A TALE OF TWO TECHNOLOGIES:
OPENING THE PRACTICES OF HISTORIANS, OPENING PUBLIC SERVANT CURRICULUM

by

Mark Jonathan Weiler

HBSc. University of Western Ontario, 2000

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Name:	**Mark Jonathan Weiler**
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 Chair: **Huamei Han, Assistant Professor**

_____

Dr. Kevin O'Neill, Associate Professor
Senior Supervisor

_____

Dr. Suzanne de Castell, Professor
Committee Member

_____

Dr. Wanda Cassidy, Associate Professor
Internal/External Examiner

_____

Dr. Joseph Polman, Associate Professor,
University of Missouri-St. Louis

Internal/External Examiner

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ABSTRACT

The design study documented in this dissertation is grounded in the material production of two technologies, one educational and one research. These two technologies pursue a common goal of providing secondary students with equal opportunities to learn how to do meaningful historical research. The methodological framework used is design-based research. Two cycles of software development are presented as a series of design narratives.

The first technology's educational goal is to support students learn to do meaningful historical research. The proposed means to this end is the provision of curricular resources that guide students towards the completion of historical research. These curricular resources are in the form of digital media representing historical inquiry as mediated action within a community of academic historians. The educational soundness of this design, however, is called into question when demographic studies reveal inequalities between the population of academic historians and the general population served by public schools.

Needing to discuss how inequities can be removed without shifting the burden to schools, the glimmer of hope I find is in curriculum created for public servants. With no substantial literature about public servant curriculum, a second cycle of software development is initiated. The goal of this technology is to encourage discussion about how public servant curriculum can participate in

dismantling inequities that impede schools. The means to this end is a

technology that makes extensive use of freedom of information legislation to

acquire documents about public servant curriculum that are in the custody of

government institutions and make them widely available on the Internet.

Keywords: secondary school history education; educational technology; design-

based research; public servant curricula; freedom of information.

DEDICATION

To heads of government institutions

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TABLE OF CONTENTS

LIST OF IMAGES

LIST OF FIGURES

LIST OF TABLES

1: INTRODUCTION

During the course of my PhD studies, two recently married friends I had known since high school moved to Vancouver. Their plan was to find temporary jobs and enjoy the west coast of Canada before settling down more permanently. During their sojourn, I visited them many times in their small third floor apartment that overlooked a quiet street in the West End of Vancouver. After a year or so, they were ready to move on to the next stage in their lives. On the last day we saw each other in their apartment, I gave them a gift I had made from primary source documents from the local library and archives. It was a short history about the street they had lived on while in Vancouver.

The idea of learning how to make meaningful cultural artefacts, such as historical accounts, figures centrally in my view about history education in secondary schools. If historical accounts are important enough for schools to require students to study them, then teaching students how to make the very thing held to be so important seems to me an obvious educational goal. This is not to suggest, as others have (e.g., Fling 1899/1971), that students spend all their time studying primary sources when adequate historical narratives are available. Rather, it is to state that at some point students learn to do meaningful historical research for themselves.

Given the demonstrable flexibility of computers, it is not surprising that one would turn to new technologies to find novel means to achieve this educational

goal. The purpose of the design study documented in this dissertation is to develop computer software to support students learning to do meaningful historical research. This design study entails the material production of two technologies harnessed together in pursuit of this common goal. It is *one* tale of *two* technologies.

1.1 History Education: "It was the best of times…"

Although relatively small, research and scholarship into history education is a bustling field. It is presently populated by various modes of academic inquiry seeking to document, criticize, and reform the practice of teaching students about the past. In the most conventional form, history education supports students in mastering a collection of historical narratives about the development of the nation in which students live (Osborne, 2006). In a degraded form, this sort of history is a tedious litany of obscure dates that dulls the mind with rote memorization (Loewen, 1995); in a better form, it is a cavalcade of stories that engages the intellectual and imaginative capacities of students (Egan, 1987, 1997).

Another prominent approach to history education involves teaching students to be critical consumers of historical narratives. This approach entails teaching students to reason about the constructed nature of historical knowledge (Seixas, 2000; Lévesque, 2007). From this perspective, students are taught that historical knowledge is not merely a set of narratives to be memorized but is socially constructed through methodological standards developed over time by communities of academic historians.

In pursuing the various goals of history education, education specialists have often turned to the technologies of their day. One cannot overlook the technologies of print-based media. Textbooks and source books have furnished schools with historical narratives and primary source documents since the nineteenth century (Osborne, 2003, 2004; Clark, 2006). The avant-garde of educational media changes however. During the 1960's and 1970's, with the audio-visual movement having peaked (Reiser, 2001), teachers used films, filmstrips, and transparencies to captivating the imagination of students as they studied the past (Fenton, 1969; SCHP, 1973).

By the 1980's and 1990's, the new technologies were personal computers. Educational specialists filled CD-ROMs with educational media such as lesson plans, hypermedia narratives, games, quizzes, and primary source documents for use in history classrooms (e.g., Hillis, 1999). With the emergence of the Internet, researchers of history education have continued to show interest in how the output of technology production can benefit history education. Today the vanguard includes online repositories of instructional materials for teachers (Cohen, 2005; NHEC, 2010), digital learning environments furnished with primary sources and scaffolds to prompt students into historical inquiry (Sandwell, 2005; Lévesque, 2008), and educational games that simulate historic events, such as the Montreal smallpox epidemic of 1885 (Kee & Bachynski, 2009). This engagement with a single class of machines requires reflection about why computers have sustained, and likely will continue to sustain, such intense interest.

1.2 The Proteus of Machines: Computer Technology

The twenty-first century has brought great attention to a single class of machines integral to massive (re)configuration of social, economic, and political relations at a local and global scale: programmable computers. These machines and their networks are so transformative because of their immense flexibility, an implication of the theoretical underpinnings of computation. In computational theory, a computer, such as a laptop, is a physical approximation of a universal Turing machine, a special type of machine capable of simulating any computer algorithm (Davis, 2000).

We experience the universality every time we use a computer. A desktop computer behaves like a word processor at one moment, then with a click of an icon it transforms into an email client, and then with another click it becomes a music player. It is one machine capable of mimicking multiple machines. The universal flexibility of computers is, however, much more dramatic than these prosaic examples suggest. Universality stretches the imagination. With a click of an icon, the same machine can become a video-editing suite, a malicious computer virus, a modelling tool for visualizing the seismic activity of the earth, or a 3D game world filled with orcs and elves imbued with magical abilities (Walker Rettberg, 2008). With this universal flexibility in mind, Seymour Papert described programmable computers as the "Proteus of machines" (1980, p.viii) referring to the shape-shifting sea god of ancient Greece.

It is nothing short of startling to see the shapes the Proteus of machines can take. For example, during the writing of this dissertation three major

computer technologies were launched into widespread global usage: Facebook (February 2004), YouTube (February 2005), and Twitter (March 2006). Each has reached massive scales of popularity and each has entered centre stage in the arena of global politics. During the 2008 United States presidential debates, YouTube brought video recordings of citizens' questions to the panel of candidates. In contrast, Iranian citizens used YouTube, Facebook, and Twitter to forge political resistance against government forces after allegations of massive corruption in the 2009 Iranian presidential elections (Giroux, 2009).

These examples of the sudden and dramatic popularity of computer applications provide a valuable lesson for those who study educational technology. Given the demonstrable and startling flexibility of digital computers and their networks, educational technologists need to take seriously the suggestion of being incredulous of the stories we repeat about educational technology (Bryson & de Castell, 1994). Repeating stories imposes a structure on what has universal flexibility. Instead we may be well served "to seek out those stories that are not being circulated… within which the complications, contradictions and complexities of this new educational domain are most likely and most productively to be discerned" (Bryson & de Castell, 1994, p.217).

1.3   Public Servant Curriculum: "It was the worst of times…"

While education and curriculum scholars were making a pilgrimage to the shape-shifting god of machines, a public curriculum in Canada was making a "remarkable odyssey" (Wilson, Stanford, & Dwivedi, 2004, p.280). The odyssey began in the nineteenth century when the Canadian parliament attempted to

curtail corruption within the newly established Government of Canada. The corruption was a result of governments recruiting public servants based on their patronage to a political party (Hodgett, Whitaker, Wilson, & McCloskey, 1972; Wilson, Stanford, & Dwivedi, 2004). Early twentieth century reforms to the Canadian public administration attempted to end political patronage by establishing hiring practices based on the principles of scientific management and merit-based appointment (Hodgett, et al., 1972; Savoie, 1999). Under this regime, it was considered a failure of public administration hiring if departments needed to teach public servants. As late as the 1950's 'public servant curriculum' was tantamount to "practicing witchcraft" (Wilson, Stanford, & Dwivedi, 2004, p.262, see also p.259).

But the saga of public servant curriculum in Canada also includes transformation. In 1969 the Official Languages Act required federal employees to speak in both French and English and the Canadian Government renewed support in Language Training Canada, established in 1964 (TBCS, n.d.c). In the same year the Official Language Act was adopted, public servant curriculum appeared at the Canadian International Development Agency in the form of the Centre for Intercultural Learning (DFAIT, n.d.). In the 1970's government commitment to public servant curriculum could be found in the Public Service Commission's Bureau of Staff Development and Training (PSCOC, 1971).

By the turn of the millennium, the Government of Canada had called upon its ministries and agencies to become places of "continuous learning of a skilled

workforce" (Clarkson, 1999)[1]. In 2003, the federal Parliament passed the Public Service Modernization Act merging the Canadian Centre for Management Development, Training and Development Canada, and Language Training Canada into the Canada School of Public Service, which has its main headquarters in Ottawa and regional centres in fourteen cities around the country. Learning, training, development, education, and curriculum are now part of twenty-first century public service in Canada (Armytage, 1996; Wilson, Stanford, & Dwivedi, 2004).

Yet the odyssey of public servant curriculum, inconceivable in the nineteenth century, an object of suspicion in the mid-twentieth century, and a jewel in the crown of twenty-first century public service reform, is a tale not often written in institutions of higher learning. Precious little academic literature documents the existence of how governments create learning opportunities for our public workers. This absence of literature leaves one in want of words when responding to questions such as 'what influence does public servant curriculum have on the behaviour of public institutions?' For a time an absence of literature could be explained by a lack of government transparency. But Canada's freedom of information legislation, the Access to Information Act, in effect since 1983, now provides statutory assurance that most government records, including those related to public servant curriculum, are accessible.

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[1] See also Electronic Appendix Two ("Transforming the Public Service Through Learning", December 12, 2005, Board of Governors Meeting, Canada School of Public Service).

This dissertation brings these two forms of public curriculum—public school curriculum and public servant curriculum—together in one tale of two technologies. In the following section, I provide an overview of the chapters in this dissertation.

1.4 Outline of Chapters to Come

It was the best of times for history education; it was the worst of times for public servant curriculum. It was an age of abundance for scholarship of public school curriculum; it was an age of poverty for inquiry into public servant learning. It was an epoch of epistemology; it was an epoch of agnotology[2]. And as we march towards the twenty-second century, an ocean seems to have divided these two realms of public curriculum.

The design study documented in this dissertation charts a course across the water that separates these two realms. Specifically, this design study finds a route between the relatively prosperous academic field of history education and the seemingly forsaken academic field of public servant curriculum. The movement between these two domains is fashioned through an account of the material production of computer technology and is guided by the question of how computers can provide secondary school students with equal access to opportunities to learn to do meaningful historical research.

At the outset of this design study I was, like many others, unaware of public servant curriculum. This study, therefore, starts within a field far from

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[2] Agnatology refers to the study of culturally induced ignorance (Proctor & Schiebinger, 2008).

public servant curriculum, history education. Chapter Two presents the results of a survey of the landscape of history education as practiced in secondary schools. This survey documents three approaches to history education, each more than seventy years old. Within this educational landscape, this design study situates itself within an approach to history education where students are taught to do simplified forms of historical research.

Chapter Three describes the methodology I use to develop the technologies produced in this design study. The methodological framework within which I conduct my research is called design-based research (Brown, 1992; Collins, 1992; Design-Based Research Collective, 2003). As a framework for educational inquiry and technology development, design-based research does not prescribe specific methodologies per se but instead commits to a process of evolving robust educational theory, digital technologies, and innovative educational practices through a process of incremental improvements to educational designs. The design study undertaken in this dissertation consists of two cycles of software development. To document each cycle of software development, I use the conventions of ethnographic representation (Van Maanen, 1988) and present major phases of software development as design narratives (Hoadley, 2004).

Chapter Four renders this general methodological framework more visible with particulars from this design study. Specifically, Chapter Four documents four interpretable dimensions to this design study: instructional, theoretical, design, and researcher. Chapters Five and Six document two important phases in the

first cycle of software development. For phase one, presented in Chapter Five, I conduct field observations of a grade ten Social Studies class in British Columbia in which students are participating in an instructional design that requires them to complete, with the guidance of online history telementors, an original piece of historical research. Chapter Five presents this phase as a design narrative entitled "The Tracks of Canada's Past" and is written with the conventions of ethnographic impressionism (Van Maanen, 1988). In light of problems that occur during the instructional design, this fieldwork becomes a form of requirements gathering, an early stage in software development (Royce, 1987). This requirements gathering provides the basis for proposing an educational technology for avoiding similar problems in the future.

Chapter Six documents the second phase of the first cycle of software development. This phase, referred to as the program design phase (Royce, 1987), entails translating the requirements in the previous phase into working computer code. This program design phase is presented in Chapter Six as a design narrative called "The Code is Dead." This design narrative uses the writing conventions of confessional ethnography (Van Maanen, 1988) and describes the development of a prototype of a computer application called Practice Forge, an online multi-media repository of videos, photographs, audio interviews, and scanned documents that attempt to represent academic historical inquiry as mediated action within a community of practice (Vygotsky, 1978; Lave & Wenger, 1991).

Chapter Six also documents how I encounter a significant obstacle during the program design phase. While developing Practice Forge, I find studies of United States and Canadian university history departments that reveal significant demographic disjunctions between the population of academic historians and the general population served by schools. Based on my reading of the sociocultural theories of human learning that inspired the design of Practice Forge, I conclude that the mediational tools and practices of historical inquiry fashioned within the material and social circumstances of academic historians, would lose their capacity to do meaningful cultural work for the population of students served by schools. As such, I conclude that Practice Forge cannot provide a sufficient range of educational resources and so I halt its development.

With the first cycle of software development stopped, Chapter Seven documents a phase of concentrated speculation. During this phase, I ask how education and curriculum inquiry can be directed towards ameliorating inequities that impede schools without placing excessive burdens on students, teachers, or schools. The answer I find is to focus inquiry onto curriculum that government and public bodies create for our public employees, or what I come to refer as 'public servant curriculum'[3].

Chapter Seven documents how I am unable to find substantive academic literature on the topic of public servant curriculum even though numerous examples of government organizations that develop and implement public

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[3] More specifically, I focused on *post-entry government-created public servant curriculum*, as will be discussed in Chapter Six.

servant curriculum can be found, such as the Canada School of Public Service and the Federal Executive Institute in the United States. The discrepancy between the high level of government commitment and low level of academic interest prompts me into a second cycle of software development. In this second cycle, documented in Chapter Seven, I develop computer software to use freedom of information legislation as a means to acquire documents relating to public servant curriculum. In this cycle of software development, the requirements and programming design phase overlap to a great extent, for reasons to be explained. Chapter Seven, written as a design narrative, uses the conventions of ethnographic impressionism to represent this cycle of software development (Van Maanen, 1988).

Chapter Eight presents a series of demonstrations that illustrate the range of documents relating to public servant curriculum that I acquire using the technology described in Chapter Seven. These demonstrations reveal that substantial documents about public servant curriculum can be acquired at minimal financial costs in very short spans of time, as quickly as twenty-two days. Chapter Nine highlights significant contributions made during these two cycles of software development and concludes with suggestions for future research.

2: APPROACHES TO SCHOOL HISTORY EDUCATION

The design study documented in this dissertation examines the question
*how can computing technologies support secondary students learning to do
meaningful historical research*? The examination begins in this chapter with a
presentation of the results of a survey of the history education literature and
archival material produced by non-school history organizations engaged in
history education in the early twentieth century in the United States. The results
of this survey reveal three approaches to history education: (1) a Collective
Memory Approach, (2) a Disciplinary Thinking Approach, and (3) a Making
History Approach. This study situates itself with the Making History Approach.

2.1 Approach 1: Collective Memory History

2.1.1 What is Collective Memory?

Collective memory, a concept attributed to the early twentieth century
French philosopher and sociologist, Maurice Halbwach (1941/1992), has in
recent decades inspired an interdisciplinary field called memory studies, which
examines how social groups remember the past. As a concept, collective
memory refers to how various groups in society "are capable at every moment of
reconstructing their past (p.182), and how individuals within these groups
remember the past by drawing on social frameworks of memory. For example,
Schwartz (1991) studied how painters, sculptors, and writers constructed images

of the historic figure, George Washington, before and after the American Civil

War. He found Washington's image as a "non-democratic military and political

leader was democratized between 1865 and 1920" (p.221). Collective memory,

as a concept, stands in contrast to the concept of *history,* which refers to the

construction of knowledge about the past by academic historians.

2.1.2 Collective Memory and School History Curriculum

Society has long used school history curriculum to teach collective

memories to youth (Seixas, 2000; Osborne, 2006). The goal of a Collective

Memory History curriculum is to ensure students grow into adults who can recall

the same historical narratives as others in their community. Schools achieve this

goal by teaching students to master a corpus of propositional knowledge about

history, most often found encoded as narratives in history textbooks, and how to

emotionally respond to this knowledge. For example, students must learn not

only that the Invasion of Normandy occurred in the summer of 1944, but also an

appropriate way to feel about it. The effects of historical narratives should not be

underestimated. Seixas (2000) describes historical narratives as having powerful

effects on the present and future. They fund students and society with ideas

about group identities that affects social relationships and moral action.

Within public education, the history narratives that students are taught

often pertain to the historical antecedents that led to the formation of the nation

through to its present status. This type of curriculum is referred to as 'nation

building curriculum' (Osborne, 2006). A justification for nation-building curriculum

in schools is that knowledge of the nation enhances the students' capacity to

participate in civic life (Seixas, 2000; Osborne, 2006). In a degraded form, Collective Memory curriculum is a litany of obscure dates that dull the mind with rote memorization (Loewen, 1995). In a better form, it is a cavalcade of stories engaging the intellectual and imaginative capacities of students (Egan, 1997).

1.1.3 Developing Collective Memory Curriculum

When developing a Collective Memory curriculum, educators must decide which historical narratives to include and which to exclude. Selecting narratives to include has not been easy. It has led to intense debates within the media and the highest political arenas (Nash, Crabtree, & Dunn, 1997). These "History Wars", as these debates were called in the United States, spread to Canada (Granatstein, 1998), and more recently, to Australia (Macintyre & Clark, 2003). One side of the debate promoted teaching students a political and military history that valorizes the emergence of their nation and imbues students with patriotism (Granatstein, 1998). The debate's other side promoted teaching history from the perspectives of a greater range of social and economic groups that make up the nation under study. These history curricula document the experiences of social groups with less political or economic power and teach students to be critical of the nation into which they were born (Nash et al, 1997).

Since selecting historical narratives is central to developing a Collective Memory curriculum, academic studies have examined what narratives are ultimately selected. Many studies have examined curricula and textbooks for ideological content (FitzGerald, 1979; Anyon, 1979; Tetreault, 1986; Kuzmic, 2000). These critical studies expose history textbooks as "weapons of group

interest" (Anyon, 1979, p.363) and schools as cultural sites that indoctrinate students to accept particular social, economic, and political arrangements even though they serve other groups at the expense of students.

Scholars have studied history textbooks for ideological content in numerous ways. They have examined: (1) actual narratives in textbooks (Zajda, 2008); (2) representations of social groups in historical narratives (Hirschfelder, 1975; Cruz, 1994; Kuzmic, 2000); (3) how social representations have changed over time (Clark, 2005; Morgan, 2008), and (4) how narratives are organized within the design of textbooks (e.g., sidebar narratives versus integrated within the main text) (Clark, 2005; Tetreault, 1986). These studies are important. When state-run schools exclude or misrepresent social groups to buttress a particular Collective Memory, students are denied access to needed historical knowledge (Marwick, 1980; Seixas, 2000). Research studies have documented adverse consequences arising from the misrepresentation or exclusion of social groups in school textbooks. Based on a review of studies on the effects of textbooks, Wirtenberg, Murez, and Alspektor (1980) conclude that social content of textbooks can negatively affect student self-image, career aspirations, academic achievement, and attitudes towards social groups**.**

Along with the recognition of the need for historical knowledge, history educators increasingly recognize that historical knowledge is not fixed. Historical knowledge depends to a significant degree on the position from which it is written and therefore is flexible. This flexibility allows historical epistemology to permit multiple historical accounts with each capable of claiming some degree of truth

(Seixas, 2000). With multiple historical narratives from which to choose, schools are put in a position to select narratives congruent with the goals of a public education system that serves a diverse population. A history curriculum that tells stories of a narrow portion of the population, although accurate, may be inappropriate for schools trying to provide a heterogeneous population with equal access to educational opportunities.

2.1.3   A Problem with Collective Memory History

Scholars of history education point out that presenting historical knowledge as a series of historical narratives has a significant shortcoming (Seixas, 2000; Wilson, 2001; Lévesque, 2007). When a curriculum is monopolized with narratives, it excludes material that reveals the constructed nature of those narratives. A consequence of excluding accounts of how historical narratives are constructed is that students do not learn more systematic ways of thinking about historical knowledge. Empirical research has documented that students in Collective Memory history programs had naïve ways of thinking about historical knowledge (Shemilt, 1980). In the late 1970's, the Schools Council History 13-16 Project oversaw a comparison study between 500 students enrolled in Collective Memory curricula, and 500 students enrolled in an experimental history program that emphasized how historical knowledge was constructed. The results revealed that compared to the experimental group, students enrolled in Collective Memory curricula held naïve ideas about (1) the construction of historical knowledge, (2) historical explanation, and (3) historical methodology (Shemilt, 1980). These findings should not be surprising however.

A curriculum monopolized by narratives does not present students with the challenges historians face when producing knowledge, or how historians propose and debate solutions. Consequently, naïve historical epistemologies held by students go unchallenged.

The presence of historical naiveté among students troubles some history education scholars (Seixas, 2000; Lévesque, 2007). Students are maturing in a pluralistic society that permits different accounts of the past that compete for recognition. Lévesque argues that without a more sophisticated understanding of the nature of historical knowledge than can be provided by Collective Memory curriculum, students will struggle to reconcile the presence of competing accounts of the same historical events. On the grounds that the Collective Memory Approach does not support students in developing a sufficient knowledge of historical epistemology, a major reform effort in history education has formed. As will be documented, this reform aims to teach students to reason about historical knowledge by emphasizing the epistemological challenges of knowing the past as well as how historians have responded to them.

2.2 Approach 2. Developing Disciplinary Thinking

History educators have an alternative to the Collective Memory curriculum in what is called the Disciplinary Thinking Approach (Seixas, 2000; Lévesque, 2007)[4]. This approach teaches students to reason about epistemological challenges of constructing historical knowledge (Fling, 1899/1971; Fenton, 1966;

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[4] Cutrara (2009) refers to this as the *Disciplinary Cognitive Citizenship* approach.

