrooms in the GTA. Following this I identified that the instrument of data collection that I will use is qualitative interviewing. With this instrument, I then outlined who the participants of my study will be, the specific sampling criteria I followed throughout my sampling protocol, and how I sampled the participants who fit my criteria. Once these participants were found, agreed to participate in this study, and provided me with data, I then began the data collection process. Within section 3.4 of this chapter, I outlined exactly how to collect and analyze qualitative data drawn from an in-depth interview: using manual coding and software programs to organize patterns in data. Following this I briefly touched upon the coding process I used. Then while considering this process, I discussed possible ethical issues, strengths, and limitations of my study that I pondered and encountered during this research process concerning an interviewer and interviewee. While the limitations of testimonial fabrication and legitimacy and the interviewee-interviewer relationship could possibly affect the outcome of data collection in a negative manor, I believe this method’s ability to collect data about behavior, representations, classification systems, boundary work, identity, personal ideals, as well as emotional states was extremely beneficial to my study of this topic. As well, I was also confident in my ability to differentiate a subject’s fabrication versus the reality of their
testimonial circumstances. Now with my research process outlined and articulated I will proceed in the next chapter to report on my research findings.
Chapter 4 – Research Findings

4.0 Introduction to the Chapter

So far, I have introduced the topic of ICT use in high school History classrooms. In doing so, I have introduced my intentions to investigate GTA History teachers’ experiences of ICT integration. Additionally in my second chapter, I reviewed literature pertaining to teachers’ integration of technology into classrooms, teachers’ reported practices of utilizing information and communication technologies as pedagogy and the response from their classroom. This literature has also reviewed the concepts of academic success and learning development within a History classroom, and varying tested History-teaching practices that have been implemented to foster historical education at the high school level. Finally within the third chapter of this research project, I explained the research methodology, identifying the various methodological decisions that I have made, and my rationale for these decisions. I also justified these decisions by identifying how my approach properly ties into my questions using support from scholarly sources, and then I described my main instrument of data collection.

Throughout this chapter I will be discussing and presenting the data that emerged from my research interviewing process. I have analyzed the data through the lens of the following research question: Are Greater Toronto Area secondary History teachers using information and communication technologies to foster learning and academic achievement amongst their students? As the practices and answers of the interviewees were recorded, relationships were both discovered regarding findings on ICTs in education discussed within the Chapter 2 literature review. I have organized my findings into the following main themes:

1. Factors Affecting Teachers’ Relationships With ICTs

2. Limitations of ICT Integration in Greater Toronto Area Schools
3. Methodology of ICT Integration by Teachers

As the discussion of these themes progresses, sub-themes will be revealed to further demonstrate how these themes reportedly unfold within a high school History classroom setting. Within the listed themes I will provide an explanation of what general topic will be discussed in relation to my research question. Following this, a report on the recorded data will be presented alongside relevant existing literature that will explain the significance of this study’s findings. Finally, after a summarization of these findings I will transition to the final chapter, where I make further recommendations for future researchers in the realm of information and technology use in high school History classrooms.

4.1 Factors Affecting Teachers’ Relationship Towards ICTs

These History teachers’ relationships with ICT, from the time they were in high school to their current positions as History teachers in the GTA, reportedly influence their ICT integration practices. I will firstly look into the educational practices backgrounds of these teachers and how ICTs were and/or weren’t used within their high school and undergraduate experiences. After that, I will discuss their viewpoints of what they believe an ICT is in an educational setting. Finally, I will close of this portion of the chapter discussing how the schools they have worked in have reportedly affected their relationship with ICTs.

4.1.1. Teachers’ educational upbringings

When discussing what exactly has influenced the participants’ relationships with ICTs, the main factor that stood out was the reported lack of ICT integration within their own high school and undergraduate education. It is interesting to note that both participants of this study said they do integrate ICTs within their History lessons. However, neither one said they had ICTs present in their History courses from high school onwards to their university classrooms.
When I inquired why Mark integrated ICTs into his History classroom, he bluntly stated that:

The most we may have ever had was an overhead projector, I hated it. As students from high school to university there was always a struggle to pay attention to lectures because you could only go off the instructor’s voice – which you couldn’t always hear – or the writing on the chalkboard, which you couldn’t always see.