Shemilt, 1980; Bain, 2000; Seixas, 2000; Lévesque, 2007). The ability to reason about the epistemological problems associated with knowing the past is called 'historical thinking'; it stands in contrast to 'historical knowledge', which refers to propositional knowledge about the past (Wineburg, 2001). Whereas the goal of Collective Memory history education is the mastery of historical knowledge, the goal of Disciplinary Thinking history education is to teach students to develop both historical knowledge and historical thinking.

2.2.1 What is Historical Thinking?

What are the characteristics of competent reasoning about the problems associated with the construction of historical knowledge? The answer for many researchers entails turning to those at the centre of the production of historical knowledge itself—academic historians. Van Sledright (2004) writes:

> Historians can serve as a benchmark in relationship to which we can understand what the less sophisticated historical thinkers do. However, we must not unfairly hold novices to the standard set by the experts. The academic development distance between novices and experts is a gap that history teachers – through history education – can strive to close (p.230).

Setting historians' thought processes as the standard of historical thinking has led researchers to provide accounts of *how* historians reason about historical knowledge. Scholars of history education have constructed accounts of how historians think by analyzing the texts philosophers and historians have written about historical knowledge and historiography (e.g. Lévesque, 2007). Some educational psychologists have based accounts of competent historical thinking

on empirical studies of historians speaking aloud as they analyze primary sources to construct a narrative (e.g., Wineburg, 2001).

University of Nebraska historian Fred Marrow Fling, who worked at the turn of the twentieth century, developed the first account of historical thinking for school history (Fling, 1899/1971; Osborne, 2003). Fling based his profile of skilled historical thought on the writings of nineteenth century German historians, in particular Ernst Bernheim's "Lehrbuch der historischen Methode" (1889/1960). For Bernheim, historians developed historical knowledge by following a procedure of textual criticism and synthesis of primary source documents. Fling taught schoolteachers how to use this simplified historical method in schools.

Contemporary scholars of history education have also constructed accounts of historical thinking (Seixas, 1996; Lévesque, 2007). According to Seixas, historical thinking has its origins in communities of historians who routinely struggle with epistemological problems as they construct and debate historical knowledge. Through ongoing participation in this community, historians progressively internalize distinct ways of thinking about the constructed nature of historical knowledge (Seixas, 1993). Since historians document and debate many of these epistemological problems in the academic literature, an account of historical thinking can be constructed from a close reading of historiographical literature. Based on his reading, Seixas proposes that an account of competent historical thinking revolves around epistemological challenges of evidence, moral judgement, historical significance, historical perspective, continuity and change, and cause and consequence (Seixas 1996).

2.2.2 Examples of Disciplinary Thinking Curriculum

Numerous examples of curriculum or teaching methods fit within the Disciplinary Thinking mould of history education (Osborne, 2003, 2004). As indicated earlier, Fred Marrow Fling taught a form of historical thinking as early as 1899 (Osborne, 2003). British educationalist M.W. Keatinge also promoted historical thinking in British schools in the early decades of the twentieth century (Osborne, 2004). Interest in teaching historical thinking intensified in the 1960's and 1970's when the New Social Studies' Movement emerged in the United States. History curriculum developers at Carnegie Mellon University (Fenton, 1966), and Amherst College (Brown, 1970; Brown 1996) followed Jerome Bruner's structure of the discipline model of curriculum design (Bruner, 1960). These multi-year history curricula infused course materials with primary source documents and instructional activities for teaching students to think in ways that resembled how historians thought about historical knowledge.

The most influential Disciplinary Thinking curriculum of the 1970's was developed in the United Kingdom. The Schools Council History 13-16 Project developed a history curriculum based on educational philosopher Paul Hirst's forms of knowledge model of education (Hirst, 1965). Like Bruner, Hirst argued that curriculum be organized around concepts and methods of academic disciplines rather than characteristics of content, such as chronological order of events in the case of history. The Schools Council's history curriculum became popular throughout the United Kingdom. In 1972, the School Council

implemented pilots programs and by 1988 approximately 1,200 schools had adopted it (Dawson, 1989).

One reason the School Council History 13-16 curriculum is a prominent example of a Disciplinary Thinking curriculum is that its organizers conducted comparison studies of students in regular history programs and students in their curriculum. The results indicated that students who completed the Schools Council's history program had more advanced ideas about the constructed nature of historical knowledge than the control group (Shemilt, 1980). These results gave credibility to the Disciplinary Thinking Approach as a viable alternative to the Collective Memory Approach.

2.2.3 Problem with Disciplinary Thinking Curriculum

A problem with Disciplinary Thinking Aproach is the presence of a notable contradiction. When considering students' naïve historical thinking, an increasing number of studies have been inspired by sociocultural theories of human learning (Levstik, 1999; Yeager, Foster, & Greer, 2002; Levstik & Groth, 2005; Lévesque, 2005). For example, Barton (2005) studied the criteria forty students in rural Northern Ireland used when assessing 'historical significance', a component of historical thinking (Seixas, 1996). Barton's unit of analysis expanded beyond students' verbal utterances to include how the local community constructed representations of the past (e.g., through murals) and an analysis of the history of religious and political conflicts shaping contemporary rural life in Northern Ireland. Barton concluded that the social and historical contexts in which students developed influenced how they reasoned about historical knowledge.

The methods for studying historical thinking among historians, however, are different. The profiles of historical thinking among academic historians are based on an analysis of historiographical texts (Seixas, 1993; Seixas 1996; Lévesque, 2007) or psychological studies (Wineburg, 2001) rather than their sociocultural contexts. This begs a question: why use different methods to study the same phenomenon (i.e., 'historical thinking') in different groups? Addressing this question is important. If sound rationale for using different method can be provided, then existing and future studies can be assessed against it. If not, then researchers may be able to formulate novel research studies.

2.3 Beyond the Collective Memory/Disciplinary Thinking Dichotomy

In the previous sections, I provided an overview of two approaches to school history education documented in the history education literature. But at least one other approach has not been described in overviews of history education (Seixas, 2000; Wilson, 2001; Lévesque, 2007; Osborne, 2006). In the following section, I document this third approach by providing specific examples of major history education programs. Attention to this third approach expands and enriches our way of thinking about history education as it is actually practiced. It is within this third approach that I situate my dissertation study.

2.4 Approach 3: Making History

The third approach to history education is where students are taught *how* to research and write history for themselves. I refer to this approach as the Making History Approach. Like the Disciplinary Thinking Approach, the Making

History Approach rejects the position that adequate history education has students only study the results of other people's research. This rejection, however, does not remove all narrative study from a Making History curriculum. Rather it de-emphasizes narrative-study at some point in order to teach students *how to* make what is held to be so meaningful—accounts of the past. Educators advance this approach by appealing to a range of educational benefits that arise from it, such as increased academic literacies, greater interest in history, and an increased sense of agency (Morrell, 2004; Morrell & Rogers, 2006). The Making History Approach shares a strong resemblance to Disciplinary Thinking history as both derive instructional strategies from epistemological practices of academic historians. However, the two diverge in their aims. Whereas a Disciplinary Thinking curriculum tries to teach students how to reason about the constructed nature of other people's historical accounts, a Making History curriculum tries to teach students how to construct their own historical accounts.

Examples of the Making History Approach make periodic appearances in the history education literature (Candeloro, 1973; Lukowitz, 1978; Mass, 1983; Kobrin, 1995; Brundage, 1997; Levstik & Barton, 2005; Manuel, 2005). Despite these appearances, it is unclear why overviews of history education have not recognized it as a legitimate approach in its own right (Seixas, 2000; Wilson, 2001; Osborne, 2006). Attributing such absence to a general lack of interest among educational practitioners would be incorrect. The following sections draw on historical and contemporary examples to reveal that the Making History Approach enjoys popularity.

2.4.1 Contemporary Example

In the summer of 2004, the University of California at Los Angeles' Institute for Democracy, Education, and Access (IDEA) marked the fiftieth anniversary of Brown versus Board of Education with a five week educational seminar titled "Equal Terms: The Struggle for Educational Justice in Greater Los Angeles, 1954-2004" (Morrell & Rogers, 2006). Brown versus Board of Education refers to a landmark decision made by the United States Supreme Court that ruled racial segregation in schooling was unconstitutional (Ettinger, 2003). This seminar brought together twenty-five secondary school students from working-class, African-American, and Latino backgrounds who to that point had received low grades in their schooling. The seminar taught students to use the intellectual, cultural, and physical tools of critical historical research to investigate the effects Brown versus Board of Education had on the students' local communities.

The educators and researchers drew from critical theory, critical pedagogy, situated learning theory, and theories of communities of practices to design the seminar (Morrell, 2004; Morrell & Rogers, 2006; Rogers, Morrell, & Enyedy, 2007). During the seminar, teachers and seminar partners taught students skills to investigate the past and produce culturally recognizable communicative artefacts, such as history papers and presentations. These investigations were conducted in partnership with long standing community groups that acted against power-imbalances within the students' communities (Rogers, Morrell, & Enyedy, 2007).

The first two weeks of the seminar offered students a foundation in historical knowledge on American school segregation. The teachers taught students about Brown versus Board of Education with historical texts, documentaries, group discussion, and special guest speakers. In the third week, seminar organizers and teachers de-emphasized teaching historical narratives and began to teach students how to research history by participating in a history project with more experienced researchers (Morrell & Rogers, 2006). The students formed small groups and picked a topic to study. Through professional and social networks, seminar organizers created opportunities in the students' local community to pursue their historical investigations. For projects, students developed a research plan, acquired and analyzed secondary literature and primary source materials, interviewed experts on desegregation, and learned practical knowledge necessary to conduct historical research in a rudimentary form. The results of their research projects included a substantial research report, a thirty-minute presentation to an audience that included civil rights attorneys, university researchers, and public officials. The presentation included a video documentary that told "the stories of young people, the age of our student researchers, who became quiet and not-so-quiet heroes as they confronted racial inequality in their school and communities" (Morrell & Rogers, 2006, p.368).

Based on their ethnographic analysis of the seminar, the researchers concluded "students moved from consumers of secondary texts chronicling a historical narrative, to producers of critical public histories" (Morrell & Rogers,

2006, p.366). The students also learned a constellation of academic literacies, and acquired greater knowledge about a historically significant event in their local and national history.

As indicated earlier, academics of history education have not yet included this Making History Approach in theoretical overviews of history education. Since the Institute for Democracy, Education, and Access's critical public historian project is informed by contemporary educational thought, such as critical pedagogy (e.g., McLaren, 1989), cultural studies (e.g., Giroux, 1996), sociocultural theories of learning (e.g., Lave & Wenger, 1991), and new literacy studies (e.g., Street, 1993), it provides valuable insights for those interested in presenting overviews of theoretically informed approaches to history education.

Although the Institute for Democracy, Education, and Access's five-week seminar was a one-time event to mark the historic significance of Brown versus Board of Education, it is one of many examples of an approach to history education that teaches students to research and write history. In the following sections, I document examples within the Making History Approach on a much larger scale than the five-week student seminar.

2.4.2 Large-Scale Examples: Historical and Contemporary

2.4.2.1 **Junior Historian Movement (1938-1968)**

Between 1938 and 1968, American schools partnered with state-level historical organizations to create networks of school-based history clubs. These junior historical societies, as they were called, were organized around the belief

that students could research and write local history (Webb, 1941). These junior

historical societies enrolled tens of thousands of secondary school students from

fourteen states and became known as the Junior Historian Movement (Carroll,

1961; Pendergast, 1974).

No mention of the Junior Historian Movement can be found in mainstream

academic literature but can be found in tertiary sources discovered using new

online search engines. Academic literature may not mention the Junior Historian

Movement because historians of Social Studies and history education in the

United States have focused on how social conservatives, social progressivists,

and social reconstructionists have competed for control of classroom-based

curriculum (Evans, 2004; Hertzberg, 1981). These studies overlook school

education extracurricular programs such as history clubs. The description of the

Junior Historian Movement below is based on primary source materials and an

unpublished PhD dissertation (Pendergast, 1974).

1.4.2.2 Texas Junior Historical Society

The Texas State Historical Association, based at the University of Texas

at Austin, led the Junior Historian Movement with its successful Texas Junior

Historical Society program (Carroll, 1961; Pendergast, 1974). In the 1930's,

Texas schools began to reduce the amount of history taught to make room for

the Social Studies curriculum that had become popular with the rise of

progressivism in schools[5]. The diminished place of history in schools disturbed

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[5] Webb, W.P. (1940). Texas Collection, *Southwestern Historical Quarterly*, 43(3), p.378-399.

the Texas State Historical Association who responded by partnering with the

Texas State Teachers Association to form a state-wide society of school-based

history clubs called the Texas Junior Historical Society[6]. The Texas State

Historical Association promoted the junior historical society throughout Texas.

To become a member, a school needed to meet several requirements.

History clubs needed to have: a history teacher and member of the community as

club sponsors, establish a constitution with provisions for regular meetings, build

a collection of Texas history books, and pursue the study of local history[7]. With

membership came privileges. Each club could send two delegates to the annual

meeting of Texas State Historical Association in Austin. While senior historians

presented papers on Friday and Saturday, the Saturday program included

sessions for delegates from the Texas Junior Historical Society. Students gave

club reports and presented results of their historical investigations. The meeting

ended with an awards ceremony followed by a tour of Austin[8].

In 1941, the Texas State Historical Association began publishing a journal

containing the results of students' historical research. Between 1941 and 1960,

The Junior Historian published approximately 1,300 history articles by students in

the Texas Junior Historical Society. The titles of student papers reflected Texas

regional and social diversity: "The Mexican Raid In Nueces County", "Stephen F.

Austin's Protégé: Jose Maria Carbajal", "The First Ranch North Of The Rio

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[6] Webb, W.P. (1940). Texas Collection, *Southwestern Historical Quarterly*, 43(2), p.280.
[7] Author unknown (1940). Junior Historians. *Southwestern Historical Quarterly*, 43(3), p.393-399.
[8]   Carroll, 1961.

Grande-Neustra Senora De Dolores", and "The Vanished Towns Of The Rio

Grande Valley", to list only a few[9].

In August 1947, Time Magazine published an article about the Texas

Junior Historical Society[10]. In the years to follow, other state and local history

associations began to organize junior history societies. In 1948, junior societies

were operating in New York, Virginia, and Minnesota. By 1952, Georgia, Illinois,

Indiana, Mississippi, Nevada, New York, North Carolina, Wyoming, and

Wisconsin had junior history societies too. By mid-century, over 32,000 students

enrolled in these societies[11]. By 1968, approximately 34,000 students across

eleven states participated in junior history societies[12]. Of these, Texas, Illinois,

Indiana, Minnesota, and Pennsylvania published journals for its membership as

well as hosted annual conferences for students to share their historical findings.

The Junior Historical Movement is an important chapter in the study of

history education in the United States. It is important because it gives historic

depth to contemporary large-scale examples of the Making History Approach. In

the following section, I document some of these contemporary examples.

2.4.2.2 National History Day (1974-present)

In 1974, a second major initiative began that bore the markings of a

Making History Approach to history education. At Case Western Reserve

University in Cleveland Ohio, historians were frustrated by the quality of history in

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[9] Carroll, 1961.

[10] Monday, August 11, 1947, Time Magazine "By Amateurs".

[11] History News, 7(4), Feb 1952, p.13, 16.

[12] Pendergast, 1974.

schools (Gorn, 2001). In response the historians organized a one-day contest for students to meet and present the results of inquiry-based history that had become the vanguard of the New Social Studies' curriculum (Fenton 1966; Brown, 1970). This gathering of students became an annual event and was named National History Day. Through partnerships with regional organizations, National History Day expanded throughout the American mid-west and eventually across the county. It presently serves 40,000 teachers and 700,000 students on an annual basis (Gorn, n.d.).

Presently, the National History Day program begins in the fall with students from participating schools picking a research topic related to a theme organizers set. Past themes have included: *Revolution, Reaction, Reform* (2002), *Rights & Responsibilities* (2003), and *Exploration, Encounters, Exchange* (2004). Although students are taught to do original source-based research, they have the option of doing research either individually or in small groups. They can also present their findings in a variety of forms: essays, websites, documentaries, performances, or tabletop exhibits. Students enter their results in local contests each February and, if successful, in a state-wide competition in April followed by a national competition at the end of the school year hosted at the University of Maryland (National History Day, n.d.).

To support students as they research the past, National History Day provides teachers with a range of instructional resources, such as bibliographies based on the annual theme, lesson plans about research methodologies, guidebooks for creating documentaries, and activities to teach students

strategies for handling large volumes of texts (National History Day, 2005). National History Day also hosts annual summer institutes for teachers where teachers are introduced to primary sources, novel teaching methods, current historical scholarship, and professional historians (National History Day, n.d.).

With almost three quarters of a million students participating in National History Day yearly and boasting a 35-year history, National History Day is a significant achievement in American history education (Gorn, 2001). Despite its success, articles about National History Day appear infrequently in the academic literature, and its unique character has not found entrée into overviews of history education (Seixas, 2000; Wilson, 2001; Osborne, 2006; Lévesque, 2007).

2.4.2.3 International Examples

It is worthwhile to mention similar educational programs found in countries beyond the United States. In 1974, Germany's Koerber Foundation started "Geschichtswettbewerb des Bundespraesidenten"[13], a history competition in which students researched local German history (Johnson, 2010)[14]. In 1998, the Koerber Foundation sponsored EUSTORY, a network of national history research competitions modelled after the successful Geschichtswettbewerb. As

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[13] "Geschichtswettbewerb des Bundespraesidenten" means History Competition of the Federal President. The German president endorsed the competition when it was established (Johnson, 2010).

[14] Personal communication with Crystal Johnson, history education specialist and former Executive Director of the Chicago Metro History Education Center (September 22, 2008, with permission). Johnson has worked extensively with National History Day and has recently completed comparative research on the National History Day, Geschichtswettbewerb des Bundespraesidenten, and EUSTORY (Johnson, 2010).

of 2008, EUSTORY involved twenty European countries[15]. In 1993, the Historica

Foundation in Canada began implementing Historica Fairs in which students

from grade four to nine present historical exhibits that document the results of

their historical inquiry. In 2006, more than 263,000 students in every Canadian

province and territory participated in these fairs (Historica, 2006). Most recently,

Australian history educators started The National History Challenge, which

"encourages students to use research and inquiry based learning to discover

more about Australia and its past" (National History Challenge, 2009).

2.5 In the Chapter that Follows

Each of these examples, the IDEA's critical public historian project, the

Junior Historian Movement, National History Day, Europe's EUSTORY,

Germany's Geschichtswettbewerb, Canada's Historica Fairs, and Australia's

National History Challenge, is an educational program in which students are

understood as capable of researching the past. These examples demonstrate

that a 'Collective Memory/Disciplinary Thinking' binary schematic cannot

adequately represent history education as it is practiced.

Even though the Making History Approach is not widely recognized in

overviews by scholars of history education (Seixas, 2000; Wilson, 2001;

Osborne, 2006; Lévesque, 2007), the purpose of this dissertation is to use

computer technologies to support students learning how to research and write

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[15] Ibid.

their own historical accounts. In the following chapter, I describe the research

methodology I use to pursue this end.

3: DESIGN METHODOLOGY

This chapter documents the general methodological framework used to develop the software for pursuing the educational goal of teaching students how to do historical research. This chapter is organized into four sections. The first section presents an overview of two approaches for producing educational software. The second examines more closely the approach used in this design study. The third and fourth sections document specific methodological and representational strategies for conducting and presenting this design-research.

3.1 Making Educational Technologies

Bryson and de Castell observed three discourses populating the field of educational computing: technicist, critical, and post-modern (1994). Each discourse "tells tales" about the relationship between computers and schools. University researchers, "teachers, ministry-based education workers, students, and others within the broader educational community" (p.201-202) co-construct these discourses with each providing "a regulative or sense-making" (p.201) function to members of institutions concerned with education.

Technicist tales are romantic as they portray a heroic but uncritical faith in computers as value-neutral technologies capable of resolving significant social problems that have been otherwise resilient to change. Against the naïve optimism of technicist accounts, critical discourses tell tales of educational

computing that are tragedies. These tales reveal educational computing to be anything but value-neutral or capable of solving social problems. In fact, critical tales reveal educational computing to be part of "potentially destructive and oppressive networks of unequal social and material relations" (Bryson & de Castell, 1994, p.207). A third discourse of educational computing draws on post-modernism. Post-modernist accounts of educational computing are "discourses of montage, rupture, and dislocation" (p.211). Post-modern tales are analogous to "ecologically-sound recycling" (p.211) that occurs after "a thorough-going deconstruction of all and any previously-held notions of epistemological or ontological stability"(p.211)[16].

Although Byson and de Castell's summary of the discourses of educational technology is comprehensive, accounts of *how* educational technologies are produced are notably missing. If educational technology discourses are constituted through the dialogical co-construction of meaning and interest (Bryson & de Castell, 1994, p. 201), then the relationships between the producers of academic knowledge and the producers of educational technologies may give insights into why a discourse that includes the production of educational technologies is difficult to find.

In some relationships, technology producers create computing software that educational researchers purchase "off-the-shelf" (Kaiden, 2002). This relationship is market-based, which means the technology producers attempt to make products that educational institutions will purchase. Since market demand

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[16] Bryson and de Castell refer to these as *ironic* tales.

takes precedence over intellectual exchange, little room exists for discussion. In other relationships, researchers hire technologists to produce a particular type of computer software based on a set of specifications (e.g., Herrington, 1997; Scardamalia, 2004). These relationships are important to the field of educational technology because they offer researchers and technologists forms of legitimate peripheral participation in the production of academic knowledge and technology (Lave & Wenger, 1991). But these relationships are also severely constrained by divisions of labour and so offer at best *limited* legitimate peripheral participation.

The limited peripheral participation of educational researchers and software developers in the production of each other's respective work has consequences for the study of educational technology. One consequence, in my opinion, is the field becomes mired with mundane technologies and uninspired research studies that do little to captivate the imaginations of the educational community. Others have observed the disappointing state of educational technology research too (Clark 1983, 1994; PCAST, 1997; Cuban, 2001).

Scholars have argued that vitality can be introduced into the field with methodological frameworks that integrate the participation structures of academic knowledge production and computer technology production (Collins, 1992; Design-Based Research Collective, 2003; Barab & Squire, 2004). Some have proposed new methods of "production-based inquiry" that result in "design-drive theory" (de Castell & Jenson, 2007). Production-based inquiry stands in contrast to reception-oriented inquiry in which educational software is studied from standpoints distant from technology production, such as teachers or students. In

contrast, production-based inquiry involves treating the material production of technology as an opportunity to scrutinize issues and problems that reception-oriented studies overlook or are unable to change. When design-academics make software (Mateas, 2002; Mateas & Stern, 2005) or participate extensively with technology producers (de Castell & Jenson, 2007), they can wrangle with vexing questions otherwise accepted as the norm[17]. Production-based inquiry can thus be a form of critical inquiry.