While Mark stated that he is not “a technology expert”, he reported here that the lack of visuals is something that always took away from his attention span in the classroom. This concept was also realized when David responded, “Yes, absolutely it has” to a question asking if his lack of ICT integration affected his outlook on technologies within History education. David also stated: “With it now being accessible to teachers, it makes you want to use it because it was never available to you at that age. ICTs would have definitely made lecture experiences more enjoyable.” This clearly outlines how a teachers’ own experiences can impact their own pedagogy. By adapting their practice from an empathetic standpoint, both David and Mark provide explicit examples of how their own educational upbringings have resulted in channeling the positioning of students within their practice. In order to create a lesson that is more engaging and appealing to learners, both Mark and David utilize ICTs resources to provide students with a more flexible and engaging pedagogical option that they never experienced themselves. This aligns with the findings of Sang, Valke, van Braak, Tondeur, and Zhu (2011) stating that the way teachers relate to and integrate computers and other technologies within their classroom instruction seems to be strongly mediated by their own experiences.

When asked about what influences his own ICT integration, David stated that predominantly stems from “the practice of other teachers. I see colleagues using different things,
and attend workshops on PA days. I’ve found that there are millions of different options, but you have to find what works for you as a teacher.” As David relays, the testimonials provided by David shows how drastically personal experience can affect a History teacher’s ICT integration. This concept is exemplified by the work of Loveless (2006) as they conducted research with teachers in Australia and their perceptions of ICTs in pedagogical use. This research found that teachers’ perceptions of ICT are created by wider cultural and social spheres that influence professional domains, and settings that students will participate in during post-secondary. Yet, there appears to be no mentioning of how their own professional, high school and post-secondary experiences with ICT influenced their practice. Despite these findings, the participants of this study relate more to their own experiences rather than social and cultural influences outside of the classroom. This then begs further study of how the educational upbringings of current educators have affected their views ICTs as pedagogical tools, and perhaps how their high school and university experiences have prevented them from using ICTs in an educational setting.

4.1.2. Teacher perceptions of a useful ICT

With the participants stating in the previous section that their ICT usage in History classrooms stems from the technological lacking within their own upbringings, clearly they have a concept of what ICTs are. This section dives into their perception of what a useful ICT is as an educator and why they are assets in the classroom.

When diving into the concept of a useful ICT in History education, Mark defined this as “whatever technology you have available ... computers, smart boards, TVs [...] or any technology that students consistently have available to them like phones. Any of these should be incorporated into assessments and lessons to increase opportunities for successful learning.” Although the term useful is subjective and vague, Mark seemed to understand useful in terms of
ICT as a device or program that students are already familiar with when entering the classroom. This struck a similarity to the idea of student-centered learning that David echoed:

It’s a way to differentiate or vary instruction and assessments. This can provide more interesting alternatives to pen and paper for students. Especially in History with the tendencies of lecturing and note taking. Videos, virtual tours of landscapes, movies...all of these are different things that I’ve used to try and make the subject come to life.

Building on Mark’s testimonial, David certainly understands useful ICTs as tools that students are familiar with outside of the classroom environment. However, David builds on this definition by insinuating that a useful ICT is something that allows History Teachers to branch out from traditional pedagogical approaches such as simple lecturing and note taking.

Accumulating these two testimonials together, defining ICTs in education can be summarized as any form of information technology that is accessible to students outside of the classroom and suits student strengths and comfort zones. Additionally, by using these tools, a useful ICT allows a teacher to branch out from traditionalist pedagogical approaches, and create new methods of student engagement that allow students to connect with the History discipline.

4.1.3. Workplace influence on ICT use

Within this subsection, the participants revealed that the level of technological-progression could vary drastically from school to school. This study’s participants believe that ICTs are a proponent in student-centered History-education. As well, both participants agreed that they saw education in general evolving into a variety of digital formats. However, When asked about how much their school can influence their use on ICT integration, it appears that it can do so tremendously. As Mark answered that “It varies at every school. Within the GTA you
see some schools that have tremendous funding, upper-class families, and it is almost expected that you use those things. Other schools, older schools, sometimes don’t have the accessibility to smart boards, computers or things like that.” This shows that teachers can be pressured both to use and not to use ICT depending on their school’s student body, socio-economic status, and ICT accessibility. David also noted that the influence or “push to use information and communication technologies” could vary extremely with different principals or students within one’s classroom. He went on to add that sometimes students may request to transfer information into a digital center of some kind, or they may not because of their proficiency with technology. As for principals, he stated that it really depends on how “hands on” a principal is in relation to their staff’s pedagogical practice, with some paying extreme notice and some leaving it to the discretion of the instructor.