This design study attempts to participate in bridging the divide between the production of academic knowledge and educational technology. To situate my study within the field of educational technology, I begin with a review of a common approach to the development of educational technology known as formative evaluation. Following this review, I present an alternative proposal for producing educational technology known as 'design-based research', which is the methodological framework I use in this design study.

3.1.1 Formative Evaluation

A common approach for developing educational technology is formative evaluation. Formative evaluation involves the systematic collection of data for the purpose of informing decisions about how to design and improve an educational product. Although instructional developers have used formative evaluation to develop courses and curricular programs (Dial & Windsor, 1985; Contento, et al.,

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[17] The software application described by Mateas and Stern was developed collaboratively by five people with the authors participating extensively in code-level design (Mateas, 2002, p.14-15). de Castell and Jenson acknowledge that the material production of the software they describe was done by students at Seneca College and Simon Fraser University in such a way that it served as a means to extend and enrich the students' education (2007, footnote iii).

2009), formative evaluation has also been applied to the development of educational computing software (Flagg, 1990).

Formative evaluation brings theory production, software development, and education into a linear relationship illustrated in Figure 3.1.

Figure 3.1   Formative evaluation as a linear process

Theory ⟩ Design ⟩ Software ⟩ Education
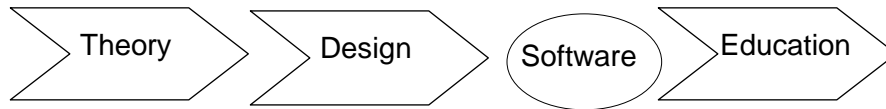
In this scheme, software designers use theoretical knowledge about learning to deduce the features of a software application. When the application is in a functional state, educational practitioners integrate the software into their teaching to bring about the theoretical benefits built into it (Flagg, 1990). The development phase can be highly collaborative with instructional experts, content-knowledge experts and software developers working together. This phase may involve instructional designers creating situations in which potential users provide feedback on features of the design (Ekulona, 1985; Flagg, 1990). The development phase ends when the development team is confident that the revised software will be successful when used in an educational setting.

Within formative evaluation's arrangement of theory production, software development, and educational practice, the theoretical knowledge that initially informed the process, remains largely unchanged. Formative evaluation does not contribute to the advancement of theoretical knowledge. Rather, it serves the

goal of creating "a more usable, compatible, and effective product" (Watson, 2004, p.62). For my purpose of creating a bridge between educational technology and academic knowledge production, an important observation to make is that although formative evaluation provides an account of the origins and development of educational technology it does not advance the idea that those involved in the material production of technology may have any 'tales to tell' about educational technology that could contribute to the field.

3.1.2 Design-Based Research

A second academic account of the development of educational technology is design-based research (Brown, 1992; Collins, 1992; Design-Based Research Collective, 2003; Dede, 2004). Design-based research is a methodological framework for producing robust educational theory, useful technology, and effective educational practices. Two general commitments guide design-based research. The first commitment is to increase the integration of theory production, technology development, and educational practice. Figure 3.2 provides a schematic overview of the integrative character of design-based research.

Figure 3.2 Design-based research as an integrative methodological framework

Theory (T)   (I) Instruction

T1   I1

T2, I2
D2

D1   (D) Design

T°

I°

D°

Resulting Outcomes
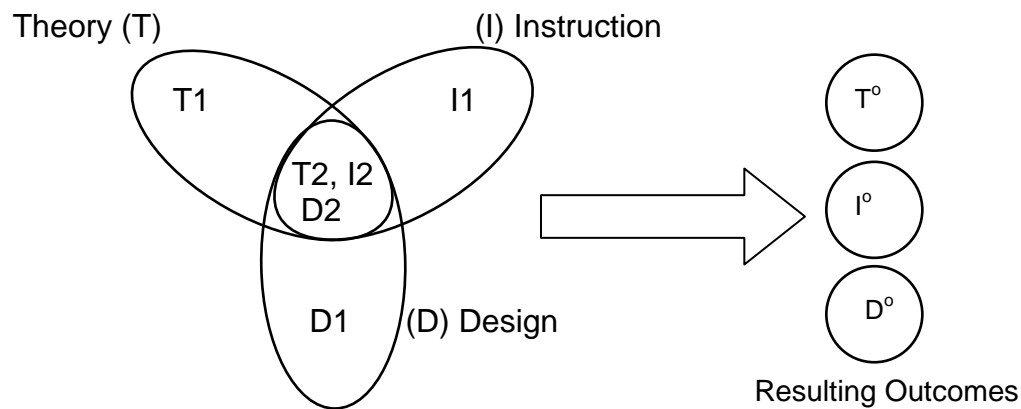
Design-based research integrates theory-production (T), technological design (D), and instructional practices (I) to produce outcomes (O) in each domain.

In both laboratory-based research and formative evaluation, theory, design, and instruction are largely sequestered from each other (T1, I1, D1) (Brown, 1992). Design-based research, on the other hand, attempts to integrate these three practices (T2, I2, D2) with the objective of producing quality software (D^O), insightful theory (T^O), and effective instructional strategies (I^O)[18].

A second commitment of design-based research is progressive refinement (Design-Based Research Collective, 2003). This commitment reflects a belief that useful theory, technology, and practices cannot suddenly be invented. Rather they evolve through repetition that is responsive to the dynamic social and material context in which the learning occurs. This commitment to progressive refinement entails "putting a first version of a design into the world to

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[18] Researchers who use DBR have recognized that theory, design, and educational practices cannot be fully integrated. Each will occur to a large extent within their traditional institutional spaces largely due to practical necessity and the need to leverage off of the resources each space provides (McCandliss, Kalchman, & Bryant 2002).

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see how it works. Then the design is constantly revised based on experience until all the bugs are worked out" (Collins, Joseph, & Bielaczyc, 2004, p.18).

Education researchers have made use of design-based research in recent years. These endeavours have yielded a variety of technological innovations, including educational games (Blanton et al., 2001; de Castell & Jenson, 2007), multi-user virtual environments (Nelson et al., 2005; Barab et al., 2007), multimedia software to teach assessment strategies to pre-service math teachers (Herrington, 1997), and websites/CD-ROMs for lesson plan preparation (McKenney & van den Akker, 2005).

Design-based research, as a methodological framework, professes a commitment to learning from design work (Edelson, 2002) as does production-based methods of inquiry (de Castell & Jenson, 2007). I find this shared commitment promising for my design study as it implies that production-based methods can be used within a design-based research methodological framework. As such, the following section provides a review of the literature on design-based research in greater detail. I describe two modes of design-based research and situate my dissertation study within one of them.

3.2 Modes of Design-Based Research: Postpositivist & Interpretivist

As previously described, design-based research as a methodological framework commits to principles of integration and iteration. These principles are general enough that design-based research is open to multiple theoretical perspectives. Scholars have identified two theoretical perspectives presented in

design-based research overviews. These perspectives are postpositivism and interpretivism (Rourke & Friesen, 2006; Willis, 2007).

To critical readers of the literature, the co-presence of these theoretical perspectives is anything but subtle: "the oscillation of design-based researchers between these two different positions is widely evident" (Rourke & Friesen, 2006, p.274). This oscillation is problematic however. Postpositivism and interpretivism are incompatible theoretical perspectives because they derive from different epistemologies, namely, objectivism and constructivism (Crotty, 1998). As such, two modes of design-based research exist: postpositivist design-based research and interpretivist design-based research.

Having multiple modes of design-based research is problematic because prominent proponents of design-based research either do not recognize this, or do not acknowledge it (e.g., Barab & Squire, 2004). Consequently, educational inquirers who employ design-based research may find themselves in situations where they are caught between two conflicting ways of conducting design-research. This is referred to as the "double-bind" of design-based research (Rourke, & Friesen, 2006, p.275). After describing both modes of design-based research, I situate my design-study within one to avoid the "double bind" of design-based research.

3.2.1 Postpositivist Design-Based Research

Postpositivism is a theoretical perspective found within the natural sciences and entails a belief about external reality (Crotty, 1998; Rourke &

Friesen, 2006; Willis, 2007). For postpositivists, universal laws govern reality and are independent from the knowing subject. Ultimately, we cannot know these universal laws but can approach them through an on-going process of falsifying proposed theories against systematically and objectively collected data. In the domain of the social sciences, researchers adopting a postpositivist perspective believe universal laws govern human behaviour. For postpositivists, social knowledge is the accumulation of social theories that have survived the crucible of falsification (Willis, 2007).

A recent example of postpositivist design-based research is the Quest Atlantis Project at Indiana University (Barab et al., 2007). Quest Atlantis is a 3D multi-user virtual environment with a narrative structure that makes associations between the fictional game-world of Atlantis and the real world. The narrative is centred on a council of Atlantians who face an impending threat that could destroy Atlantis. In an effort to save their world, the council creates virtual portals to the real world. It then invites students/players to engage in quests that have students/players share their personal experiences, knowledge, and hopes needed to save the Atlantian civilization. The quests given to the students are based on principles of inquiry-based learning associated with national educational standards (Barab et al., 2007).

The Quest Atlantis Project described by Barab et al. (2007) is an example of a design-based research study with commitments to postpositivism. It is based on the beliefs that universal laws under gird student achievement and that researchers can infer whether or not student achievement has occurred by taking

systematically and objectively gathered measurements. For example, Barab et al. conducted pre-post assessment tests with Quest Atlantis players and found statistically significant learning gains in the domains of science, social sciences, and language arts. They also analyzed student responses to open-ended questions and concluded that Quest Atlantis players were better able to engage in perspective taking, a marker of empathy. The study pivots on the belief that human learning and empathy are governed by rules that transcend cultural, linguistic, and historic context and can be measured quantitatively. This orientation bears a strong resemblance to postpositivist educational research.

3.2.2 Breaking with Postpositivism

When advocates of design-based research in the learning sciences began to move educational inquiry away from laboratories and into the learning environments of schools and classrooms (Brown, 1992; Collins, 1992), they broke from doctrines of physical science requiring researchers to control and manipulate significant variables for the production of knowledge. To justify this breach, design-based researchers drew from theoretical perspectives that emphasized interconnections among agents, social practices, and structured situated contexts (e.g., Suchman, 1987; Brown, Collins, & Duguid, 1989; Greeno, 1989; Lave & Wenger, 1991; Hutchins, 1995). As a result, design-based researchers endorse methodologies that attend to social and material dimensions of human learning (Brown, 1992; Shavelson, Phillips, Towne, & Feuer, 2003). Critical commentators of the learning sciences laud this direction (Rourke & Friesen, 2006, p.280). These theoretical perspectives are distinct from

postpositivism and resonate with a theoretical perspective known as interpretivism (Rourke & Friesen, 2006; Willis, 2007).

3.2.3 Interpretivist Design-Based Research

Interpretivism is a theoretical perspective based on a constructivist epistemology (Crotty, 1998). As it is not based on an objectivist epistemology, interpretivism is incompatible with theoretical perspectives derived from objectivism, such as postpositivism. Thus, interpretivists take issue with postpositivist claims that meaningful phenomena can be studied as objects independent from a knowing subject. For interpretivists, phenomena that involve human meaning are contingent on both objects and perceiving subjects, both of which are inextricably embedded in the world and time.

The implication of the contingency of human meaning is important for educational research. To understand its consequences for design-based research, it is worthwhile to quote Rourke and Friesen at some length:

> [Interpretivism] would be associated with a number of methodologies and schools of thought. However, they all share the same underlying assumption: that human phenomena, such as language, action and learning cannot be sufficiently understood as the outcome of rule-bound processes that can be predicted and controlled through research. These phenomena are instead understood as being in the realm of meaning and interpretation, rather than being subject to any ostensibly factual or scientific certainty. As such, human action, language and learning would be seen as necessarily occurring within a context—culture, society, institutions, history, groups—from which it cannot be separated. (Rourke & Friesen, 2006, p.280)

Since the meaning of a human phenomenon is contingent on interpretations that are influenced by a changing cultural and historical context,

meanings are unavoidably amenable to change. The consequence I take from this for guiding the methodological framework of interpretivist design-based research is twofold. The first consequence relates to the methodological openness of design-based research. With meanings inextricably bound to humans and their context, there is no universal method or single mode of inquiry capable of honing in on meaning. One does not need specialized training to arrive at meaning, though one might engage in specialized training if one wanted to understand something from a particular methodological perspective.

A second consequence of the contingency of meaning for interpretivist design-based research is a disposition to resist methods, or elements thereof, engrossed with aspirations to transcend culture and history. Holding interpretivist methods to the evaluation criteria used in the physical sciences, such as scientific forms of validity, is therefore rejected. The standard of external validity (i.e., generalizablilty) presupposes meaningful claims can transcend the local context in which those claims gain meaning. Interpretivist methods still have standards of evaluations, however. For example, Ellis proposes evocativeness and verisimilitude be used to evaluate autoethnographic studies (2004). The goal of autoethnography is not to find universal truths but rather "[to help] readers communicate with others different from themselves or offers a way to improve the lives of participants and readers" (Ellis, 2004, p.124)[19].

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[19] Lather (1993) provides additional forms of validity beyond scientific forms. These include ironic validity, paralogical validity, rhizomatic validity and voluptuous validity.

Rourke and Friesen also provide additional direction for those engaging in interpretivist design-based research. They explain how human phenomena gain meaning from the cultural historical context in which the phenomena exists:

> The nature of this context, moreover, is such that it can never be exhaustively articulated, modelled or even understood. As a further result of this fact, research cannot be understood as occurring at an objective remove from its object or its subject matter. The observation and manipulation of the researcher are themselves interpretable acts occurring in the context of the interpretable dimensions of culture, history, and other domains of human meaning and action (Rourke & Friesen, 2006, p.280)

Postpositivist forms of inquiry view the researcher as a potential "threat" to knowledge. In postpositivist studies that use qualitative methods, researchers use methodical strategies such as triangulation or member checking that purportedly minimize researcher subjectivity as an influence on the study. Interpretivism doubts that these strategies can achieve their goal. Since the researcher is part of the context of study, the researcher's subjectivity is inseparable from the study. Rather than try to minimize researcher subjectivity, interpretivist methodologies seek ways to meaningful include this dimension of inquiry. An implication for interpretivist design-based study is that researchers can make their research more meaningfully by integrating the researcher and the researcher context into the scope of the study. Figure 3.3 illustrates the integrative feature of interpretivist design-based research.

Figure 3.3   Interpretivist design-based research

Theory (T)   T1   I1   (I) Instruction

T2, I2
R2, D2

Researcher (R)   R1   D1   (D) Design

T°

I°

D°

Resulting Outcomes (O)
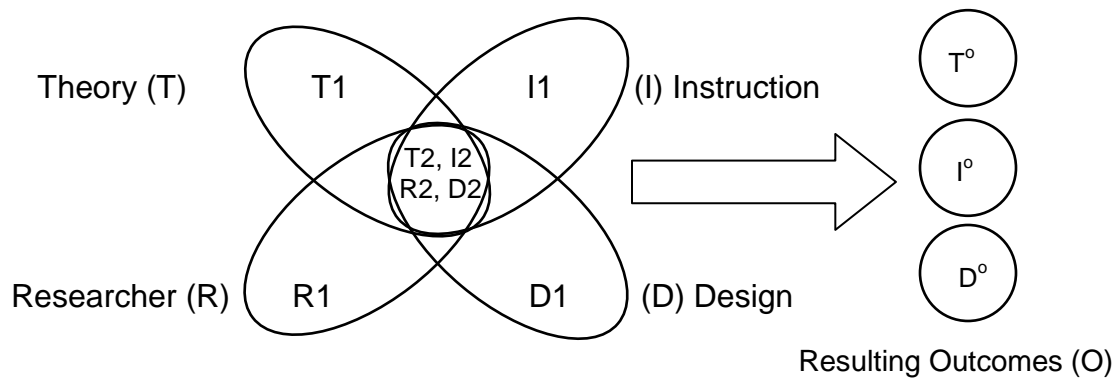
Interpretivist design-based research in education thus has four

interpretable dimensions (Table 3.1).

Table 3.1   Four dimensions of interpretation in design-based research

Theory	A theoretical dimension of linguistic statements about relevant phenomena, such as learning and education, used to inform decisions about the research.
Instruction	An instructional dimension of educational setting and pedagogical strategies.
Design	A design dimension of the technological artefacts being built and revised to achieve an educational goal.
Researcher	A researcher dimension including elements of the researchers, their personal/collective history and aspirations, and the sociocultural circumstances within which the research occurs.

Some critics of the learning sciences state the turn towards interpretivist

design-based research, if decoupled from postpositivism, might be "a most

propitious shift of paradigms… it may point to a different way of reconstituting

educational research" (Rourke & Friesen, 2006, p.280). Rourke and Friesen

claim this reconstituted educational research would be:

a way of understanding the study and improvement of learning and learning conditions not as a 'science' that would deny the reality of its own social construction, but that would be explicitly aware of the sociological and other conditions that inform it. This research would leverage this awareness to its own advantage, and it would utilize ways of understanding the constructed, debatable, and interpretable nature of knowledge as a means of investigating its own subject matter (Rourke & Friesen, 2006, p.280)

Before describing the specifics of my design study (Chapter Four), an example may be helpful for understanding interpretivist design-based research. Here we face a challenge. Examples of educational design-based research based on interpretivism and without postpositivist commitments are difficult to find. However, the following section reviews one interpretivist design-based study. This review not only documents a study that used this nascent mode of inquiry but also documents a risk known as the "double bind" of design-based research that such inquiry faces (Rourke & Friesen, 2006). The "double bind" will be more thoroughly explained within the context of the following example.

3.2.3.1 Example of Interpretivist Design-Based Research and the Risk of the Double Bind

Knowlton (2007) offers an example of an educational design-based research that attempts to conduct itself in the interpretivist mode. The design study provides an account of university faculty engaged in the rapid-prototyping of a computer-mediated bulletin board used by university students. Knowlton's commitment to "hermeneutic approaches for understanding DBR" (2007, p.220) is initially reflected in a description of what he proposes to do: provide an understanding of the contextualized lived experience of a designer (2007, p.209). Moreover, his commitment to interpretivism is reflected in how he understands

the results of his study: "I do not offer a definitive truth about design, but an interpretation of my design experiences" (2007, p.214).

While following an interpretivist theoretical orientation to design-based research, Knowlton also takes guidance from a postpositivist theoretical perspective. Early on in his article, Knowlton tells the reader he will "offer my personal narrative as a designer" (2007, p.209). However, in the remainder of the text, he fashions his experience to constructs from postpositivist design-based research (Edelson, 2002). As a result, Knowlton does not present his local contextualized experience as a designer. Rather, he casts his design experiences within the moulds of theoretical formulations relating to "domain theories", "design frameworks", and "design methodologies" (Edelson, 2002).

Taking guidance from the two diverging theoretical perspectives of interpretivism and postpositivism, Knowlton puts his study into design-based research's "double bind" (Rourke & Friesen, 2006, p.275). According to Rourke and Friesen, design-based researchers succumb to the "double bind" when they try to guide their study using both postpositivism and interpretivism. The result is extreme inconsistency where:

> every move they make toward a deeper understanding of local practices is a move away from reliable, valid measurement and generalizable results. Conversely, assertions of the generalizability, objectivity and scientific validity of their findings removes them from their origin in situated, local and authentic practice (2006, p.275).

Design-based research's double bind can be found most clearly in the closing of Knowlton's contribution:

In this paper, I have offered my experiences as a designer within a specific scenario. I have tried to offer this perspective from a "personal" viewpoint, *but* I have tried to shape the narrative provided here around what Edelson (2002) says a designer should "learn" (i.e., what theories a designer should develop) as design is occurring (Knowlton, 2007, p.220, italics added)

What Knowlton sacrifices by shaping his narrative around the theoretical constructs of Edelson's postpositivist design-based research is precisely what he had wanted to provide the readers with in the first place: a personal narrative of an instructional designer engaged in rapid-prototyping computer-based bulletin boards for use by students in a university setting.

Although few examples of interpretivist design-based research exist and although there is a methodological risk of the "double-bind," I attempt to use an interpretivist theoretical perspective in this design study. In the sections that follow, I locate design methods and representational strategies with which I conduct my interpretivist design study.

3.3 Locating Design Methods

3.3.1 Production-Based Inquiry: Design Work as Methodology

The development of educational software is not simply a matter of instrumental techniques that are "the sterile embodiment of nature's laws, devoid of human intent or interests" (Bucciarelli, 1994, p.201). Rather, software development, as with any human endeavour, is constituted by and intersects with human interests and concerns. If these human dimensions are examined, software development provides a standpoint from which to study and advance a field of inquiry. With this recognition, educational design researchers have

proposed a production-based methodology in which building technology becomes a method of inquiry and theoretical formulation (Sandoval, 2004; Mateas & Sterns, 2005; de Castell & Jenson, 2007).

Centred on the observation and description of design work, production-based inquiry can be taken as a form of *design ethnography*. In sociological studies, design ethnography uses methods from anthropology, such as prolonged immersion in a cultural setting, interviews, and ethnographic writing, to understand cultural activities that are centred on the production of technological artefacts of considerable complexity (Bucciarelli, 1994; Vinck, 2003). Such ethnography can reveal broader social and cultural processes that impinge upon how artefacts are produced.

For example, Bucciarelli (1994) used ethnographic methods to study engineers designing and building sophisticated machinery, such as a component of a photovoltaic-powered desalination plant. Bucciarelli's description presents engineering as an intensely collaborative process in which each engineer inhabits an "object world" comprised of "domains of thought, action, and artefact within which participants… move and live when working on any specific aspect, instrumental part, subsystem, or subfunction of the whole" (Bucciarelli, 1994, p.62). According to Bucciarelli, the engineers he observed did not simply make design decisions based on mathematical calculations. When faced with a challenging question about the performance of a complex piece of machinery, the engineers made decisions by negotiating a consensus among their team members. In these negotiations, the engineers exchanged stories each had

constructed from the behaviour of the piece of machinery and their object worlds (Bucciarelli, 1994). Bucciarelli's ethnography challenges perspectives that reduce human technological competency to the application of scientific laws to practical problems (e.g., Miller, 1986).

A characteristic of sociological studies of design ethnography is they are not concerned with what artefact is being made (Bucciarelli, 1994; Vinck, 2003). Although Bucciarelli studied engineers designing a component of a desalination plant, for all intents and purposes, he could have been studying engineers designing silent refrigerators. In this regard, these design studies do not have an interest in the outcome of the design work. If a component of the desalination plant fails, the ethnographer does not intervene; instead, he or she provides an account of a failure.

The interests of design workers and design ethnographers are thus partially disconnected. A design worker's interests are in making a specific artefact. Consequently, the design process is partially constituted by the design workers' first-person perspectives on that artefact. In contrast, design ethnographers are interested in observing and documenting the process of technological production. Although these studies use methods such as interviews with engineers to include some first-person perspectives (e.g., Bucciarelli, 1994), these design perspectives are diminished when they are included in a largely third-person representation of design work. This observation does not suggest that design workers have a monopoly on the meaning of their design work. Rather it suggests that a mode of ethnographic representation constructed from

the perspective of design workers may make important contributions to understanding design.

One way to produce a first-person perspective on design work is for an ethnographer to increase his or her role as a design worker. Using methodical strategies of active participation where "the ethnographer actually engages in almost everything that other people are doing as a means of trying to learn the cultural rules for behavior" (Dewalt, Dewalt, & Wayland 1998, p.262-263) would have a design ethnographer be responsible for some activities involved in software development[20]. Another way of producing first-person accounts of the design of educational technology is for software programmers to take on the task of doing design ethnography. In this way, "insiders" to educational technology production construct first-person accounts of their design work. I refer to this as "design autoethnography" and elaborate on it in the following two sections.

3.3.2 Autoethnography

Autoethnography is a qualitative research method used in the social sciences. Conventionally, ethnography has involved a researcher using methods such as prolonged immersion and interviews to study a culture process to which they are normally unaffiliated. Autoethnography, in contrast, involves a researcher studying the culture of which she or he is already a full member. Ellis and Bochner describe autoethnography as:

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[20] Such as systems design, interface design, software development, quality assurance, and so on.

an autobiographical genre of writing and research that displays multiple layers of consciousness, connecting the personal to the cultural. Back and forth autoethnographers gaze, first through an ethnographic wide-angle lens, focusing outward on social and cultural aspects of their personal experience; they look inward, exposing a vulnerable self that is moved by and may move through, refract, and resist cultural interpretations… As they zoom backward and forward, inward and outward, distinctions between the personal and the cultural become blurred (2000, p.739).

Representations of autoethnographic research are varied and can include forms such as narratives, poetry, short stories, and social science writing. The principal criterion autoethnographic research emphasizes is the evocation of emotions for researchers, participants, and readers. Autoethnography has been used to study cultural phenomena that are quite often difficult to experience, such as surviving breast cancer (Ellis, 1999). Given these topics and the goal of being evocative, autoethnographic writing can be therapeutic to researchers and readers alike (Ellis & Bochner, 2000; Ellis, 2004).

Numerous criticisms have been directed at authoethnography (Ellis & Bochner, 2000, p.745ff, p.749). One criticism observes that autoethnography elevates the significance of the experiencing individual. Crotty (1998) draws the conclusion that this elevation makes autoethnography a method of a subjectivist epistemology. Subjectivists believe meaning is not derived from the interplay of subject and object but rather from the subject alone. If autoethnography was derived from subjectivism, then it would not provide a means to understand the social world as it would a means to construct subjectivity. However, Crotty may be too quick to conclude autoethnography is part of a "rampant subjectivism" in social research (1998, p.48). Autoethnographic researchers are very much

attempting to make sense of an objective reality, sometimes one they might like to be otherwise, such as the reality of living with chronic pain (Neville-Jan, 2003).

De Castell and Bryson (1998) offer a criticism of ethnography that also applies to autoethnography. Unlike Crotty, who rejects autoethnography on the basis of its elevation of the knowing subject in social research, de Castell and Bryson's criticism of ethnography questions which subjectivities are elevated and which are diminished by autoethnography. In the textual representation of autoethnography "who can find place in the text and who is exiled?" (de Castell & Bryson, 1998 p.101). Is it a subject who fits within a white heteronormative standard of cultural living? Or is it a queer subject? De Castell and Bryson provide reminders that the sites of social research, the "home base" of academic settings, and the act of writing social research can be hostile or friendly environments depending on who is writing and who is reading.

3.3.3 Design Autoethnography

The proposal here is that autoethnography can be used as a methodology within the production-based forms of inquiry. I refer to this methodology as *design autoethnography* to emphasize that it entails studying educational technology from the perspective of its material production. The following description of design autoethnography is admittedly shaky and deserves more attention than provided here. Rather than provide a solid ground on which to methodologically tread, the following description provides a swaying compass needle that although needing further calibration points in a rough methodological direction.

A purpose of design autoethnography is to evoke a *design* response among educational technologists or those engaged in design work. That is to say, a design autoethnography leads readers towards acts of making. This goal is pursued by the autoethnographic account identifying ways around barriers that might impede designers from engaging in design projects (e.g., Seagrave, 2005). Although design autoethnography no doubt entails discussion of instrumental technique, it also entails representing human interests, concerns, and experiences of design such as frustrations or leaps of faith, which are as important to design work as descriptions of artefacts (e.g., the structure of a relational database). Without an account of the impinging human and social order, representations of design are inadequate for scholars who propose design work is a source of knowledge critical to the success of educational technology (Brown, 1992; Collins, 1992; Edelson, 2002; Barab & Squire, 2004).

The audience for design autoethnographies is not limited to producers of educational technology but include scholars and researchers not directly engaged in design work. This broadening of audience is pursued by reading and citing the contributions of scholars who work and publish in fields beyond educational technology. Appealing to a wider audience also entails making an earnest effort to apply the ideas of other academics and to comment on them. Moreover, as a methodological strategy of production-based research, design autoethnography attempts to produce "design-driven theory" (de Castell & Jenson, 2007); that is, to contribute innovative ideas and thoughts that perhaps are most transparent in the 'heat of design.' In sum, design autoethnography as

proposed here brings design-researchers into relationships with the interests and concerns of members of academic communities.

Examples for design autoethnography I propose can be found in autobiographies of the inventors of famous technologies such as the personal computer (Wozniak & Smith, 2006). Other examples may be bounded to the period during which the material production of an artefact occurred. For example, Seagrave (2005) provides a story of how she and her husband successfully invented and marketed a device for the home improvement marketplace.

3.4 Representing Design: Design Narratives and Ethnographic Tales

Researchers have proposed representing design-based inquiry with narratives (Shavelson, et al., 2003; Hoadley, 2004). These narratives of design are structured around major changes or "borders between phases" in design work (Collins, et al., 2004, p.34). The purpose of a design narrative is to "tell the story of the events leading up to, during and following the investigation" (Bell, Hoadley, & Linn, 2004, p.79). When writing a design narrative, "researchers describe the tools they have designed, the learning context, the activities and practices offered to the users, and most importantly, the evolution of the context over time in response to the tools" (Bell, Hoadley, & Linn, 2004, p.79).

Design narratives increase the communicative significance of design work for an academic community (Bell, Hoadley, & Linn, 2004). They achieve this by providing design researchers with an opportunity to articulate their design decisions (Hoadley, 2004). This provides a means for others to critically reflect

on those decisions (Bell, Hoadley, & Linn, 2004). Design narratives also produce

a communicative device that assists others with adapting the design to their local

context (Linn, Davis, & Eylon, 2004).

Despite the endorsement of design narratives, design-based researchers

have not offered writing conventions to use when preparing design narratives

(Bell, Hoadley, & Linn, 2004; Linn, Davis, & Eylon, 2004). For this reason, it is

necessary to document conventions of writing that design-based researchers can

use. As design narratives document prolonged and situated human activity, they

can be understood as aspiring to a form of ethnographic writing that describes

the cultural activity of the material production of software development. In the

following section, I document three forms of ethnographic expression and the

writing conventions used to construct them. Some of these conventions are used

to write the design narratives that document the two phases of the first cycle of

software development (Chapter Five's "The Tracks of Canada's Past" and

Chapter Six's "The Code is Dead") and the single phase of the second cycle of

software development (Chapter Seven's "Recalled to Inquiry").

3.4.1 Realist Tales In Ethnographic Expression

According to Van Maanen (1988), ethnographic representations can be

told as "realist tales." Realist tales describe a culture, community, or an

organization in a dispassionate third-person voice. They remove the author from

the ethnographic account assuming that what the field worker observes "is more-

or-less what any similarly well-placed and well-trained participant-observer would

see and hear" (Van Maanen, 1988, p.46). A second characteristic of

ethnographic realism is the presence of extensive detail about everyday life. This can result in a dry mundane tone or "draw the audience into the world of the people studied" (Van Maanen, 1988, p.49). A third characteristic of realist tales is the extensive effort to present the perspective of members of the culture or organization. This may be achieved through the inclusion of edited quotations or translations of stories that were told to the field worker by informants. A fourth characteristic of realist ethnography is the interpretive omnipotence of the fieldworker. To achieve this effect, authors rely on the authority of grand theories of cultural behaviour (e.g., Marxism, Freudian psychoanalytical theory) or communicative-interpretive theories (e.g., semiotics, phenomenology) (Van Maanen, 1988, p.51-52).

The conventions of realist tales are not used in the three design narratives presented in this design study (Chapters Five, Six, and Seven). I have included a description of the conventions of ethnographic realism as a matter of reviewing Van Maanen's entire tripartite framework (1988)[21].

3.4.2 Confessional Tales In Ethnographic Expression

The second design narrative, "The Code Is Dead", presented in Chapter Six, makes use of the conventions of confessional writing (Van Maanen, 1988). The rationale for this decision is provided in the opening of Chapter Six. This section reviews the writing conventions of confessional tales.

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[21] "Realist/Confessional/Impressionist Tales" are three modes of ethnographic impressionism reviewed by Van Maanen (1988). An additional mode of ethnographic representation reviewed but not presented here are "Queer Tales." These are ethnographic accounts written from the perspective of queers subject studying normativity (see de Castell & Bryson, 1998).

Unlike realist tales, confessional ethnography uses conventions that destabilize textual authority. This is achieved by the inclusion of the fieldworker's perspective within an otherwise realist account of cultural activity. With the fieldworker rendered visible to the reader, the author provides a narrative that is "something of a character building conversion tale in which the fieldworker, who saw things one way at the outset of the study, comes to see them in an entirely different way by the conclusion of the study" (Van Maanen, 1988, p.76). Confessional writing thus communicates a dual-perspective with "one moving between rule-based engagement in the field, and the other a more reflexive, language-based, interpretive one" (p.76). As Van Maanen describes them, "common features of research confessions are episodes of fieldworker shock and surprise" that cause a shift between these perspectives (1988, p.77). For a reader, a confessional tale can seem like a realist tale with an anxious author wanting to step from behind the authorial curtain.

Naturalness, as a second characteristic of confessional ethnography, conveys a message that, despite all their ruminations, the fieldworker still retains epistemic authority. As Van Maanen writes:

> Though confessional writers are forthcoming with accounts of errors, misgivings, limiting researcher roles, and even misperceptions, they are unlikely to come to the conclusion that they have been misled dramatically, that they got it wrong, or that they have otherwise presented falsehoods to a trusting audience. The implied story line of many a confessional tale is that of the fieldworker and the culture finding each other and, despite some initial spats and misunderstanding, in the end, making a match. (1988, p.79)

So although confessional writing destabilizes textual authority enough to acknowledge the presence of the researcher within the field, an underlying epistemic authority is retained throughout the entire representation.

3.4.3 Impressionist Tales In Ethnographic Expression

A third mode of ethnographic writing Van Maanen reviews is called impressionism (1988). This mode of representation is used to present the design narratives in Chapter Five ("The Tracks of Canada's Past") and Chapter Seven ("Recalled to Inquiry"). The rationale for using ethnographic impressionism for these design narratives is presented in the openings of their respective chapters. In this section, I present an overview of the writing conventions of impressionism.

Impressionist writing in ethnography explicitly constructs the text to include a representation of the researcher doing the fieldwork. According to Van Maanen, an impressionist tale can

> draw an audience into an unfamiliar story world and allow it, as far as possible, to see, hear, and feel as the fieldworker saw, heard, and felt. Such tales seek to imaginatively place the audience in the fieldwork situation (1988 p.103).

Impressionist tales thus may have a novelist style. The authors may use literary conventions such as scene setting, dialogue, and plot structures. These narrative conventions also include dramatic recall, metaphors, and imagery presented from a first-person perspective creating "a tightly focused, vibrant, exact, but necessarily imaginative rendering of fieldwork" (Van Maanen, 1988, p.102).

The protagonist of the impressionist tale is the fieldworker, and boldly so. Like the confessional tale, an impressionist tale insists the researcher was in the

field. However, unlike confessional tales where the fieldworker is written from start to finish as an epistemic authority, the fieldworker in an impressionist tales starts off in a state of relative ignorance. However, through a series of events the fieldworker becomes a "wise and imperial character" (Van Maanen, 1988, p.105). Throughout the narrative, however, the author retains dramatic control and may jar sensibilities to increase and release tension to provide an engaging tale.

The standards by which impressionist tales are assessed are literary rather than scientific. A principal criterion a reader uses for evaluating impressionist tales is the question: was the story believable and engaging? Readers are to judge the impressionist tale based on its evocativeness, coherence, and verisimilitude rather than "the basis of accuracy or representativeness" (Van Maanen, 1988, p.105).

3.5 Conclusion

This chapter has described the methodological framework used to organize and conduct this design study. Central to the methodology is the material production of technology. To avoid rendering a purely instrumental and functional account that misrepresents design by exhuming it of human interest or obscuring the agency of the maker(s) of technology, I have set out to use design-based research in its interpretivist mode (Rourke & Friesen, 2006; Willis, 2007). This chapter has also documented the representational strategy I will use to provide the necessarily subjective account of the design work undertaken here. This strategy involves creating design narratives that provide the readers with an engaging account of design work that prompts future designers and researchers

in meaningful directions (Bell, Hoadley, & Linn, 2004; Hoadley, 2004). To

construct these design narratives, this chapter has documented writing

conventions used in ethnographic expression (Van Maanen, 1988). These

conventions will be appropriated in chapters to come to create accounts of first-

person perspective on the cultural activity of software development. In the

chapter that follows, I render visible the four dimensions of interpretivist design-

based research.

4: STUDY OVERVIEW: INTERPRETIVIST DESIGN-BASED RESEARCH FOR HISTORY EDUCATION

As described in the Chapter Three, interpretivist design-based research is comprised of four dimensions: instruction, theory, design, and researcher/research context. This chapter describes these four dimensions as it applies to this study. As a methodological framework, educational design-based research is also responsive to events that occur during the design of educational programs (Brown, 1992; Collins, 1992; Barab & Squire, 2004). This study is comprised of two cycles of software development. The second cycle was a response to a significant event that occurred during the first. Table 4.1 represents this study as a composite of two cycles of software development, each with four interpretable dimensions.

Table 4.1   First and second cycle of software development

Design Study - *"A Tale of Two Technologies"*		
First Cycle of Software Development		*Second Cycle of Software Development*
1. School Education (History Education)	→	1. Context of School Education
2. Theoretical: Sociocultural Orientation	→	2. Theoretical: Sociocultural Orientation
3. Design: Educational Technology	◆→	3. Design: Research Technology
4. Researcher & Researcher Context	→	4. Researcher & Researcher Context
Representation		*Representation*
Design Narrative • Ch 5. "The Tracks of Canada's Past" • Ch 6. "The Code is Dead"		Design Narrative • Ch. 7 "Recalled to Inquiry"

Triangle-headed arrows signify continuity between the first and second cycles of software development. Diamond-headed arrows signify a change between the two cycles.

As Table 4.1 depicts, between the first and second cycles of software development, the design study changed from having a focus on history education in schools to the broader sociocultural context in which schools operate. The focus also changed from the design of an educational technology to the design of a research technology. In the remainder of this chapter, I elaborate on Table 4.1.

4.1 Instructional Design: Tracking Canada's Past

4.1.1 Overview

"Tracking Canada's Past" is an instructional design and research project implemented in five schools in two Canadian provinces over the course of three years (2002, 2003, 2004) (O'Neill, et al., 2003). Working within the methodological framework of design-based research (Collins, 1992; Brown, 1992; Barab & Squire, 2004), Tracking Canada's Past was committed to refining an instructional design through an iterative process across multiple years of

implementation. The educational goal of Tracking Canada's Past was to develop students' abilities to reason about the constructed nature of historical knowledge (Levstik & Smith, 1996; Seixas, 1996; Bain, 2000; Lee & Ashby, 2000; Van Sledright, 2002; Lévesque, 2007). Tracking Canada's Past pursued this objective by asking students to do a rudimentary form of historical research about the construction of the Canadian Pacific Railway. Built between 1881 and 1885, the Canadian Pacific Railway was instrumental in the expansion of the recently confederated federal Dominion of Canada within British North America. As a major achievement in the development of Canada as a nation, the Canadian Pacific Railway is featured prominently in most provincial and territorial school curricula.

By researching some aspect of the Canadian Pacific Railway, the research team expected students to encounter some of the epistemic challenges of historical inquiry. With the support of history telementors (as will be described shortly), students were expected to work through these challenges by learning to reason about the constructed nature of historical knowledge. History pedagogy that involves students doing historical research is not new. Many researchers of history education pursue the goal of teaching disciplinary thinking (see Chapter Two) by having students do rudimentary forms of historical research (Levstik & Smith, 1996; Bain, 2000; Van Sledright, 2002). Although Tracking Canada's Past intended to teach disciplinary thinking, the central pedagogical activity involved students researching history. In this way Tracking Canada's Past overlapped with the Making History Approach described in Chapter Two.

4.1.2 Instructional Design

Tracking Canada's Past's instructional design used a unique combination of discipline-based assignments, a web-based discussion forum, and volunteer historians and history enthusiasts to act as online mentors, also referred to as telementors (O'Neill & Harris, 2004). A schematic representation of the instructional design of Tracking Canada's Past is provided in Figure 4.1.

Figure 4.1   Instructional design of Tracking Canada's Past 2004
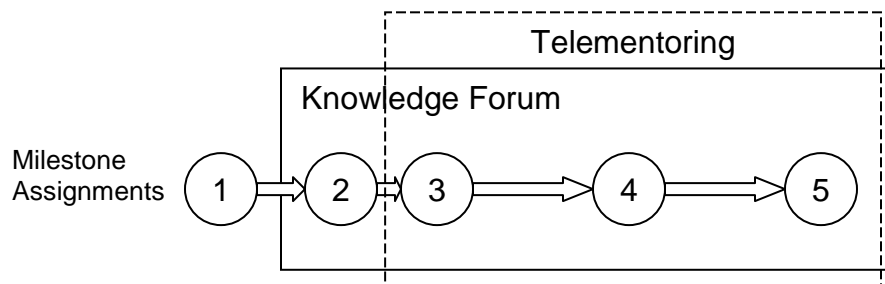
Figure 4.1 shows three main elements of Tracking Canada's Past in its 2004 iteration: (1) students were assigned a series of milestone assignments (described in the following section) that progressed students through stages of historical research, (2) students posted milestones two, three, four, and five, in the online discussion forum, Knowledge Forum (Scardamalia, 2004), and (3) while students were working on milestones three, four, and five, history telementors were to use Knowledge Forum to communicate with students to assist them to their projects' completion. These elements will be described in greater detail below.

With respect to the broader classroom activities, the instructional design of Tracking Canada's Past was built with a general expectation that, while the classroom would provide a "home base" for students to discuss their projects with their teachers, students were to do a significant amount of their project after school hours. How teachers organized classroom activities to advance the students through their projects was a decision left to the teachers. As will be discussed shortly, the research design of Tracking Canada's Past did not provide a window into the classroom activities that teachers implemented.

4.1.2.1 Milestone Assignments

The students' history projects were broken up into a series of milestone assignments intended to progressively advance students towards completing an original piece of historical research. Dr. O'Neill and a resident PhD history student on the research team initially constructed these milestone assignments. The assignments were revised annually based on the feedback of participating teachers. A summary of the milestone assignments used in Tracking Canada's Past 2004 iteration is provided below:

> Milestone 1: Students described three sources (primary or secondary) they found and what they found interesting about them.
>
> Milestone 2: Students posted into Knowledge Forum, an online asynchronous discussion forum, a statement about the historical question they were interested in researching. The resident PhD historian on the research team used Knowledge Forum to respond to students with initial feedback about their topic.
>
> Milestone 3: Students posted a note to introduce themselves to their mentors. Students described their topic, their interest in the topic, a description of the resources they had, and where they

thought advice was needed. Telementors were expected to respond to students and provide ongoing guidance and support.

Milestone 4: Students provided a prospectus (with title, topic definition, periodization, a discussion about the sources being used, research questions, description of method) for telementors to provide feedback on.

Milestone 5: Students wrote a final history paper (approximately 5-10 pages)

4.1.3 Telementors: Guides through Disciplinary Practices

In researching and writing their historical accounts of the Canada Pacific Railway, students were to be supported by a group of history telementors. Telementoring is a strategy instructional designers have pursued either as a freestanding innovation for learning or as a part of larger educational programs (Kochan & Pascarelli, 2005). It involves the orchestration of long-term, online, helping relationships between more and less experienced people using Internet media. Telementoring is useful in situations where face-to-face mentoring relationships are impractical. The first use of the word "telementoring" to appear in the literature is Wighton's (1993), in connection with teacher professional development. Three years later, Harris, O'Bryan and Rotenbert (1996) reported on the Electronic Emissary project, which connected teachers and students with subject-matter experts to pursue a variety of curricular projects.

At these early stages, researchers began to document challenges with telementoring. Challenges included communication difficulties due to a lack of physical proximity, mentors and teachers/mentees having different expectations as a result of differing contexts (i.e., workplace, school), and challenges in

71

teachers securing time for students to communicate with mentors among competing school demands (Harris, O'Bryan & Rotenbert, 1996). O'Neill and Harris (2004) discussed ways telementoring programs could address these challenges, such as through goal setting and progress reporting.

For the telementoring component of Tracking Canada's Past project, students were to work with adult history telementors using an online asynchronous discussion application called Knowledge Forum (Scardamalia, 2004). The research team recruited mentors through museums and email lists that were popular among historians. Each mentor was screened using reference checks and a criminal background check prior to participating in the project. In Tracking Canada's Past 2004, four of the twelve mentors had graduate degrees in history and each had completed an original piece of historical research. The remaining eight were history enthusiasts knowledgeable about some aspect of the history of the Canadian Pacific Railway, in some cases through working at a history museum or actually working for the Canadian Pacific Railway.

The resident PhD history student on the research team matched mentors with students based on mentor expertise and interests that students described in their second milestone assignment. Beginning with the third milestone assignment, mentors were expected to log into Knowledge Forum and communicate with the students they had been matched with by posting notes and answering student questions. To support the mentors with their responsibility in supporting students, the research team sent them each a copy of a

telementoring guidebook prior to the commencement of the 2004 iteration of Tracking Canada's Past (O'Neill, Abeygunawardena, Perris, & Punja, 2000).

4.1.4 Online Collaborative Workspace: Knowledge Forum

As mentioned earlier, students and their telementors communicated through Knowledge Forum, an online asynchronous discussion forum (Scardamalia, 2004). While Knowledge Forum is typically used to support a pedagogy known as "knowledge building" (Scardamalia & Bereiter, 2003), Tracking Canada's Past adapted some of the "knowledge building" features built into Knowledge Forum to support students engaged in a disciplinary form of knowledge construction.

Tracking Canada's Past's research team partitioned the online forum into discussion areas, or *views* as they are called within Knowledge Forum parlance. Students who were researching a related topic were assigned to the same view. Views included: Building the Railway, Architecture, Tourism, Social History, Radio/Telephone/Telegraph, and Labour History. In these views, students posted notes about their projects, messages to their peers, and drafts of assignments. A telementor was assigned to each view and was expected to read and respond to students' drafts, provide students with references to books or websites related to students' projects, ask questions about students' topics and ideas, respond to their questions, and reflect in their notes some of the disciplinary ways of thinking about historical knowledge and historical research.