This finding echoes that in the research of Govender (2009) by adopting ICT in a classroom setting some teachers can feel pressures from an outside source to adapt and change their methodology. This converges precisely with the testimonials of Mark and David as they voiced pressures both from an administrative level, and from factors out of their control, such as the affluence of the student body and the school itself.

Being able to adapt one’s practice can be a difficult task, especially as a teacher who was not raised as a digital native much like the youth of today. By reflecting on their educational upbringings, this study’s participants revealed that their educational experiences made them eager to integrate ICTs within their own classroom. However, these participants also revealed that even with this eagerness, it is not always possible to integrate ICTs into History lessons because of a school’s environment.
4.2 Limitations Of ICT Integration In Greater Toronto Area Schools

As previously discussed, the environment a teacher is placed within can heavily influence their relationship with ICTs. This theme focuses on what participants within this study said hinders or limits their use of ICTs within a History classroom. Both participants voiced a strong opinion towards the ICT policies instilled by their respective boards, as well as the reliability of ICTs as an educational tool.

4.2.1 Limitations of ICT policy

Much like the Ontario curriculum, ICT pedagogy throughout the GTA is often held to the standard of a school or board’s respective board policies. However, when using these policies, teacher’s can feel limited depending on their desires for ICT integration. This section displays how the participants within this study have reportedly been limited by the regulations within their respective ICT policies.

When asked if their respective school boards possessed a policy pertaining to the use of ICTs within the classrooms, both participants answered with a disenchanted tone, “yes.” With information and communication technologies possessing a variety of possibilities within the classroom, it is expected that usage would have some sort of regulation by higher authority. Nevertheless when questioned about their sentiments towards these policies and their practicality, both responded with criticisms. Mark for example discusses its inability to allow a teacher to be flexible in the means of technology used:

There is no protection for teachers really, it is kind of one sided. When it comes to laptops or devices, if anything happens or a virus is transmitted, the liability is always on the teacher. The other catch is that you can’t buy a laptop and write it off on your taxes, so the onus is on the teacher to integrate at their own choice,
especially if it is a school that doesn’t have a lot of ICTs present. I think if there were better options available for teachers than they would use [ICTs] more.

With a lack of protection or compensation for ICT devices and integration, Mark’s testimonial shows that although ICT integration is a practical and developing form of pedagogy, policies such as the one Mark uses do not support wide varieties of integration. To echo this idea of dissatisfaction with a school board ICT policy, David echoed the same sentiments. To add to his dissatisfaction, he voiced his perception of the reasoning behind these shortcomings:

It’s inadequate; it’s out of date [...] what is the opposite of innovative? They are afraid of the implications of expanding it to new platforms. Everything from personal electronic devices to school wifi [...] they’re very behind the times. Basically they are reluctant to acknowledge what a classroom could look like with technology.

This aligns with the findings of Hillis and Munro (2005) that over the last 25 years there have been tremendous advances within ICT that can be directed towards History teaching. There has also been a noticeable increase in the deployment of ICT for History teaching and learning (Hillis & Munro, 2005). This is important to document because it displays how the study of History like most of the world is changing into a more technologically based practice, and if boards are not making appropriate accommodations to how the world is changing technologically, then students will be victims of a disservice. This could affect them in post-secondary education and other institutions of society.

David would later add that what he meant by this statement is that the school board he was within did not provide a wide variety of digital and technological options for teachers to
utilize, especially for how historical research has advanced digitally (i.e., e-learning/regulated online websites, tablets, laptops, applications, etc.) Although it seemed that there were other issues stemming from ICT policy, this was the extent of their elaborations regarding the subject.

4.2.2. Reliability of ICTs

Although this study’s participants self-identified as avid ICT users, when asked about the shortcomings or limitations of ICT integration, they offered a window into the hindrances of ICT, specifically its reliability. As David noted that “when using ICTs, I always make sure to have some sort of a non-digital back up incase the school’s computers are down. There has been a few times where a tech issue has left me without a lesson to teach.” Mark also reverberated this sentiment, stating that the only real downfall of ICT integration in History would be a lecture, assignment or assessment falling through due to technical difficulties such as insufficient WiFi or power surges. This is important to note because even though these participants share a positive review of ICT integration, as well as frustration of technological barriers within board policy, they are still aware of the possibilities of ICTs hindering a History lesson or assessment.