Students could also enter other views in Knowledge Forum and read the notes exchanged between fellow students and their mentors. This model of online mentorship, referred to as "mentoring in the open" (O'Neill & Scardamalia, 2000), makes mentor-student communications transparent for the entire community to read. This open environment allows students to learn from the advice offered by other mentors as well as allowing students to learn strategies for interacting with mentors from their peers. In a quantitative analysis of post-surveys given to seventy-two students across three schools participating in Tracking Canada's Past, Asgari (2004) found that the open environment which allowed students to see each other's work was an important factor in students' judgements of the overall success of telementoring.

Tracking Canada's Past required teachers to use classroom time to allow students to access computers to communicate with their telementors and complete their milestones. Tracking Canada's Past assumed that most students would be able to access Knowledge Forum on the Internet using a home computer. To ensure students who did not have access to these resources at home could still access Knowledge Forum, Tracking Canada's Past relied on participating schools to make computers and the Internet available to students after school or during spare periods through computer labs or the library.

4.1.5 The Research Design of Tracking Canada's Past

In each year of its implementation, Tracking Canada's Past collected a core set of data: online transcripts between telementors and students, student demographic information, pre and post-surveys, and post-interviews with a

sample of the students. Periodically, the research team also conducted post-interviews with some of the telementors. This data collection strategy produced a significant amount of data that was used in retrospective analysis.

Asgari (2004), for example, examined pre and post-surveys with students and mentors, videotapes of post-interviews with students, statistical reports of the online discussion forum, and face-to-face post-interviews with telementors. Her research sought to determine what students believed made telementoring successful. She found that the reliable predicators of students' perceived success of mentoring relationships were factors related to the telementors (e.g., mentor providing helpful reading material) as well as the transparency of peer's work through the online discussion forum. Martin (2005), in contrast, examined issues of instructional responsibilities between teachers and mentors. Using interviews with mentors and teachers, case studies, and questionnaires, Martin concluded that educational outcomes might be more easily achieved with a team-teaching approach where teachers and mentors more explicitly share responsibility for explaining research tasks to students and finding resources for them.

The research design of Tracking Canada's Past thus provided opportunities for retrospective analysis but not for understanding what occurred in a classroom. My contribution to Tracking Canada's Past was to document what occurred in one of the participating classrooms and to make observation-based proposals for how the project could be improved. In the following section, I describe the setting in which these observations were based.

4.1.6 Field Observations: Tracking Canada's Past 2004

4.1.6.1 The Site: Milton Chambers Secondary School

Milton Chambers Secondary School is a grade eight to twelve secondary school of approximately 1,000 students[22]. It is a suburban school that opened in the late 1970's and presently serves a catchment area of families with low incomes. At the time of the study, student attendance had been an issue and students' grades were suffering. Teachers and school staff had been working hard to improve student attendance[23].

The community surrounding Milton Chambers is ethnically and linguistically diverse. Approximately half of the students from Milton Chambers came from homes where non-English languages, such as Cantonese and Punjabi, were spoken. The provincial average of homes where non-English languages are spoken, in contrast, was 22%. The classroom I observed reflected the ethnic diversity of the school and community (Table 4.2).

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[22] A pseudonym. All school, student, and teacher names have been changed to preserve anonymity.

[23] According to the school annual reports.

Table 4.2   Sex/ethnic heritage of the grade ten Social Studies class

Ethnicity	Sex	
	Female	Male
Asian-Canadian	1	3
Euro-Canadian	3	1
Afro-Canadian		1
South-Asian Canadian	4	4
Middle-Eastern Canadian	2	
Total	10	9

Although the total numbers of boys in the research study was eight, the total of boys in the column is nine as one student identified as being of dual-heritage.

Although a total of twenty-one students were in the classroom, the Tracking Canada's Past research team did not receive informed consent from parents/guardians for three of the students to participate[24]. The class size was below the provincial average of 24.8.

In terms of educational attainment, well over seventy-five percent of the population that surrounded Milton Chambers had graduated from high school. A much smaller proportion of the population in the surrounding community had a bachelors degree or higher. The rates of high school and bachelor degree attainment were similar to the provincial averages. In the year after the high school graduation of the grade ten class of 2004, a sizeable majority of the students would enter a public post-secondary college or university in British Columbia, well over the 50% provincial average. The households in the community that surrounded Milton Chambers had roughly the same annual

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[24] Online notes by these students and transcripts of what these students said during class were excluded from this study.

income as the rest of the province. However, the percentage of single-parent families in the community was slightly higher than the provincial average.

Educationally and economically, the community surrounding Milton Chambers had much in common with the province as a whole. However, the adolescents that attended Milton Chambers were unlike the population of the province in at least two respects. First, a significantly greater percentage of students at Milton Chambers were en route to post-secondary institutions. And second, in contrast to the predominantly white, European-Canadians who make up the majority of the population in British Columbia, a much greater percentage of students at Milton Chambers were visible minorities.

4.1.6.2 Research Participants: Ms. Baker and her grade ten Social Studies Class

Although Ms. Baker was a teacher with many years of experience, this was the first year she taught the grade ten Social Studies curriculum. She had an undergraduate degree in history and a masters degree in educational technology. It was during her time in the master's program that she learned about Tracking Canada's Past and, after graduating, contacted the principal investigator, Dr. O'Neill, about participating. As will be documented in Chapter Five's design narrative, problems with Tracking Canada's Past occurred and students struggled to complete their history projects. Despite the struggles that occurred over the eight weeks, Ms. Baker was committed to the project's success. She organized a Saturday trip to a local public library which four students attended, she attempted to organize an after-school trip to the city

archives, and she also oversaw two impromptu after-school writing workshops that were organized to help the students complete their projects.

4.1.6.3 Research Design: History Boot Camp

My academic background is not in history but anticipating my role as a participant-observer in the classroom, I acquired some practical experience in historical research in the year prior to the fieldwork. This history "boot camp" entailed interviewing and observing a historian doing historical research. The resident PhD history student who was assisting in the administration of the Tracking Canada's Past also demonstrated to me how to discursively scrutinize primary source documents, a unique skill honed by historians (Wineburg, 2001). She also explained current trends in historiography, explained the research she had conducted, and answered questions I had about how to research and write history. To understand history as a community of practice, I attended meetings of a local history society and several colloquia offered by my university's history department. I also read history books and graduate history theses to familiarize myself with writing conventions of academic history.

This history "boot camp" also entailed doing my own historical research at numerous local archives. In total, I conducted primary source research in approximately twelve archives. During this time, I became familiar with terminology like 'fonds'[25] and 'finding aids'[26] and also learned the norms of working in archives, such as having to leave coats and bags in lockers before

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[25] A 'fond' is a collection of documents that originated from the same source.
[26] A 'finding aid' is a document that provides an overview of the material in an archival fond.

entering archival reading rooms. I also began to appreciate at a practical-experiential level why primary source documents were so crucial to history. I did not expect the limited expertise developed during this time to equip me to respond in depth to the variety of projects students would pursue; that level of expertise was something that telementors were expected to provide. I did, however, expect the knowledge I gained from the practical experience to be of some assistance to the teacher and students during the class.

4.1.6.4 Research Design: Establishing Rapport with the Students and Teacher

An important strategy in ethnographic fieldwork is to establish rapport with members of the group being studied. According to Dewalt, Dewalt, and Wayland, "rapport is achieved when the participants come to share the same goals, at least to some extent" (1998, p.268). With Ms. Baker, I established rapport by supporting her instructional goals. During the second week of the project, I prepared a lesson plan and extensive lesson materials for Ms. Baker to teach students about the relationship between secondary and primary sources in historical research. I also assisted her in routine classroom tasks, such as distributing and collecting textbooks and instructional materials to students. During challenging phases of the project, I also organized two impromptu after-school writing workshops, which she oversaw.

To establish rapport with the students, I assigned myself a history project that was similar to the one they were doing but I would complete the milestones ahead of them. As student projects overlapped with mine to some degree, I expected bringing in my project materials (e.g., notes, timelines, books, drafts,

etc.) would create opportunities to talk about historical research and their projects. To avert embarrassing students who were struggling with their projects and to avoid the perception that I was competing with them, I showed a genuine interest in students' topics and progress, acknowledged the difficulties I faced in my own project, searched for and provided students with resources (e.g., book references), and suggested strategies they could use in their projects. I also did not use social or material resources that were intended for students (e.g., mentors, time with Ms. Baker, books from the school or public library).

Important differences, of course, distinguished the project that was assigned to the students and the one I was undertaking. Attendance at Milton Chambers was mandatory for the students and enforced; my attendance was optional. Other classes placed demands on the students' time and performance while I had more time to work on the project. My age, physical size, as well as the experience, knowledge, and mannerisms acquired through secondary and post-secondary education, helped me navigate places like archives and talk about my research project with librarians. Finally, my assignment was not evaluated.

4.1.6.5 Research Design: Observations and Data Analysis

In total, I attended 20 classes over a period of eight weeks. I also joined Ms. Baker and four students on a Saturday trip to the reference section of a local public library. I also organized two after-school writing workshops for the students in which Ms. Baker participated.

My day in the field began in the morning when I arrived at Milton Chambers during Block A. I would go to the school's staff room where I would wait until the bell rang to mark the end of the first morning block. I would then go to Room 214 and sit with Ms. Baker by her desk. During this time, students were in the hallways moving between their lockers and their classrooms and Ms. Baker and I would talk about the research project, our experiences as graduate students, or education. As students began to enter the class, I would place my history project materials, such as notes or completed assignments, on an empty student desk in the back middle row among an area of four desks that were unoccupied during Block B. If students looked interested in these project materials, I would initiate a conversation with them.

Initially I brought a video camera to record the audio and visual activity. However, some students told me that they were uncomfortable with being video taped so I switched to audio-only recordings. Observations of classroom activities were noted in a field journal in five-minute intervals to accompany the audio recordings. After the class ended, I elaborated events that I considered to be relevant to the goals of Tracking Canada' s Past by either dictating them into the audio recorder or writing about them in a file on my computer that was later used to index these events. During one of the after-school writing workshops, video recordings were taken to document student interaction with the workshop objects and to record conversations.

Upon completion of the research project, I prepared the data for analysis. I extracted the online notes between mentors and students from Knowledge

Forum. The notes posted by the three students for whom informed consent was not granted were not analyzed. The notes exchanged between mentors and the eighteen students were organized chronologically in a file created for each view. Qualitative coding software was then used to index the transcriptions and online notes. The indices were based on date and speaker thus providing me with an easy way to access the data set as needed. Through this process of organizing, indexing, and reading the data, I became familiar with the data set as a whole.

With this collection of text-based material, I then used spreadsheet software to create a timeline of events that occurred within the classroom and in the online forum that I considered to be significant. The vertical axis of the chart was based on a temporal unit, with each row corresponding to a day in Tracking Canada's Past. I organized the horizontal axis around speaker/writer. When printed and pieced together, the timeline became a five-foot by seven-foot chart that I hung on a wall. This representation of the data allowed me to examine the flow of online and in-class activities. I used the timeline, online transcripts, and transcripts of in-class activities to construct an account of what occurred during Tracking Canada's Past 2004 iteration which is presented in Chapter Five.

4.2 Sociocultural Theories of Learning

In Chapter Three, I identified four dimensions for organizing my design study within the general framework of interpretivist design-based research. In the previous section, I provided an overview of the instructional constraints acting on my design study. In this section, I provide an overview of the theoretical formulations that I found compelling and productive in thinking about my design

work. The theoretical reflections that I used to think about the first and second cycles of software development are drawn from a set of sociocultural theories that offer explanations of how humans become competent in cultural activities. The following sections provide a brief overview of these theories which will be drawn on in Chapters Five, Six, and Seven.

4.2.1 Cognition and Culture: Distributed and Situated Cognition

In recent years, psychologists have advanced a "distributed" or "situated" thesis of human cognition that brings into sharp focus the role that the external world plays in human thinking (Hutchins, 1995; Brown, Collins, & Duguid, 1989). Cognitive psychology has often taken cognition as residing within individual brains and amenable to modelling as an information system. In this view, learning conceptual knowledge can be separated from the everyday settings in which knowledge is developed and used. However, under a distributed/situated thesis, cognition extends beyond the individual brain and includes physical objects and social processes. An implication is that teaching does not entail expounding at greater levels of specificity for the individual to reconstruct internally but rather involves creating structured situations where competent performance can be performed. Teaching includes cognitive scaffolding and cognitive apprenticeship both of which attempt to show students how to act upon physical artefacts and within social activities (Brown, Collins, & Duguid, 1989).

4.2.2 Vygotskian Cultural Historical Psychology

A second collection of theoretical reflections I found productive for thinking about my design work was Lev Vygotsky's cultural historical psychology (Vygotksy, 1978, 1986). Through the lens of cultural historical psychology, physical tools and symbolic signs mediate the human mind. Although humans have basic mental functions, it is through the use of tools and sign systems, such as mnemonics, alphabets, and diagrams, that these functions are altered into higher psychological processes. Individuals acting with others create these mediational systems and over time, whether hundreds or thousands of years, cultures revise them. Psychological development requires accessing these mediational systems. An important finding of this cultural historical psychology is that higher order psychological functions, such as inner speech, have its genetic origins within the social or inter-psychological plane. After a process of internalization, these higher order thoughts then appear on the intra-psychological plane within an individual (Vygotksy, 1986).

4.2.3 Tomasello's Theory of Human Psychological Development

Another collection of theoretical formulations that I found productive in thinking about my design work was Tomasello's socio-pragmatic theory of human development (1999). From this perspective, human development can be charted through biological and cultural lines of activity. The biological line, which includes basic mental functions such as memory, is genetically inherited. However, according to Tomasello, there are also lines of development within cultural activity. Based on his research, Tomasello proposes that humans have evolved a

biologically based ability to interpret others as intentional, which allows humans to use others as a vantage point (e.g., "I see your point") from which to learn. Starting from the most primitive biological processes, the human species has "ratcheted up" complex language, social practices, and material cultures which are the basis for cultural lines of psychological development. To access these lines of development, novices engage with experts in joint-attentional activity or through imitative learning following the observation of experts (Tomasello, 1999).

4.2.4 Anthropological Theories of Learning and Development

A fourth set of theoretical formulations that I found useful to organize and advance my design study was anthropological in orientation. These theories speak less about psychological processes of learning and instead focused on learning as a social practice. For Rogoff, learning is the transformation of social practices and social relations in collective human activity (1995). The most notable forms of learning practices are apprenticeship, guided participation, and participatory appropriation (Rogoff, 1995). Similar to Rogoff is the work of Lave and Wenger (1991) who describe human learning as participation in communities of practice. Novices initially engage in legitimate peripheral practice. From these peripheral positions, they observe others perform more complex practices of a community of practice. Through the transformation of participation structures within these communities of practices, novices progressively move from legitimate peripheral practices to fuller forms of participation.

4.2.5 Theories Applied to the First Cycle of Software Development

These collections of theoretical formulations were particularly useful for the conceptual work I faced while thinking about how to support students learning to perform in manners akin to experts, such as academic historians. Each of the theoretical formulations mentioned above, in their own way, recognize academic historical inquiry as a cultural activity constituted by material artefacts, social practices, and linguistic conventions that have evolved historically. In order for school education to give students the opportunity to learn to do historical inquiry, educators need to structure classroom activities that resemble academic forms of historical inquiry, to furnish those classroom activities with resources similar to those that furnish the researching and writing of academic history, and to provide "scaffolds" or other mechanism for students to take the perspective of historians.

I recognized that this was not a matter of rigidly "simulating history" in classrooms. School-based historical inquiry would have to be tailored to a level appropriate to students (Bruner, 1960) and school-based historical inquiry would engage in practices that academic history does not. For example, the National History Day program (Chapter Two) makes historical inquiry a practice in which the results of research can be presented not just as essays but also as performances, tabletop exhibits, or multi-media presentations. These sociocultural theoretical formulations also provided me with language with which to think about challenges I faced during the field observations (Chapter Five) and software development phases (Chapters Six and Seven).

4.3 Design Work: First Cycle of Software Development

A third dimension of interpretive design-based research is design work. My design work consists of two cycles of software development. The goal of the first cycle is to produce an educational technology that can support students learning to do historical research. This first cycle of software development is situated within the context of the 2004 iteration of Tracking Canada's Past and is comprised of two phases. In phase one, I conduct field observations in a secondary school classroom where students are assigned a project involving historical research (described above and in Chapter Five). These field observations reveal a significant problem occurring during instructional implementation. To diminish the effects of this problem in the future, I propose the design of an educational technology. The second phase of this first cycle of software development documents the material production of this technology.

Figure 4.2 provides a schematic overview of the relationship between the first cycle of software development and Tracking Canada's Past.

Figure 4.2   First cycle of software development is situated within Tracking Canada's Past 2004 iteration
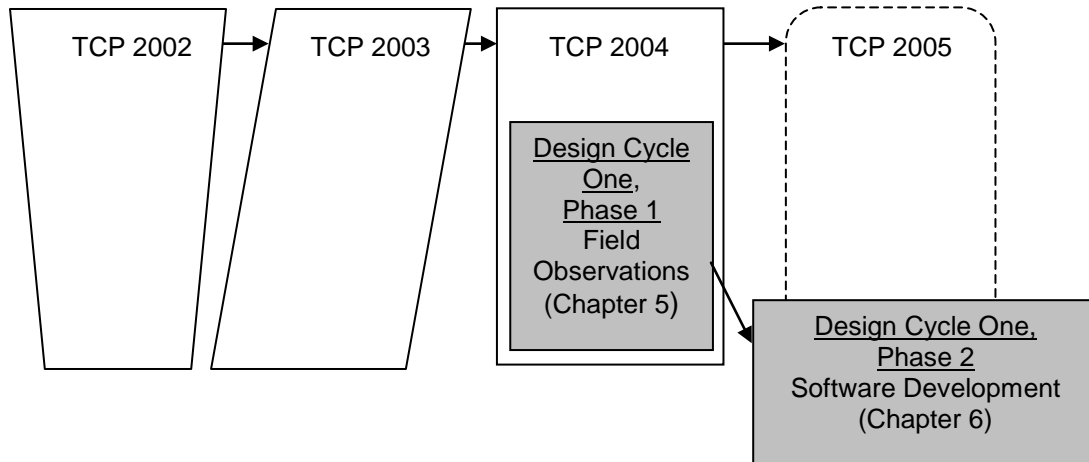
Variation in shapes indicate yearly variation to the instructional design

These two phases of software development are presented as design narratives described below (Hoadley, 2004).

4.3.1   Design Narrative One: "The Tracks of Canada's Past"

I present my field observations of classroom-based historical inquiry as a design narrative called "The Tracks of Canada's Past". This design narrative uses writing conventions of ethnographic impressionism described in Chapter Three (Van Maanen, 1988). These conventions include scene setting, dialogue, and dramatic structuring of the narrative. Impressionism is used because by rendering the researcher as part of the narrative it is a mode of representation consistent with interpretivist design-based research which emphasizes that the researcher's subjectively informed decisions are an interpretable dimension of any educational intervention (Rourke & Friesen, 2006). Additionally, since so little is known about classroom activities within Tracking Canada's Past, ethnographic impressionism, which creates an engaging narrative that provides

readers with a vivid sense of being in the field, is a particularly useful mode of expression to learn from. Impressionist writing offers to make communicative a unique research opportunity within one participating classroom.

The first phase of the first cycle of software development reveals history telementors not participating to the standards expected of them. As a result, this first phase becomes a form of 'requirements gathering', an early stage in software development (Royce, 1987). I propose that a 'backup system' of persistent resources is needed to stand in for telementors should mentoring relationships falter in future implementations. The programming design phase (Royce, 1987), where software requirements become working code, occurs in the second phase of the first cycle of software development and is presented as a design narrative described in the next section.

4.3.2 Design Narrative Two: "The Code is Dead"

"The Code is Dead", presented in Chapter Six, is a design narrative that documents my attempt to develop a prototype of an educational technology to support history students do historical research. To develop the technology, I was inspired by the sociocultural theories of learning described earlier in this chapter. My goal was to produce a repository of digital artefacts (e.g., videos, images, audio), which represent history as mediated action within a community of practice (Vygotsky, 1978; Lave & Wenger, 1991) and which students could access as they did their history projects.

"The Code is Dead", as a design narrative, is written with conventions of confessional ethnographic writing (Chapter Three; Van Maanen, 1988). As a confessional tale of design, this narrative includes not only a representation of software development itself but also a representation of a thinking, reflective design worker. Confessional writing, which represents the ethnographer, is consistent with interpretivism as it explicitly represents the researcher in the text. The purpose of using confessional writing, as opposed to impressionist writing, was to represent my sense of authority during software development. Confessional writing presents the fieldwork as an agent who, although reflective and questioning, still retains epistemic authority within the field being studied (Van Maanen, 1988). As I engaged with the design work, I was reflective and questioning but nonetheless retained a sense of design authority.

As will be discussed in Chapter Six, during the development of the educational technology, I discover studies that reveal significant socioeconomic inequities between the population of academic historians and the general population served by schools. Faced with such inequities, I conclude that an educational technology that represents historical research as mediated action within a community of practice cannot provide sufficient curricular resources to the diverse population served by schools. As a result, I stop the development of the educational technology. Further discussion of this is provided in Chapter Six.

4.4 Design Work: Second Cycle of Software Development

In the wake of a halted cycle of software development, I ask how non-school forms of curricula can participate in ameliorating inequities that blocked

development. In response to this question, documented in the opening of Chapter Seven, I direct my attention to curricula that government and public bodies create for public servants. Even though I find numerous examples of government organizations that deliver public servant curriculum, I am unable to find a substantive academic literature on the topic I feel necessary to address the important question of how curriculum and education initiatives can participate in ameliorating inequities faced by schools without excessively burdening schools.

To support the production of an academic literature on the topic of public servant curriculum, I initiate a second cycle of software development. This second technology is a research technology that uses freedom of information legislation as a means to acquire documents about public servant curriculum from government and public institutions. A description of this cycle of software development is provided below and discussed in greater detail in Chapter Seven.

4.4.1 Design Narrative Three: "Recalled to Inquiry"

The second phase of software development is presented as a design narrative using the writing conventions of ethnographic impressionism (Van Maanen, 1988; Chapter 3). As a design narrative, "Recalled to Inquiry," tells the story of how I develop a software application that can track multiple freedom of information requests. These requests are used to acquire documents related to public servant curriculum.

Impressionist writing is used because, as indicated earlier, it renders the researcher visible within an ethnographic text. This representational convention

makes impressionism consistent with interpretivist design-based research which

emphasizes that the researcher is an interpretable dimension of educational

inquiry (Rourke & Friesen, 2006). Rather than use confessional writing, I use

impressionist writing for this cycle of software development because of how it

represents the fieldworker's epistemic authority. Impressionist writing casts the

fieldworker as initially naïve in the field but through prolonged engagement

becoming more knowledgeable. This convention of ethnographic impressionism

is therefore particularly useful for documenting my prolonged engagement in the

overlapping fields of public servant curriculum and freedom of information-based

research, both of which I had very little knowledge of at the outset[27].