4.3. Pedagogies of ICT Integration

As the study’s participants have now defined their perception ICTs and the possible roadblocks that can arise in integration, this theme will discuss the varying pedagogies of ICT usage in History as reported by these teachers. Looking at lessons and lectures, assessments, and evaluations, this section expands on their methodology of ICT integration.

4.3.1. Online classroom software

When looking at different pedagogical approaches within ICTs, this study has found a
variety of different pedagogical approaches to be useful either through scholarly evidence or participant testimonials. Within this section, it is revealed that the use of online Classroom software, is an affective tool for student learning and organization.

Both participants spoke to their appreciation of the online classrooms such as Microsoft Classroom or Google Classroom. Mark reported that using this medium of information sharing with the class allowed him to share all documents within the course to prevent document loss, allow students to reference materials on a computer, tablet, or Smartphone, as well as any other form of audiovisual material that was used within a lesson. David also discussed how his History classrooms were able to access research much more efficiently, as he could use this classroom network to share primary resources, online archives, and multiple library websites and journal articles that would not be accessible within a local library. For example, David expressed his ability to share electronic resources from the Library and Archives of Canada for his Canadian History courses, rather than retrieving them from the physical location in Ottawa. When discussing how he incorporates this into grade 10 History, David elaborated as follows: “the Canadian archives website allows you to see soldiers’ enlistment papers...its a primary source document that allows students to access things online. So it allows them to imagine life of someone who went into the war just by going off the details in the enlistment papers.” This shows the accessibility of wide varieties of information that online domains can provide. These are also resources that David uses to incorporate into an assignment in which students use these enlistment papers and course material to write a historically accurate letter home from the trenches of Vimy Ridge. As well, within this classroom domain, exemplars are shared to show students proper formatting and writing style. By using a variety of visuals and
exemplars, students have multiple examples that demo the specific success criteria that are required within their History classrooms. Aligning with the work of DenBeste (2003), this shows that educational technology contributes to a student-centered learning environment that opens doors for multiple opportunities of student-centered learning, flexibility and pedagogical tools.

In relation to online domains assisting in History classrooms, Mark expressed how his online classroom allows him to keep students accountable in terms of assignment submission. Students deliver their assignments to his website as the drop box records the date and time of submission leaving no room for the loss of documents. Although this displays the accountability within this classroom, there is no existing research displaying the increase of classroom accountability using online domains, or an increase in overall grade point average. With this newfound concept, this is a topic that would be interesting to investigate.

4.3.2. Visual information projection

When asking about the methodology of ICT integration, both participants were eager to express the value of ICTs in the visual projection of historical information. Both participants stated that they use the program Microsoft PowerPoint to convey notes and visual representations of their lectured material on the classroom’s Smart Boards. As David relayed, this provides “a more flexible alternative to pen and paper.”

However they differed in terms of how they utilize other forms of ICTs within a History classroom. Mark for example utilized video cameras, the website YouTube and various video editing programming for his students when they conducted presentations. Explaining his reasoning for this, he explained that students who have public speaking anxiety could record it on video and present it to the class instead of standing up and presenting. He also reasoned “the
The final product is always better because you can edit a video, and you cannot edit a live performance. The students who take this avenue usually receive higher marks.” This once again ties into the finding of DenBeste (2003) as it allows for a student-centered approach while still allowing the teacher to assess knowledge, creativity, and accuracy of the presentation.

Yet when looking at ICTs in terms of a lesson plan, David incorporated an alternative to the note taking which extends from the use of Microsoft PowerPoint. This alternative is that of gaming. Using a game entitled “Trench Warfare” from the BBC website, the students have the option of picking different experiences within the trenches as a soldier and other members of the trench. Accompanied by a worksheet given to them prior David states that he “allows them to role play within the realm of a soldier. It instills empathy and brings the material to life.” This is echoed by the research of Spring (2015) as he argues that video game offers far greater potential for the creation and presentation of History than any other entertainment or interactive media. This is clearly exemplified by David’s testimony.

4.4. Conclusion

Through data analysis, three major themes emerged pertaining to the research question of how ICTs affect and foster student learning in GTA high school History classrooms. The most significant factor affecting GTA teachers’ ability to integrate information and communication technologies is their developed relationship and proficiency with these pedagogical tools. This is supported by the reports from the participants describing how their educational upbringings, developed perceptions of ICTs as educational tools, and the factors within each individual high school (student affluence, principle supervision, school funding and resources, etc.) that can affect an instructor’s ability to integrate ICTs properly.

Secondly, I found that teachers’ main reported obstacles and hindrances of integrating
ICTs into the GTA’s classrooms are board policies and the technological difficulties that can arise from ICT malfunction. When attempting to integrate ICTs into their pedagogical approach, both participants were adamant that their respective boards did not provide them with policies that allowed them to explore an array of options efficiently. Exemplified by their claims of teachers utilizing resources such as laptops from their own funds, or the lack of liability protection and evolution within these policies, the data revealed that teachers couldn’t utilize ICTs to their best of their abilities because of these policies. As well with the possible malfunctions of software crashing, insufficient WiFi, and other technical malfunctions, teachers expressed that ICTs although a sufficient pedagogical tool are not always dependable.

Lastly, in terms of methodological practice, this data revealed that ICTs are a resourceful tool in differentiating traditional instruction, varying assignment conduction, and classroom organization. With the use of online classroom domains such as Google Classroom and Microsoft Classroom, participants revealed that by having information easily accessible, students can access resources that they may not have otherwise been able to access without the use of ICTs. As well students can also be held accountable due to the accessibility of documents and online recording of assignment submission. Furthermore, teachers can also use ICTs as a pedagogical tool to cater to the interest and strengths of their class. This is exemplified by the use of video technology and editing for oral presentations, and the use of video games as a creator of empathy and tool for researching historical accuracy during the World War I period.

In advance of writing this research paper, I possessed the idea that ICTs are valuable tools in fostering the learning of students within the discipline of History. To some extent, this was echoed through my findings within the testimonials of each participant as they elaborated on their preferred ICT practices. However an element of this implementation that I did not account
for was the possible hindrance of technology accessibility within schools and the regulations of school board ICT policy. In the future, it is evident that more research needs to be conducted on the formation of ICT policies within GTA school boards, in terms of how they are conducted, and how teachers feel they are affecting their practices. In doing so, this may allow teachers to fully promote student success and learning within History classrooms.

Next in Chapter 5, I discuss the variety of implications for these findings, as well as provide recommendations for future researchers within this topic.
Chapter 5: Implications

5.0 Introduction

This chapter will first exhibit the key findings generated from this study and their significance to educational research. Then, I will discuss the implications that my study has for high school History teachers and how it will impact my teaching practice in the future. Afterwards, I will provide future recommendations for secondary school teachers, teacher education faculties and high schools, as well as administrators and policy makers rooted in the implications that I have presented. Lastly, I will explore other areas of research that could possibly relate to the field of Information and Communication Technologies (ICTs) in high school education.

5.1. Overview Of Key Findings And Their Significance

This study explored and analyzed how ICTs are reportedly implemented in high school History classrooms across the GTA. As well, this study sought to answer whether or not Information and Communication Technologies were, in teachers’ experiences, effective tools that could help foster the learning of the student body in History classrooms. Using the methodology of semi-structured qualitative interviews the following themes emerged: 1) factors rooted in a teacher’s educational upbringing that affects teachers’ relationships towards ICTs; 2) limitations that teachers faced while integrating ICTs in the GTA; and 3) pedagogies that teachers have used to integrate ICTs.

Perhaps the most significant factor that affected GTA teachers’ reported ability to integrate information and communication technologies were if they were raised in the presence of ICTs throughout their own secondary and post-secondary experience. As a result, this
allowed these teachers to be either more proficient, or seek out these resources as tools. The participants in my study revealed how their educational upbringings developed their perceptions of ICTs as educational tools, and how a teacher’s ability to integrate ICTS effectively is heavily rooted in how they were taught themselves. Therefore if Ontario educators wish to have learners that are proficient in ICT use, it is imperative to have schools with these tools available and a staff that has grown up as technological natives. As society continues to saturate in all forms of Information and Communication Technology, this is an important ideal to be conscious of not only within high school History classrooms, but all classrooms within the Greater Toronto Area school boards.