4.5 Reflecting the Researcher

As described in Chapter Three, design-based research in its interpretivist

mode recognizes that researchers, their actions, and their contexts are an

inextricable, interpretable dimension of educational design-research (Barab et al.,

2004; Rourke & Friesen, 2006). To represent design studies in a way that denies

the reality of the researchers misrepresents design-research. So that I can

understand my dissertation study as a serious attempt at interpretivist design-

based research, I hold my study to the standard where it is informed by my

description of interpretivist design-based research. As such, in the following

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[27] These fields are also unknown to most academics. For a discussion of the underuse of
freedom of information legislation by researchers see Keen (1992), Lee, (2001, 2005), and
Brown (2009).

section, I provide a personal narrative that constructs a representation of myself as a design-researcher.

The personal narrative below was written based on consideration of the general purpose of this dissertation, which is to use the material production of technology as a position from which to speak about issues related to teaching secondary students to do basic forms of historical research. This purpose is thus an amalgam of (1) an educational goal of teaching students how to make something (i.e., historical accounts), and (2) an engineering task of making computer programs to achieve that goal. In the following section, I provide a personal narrative focused on "making things" and "making computer programs."

4.5.1 Making "Things" and Making Computer Programs: A Personal Narrative

The earliest memento I have of my interest in making "things" is a photograph taken in April 1980. I am four years old and standing in front of a shelf filled with books, photo albums, a dictionary, family heirlooms, a plant, and a religious book. Around my neck is a purple ribbon leading to two old wooden boards, one wide and one narrow that I have joined together. From the base of the wide board to its top are three rubber bands that I have stretched and kept in place with small tacks. I stand in front of the camera to show what I have made. My first guitar. *Click.*

Although the phrase "making *things*" is non-descript, it best describes what so many children, including myself, liked to do. The "things" I made growing up did not fall into a simple category. I made sandcastles, hand-sewn costumes,

magic tricks, electrical contraptions, surgical simulators, and mechanical devices. In all of this making, I learned to use the tools around the house such as a soldering gun, the sewing machine, and power tools. I also scavenged the kitchen, the basement workbench, and the various cupboards to find abandoned devices that could be used for parts in my contraptions.

The idea that I could make computer programs did not occur to me until I was much older. By that time, I had hours of positive experience with computers. My earliest experience with computers involved playing video games. In the 1980's, home video game machinery began to reach the mass market in Japan and North America and families on my block soon began to purchase Atari 2600s. Neighbourhood kids would crowd into living rooms and play games like Pac-Man, Chopper Command, and Spy Hunter. The first computing device in our home was the Coleco Gemini, a clone of the Atari 2600 and my brother and me played games like Mouse Trap, PitFall!, Stampede, and Donkey Kong.

Within two years I had my first experience making a computer program. In the mid-1980's, schools took a serious interest in programmable computers as educational technologies and my grade four class went on a half-day trip to the school board office to use a special computer lab that had Logo. At the computer terminals we entered lists of commands that instructed the computer to draw shapes on the screen (Papert, 1980). Meanwhile, programmable computers had reached a critical stage. With the success of the Apple II, it became clear that there was a mass market for programmable personal computers.

A common narrative of the socialization of boys into technological expertise is that their fathers bring electronic devices and technological knowledge they acquire in the workplace into the home where they act as local experts launching their male off-spring into increasing levels of skill and competency (Margolis & Fisher, 2002). My socialization was different. My father was not technologically savvy beyond the electric typewriter he used in his occupation and, on a rare occasion, brought home. My mother, in contrast, was the household computer expert. She was first introduced to computers in the late 1960's when she had a summer job working with a punch-card computer. By 1984 both my father and mother read the signs of the times and knew that computers were going to be part of their sons' lives. Knowing that we would need parental help to understand them, my mother enrolled in a computer programming course at a local university and then bought my brother and me a Commodore Vic-20, an inexpensive programmable personal computer.

The Vic-20 was basic. Physically, it was a thick keyboard with computer chips built into it and was plugged into a standard television set. The Vic-20 had a slot at the back to insert game cartridges and I spent hours playing games like Centipede and Defender. But unlike our earlier videogame system, the Vic-20 could interface with peripheral devices—a printer, modem, or cassette-based hard drive. We had a cassette drive for storing and loading programs.

We also had a book about the Vic-20. It included code listings of simple games. The codes were cryptic, like 'CONT', 'LOAD "NEXT", 8', 'RUN 100.' The reader could type the codes into the Vic-20 and then play the game. With some

help from my mother I learned to transcribe the codes into the computer. Some of the code listings were dozens of pages long and it took what felt like hours to type them in. But it was exciting to finally finish and type RUN to see what the program actually did. From these code listings, I taught myself some of the basics of programming the Vic-20. Without formal instruction in programming, however, I was more enthused about "making material things" than "making digital things."

In December in the late 1980's, my attention moved from the Vic-20 and programming to the Nintendo Entertainment System that my parents bought my brother and me for Christmas. We were elated to play games like Duck Hunt, Super Mario Bros, Tecmo Bowl, and Decathlon. A few years later, my parents bought the family our second personal, programmable computer (PC) for Christmas. The computer ran the Windows 3.1 operating system and it was incredible compared to the Vic-20. In addition to a keyboard, it had speakers, a colour monitor, and a large metal computer tower with floppy disk drives. With its word processing software and dot matrix printer, we used the PC for school projects. The PC also introduced my brother and me to a whole new breed of games, such as Where in the World is Carmen Sandiego?, Ultimate IV, and Police Quest II: The Vengeance. We also had a drawing program, Deluxe Paint II which I used for countless hours to draw pictures.

Outside of the computer room, I continued to make things. Although interested in making electrical gadgetry from odds and ends, I also started making movies and skits for high school entertainment assemblies put on by

students twice a year. While it would have been easy to reproduce skits from Saturday Night Live, I saw these assemblies as an opportunity to make my own. As a member of the production team, I made and performed in many original skits. But I also came up with skit ideas and encouraged students to take the leap and perform them. One skit entailed more than half a dozen students. The skit was set in a classroom during final exams. The teacher, played by a student, warned the students "No cheating!" But once the teacher sat down at his desk, the Pink Panther theme song filled the auditorium and the students, unbeknownst to the teacher, began to unfurl elaborate inventions and schemes for cheating on their exams. At one point the known smart student in the school snuck into the class and swapped, for a fee, places with a student known for his slacking. Periodically, the teacher looked up from the book and the cast of students frozen, struggling to hide their ridiculous manoeuvres behind angelic smiles.

I began to think seriously about making computer programs while watching an episode of a movie review show, Siskel & Ebert. The hosts gave a scathing review of an interactive movie called Mr. Payback (Ben-Shaul, 2008 p.8). In his review, movie critic Roger Ebert concluded, "You don't want to interact with a movie. You want it to act on you." Having played computer games so much, I questioned this claim and began to seriously examine the possibility of making interactive narratives using computers. With this idea in mind, I studied computer science in university.

In university, I learned that programmable computers were physical approximations of universal Turing machines capable of mimicking any other

computer program (Davis, 2000). The lesson I took from this was an attitude of openness towards computers; saying "computers can't do X" may underestimate their flexibility. With this open attitude, my programming interests moved to the question of how a computer application could combine the interactivity of computer games with the aesthetic experience of listening to music, a use of computers I thought more rewarding than interactive narratives. After graduating from university, I began to search for graduate schools to study this but after two years of searching, I still hadn't found one.

Eventually I applied for job as a software developer in the Faculty of Education at Simon Fraser University working for Dr. Kevin O'Neill. The purpose of the software I was to develop was to help users manage telementoring components of educational programs (O'Neill, Weiler, Sha, 2003). Through participation in research meetings with Dr. O'Neill and his graduate student team, I began to learn about educational research that involved teaching students to conduct historical research with the support of online history telementors. My role as software developer changed when I began to conduct post-interviews with students who had participated in Tracking Canada's Past. During this time in the Faculty of Education, I met graduate students and attended faculty seminars. Through this participation in a community of educational inquirers my appreciation for the complexity of education grew. With an interest kindled by questions of how computer technologies could be used for educational purposes, I applied and was accepted into graduate school.

4.5.2 Situating these Reflections within the Study

These reflections on my interest in "making things", whether guitars, gadgets, skits, or eventually computer programs, play an important role in explaining why I endorse the Making History Approach to history education and gravitated to the Tracking Canada's Past research project. By including history in school curriculum, society legitimizes the importance of students studying other people's historical accounts. My long held interest in making things intensifies my present belief that history students would benefit from learning to make for themselves that which history education holds to be so important—historical accounts. Moreover, by learning to "do history" students could use the productive knowledge to usher in important historical narratives at various stages in their lives rather than rely exclusively on historians to provide them.

This personal narrative also explains why I am interested in the question of making computer technologies to support students conducting historical research. Given my skills in computer programming and interest in producing "things", I am drawn towards the question of how to make computer programs to support the goals of the Making History Approach to history education. Furthermore, my open attitude about the incredible flexibility of computers explains why my design study is comprised of two cycles of software development: when I halt the first development cycle, I wondered how computers, the Proteus of machines (Papert, 1980), could morph into a program that addressed the problem I encounter.

4.6 Conclusion

With a methodological framework provided in Chapter Three, this chapter advanced this design study by moving beyond methodological generalities and grounding this study in concrete descriptions. This description was organized across four dimensions of interpretive design-based research: instructional, theoretical, design, and researcher. In the following three chapters, I present the outcomes of the design-based research. These outcomes are presented as three design narratives. The first design narrative, "The Tracks of Canada's Past", presented in the following chapter, describes an eight-week period in a grade ten Social Studies classroom where students were asked to do historical research.

5: DESIGN NARRATIVE ONE: THE TRACKS OF CANADA'S PAST

THE TRACKS OF CANADA'S PAST

5.1 Introduction

This chapter provides a design narrative of the first phase of this design study. Within the overall trajectory of the study, this phase constitutes a form of requirements gathering for the software subsequently development (Royce, 1987; Wieger, 2003). In this phase, I observe and participate for eight weeks in a grade ten Social Studies classroom at a suburban secondary school in the Lower Mainland of British Columbia. Students are assigned a project that requires them, with the aid of history telementors, to research a topic of their choice relating to the building of the Canadian Pacific Railway (O'Neill, et al., 2003).

The design narrative presented in this chapter is written with conventions of ethnographic impressionism (Van Maanen, 1988). The rationale for using this genre of ethnographic representation is twofold. First, impressionist writing explicitly represents the researcher within the ethnographic text and therefore is consistent with interpretivist design-based research, which recognizes that the subjectivity and actions of the researcher are interpretable dimensions of educational research (Rourke & Friesen, 2006). Second, previous research into Tracking Canada's Past has largely been based on the retrospective analysis of survey and interview data (Asgari, 2004; Martin, 2005). No research study, to this point, has examined what occurs within a Tracking Canada's Past classroom. Under such circumstances, ethnographic impressionism is a useful mode of representation as it attempts to use writing conventions that create a vivid and engaging account of cultural activities. As a result, ethnographic impressionism opens widely one instance of Tracking Canada's Past for readers.

5.2 "The Tracks of Canada's Past"

It was the first day of Tracking Canada's Past 2004. Joan and I arrived at
Milton Chambers Secondary School with our pre-surveys[28]. At the school's office,
a secretary paged Ms. Baker who was teaching her Block A class. When she
arrived at the office, Ms. Baker welcomed us, introduced us to the principal, and
took us to the staff lounge where we waited until Block B.

When the bell ended Block A, we made our way to Ms. Baker's Social
Studies' classroom. Ms. Baker was at the back of the room at her desk talking
with students and Joan and I waited at the door. Across the room was a row of
windows that faced a small courtyard outside. At 10:30am, the building blocked
the sun and cast a shadowy promise of sunlight into the room. Sparsely placed
historical photos and two maps hung on the walls where I had expected student
assignments to be on display. Desks were in rows. Each desk had an awkward
aqua-green frame with a writing surface and a rigid plastic seat. In the weeks
ahead, these desks would screech as pupils manoeuvred them into working
groups.

The next eight weeks would find the drab classroom with rigid-desk
uniformity challenged in unifying students' projects. Their research topics
overlapped and diverged: Chinese and Italian labourers' living conditions along
the Canadian Pacific Railway line, racism faced by Chinese labourers and how

---

[28] The names of the students, teacher, mentors, and the school are pseudonyms.

they rebelled, hotel design along the rail line, steam and diesel locomotive technology, businessman David Oppenheimer's success, and folk festivals that welcomed tourists at major stops. Unfortunately, some projects were never completed. For example, Kelly, whose mentor only posted one note to her, tried to research the social life of CPR's telegraph operators.

When announcements ended, Ms. Baker walked to the front and stood by an overhead projector. She introduced Joan and myself as the Simon Fraser University researchers she mentioned earlier and had written their parents and guardians about. Ms. Baker then gave Joan the floor. Joan took a spot at the front of the class. She explained how the Tracking Canada's Past unit worked and cued me to play a videotape in the VCR. The screen glowed and the tape began to play. From the television, Dr. O'Neill welcomed the class to the project. He explained how they would do historical research using primary source documents in their community. During their investigation into Canada's past, online mentors would help students. When the video ended, Joan introduced me. I explained to the students that I would sit in on classes to learn how to improve the project and make history more interesting for students. I also explained that I would be researching a historical topic too but completing my assignments slightly ahead of them and so if they had question about their projects, they could ask me. Joan asked if there were any questions about the project. A student from the back raised his hand. "Can we pick any topic?"

"As long as it deals with building the CPR and a mentor has related expertise," Joan replied. Joan also mentioned two available mentors: Sandra, a

PhD history student was writing on Chinese Canadian labour history, and Tina, another PhD history student, who had researched Canadian music. Joan concluded. "Historians don't simply uncover facts. We negotiate meaning within a community of inquirers."

■

In the first class, Ms. Baker introduced students to the online collaborative software, Knowledge Forum. Ms. Baker gave the students their login information and the class then went to the school library. She introduced them to Knowledge Forum terminology such as "views", procedures for "posting notes" and "building-on" other students' notes, and how to use "scaffolds" (Scardamalia, 2004).

Ms. Baker explained the first milestone assignments. Students were to collect three primary or secondary sources linked to a topic of interest and describe what they found interesting in the sources. It was due in six days. The purpose of the assignment was to start students thinking about possible topics, encourage them to uncover community-based source materials, and spark an interest in a historical topic.

Once the first milestone was completed, students had six days to complete the second milestone. Students were to post their second assignment in the Knowledge Forum discussion area or "view" entitled "Milestone 2: Creating a Framework For Your Research." Student notes were to explain to Joan the resources they found and describe a research topic that interested them.

```
My name is Apala. I was hoping to research the
labour conditions of the workers on the CPR. So
far, I found many sources on the Chinese workers
```

and the discrimination they had to endure. I
wanted to tone this topic down a little, and
focus on one section. What I'm curious about is
the inequality of worker's rights while building
the railway. I want to narrow it down to things
like racism, sexism, discrimination, etc.

Hello Joan, This is Kim from Milton Chambers. I
am writing to you to let you know that I have
found my topic, which is disasters while building
(Natural and Human Made). I have looked on the
internet to find some links, but I cannot find to
many […]

Hi Joan! My name is Kelly I am 16 years old and
attending Milton Chambers Secondary. Today I'm
going to take my driver's test for my learners
license!! yaya! And how are you this fine
morning? Anyways... What I'm curious about: the
telegraph communications, how they work, how they
are designed, the route of the lines, and the
lives of the telegraph operators. […]

Hey Joan, my name is Perry… The topic I have
chosen is the Chinese workers during the building
of the CPR. What I'm curious about is what were
the work conditions of the Chinese and why there
was nothing done to help the Chinese workers.
Wasn't Canada a non-racist country where everyone
was equal? Also what were the roles of the women
and children, in the building of the CPR. Sources
I've looked at so far are just general, broad
sources and not specific archives dedicated to
the Chinese workers. I am looking for archives
that are more dedicated to the Chinese workers
during the building of the CPR. The sources I
have looked at are […]

From her university office, Joan quickly replied to the students. With her

expertise in history, she asked discerning questions to narrow topics where

needed. She also posted references, resources, and provided historical context

to student research questions. For example, she wrote to Perry:

```
Hi, Perry. If your question is about Chinese
women and children I have bad news for you.
Immigration was restricted so very few of the
Chinese workers were allowed to bring their
families with them. The assumption was that they
would go back to China when the railway was
complete. In general building the railway was a
man's job. But you've raised a really interesting
question about the quality of private life
available to the Chinese workers and I'd like to
know a bit more about why this is of interest to
you so we can narrow your topic a bit more.
```

Joan then used the assignments to match groups of students with mentors. This matching was pivotal to the instructional design of Tracking Canada's Past. It required Joan to match students' research topics with mentor expertise. Once the mentoring groups were formed, Joan created Knowledge Forum views for each of the mentoring groups. The views were titled: Tourism, Architecture, Labour History, Social History, Radio/Telephone/Telegraph, and Building The Railway[29]. Into each view, Joan then posted an introductory note that mentors had submitted to the Tracking Canada's Past team months earlier. These notes were to start student-mentor discussions. Examples of mentor notes included:

```
Your Mentor: Tina Gordon

I am a Canadian citizen, doing my PhD in American
and Canadian studies in England and have been a
professional tennis umpire

Your Mentor: Bill Raymond
```

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[29] Due to the popularity of the topics, four Social History and four Building The Railway views were created.

I have been working for Canadian Pacific Railway
from 1970 until the present. From 1984 to 1987 I
was a supervisor working in Manitoba and Alberta
instructing employees in changing technology
including riding with them and qualifying them as
new systems were developed. I worked with an
Electronics Lab in setting up what are now called
black boxes laying out parameters that would be
implemented into the software. I have worked on
passenger trains, pusher service, snowplow
service as well as Freight. In my spare time I
volunteer at a museum as a docent helping
visitors make sense of the many displays and
changing technology. I look forward to working
with you on your research

Your Mentor: Sandra Wilson

I enjoy working with people as well as working on
my graduate research. When I'm not doing my
schoolwork, I like to devote some time to my
hobbies: cooking, baking, reading, cycling,
knitting, sewing, quilting, etc. I look forward
to working with you on your research.

With these notes posted, the telementoring component of Tracking Canada's

Past was initiated.

The next day, Friday, Ms. Baker took her class to the computer room to

post their third milestone assignments into views for their mentors to read. This

milestone had students introduce themselves, summarize a research topic, and

describe research accomplishments to date. This assignment marked the

important transitional point in Tracking Canada's Past where Joan handed over

her role as the initial online guide to the mentors who were now expected to steer

students through the challenges of research and writing history. Ahead lay

milestone assignments four and five, which were much more challenging than the first three.

■

On Monday Ms. Baker explained the fourth milestone assignment – a five-part prospectus in which student provided (1) a project title, (2) a precise topic definition, (3) periodization, (4) a summary of questions their projects would answer, and (5) a description of the methodology used to answer the questions. "Prospectus", "periodization", and "methodology" would be unfamiliar words to students but the purpose of Tracking Canada's Past was to develop students' historical thinking through genuine forms of historical inquiry and so the terminology, although challenging, was preserved. After Ms. Baker read the assignment, the mood of the class grew silent until Kate broke through it.

"What's the overall project going to look like? Is it a poster? Is it an essay?"

"It's an essay," Ms. Baker said calmly from the front of the class.

A chorus of "ahhs" came from the rows of students.

"So you don't need pictures and all that right?" Gopaul asked.

"You could use them if you got pictures. They would be really good as appendices." Ms. Baker responded.

"What does that mean?" Gopaul asked.

"Appendices?" Ms. Baker asked before another student jumped in.

"So are we writing the essay in class or—", Kim asked from the front.

"No. You're going to be doing most at home", Ms. Baker respond and looked back to Gopaul to explain what appendices were.

"Today we're going to the computer lab," Ms. Baker then announced. The immediate task was milestone three where students wrote an introductory note to their mentors. Ms. Baker explained how to write to the mentors and added, "Mentors were told to check in about three times a week, so write them at least three times a week. And, just not five sentences," Ms. Baker instructed. "Pack in information and your questions. Be assertive, ask for help, and be specific. Provide your mentors with as much information as you can. Okay?"

Ms. Baker read an email from Joan that listed student names, Knowledge Forum "views" they were in, and the names of mentors they were matched with. A new energy filled the room as students began to talk after they heard the name of the mentor they were matched with. Ms. Baker instructed students to go to their Knowledge Forum views and post their milestone three assignments where their mentors would read them. The desks screeched as students got up and walked to the computer lab.

In the lab, each student had a computer. As students were completing assignments, I asked about their projects.

"Hey Gapaul", I said as I approached his computer.

Students laughed. A student corrected my pronunciation.

"GOpaul, did you want anything clarified?" I asked.

"What's our final project supposed to look like?" he said with frustration.

"This is the final product," I said, holding up a draft of my essay.

"Are you done?" he asked, looking at the papers in my hand.

"No. I'm still working on it, but I'm halfway done. If you're interested – " I said, holding my draft out to him which he took and flipped through.

"So there are five or six pages," I said. He looked through the draft, slowing down to look more closely at what I had written. "It has reference to the material I've been reading. It's just about the topic or the question that you're researching," I said as he examined each page. "At that stage you'll have a really focused question. In my essay it's 'How did the Canadian Pacific Railway affect the lumber industry in Northern Burnaby between 1905 and 1915?' So it's a very specific question."

Gopaul handed back my paper, "So what's milestone four all about then? Just resources?"

We started to talk about milestone four and I explained what a prospectus was and show him the one I had written. By this time, Prama and Kelly, who were sitting nearby, turned from their computers and listened.

"Who knows what a prospectus? Kelly?" I asked.

"Theory?"

"Theory. Do you have an idea Prama?"

"Not really.

"Not really, okay. A prospectus is a special word for 'proposal'. So it's what you're proposing to do. I am proposing to do research on a question of the lumber industry in North Burnaby between the years 1905 and 1915. My resources are this", I said holding up a book I had brought with me, "'British Columbia: A History of the Province' by George Woodcock. I also have a resource on the history of Burnaby by Jim Wolf. I have some primary resources like newspaper articles. It's just a list like that but with more explanation."

"So all your really have to write is, like, 'Okay my essay is going to be on this and like this is what I've got so far and that – '", Gopaul asked.

"Yeah," I said, nodding to him that he understood.

"– and these are the resources I've looked at – ", he continued.

"And at this stage you'll know a lot about the topic. You don't have to have the final paper done though."

"Will we have to look up a lot of stuff?"

"By that stage, yeah," I said.

The discussion reached its end and I went to a desk and sat down. Prama hurried over with notes.

"Okay I think I need help with the question," Prama said. "At first I was kinda all over the place but Joan helped me. She said I should pick one question. And so I picked building structures. So you have a question," she said, pointing to the draft of my essay on the desk. "It's not broad. It's specific so you can find a lot of stuff. I don't think I have a question that's actually... thinking worthy."

We talked about her topic until the bell rang to end Block B. On his way out of the lab, Gopaul turned to me

"History is boring. How can you look at something all your life? It's so boring."