However, as the origins of these teachers’ technological integration were investigated, many obstacles in the integration process appeared. The main reported obstacles and hindrances of integrating ICTs into the GTA’s classrooms as expressed by the participants were proven to be board policies and the technological difficulties that can arise from ICT malfunction. The participants expressed frustration that their respective boards did not provide them with policies that allowed them to explore an array of options efficiently. This dissatisfaction arose from utilizing resources such as laptops funded by their own bank accounts, the lack of protection from school boards in case of possible network security issues, and the lack of progression in ICT usage that can be utilized under these policies. Feeling dissatisfied with the progression of ICT integration, with the amount of compensation they are provided, the liability they are under when utilizing ICTs, and with numerous nuances of ICT policies may cause high school History teachers in the Greater Toronto area to feel reluctant towards ICTs because of policy influence on their practice.
The methodological practice of this study also revealed that, in these teachers’ experiences, ICTs are resourceful tools in differentiating traditional instruction, varying assignment conduction, and classroom organization. By having information easily accessible, students can reportedly access resources that they may not have otherwise been able to access without the use of ICTs. Teachers can also use ICTs to differentiate instruction, therefore catering to the unique interests and strengths of their class.

5.2 Implications

This section closely examines the implications of using ICTs within high school History classrooms in the GTA. I will first peer into the broad implications that high school History teachers face, followed by the implications that administrators and policy makers face as well. I will then share and reflect on my own teaching practice and how this study has opened my eyes to the field of ICTs being integrated into my own pedagogical practice, and how it will influence me in the future.

5.2.1. Broad implications for the greater educational community

After reviewing the findings of this study and the scholarly research uncovered in the second chapter, it is apparent that using ICTs is an efficient practice in fostering the learning of students. With both scholarly evidence and anecdotal evidence displaying this finding, educational communities and institutions such as Ontario curriculum organizers and varying public school boards will be strongly influenced to implement ICTs into their everyday operations now more than ever. Whether increased funding to supply schools with an array of resources, or collaborating with ICT companies to develop school-specific technologies accomplishes this, it is apparent that education is quickly being engulfed into the digital realm. If
school boards and educators fail to recognize this shift in learning paradigm, students could risk missing out on practical and innovative learning experiences that could hinder their cognitive development and education experiences. In addition to this, due to the student-centered characteristics that ICTs have been proven to possess, a lack of technology integration in the History field could possibly result in an increase of student disinterest in the discipline.

However, technological integration in History teaching is not made possible without the proper policies in place. With domains such as gaming as pedagogy, documentaries, and a wide variety of domains spread throughout the internet, proper policies must be set in place for teachers to allow students to access these options. Yet in reviewing this study, disconnects between teachers, policy makers and administrators have shown to affect teachers in a negative manor. By limiting their ICT utilization and obliging teachers to work under policies that they have distaste for, a disconnect between teachers and administration has been insinuated. If this disconnect is not amended within the greater educational community, students could suffer by not progressing linearly with society in terms of their technological literacy and proficiency. This circumstance may unfold if the resources needed to advance their educational experiences will not always be utilized. This may also cause the pedagogical strategies of teachers to suffer, as students may grow to find traditional methods less enthusing and inferior.

5.2.2. Narrow implications – My personal teaching practice

Based on my research findings, I realized that if I wish to foster the learning of my students it is imperative to use ICTs as pedagogical tools in my History teaching practice and create a variety of student-centered learning domains that are practical to real life experience. As scholarly sources and anecdotal evidence reveal, it is my responsibility as an educator and
History teacher to allow my students to be able to access all of these different possibilities within the discipline of History and any other disciplines that I may teach in the future.

By allowing students to be up to date with new technologies that arise and become ingrained in society, I will not only be preparing them for future domains of education (i.e. university or college) but also the working world and other aspects of their life that use ICTs on a regular basis. This could result in me attending multiple technological education workshops, researching deeper into the possibilities of ICTs in History education, and also encouraging fellow History teachers to do the same. As well, by networking with other teachers, I would also be able to share ICT practices that I can adopt to successfully foster students in my own classroom and vice versa.

As per policy, there are numerous implications that could arise for myself. If policies do not change drastically by the time I am teaching in a high school History classroom, I must be prepared to invest my own money on ICT tools that will promote the learning of my students (i.e. laptops, gaming systems, phone applications, etc.). This may motivate me to become involved in the policy making process either by joining a board that controls curriculum development, or meeting personally with administrators to negotiate policy changes. As an educator it is my duty to go to the proper lengths to ensure my students have sufficient access to the educational tools that will maximize their cognitive development.