■

Knowledge Forum was starting to fill with mentor and mentee notes. Three mentors – Sandra, Tina, and Brenda had already responded to their mentees. Brenda posted a note to Anne.

```
Hi Anne. What period are you looking to write on
regarding the workers that moved here to Canada?
If you choose a period in history to write on
your topic it will make it easier to find
information.

There is a railway museum in Squamish that had
some information regarding some of the workers
that moved here.

Check books regarding immigration and look at
what the author of the book used as there source.
I found that to be helpful. Newspapers sometimes
have stories, cultural centers. I have a book
title that may help. I will look for it.

I will get back to you in a few days… Brenda
```

Brenda did what Tracking Canada's Past was designed to do. She focused Anne on disciplinary practices of historical research: (1) she asked a question requiring Anne to think about limiting her topic's scope to a fixed period. Historians use time periods as a mediational sign to help coordinate higher order psychological functions (Vygotsky, 1978; Case, 1991a, 1991b); (2) Brenda

114

introduced a strategy, called 'footnote-chaining', that historians use to find

sources (Duff & Johnson, 2002). However, Brenda also put her credibility in

jeopardy. Squamish is a 75 km car drive away from the Milton Chambers and not

someplace a 15 year old could go. Anne was diplomatic enough to bring it to her

attention:

> ```
> Brenda, I appreciate your help with where I can
> find resources or information, but I think that
> Squamish is really too far for me to be
> travelling. It's about a 1 1/2 to 2 hour drive,
> and I'm not old enough to drive… Anne.
> ```

That same day, Brenda replied:

> ```
> Hi Anne, You can call the museum in Squamish and
> ask them questions over the phone. Most of them
> have historians that should be able to help you.
> Also email them the questions that you have…
> ```

Brenda not only attempted to repair her credibility as a mentor but also

guided Anne towards participating in an important social practice that many

historians do while conducting historical research—consult with experts

employed at historical institutions such as museums or archives (Duff & Johnson,

2002). Brenda was supporting Anne in a sort of virtual 'guided participation'

(Rogoff, 1995). Brenda continued to provide guidance in her note. She wrote

more about limiting a research topic within a time period and also provided Anne

with the titles of four books that were related to her topic. She ended with a

sentence about her personal relationship with the Canadian Pacific Railway and

a promise to try to return to Knowledge Forum the next day.

```
… I know from my background that my family moved
here after the 2nd World war because of the CPR.

Brenda

P.S. I will try to get back on Wednesday
```

These exchanges initiated ongoing conversations between Anne and Brenda, which lived up to Tracking Canada's Past's promise. By early May, things were going smoothly overall. Students had completed three of the five milestone assignments and were now ready for guidance from their mentors.

■

At my apartment, I woke up early and got ready for the day. In an hour, I would take a bus to go to Milton Chambers. Ms. Baker, Joan, Dr. O'Neill, and I had expected that all of the mentors would have posted a note to their mentees by now. Today's class was going to be in the computer lab and students were to be given time to read their mentor's notes, follow up with their mentors, and continue working on their projects. I sat down at my desk, logged into Knowledge Forum, and went into each view to read what mentors had posted.

The first view opened. Nothing. The mentor had not responded. I went to the second view. Nothing. The mentor had not responded. And on and on it went. Of the twelve mentors, only Sandra, Tina, and Brenda had responded. Without mentor responses, there would be nothing for the class to do today. And if Ms. Baker didn't know about this then she may have no backup plan. I scrambled around my apartment to find anything that could be used in a lesson: a collection

of Burnaby historical maps I got from city hall and a few history books. It wasn't much, but I grabbed them and ran to the bus stop.

■

When I arrived at Milton Chambers, I went straight to Ms. Baker's Block A class instead of going to the staff lounge. The class was doing a test and so I talked with Ms. Baker at the back of the room. I told her that most mentors had not responded. She was surprised and her face showed that she also knew this was going to be a serious problem.

"I haven't anything else prepared," she said.

I described an alternative class plan that required using the library. She agreed to it and I hurried to the library where I introduced myself to the librarian, and asked if Ms. Baker could bring her Block B class here. The librarian went to her desk and checked to see if anyone had booked the library.

"It's free," she told me much to my relief. I asked if she could pull as many books about the CPR or BC history between 1875 and 1915 as she could find. She said she would, again much to my relief. Walking back to the classroom, the weight on my shoulders was considerably lighter than when I had arrived. The bell rang to end Block A and the routine commotion filled the hallway, and students began to wander into Room 214. The second bell rang and the school announcements blared from the speaker in the corner. Once they were over, Ms. Baker went to the front of the room and started with her own announcements.

Gopaul raised his hand.

"I don't think we should do this project," he announced to Ms. Baker. Students began to laugh and applaud. Feeling the support of his peers, Gopaul continued, "Cause it's seriously too hard. And it's so boring. And no one in this class wants to do it. Like we're all going to fail. Ask anybody."

Students laughed and clapped again.

Ms. Baker stood at the front by the overhead projector listening.

"We're all going to fail," he continued, "All of our marks are going to go down and it's going to be so crap. Like honestly, it's such a boring project. If it was a fun project, then yeah sure. And like no one has any information. We have so much other stuff to study for. We have math provincials coming up so soon and like I can't have my mind on this."

Students laughed.

"But that's my opinion. You don't have to take it but we should poll the class to see how many people want do it. And if the people who don't want to do it overrule the people who do want to do it, then we shouldn't", he concluded.

"Well, I can't do that. I'm bound by the curriculum," Ms. Baker replied.

"But can we have something else on the side to do instead of the project?" Gopaul asked.

The whole research project was on the line here. A good number of students were clearly in support of ditching the project. And if Gopaul had known that only minutes earlier Ms. Baker and I were panicking about the lack of response from mentors, then the whole project would have ended right there.

"Can we have something else?" Gopaul asked again.

"Yeah because this is worth a lot of our marks. I'm not going to do very well", Kim said supporting Gopaul's proposal.

"No it's not worth all of you're marks. We're going to start the gold rush soon. So there will be a few assignments in that", Ms. Baker said sympathetically.

"So how can we do this at the same time?" Kim asked.

"But if we get a C in this - " Gopaul interjected " - we basically get a C in the term."

"Well but the thing is what you're doing on this paper is the essence what you would do at university or college," Ms. Baker said. "It is very different though from high school teaching because we tend to teach as if I have all this information and I'm going to give you notes and you're going to memorize them."

The students listened quietly in their rows of desks.

"This is really hard because you're doing something completely different. I'm listening to you," Ms. Baker continued. "I am very frustrated with the level of resources and I'm probably going to be scaling the project down a bit to reflect that fact. I've been talking to SFU. I can't expect every student to go to the archives. I have to be able to provide some resources for you. It is also different in the sense that I haven't been giving you any homework at all so that you would be taking time to go to outside sources. So you have been accommodated."

"But we have so much other homework from different classes. This isn't our only class!" Gopaul said defending his position.

"I know, I know." Ms. Baker replied, sympathizing with him again.

"Our mentors should have gotten back to us", Kim perceptively noted. Her research topic was natural and human made disasters.

"I know. That's a big problem too. And we only have 11 or 12 classes left" Ms. Baker sighed revealing her frustration.

From the back of the room, I could see that the whole research project was teetering on the brink.

"Another reason it is important for you guys to do history is that you are going to be the next people writing history," I said. "And your interpretations of the past are completely fair. You may see things that we adults don't even see. So that's why it's important for you to get control of the evidence and interpret it yourself. And that's what we're trying to do as well."

The room filled with silence.

"But I mean it's so boring" Gopaul retorted and the students broke into laughter. "I think everyone is the same way. It's just so boring. Like I asked you the other day, how's it fun to be a historian?"

"Well Gopaul is a very loud voice in this class. And there's a very loud silent majority," Ms. Baker said from the front.

"Yeah that's why I said take a poll right now. Take a poll!"

"Now, lots of people don't feel comfortable in front of you."

"Poll!"

But Ms. Baker ended the conversation and continued with a few more announcements. The project was still moving forward.

"Today we'll be working in the library", she announced.

The desks screeched as the students stood up. They marched down the hallway and into the library. The librarian had pulled a large number of books from the shelves and put them on display for the students. Ms. Baker and I divided the class into two groups. The first worked independently at the computers, searching the Internet for sources. The second worked with me. Halfway through the class the groups switched.

On a large table, I piled all the library books and instructed students to find a book that related to their projects. Students picked books from the pile, skimmed through them, read through them, and put them back. After a few minutes, I went to each student and asked about their project and the book they had found. My goal was to create a "joint attentional scene" with each student, an important interaction needed to become competent in a cultural activity. According to Tomasello,

> Joint attentional scenes are social interactions in which the child and the adult are jointly attending to some third thing, and to one another's attention to that third thing, for some reasonably extended length of time (1999, p.97).

The shared object of attention in this activity was the book they found. Some students didn't think their book was helpful because it didn't directly relate

to their specific question. I would read the section of the book and discuss how inferences could be made that did relate to their project. Once students recognized that they could make inferences from the book, I used notes and timelines from my project to create a new object of shared attention. In these joint attentional scenes, I talked about how students could take notes—remembering to include the book reference and page numbers—and create a timeline of important events related to their topic.

At the end of the class, students formed a long line at the librarian's counter to check out books. The librarian came up to me and said, "That looked like it went well" and she commented how this was the first time some of the students had ever used their library privileges.

While leaving the school, I walked by Gopaul and asked what he thought of the library activity.

"Yeah, it was useful," he said reluctantly. "But history is boring!"

■

As mid-May approached, most of the mentors, aside from a few like Brenda, Sandra, and Tina, still hadn't posted many notes into Knowledge Forum. Ms. Baker had to march on.

"Today we are not going to the computer lab, " she announced. "We had our last day to work on our paper in terms of class time. From now on, I'm going to be talking about the project for three to five minutes in each class depending

on your interest. So you are sort of on your own from now. You'll need your textbooks today."

Ms. Baker continued with her announcements as students got their textbooks. "I did my planning for the rest of the year and so here are some events for you. On May 18, next Tuesday, we are going to discuss current events. May 20th your milestone four is due. And on June 9th and 11th you'll present your final papers."

"We have to present?" a student groaned.

"You have to present them because you are learning individually. So you are going to present to other people so they can understand it."

Ms. Baker then explained that for the rest of the year they'd be covering more British Columbia history, modern Canada, and ending with the British Columbia economy.

"Okay, just some notes. I got some information from Joan." Ms. Baker said and began to read from a piece of paper on the overhead. "Raj if you want to change your subject then write to Dave Coffey. He's in the 'Building Railway' view. Dave is having trouble getting onto the website and we are working on that. He's the curator of the South City museum."

"Now I want to make sure everyone goes to the Tourism view. Tina Gordon has posted really good information on how to organize a good research paper. I looked at it and it's perfect for just how to organize a paper. So just

follow that. She's also terrific on the practical ideas of getting the project done and previous years students have found that helpful. So you can write to her."

This was disappointing to me. This wasn't the way it was meant to be. Students were supposed to be fully supported by their mentors and now we were relying on one mentor's advice.

"Anne. You were saying you have notes on each of the six elements of milestone four. Post them to your mentor and ask her to read them. What ever you have now, post it. Say 'this is what I found', 'this is what is going well', 'this is the areas that I'm having difficulties with – what do you think?'" Ms. Baker instructed.

"It's really hard", a student groaned from the front of the class.

"Well you have to keep going through without the mentors. They are having technical difficulties but I don't know what it is," she said. "Okay everybody, the history of BC begins with a look at the Oregon Territory. What I would like you to do is to turn to page 209 in your textbook and there's a picture of a map of the Oregon Territory. And I'd like…"

Mike flipped open his textbook without much care.

Ms. Baker went on to give a lecture about the Hudson Bay Company in the mid-nineteenth century. She covered material that was in the textbook and the students dutifully wrote notes on the lined paper in their binders. After fifteen minutes, the class transitioned into group work. Each group answered a set of questions and ten minutes later, Ms. Baker took up the answers.

During this time, I realized that without the mentors, without in-class time activities to get them over some of the practical barriers of doing historical inquiry, and without solid direction into the primary sources in the local community, the chances that students would succeed in their historical inquiry were retreating.

After class, Ms. Baker and I talked at the back of the room. She told me that many students were struggling with their projects and weren't likely going to do well. Feeling the pressure and not wanting to see the students fail, I offered to organize an after-school writing workshop.

■

Ms. Baker had agreed to host the after-school writing workshop for the students. While organizing the workshop one evening, I became frustrated by the unresponsive mentors and wrote a technological idea in my design journal:

> Make a web site that has sections such as: 'Historians in the Community', 'Historians in the World', 'People who do historical research', and 'History Community.' Show pictures of historians interviewing people, historians reading photographs, historians doing research, and historians presenting papers. Then show what historians make… All this "surrounds" the student in an online workspace (i.e., where they post their notes). We also have images of the tools of the trade; we have ability to ask historians questions; we have historians discussing issues; we have examples of notes, drafts, etc.

The idea of uploading representations of historians engaged in historical inquiry onto the Internet would grow into the idea of Practice Forge described in Chapter Six.

■

Earlier in the week Ms. Baker had announced to the class that there would be an after-school writing workshop. On the day of the workshop, I went to Ms. Baker's class and began to rearrange a few desks. I brought with me a file folder with some of my notes, timelines, and drafts of my milestone assignments, including my final essay. I also brought a history master's thesis, a PhD dissertation, and a book by a professional historian who worked at a nearby university. I arranged these materials on a desk so there was a progression from novice research, to the masters student's work, to the PhD student's dissertation, and finally to the history professor's work. My plan was to furnish the room with objects that students examine and could be used to form joint attentional scenes with them (Tomasello, 1999). These material objects could prompt discussion about historical research and the students' own historical projects supporting a form of guided participation into historical inquiry (Rogoff, 1995).

The final project was due in two weeks and there was reason for concern. Students weren't getting much support from their mentors, even after almost four weeks. Kelly, Alex, and Reggie hadn't received any messages from their mentors. Gopaul had only received one note from his mentor. Perry and Dean had received two. Of the twelve mentors, some were very active. Tina had posted eighteen notes for her mentees and Brenda posted twenty-six. The purpose of this workshop was for Ms. Baker and me to fill in as best we could.

Anne and Prama came into the room and sat down next to each other.

"What is this?" Anne asked pointing to the table of books and folders.

"This is how I did my project." I explained the stages my essay had gone through, from notes to written drafts. Anne asked if I had finished milestone five yet and whether anyone was going to mark mine. When I told her that Joan had been advising me earlier on she was surprised.

"You have a mentor! Why do you need a mentor?"

I explained that there was a continuum of experience in history and that I only had a year's experience doing historical research, while the fellow who wrote the masters thesis on the table had several more. The woman who wrote the PhD dissertation had even more and the fellow who wrote the book on the table had about twenty years of experience. Anne strolled around the table, examining the books. She picked up the masters thesis and flipped through it. She quickly turned to Prama.

"Each chapter is its own book. Look here -" Anne laughed as she gripped a width of pages, " - three chapters!"

Anne drew my attention to the thick red cover on the thesis. "How did they know how to put the cover on like this?" she asked and I explained how students submit their thesis to the library and the library binds them.

"Wow. That's crazy!" she exclaimed.

Anne had lots of questions. "So does everyone have to do a thesis at university?... Do you know what grade this person got?...How long did it take the person to complete it?... But did they get assigned the topic?" While the notes, drafts, books on the table provided us opportunities to talk about how others

produce knowledge, I wanted to make sure we talked about Anne as a producer

of historical knowledge.

"When last we talked you said you just have to pull your final essay

together," I said changing the discussion to her project.

"Yeah like I have a lot of information I just don't know how to put it

together."

"Have you written up anything at all?"

"No," she said becoming timid.

"That's okay. I'm just trying to get a sense where in the process you are.

So do you have notes?"

"I have Internet printouts. I don't see the point of making notes when you

have the information already written there."

"Oh," I said guarding my concern. A lack of notes could present Anne with

a problem. While searching the academic literature on the practices of historical

research, I had found the following quote:

> A professional historian's writing is based on a staggering amount
> of research. One historian says 'I live in the archives.' And at home
> and in the office he has "hundreds of thousands' of five-by-seven
> inch cards, held together with rubber bands and placed in metal
> boxes. The cards serve to record chronologies of events in the lives
> of subjects… He also uses spiral bound "copy books" to record
> references and facts. (Case, 1991a)

While interviewing a historian during my history "boot camp," I had showed him

the quote and he laughed in recognition:

Haha. Yeah. Well interesting. I could have written that. We keep a lot of stuff.

I was concerned that by not taking notes, Anne was missing a material requirement needed to do historical research. Without notes, she might find it difficult to write her final essay.

"It's very common for historians to have a lot of notes," I said. "One historian I talked to said he has boxes and boxes of notes."

"On one thing?" Anne asked with disbelief.

"It's the historian that wrote that book here," I said, pointing to the table. "Maybe not on one thing. As he did his research over the years he probably collected a lot of notes and filed them. Later on, when he was writing a chapter for a book he may have gone back to the notes he collected years earlier."

"But what do you think - " Anne broke off nervously, "- like do you think that we could complete milestone five at a high school level, not a university level where you have boxes and boxes of notes?"

By talking about how this historian took notes, I had made Anne worry and needed to turn it around.

"Yup. Totally. If doing what a historian does is like driving a race car, does that mean 15 and 16 year can't drive cars?"

"No."

"They just do it a little differently. So a historian may have 15 boxes but we don't expect you to. Just what's enough for people starting out."

Ms. Baker looked at the clock. "I guess this is it," she said disappointed at the attendance. Anne went over to Ms. Baker's desk and they sat down together to go over the final milestone.

"Can you tell me how to do footnotes?" Prama asked.

"Sure" I said and started to give Prama a quick tour of the materials on the table to give us conversational aids. I showed her how footnotes were used in the draft I had written, the master's thesis, the doctoral dissertation, and the professional historian's book. I opened the dissertation to create a joint attentional scene.

"I see some footnotes here. This chapter has 41." To cut off any worry, I quickly added, "And we don't expect you to have 41 footnotes or to write a 120 pages—"

Prama laughed with relief.

"We'd be crazy to expect you to do that", I followed, picking up that she was worried. "We expect something that is appropriate for grade ten history students, doing a history project that they've never done. Your paper may be five to ten pages long."

Prama asked me questions about how I was taking notes for my project.

"Did you write out your notes or write out the paper with evidence and elaborate?"

I explained that some time after I made my notes and read them over Joan advised me to do free writing.

"But like was that organized?"

"Some of it. I just kind of looked at my notes and I thought 'what can I say about that?' Sometimes I didn't have anything to say, other times I did. And then I looked at the next entry in my notes and said 'oh that's interesting' and then I elaborated."

"Like what is the evidence saying?"

"Yeah. So I'm really keeping close to the evidence."

"It's kind of just reading it over again. Yeah haha. I think I get it."

She picked up my paper and looked it over for a few moments.

"I guess I don't understand footnoting."

"So is your question what exactly is a footnote doing? Or when do you use it?"

"No. What *do* you footnote? I mean like evidence or – cause I understand what it is doing. It's showing the reader that they can either go further into sentence or they can find out where that came from if it's like just evidence – a bibliography but for a sentence kind of thing."

"It also has to do with interpretations. It's not just because a reader would say 'Oh what is #44' and look it up. It also gives a reader a sense of where the historian is getting all their evidence. For example, I'm getting mine from books." I point to my footnotes. "So these footnotes would tell the reader 'Okay, he's making his account based on books and newspapers.' But a reader might think

'Well, there is a lot of evidence he may *not* be looking at. He missed a *complete*

range of sources, like pictures, maps –'"

"But like what do you cite?" Prama restated.

"Okay – good question." I said, although I wasn't sure what she was

asking.

"Haha" Prama laughed nervously.

"I still haven't addressed your question."

"I'm sorry – I like – "

"- No. Fair enough. Hold me to it, *hold me to it.*" I said in a humorous voice

to signal it was okay to persist with her question.

She laughed and we returned to her question.

"What did I cite?" I made sure we both could see the draft on the table and

I read aloud a sentence that I had footnoted, "'These marks on the bases of trees

are not only evidence of early logging camps but are physical remnants of British

Columbia's great logging industry that was in full bloom at the beginning of the

twentieth century.' So I made a decision to footnote that because I didn't realize

that the logging industry was booming at the beginning of the twentieth century.

So that's when I decided to footnote."

"But was that sentence from the book then?" Prama asked.

"Good question. Not really, no."

"You found out that the lumber thing was booming in the twentieth century from that book?" Prama asked pointing to a book citation in the footnote.

"Yeah. I have the book here," I picked the book up from the table and flipped to the footnoted page. "So this particular paragraph here - " I said and pointed to my draft, "- was inferred from here" and I pointed to the passage in the book. "This whole section in the book is about the thriving economy," I said, again showing her the section in the book. "I mean he goes into great detail but I didn't need that level of detail. At that point I saw the big picture and then –"

A realization dawned on Prama and she said, "So I guess its because YOU made up your own sentence but you made up that" she said, pointing to my draft, then turning to the book, "from that."

"That's right yeah."

"Okay – aha" Prama smiled, "Okay. Yeah, I get it now."

Prama left and talked with Ms. Baker at her desk, then Anne and Prama left together. Ms. Baker walked over to me. "I'm surprised more students didn't come," she said.

■

Over the weeks it had become routine for Ms. Baker and me to chat between Block A and Block B before students arrived. "Kate hasn't heard from her mentor," Ms. Baker said. "I emailed Joan about it. She doesn't have anything for Kate. I'll need a separate assignment for her. She can't proceed with this project with no mentor guidance." Ms. Baker sat up at her desk. "I'm ticked. You

know, when you open up your classroom to other people, you're dependent on them. People being people, well, some aren't reliable."

"I'm really sorry that it's not working out."

"I appreciate the condolences."

Once the morning announcements were over Ms. Baker walked to the front of the classroom.

"You should probably be writing up your final paper this weekend," she told the students.

In twelve days, including two weekends, the essays were due. More students were voicing their concerns. Alex said that the final paper was too long. Raj said he was having technical problems getting his assignment to Ms. Baker. Alex, Anne, Kate, Prama, and Apala also told Ms. Baker they were having problems logging into Knowledge Forum.

Ms. Baker returned the fourth milestone assignments and gave a lecture. Once done, students were assigned workstation activities. Raj came over to me.

"Can you do another writing workshop?" he asked.

I was surprised to be asked. I talked with Ms. Baker and she agreed to host another workshop after school next Thursday, six days before the final project was due.

"We can have another writing workshop, " I told Raj. "I'll do a workshop but you need to pass this around" and I handed him a blank sheet of paper. "Ask students what would be helpful at the workshop."

At the end of the class Raj handed me the sheet. It was filled with students' requests for help, including:

help with structure of essay (where parts go)
writing introduction and conclusion
how to talk about your methodology
how to write about a lack of information
work with footnotes
finding info in my books … (disasters)
more vocabulary, a way to write introduction better
finding info
teach me how to put my info into a 5-paragraph essay

∎

The workshop prep challenged me. From the students' list, it was clear there were lots of needs. My strategy was to create a collection of wall and tabletop displays and to place them around the classroom. A poster on 'Writing about methodology" illustrated an example of methodology. I drew lines indicating sections on "writing about troubles at archives or libraries", "writing about things historians don't write about", and so on. A second poster outlined how to transform secondary source materials into notes, then into a draft, then a final version. A third poster focused on introductions; another spelled out the relationship between milestone four and the final essay; and a final poster outlined a compare-and-contrast essay.