5.3 Recommendations

I recommend high school History teachers to branch out pedagogically from the traditional teaching methods of lecturing and note taking when appropriate. Methods such as gaming in History, using virtual tours of historical land sights, videos, and PowerPoint
presentations are all pedagogical methods that have proven within this study to have a place as a useful student-centered tool in the discipline of History.

This recommendation also carries over to policy makers and parents, as ICTs appear to be a budding aspect of education. My recommendation to parents is to research the programs and curricula that schools are offering that involve ICTs for learning. By placing a child into such schools and/or programs I believe that parents will be giving their children a higher opportunity for cognitive development and success in both educational and practical realms. Contrary to this, I recommend that policy makers create or integrate more programs that encourage the use of ICTs by students and teachers. Whether this is increasing funding to purchase such tools for teachers, or collaborating with ICT companies to create more technological infused curriculums, I truly believe that moving in this direction would increase the efficiency of public education and increase the morale of teachers.

5.4 Areas of Further Research

Firstly, I believe that a main area of research that needs to be focused on is the effectiveness of ICT board policies. As Tondeur et al. (2008) identify, ICT use in schools is generally subjective to the variables of the class level, to accessibility, and to the instructor themselves. In fact within Tondeur’s findings, only 12 of 53 principals within their surveyed schools had a school-wide ICT policy in effect that included clear goals and proper usage of information and communication technologies within the classroom. With this scholarly evidence combined with the testimonial evidence over teacher-administrator disconnect regarding ICT policy, future research could possibly study policies that have been found to be successful.
While there is evidence that supports the effectiveness of ICTs in student-centered learning, as well as the presence of this notion in the qualitative interviews conducted, I believe more research needs to be conducted on the possibilities of ICTs as pedagogical tools. By not limiting class material to the classroom setting (i.e., online domains such as Google Classroom), providing immediate feedback for students via e-mail, allowing students to work in groups with their peers within both the classroom and online setting, and creating a classroom environment that allows a teacher to facilitate learning rather than lecture and scribe course content (Firmin, 2013). This is reiterated in the findings of Boone, Fore & Rasheed (2007) reveals that both students with and without disabilities displayed positive development and sentiments toward the use of guided note software. And yet, policy changes do not appear imminent. By accumulating a multitude of research regarding the effectiveness of ICTs in the classroom, perhaps the positive aspects of ICTs in the History realm will take a more prominent position in policymaking.

5.5. Concluding Statements

The role of a teacher is first and foremost to create an ideal learning environment that allows students the opportunity to cognitively develop to their maximum potential. As a future teacher and a current researcher, the goal of this paper was to share findings that would contribute to the advancement of the field of History education. More specifically, the goal of this research study was to share findings that would open the eyes of educators and policymakers to the multitude of possibilities that arise from technology integration in History classrooms. This research is explicit to teachers who are seeking an expansion of their pedagogical practice that students will enjoy and be positively affected by. This study is also for principals, administrators, and curriculum developers alike who are continuing to improve the delivery of course content and the development of students in Ontario. In good faith, I anticipate that
educators and educational researchers can reflect on the findings of this study and positively improve and develop their practice. I recommend high school History teachers to allow students to be up to date with new technologies as this will not only be preparing students for higher education but also a variety of future careers and budding industries. I also recommend that all high school History teachers invest time into researching and integrating ICTs into their pedagogy where applicable. With evidence showing the success opportunities arise from ICT infused pedagogy, I believe that teachers in fact are doing a disservice to students by not integrating these technologies into their own classrooms.

Throughout my experience as an educational researcher and History teacher, this topic has become more relevant and important to me as time has gone along. As someone who has seen the technological age rise to forefront, I have noticed drastic change in Ontario’s educational system from the elementary level to the university level. I chose this topic because I believed that it would aid me in my practice and assist others in doing the same. In concluding this study, I can honestly say that I have adopted practices and notions that I hope will contribute to the success of my future students in years to come.
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Appendices

Appendix A: Informed Consent Letter

Date: ______________________________

Dear ______________________________,

My Name is Adam Selvaggio and I am a student in the Master of Teaching program at the Ontario Institute for Studies in Education at the University of Toronto (OISE/UT). A component of this degree program involves conducting a small-scale qualitative research study. My research will focus on teacher’s experiences of integrating information and communication technologies (ICTs) within History classrooms. I am interested in interviewing teachers who have taught at least 3 History courses since 2010. I think that your knowledge and experience will provide insights into this topic.

Your participation in this research will involve one approximately 60 minute interview, which will be transcribed and audio-recorded. I would be grateful if you would allow me to interview you at a place and time convenient for you, outside of school time. The contents of this interview will be used for my research project, which will include a final paper, as well as informal presentations to my classmates. I may also present my research findings via conference presentations and/or through publication. You will be assigned a pseudonym to maintain your anonymity and I will not use your name or any other content that might identify you in my written work, oral presentations, or publications. This information will remain confidential. Any information that identifies your school or students will also be excluded. The interview data will be stored on my password-protected computer and the only person who will have access to the research data will be my course instructor. You are free to change your mind about your participation at any time, and to withdraw even after you have consented to participate. You may also choose to decline to answer any specific question during the interview. I will destroy the audio recording after the paper has been presented and/or published, which may take up to a maximum of five years after the data has been collected. There are no known risks to participation, and I will share a copy of the transcript with you shortly after the interview to ensure accuracy.

Please sign this consent form, if you agree to be interviewed. The second copy is for your records. I am very grateful for your participation.

Sincerely,

Adam Selvaggio
**Consent Form**

I acknowledge that the topic of this interview has been explained to me and that any questions that I have asked have been answered to my satisfaction. I understand that I can withdraw at any time without penalty. I have read the letter provided to me by **Adam Selvaggio** and agree to participate in an interview for the purposes described. I agree to have the interview audio-recorded.

Signature: ______________________________________

Name (printed): ___________________________________

Date: ____________________
Appendix B: Interview Protocol

Hi, my name is Adam Selvaggio from OISE’s Master of Teaching program! I’m currently working on a project that concerns teachers’ experience of using information and communication technologies within high school History classrooms, and I am hoping to hear from you about your own related experiences. Thank you for sitting down with me today, I am going to ask you a series of questions regarding your experiences of integrating technology within your History classroom. The process all in all will take about 60-75 minutes. If any questions regarding the interview process please let me know, and we’ll begin whenever you are ready.

When you are ready to begin, please state your name for the recording:

Section A: Biographical Information

1. How long have you been a teacher?
2. How long have you taught History?
3. What education system were you a part of in high school?
4. What grades, subjects and streams do you currently teach?
5. In addition to teaching, do you play any other roles within the school (i.e. coach, club leader, etc.)
6. Did you have ICTs present within your own high school History classroom?
   a. If yes, what kind?
   b. If no, why do you think that is the case?
7. Did you have ICTs present within your undergraduate History classes?
   a. If yes, what kind?
   b. If no, why do you think that is the case?

8. Could you describe the environment of your current school? (i.e. wealth level, student diversity level, socioeconomic stats)

9. How long have you taught within this school?

Section B: Integration of Technology Within the Classroom

1. How would you describe your relationship and proficiency with ICTs?
   a. Which ones and how often do you use them outside of school?

2. What forms of ICT do you integrate in your History classroom?

3. Can you tell me about a recent lesson that you taught in History that featured ICTs?
   a. Did the students reach the learning goals you set for them? If yes, how? If no, why not?

4. How do student learning styles and/or exceptionalities factor into your ICT integration?

Section C: Beliefs Towards ICT integration

5. In your view, what does ICT integration in History look like in general?
   a. What does it not look like?

6. Why do you believe technology is a useful tool in History teaching?
   a. Could you please provide an example or anecdote that supports your belief?
7. Do you believe technology aids in the engagement of students?
   
   a. Why or why not?

   b. Could you provide an example or an anecdote that supports your belief?

8. Do you believe ICTs works/assists bests with a specific type of instructional practice (i.e., cooperative learning, differentiated instruction, etc.)?

9. What is your opinion of video gaming in History class?

Section D: Barriers Obstacles to ICT Integration

10. Are you aware if your board has an ICT policy?
   
   a. If yes, how do you feel about it?

   b. Does it inform your teaching practice?

11. Are you aware of your school having an ICT policy?
   
   a. If yes, could you describe it?

   b. How do you feel about it?

   c. Does it inform your teaching practice?

12. What supports are made available within your school?

13. Do you face any barriers/obstacles when using them? I
   
   a. If so, could you elaborate?

   b. How do you manage these barriers?
14. What supports would you like to see be put in place? Why?