I used manila file folders for tabletop displays attaching materials to each side. Students could pick them up, read them, and bring them to Ms. Baker or myself with any questions. I dedicated one folder to historical methodology. Its left side had my essay's methodology section. The right side I had labelled "Historian with 6 years experience" and it had a methodology from a PhD

dissertation glued on it. A second folder focused on introductions, and contained, among other things, a one-page introduction to a history PhD dissertation. The final folder showed how a single book could support diverging inferences serving two different historical essays at the same time. The folder's left side was a photocopied page from a history book, and the right side had two paragraphs of explanatory text. The first paragraph told how towns celebrated the CPR's arrival; the second described passenger and cargo trains. I brought the displays, a few history books, a PhD dissertation and master's thesis to the workshop so students could glean whatever might be helpful for their projects. The plan was to bring these materials into the classroom for students to examine and bring to our attention if they had questions.

■

When the bell ended the school day, I went to Ms. Baker's empty classroom: posters went on walls, desks were rearranged, and tabletop displays placed on them. My laptop went on one of the desks and displayed my essay. Ms. Baker arrived and commented on the work that had gone into everything.

Ten students arrived: Gopaul, Raj, Kim, Reggie, Anne, Prama, Elaine, Mike, Kate, and Perry. I called for their attention and then gave a basic orientation. Standing by the poster with my milestone four and essay pasted on it, I explained how milestone projects were designed to move students step-by-step to their final essay. They could examine my essay to confirm that I had reused large portions of milestone four. I then went to each poster and each

tabletop display telling them what it was about. "If you have any questions, Ms. Baker and myself are available."

The desks shrieked as students stood and walked to different stations. The classroom buzzed with activity. Students peered at the posters and jotted down notes in their binders. Students moved around the room in small groups that split and merged as their interests changed. I moved around the room. At the poster on footnoting, Anne, Kelly, and Mike asked about footnoting. Apala showed me her essay and asked if it was okay. Reggie took a copy of the final essay and read it over. Meanwhile, Ms. Baker talked with a student at her desk at the back of the room. Kim, reading my essay on my laptop shouted across the room, "Mark, you made a spelling mistake!" Perry showed me a bulletin board in the hallway that had a news article about the Chinese Head Taxes. He asked if he could use it in his essay.

"Just be sure to cite it as 'Hallway next to Room 214, Milton Chambers Secondary School.'"

■

The projects were due today and students rolled into class. Gopaul was talking with Ms. Baker. "And then for the last paragraph I'm going to describe the ways my mentor can improve" he said calmly. Surely he was upset. He had a reason to be. His mentor had only sent him one note in eight weeks.

The bell rang. The announcements started and finished.

"Okay. Can I have your attention please?" Ms. Baker said from the front of the class. "Most of you should have your final papers done. We're going to do

partner talks today. I've paired you up with somebody who is doing something different than you so you can learn from each other."

The students moved their chairs so they could sit next to their partners. The room felt alive with the buzz of chatting. I set the recorder down at a desk. Weeks later, I transcribed the audio. Gopaul was speaking to Perry.

> Okay. My essay was on why the CPR used steam engines and what were the steam engine's faults and good things about it. And I compared the steam engines to diesel engines, which they use now for trains.
>
> So for my introduction I wrote the way the steam engine worked was more or as important as why it worked. Cause without the trains and the steam and that technology the CPR wouldn't be there because the CPR wouldn't run.
>
> And then for my next paragraph I wrote how they worked like in quick paragraph in easy words. And then I did the pros and cons of diesel engines.
>
> And then for my conclusion I wrote that they had to use steam engines because the other technology really wasn't there yet. So they were forced into using steam engines or else if they had a better choice they would have used another one.
>
> That's basically it. Oh in my introduction I wrote that I went to libraries and I used Knowledge Forum but not very much because the mentor wasn't very helpful.

■

Joan and I met with groups of students for post-interviews. We asked about mentors, milestones, Knowledge Forum, and their ideas on history. With time almost up, I asked a final question. "Would you do a history project again on your own time?"

"Like without marks?" Anne asked struggling to understand the question.

"Like on my own time?" Kate asked. I nodded. "No" she said.

"And no marks?" Anne said, still trying to understand.

"And no marks."

"Ah… No"

I turned to Martin.

"I found the history project – it was pretty interesting," he said. "Like my topic it could be related to things we do today, like taking photographs of things we make now so that later they'll be able to look back at it and do the same thing. So that was pretty interesting."

It didn't answer my question but I said, "Okay" and I turned to Prama, "Would you do history on your own time?"

Prama fidgeted and struggled to answer. She stretched out her answer into a tentative "Probably?" I took it as a "No."

■

More than three weeks after Prama posted her final essay, Vince, her mentor posted a note.

```
Sorry for not writing earlier. I hadn't realized
that you'd be posting a finished project.
```

He went on at length to compliment her on her essay without seeming to realize that school had ended two weeks earlier.

5.3 Conclusion: A Proposal for Telementoring Designs

The 2004 iteration of Tracking Canada's Past did not proceed as expected. To adapt to the disappointing degree of mentor participation, three impromptu classroom interventions were implemented (Figure 5.1).

Figure 5.1   Tracking Canada's Past 2004 as implemented.
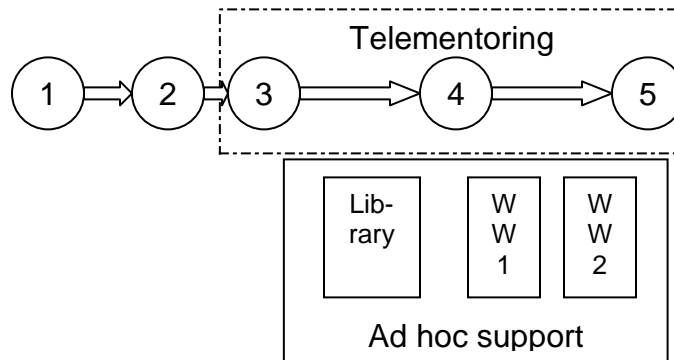
Due to unresponsive telementors, Tracking Canada's Past 2004 required impromptu supports in the form of a library activity and two after-school writing workshops (WW1 – WW2).

Although a significant amount of research has focused on factors that contribute to successful telementoring programs (Kochan & Pascarelli, 2005), a crucial instructional design question remains: how do instructional designs that involve telementoring adapt in situations where mentors do not meet expected standards of performance, whether through technical problems, lack of commitment, or unforeseen emergencies? This question is important because students rely on mentors and in many circumstances it may be difficult for the instructional designs to proceed without them. While the opportunity for students to interact with subject-matter experts on student projects is perhaps the selling point of telementoring programs, it may be also its Achilles heel if mentors are

unable to participate as agreed upon. In such situations, the overall instructional design is susceptible to a significant risk of collapsing.

To mitigate this risk, instructional designs that use telementoring programs would benefit if the design was capable of adapting to situations where mentoring relations do not develop as expected. While there are no doubt multiple solutions to this "adaptability requirement," my experience in the 2004 iteration of Tracking Canada's Past 2004 provides some guidance in proposing a solution. Some insights can be drawn from the two ad hoc after-school writing workshops. During these workshops, I provided students with artefacts I used during a history project, such as a master's thesis, notes, timelines, and drafts of essays. Students were allowed to examine these artefacts and ask questions about them. During the second writing workshop, many of the artefacts were annotated to prompt student attention to features of the artefacts.

The writing workshops, however, are not ideal models for advancing the goal of teaching students to do historical research in a way that is meaningful to them. The students attended the workshops not because they enjoyed doing research but because the workshops provided an opportunity to access resources and supports that they needed to finish a school project. The workshop environment, however, did allow students to freely move about from station to station, whether individually or in small groups, and to leave when they wanted. Furthermore, the station-based design of the workshops allowed students to bring to Ms. Baker's and my attention things that were of interest and concern to the students. So although these workshops were less than ideal, they

appeared to have had some success and are perhaps the most promising source of instructional inspiration within Tracking Canada's Past 2004 to draw from when proposing a solution to the major problem encountered in this iteration.
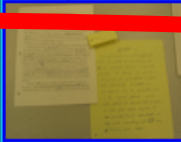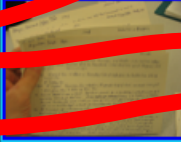
Based on my experiences in Milton Chambers Secondary School, I propose that Tracking Canada's Past 's instructional design can be made more adaptable if it includes a repository of persistent educational resources capable of serving similar functions to mentoring relationships. If these educational resources serve similar functions, then if mentoring relationships faltered, students would still have access to a source of educational support. Figure 5.2 depicts this sort of backup system for Tracking Canada's Past.

Figure 5.2   Proposed addition to the instructional design of Tracking Canada's Past
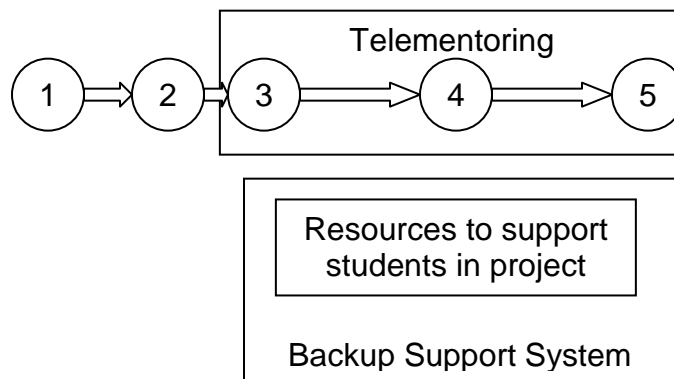
In this proposed solution, the backup system contains resources to support students in their projects. Should telementoring relationships fail then an additional cache of resources is available for students to draw on. In the following chapter, I provide a design narrative that describes the process of transforming this schematic into a computer prototype.

6: DESIGN NARRATIVE TWO: THE CODE IS DEAD

The Code is Dead

6.1 Introduction

Design-based researchers recommend presenting design narratives around distinct phases in design research (Collins et al., 2004). In the previous chapter, I provided a design narrative of a grade ten Social Studies' classroom where students were doing basic forms of historical research with less than expected support from history telementors. In this chapter, I provide a design narrative of a phase of software development in which I build a prototype of technology to function as a backup to history mentors. Unlike "The Tracks of Canada's Past," which was written using the conventions of impressionist tales (Van Maanen, 1988), the design narrative in this chapter is written using the writing conventions of confessional tales described in detail in Chapter Three.

Confessional ethnographic expression includes a representation of the fieldworker and therefore is consistent with interpretivist design-based research, which emphasizes that an inquirer's actions are an interpretable dimension of research (Rourke & Friesen, 2006). While impressionist writing also includes a representation of fieldwork, I chose to use the conventions of confessionalism because of how it represents the epistemic authority of the researcher. Confessional ethnography represents the researcher as self-reflective and self-questioning but ultimately retaining epistemic authority within the field (Van Maanen, 1988). At the outset of my design work, I had a strong sense of design authority. From the "history boot camp" described in Chapter four, I was familiar with historical inquiry and had a clear conceptual model of the application to develop, as will be described in this chapter. Confessional writing was an

appropriate representational strategy to describe my first-person perspective on the development of an educational technology.

However, as will be documented, one of these touchstones, namely, historical inquiry, crumbles for me. This causes me to question and eventually terminate the second phase of software development. As the event that shook my sense of design authority occurred in the advanced stages of software development, I chose to represent the following design narrative as a confessional tale rather than an impressionist tale. What follows then is a design narrative of the development of a prototype of an educational technology presented at a systems level (Shelly, Cashman, & Rosenblatt, 2001).

6.2 "The Code is Dead"

My experiences in the 2004 iteration of Tracking Canada's Past provided insights into some of the problems of an instructional design that attempted to offer to students an opportunity to learn how to do meaningful historical research. My general proposal was to create an application that could act as a backup system in cases where telementors failed to live up to expected behaviour. Within the waterfall model of software development (Royce, 1987), I was transitioning from the requirements phase to the program design phase. In this new phase, my goal was to conceptualize and specify the behaviour of the software application from the perspective of its users—students and teachers. But translating the vague idea of 'backing up telementors' needed to be made more explicit to render it as computer code.

The writing workshops (Chapter Five) provided experience in how an instructional design could support students when telementors were unresponsive. Moreover, sociocultural theories of learning (described in Chapter Four) intensified my thinking about how learning might occur if students encountered historical inquiry as practices embedded within contexts rich with resources, tools, and social interactions that assist historians in doing research (e.g., Brown, Collins, & Duguid, 1989). But I was without a model of an educational technology to guide my design of a backup system until I found a rare 16-mm education film called *The Historian At Work.* In an empty office, I mounted the reel, fed the strand of film through the projector, and flipped the switch. The motor engaged and the projector's light flickered on the wall. A

trumpeter's herald blared announcing a series of screens: "Open University Humanities: A Foundation Course", "Introduction to History," and finally, the title screen, "The Historian At Work." The film provided me the important model of a history educational technology that would give me clear direction for creating a backup system for instructional designs that involve telementoring.

In 1969, the Government of the United Kingdom established the Open University with a mandate to provide post-secondary education opportunities for adults without regard to their previous academic achievements. To achieve its goal, the Open University used existing and emerging technologies to provide distance education to students throughout England, Wales, Scotland, and Northern Ireland (Tunstall, 1974). The Open University has since earned a reputation for its innovation educating geographically dispersed students. The Open University's novelty in history education can be found in the 1971 introductory humanities course offered by the faculty of Arts (Marwick, 1976). The multidisciplinary course spanned 38 weeks and introduced nearly 7,000 students to various subjects within the humanities (McIntosh, 1974). A team of curriculum specialists, led by historian Arthur Marwick, created the four-week history unit using radio, television, and print-based material. The course developers decided to leave teaching historical content for a future history course and instead the objective was to teach students how historians construct historical knowledge (Marwick, 1976).

The course designers prepared a twenty-four minute documentary film called The Historian at Work (Scroggs, 1971) for broadcast on the BBC2, the

second channel of the British Broadcasting Corporation. In the television

supplement that accompanied the course materials, the course designers told

the students they were going to learn about history as a disciplinary practice:

> [This week's program] shows you, in a way which is only possible in
> a television film, and quite impossible in written correspondence
> material, just what the professional historian's work really is like.
> The programme is not designed to show you how to write an essay:
> it is designed to show you what a *real professional historian* has to
> do when he is writing a substantial scholarly book. (Marwick, 1971,
> emphasis in original)

In February 1971, 6,750 students tuned their televisions to BBC2 and

watched a re-enactment of how Welsh historian Kenneth Morgan conducted

research for a book he wrote on nineteenth century Welsh politics (McIntosh,

1974). The documentary began with Morgan, briefcase in hand, resolutely

entering the British Museum and its reading room. It was a hive of activity.

Beneath the vaulted ceiling, men and women were reading books and papers

while sitting at long narrow desks that radiated around concentric rings of shelves

in the middle (Image 6.1). As Morgan walked through the reading room, an audio

commentary accompanied the film. Morgan told the viewer of a famous novelist

who called the reading room "the valley of the shadow of books." But to Morgan it

was "a place of endless fascination."

Image 6.1   Morgan (centre) walking through British Museum's reading room to desk

Copyright owner unknown; image used under fair dealing.

The film showed, and the narration described, the massive amounts of secondary and primary sources available. After close-ups of men and women at desks reading, the documentary showed Morgan holding rare printed pamphlets by "defenders of the church" and "non-conformist radicals" with titles such as "Is Disestablishment Just?" and "Church Plunder – State Blunder." In the manuscript room, Morgan also showed and described a catalogue that enabled him to navigate the 750 volumes (375,000 pages) of Prime Minister William Gladstone's (1809-1898) political papers.

During the documentary, Morgan also explained that historical knowledge depends on the questions that historians asks of their sources:

> I found, as other historians have found, that you can find out new material about your subject, not only in obscure and out of the way collections locked up in trunks, but even with sources as familiar as the Gladstone Papers simply by asking new questions about them. And in my own case, I found an enormous amount of material about Gladstone and other people's attitudes toward Wales simply by asking new questions, following up the correspondences, and tracing each lead as far as I possibly could (Scroggs, 1971)

Morgan also showed viewers some letters he had examined, and how he referenced them in the book he would eventually write. The documentary went on to show Morgan driving to the archives at the National Library of Wales, two hundred miles from London. Morgan confided to viewers getting to the library was difficult since he had to take a train, which arrived an hour before the archive opened. "As I didn't know anybody here, all I could do to kill time was sit on the promenade and watch the seagulls until opening time." But once in the archive he found a "treasure house" of manuscripts from 1870-1920 (Image 6.2).

Image 6.2   Kenneth Morgan at the National Library of Wales

Copyright owner unknown; image used under fair dealing.

Morgan also explained to the TV audience that, although historical research entails a laborious amount of sifting through materials, he had experiences of making "striking" finds. The documentary concluded with Morgan describing challenges of writing history such as writing for an audience without

oversimplifying and "tedious technical chores" of checking references, securing copyright permission, and preparing an index.

For the purposes of building a backup system to history mentors (Chapter five), I found The Historian at Work gave me something concrete to think about. Educational specialists have long tried to use various technologies to provide students with access to primary sources, whether through books (Osborne, 2003; Osborne 2004), film strips (Fenton, 1969; Schools Council History Project, 1973), laser-discs (Myers, Perlin, Wallace, & Fusonie, 1991), CD-ROMs (Hillis, 1999), or the Internet (Craver, 1999). This educational technology was the first I had found that provided students with evidence of situated practices or descriptions of experiences of historical inquiry. "What could The Historian at Work look like in the era of the Internet?" I wondered. Digital video cameras were affordable, and video-streaming technology had matured enough to put short digital videos online. So, it was easy to imagine putting video clips of historians engaged in historical inquiry on the Internet.

This strategy of depicting situated historical inquiry was also compatible with sociocultural theories of learning (e.g., Vygotsky, 1978; Lave & Wenger, 1991; Tomasello, 2002; Rogoff, 2003) (see Chapter Four). These theories emphasized that to learn a cultural practice requires access to the social and material context in which competent performance of that practice occurs. If practices of historical inquiry could be documented digitally and uploaded onto the Internet, then students could access representations of how historians produce historical accounts within a community of practice (Lave & Wenger,

1991). Based on the concept of "guided participation", which is one of the ways in which learning a cultural practice is said to occur (Rogoff, 1995), I conjectured that these digital representations could support students learning to do historical research. According to Rogoff, the concept of guided participation refers to

> the processes and systems of involvement between people as they communicate and coordinate efforts while participating in culturally valued activity. This includes not only the face-to-face interaction… but also the side-by-side joint participation that is frequent in everyday life and the more distal arrangements of people's activities *that do not require copresence* (Rogoff, 1993, p.142, italics added)

According to Rogoff, guided participation often occurs when novices work with an expert. This learning principle characterized the telementoring in Tracking Canada's Past. But guided participation also occurs when novices are "actively observing and following the decisions made by another… whether or not he or she contributes directly to the decisions as they are made" (1995, p.147). What is crucial for guided participation is "engagement in some aspect of the meaning of shared endeavors" (Rogoff, 1995, p.147). According to Rogoff, observing actual cultural practices is one way to become skilled in those practices. Observation is thus central to the act of learning because "cultural processes surround all of us and often involve subtle, tacit, taken-for-granted events and ways of doing things that require open eyes, ears, and minds to notice and understand" (2003, p.11). If guided participation could be achieved through observation, then representing historical inquiry as a community of practice with video and making it available on-line, could provide students with a source for guided participation into

historical inquiry. I felt this design rationale was promising enough to start a

phase of design work where I conceptualized the behaviour of the software.

The initial name I gave to the software I imagined was Practice Forge.

This name is a compound word where *Practice* is derived from "community of

practice" (Lave & Wenger, 1991) and *Forge* gives a nod to the website

SourceForge, an on-line repository of open source computer code. *Practice*

Forge, as a name, encapsulated the principal of on-line access to social

practices that I would strive to build into an educational technology. The user

roles, structures, and workflows of Practice Forge are documented in Figure 6.1.

Figure 6.1   Design sketch of Practice Forge
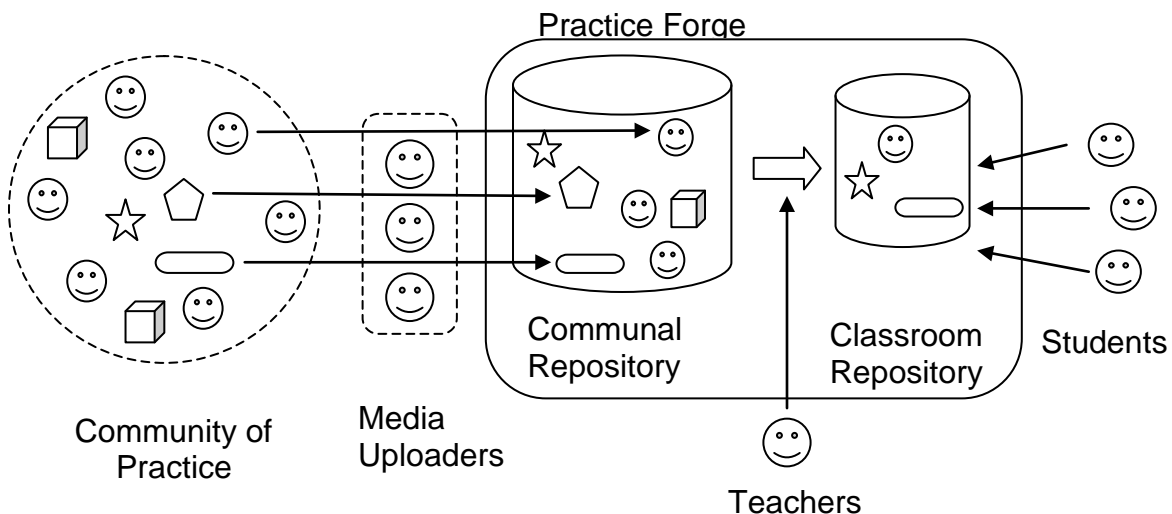
In Figure 6.1, a community of practice, such as historians, engages in

routine practices involving social interactions and physical artefacts to mediate

their actions. A team of education specialists documents mediated action using

digital recording equipment and uploads their media files into an on-line

153

communal repository. Teachers then search through the communal repository to select which media to fill a classroom repository that students can access.

The overall goal of Practice Forge was to give students access to representations of legitimate and full participation structures in communities of historical inquiry. I conjectured since students encounter practical challenges in their own research, they could search Practice Forge for resources that might reveal how historians resolved similar challenges. In future iterations of Tracking Canada's Past, Practice Forge could be used to provide a backup in case the mentoring component failed (Figure 6.2).

Figure 6.2   Practice Forge contains representations of a community of practicing historians to serve as a backup to telementoring
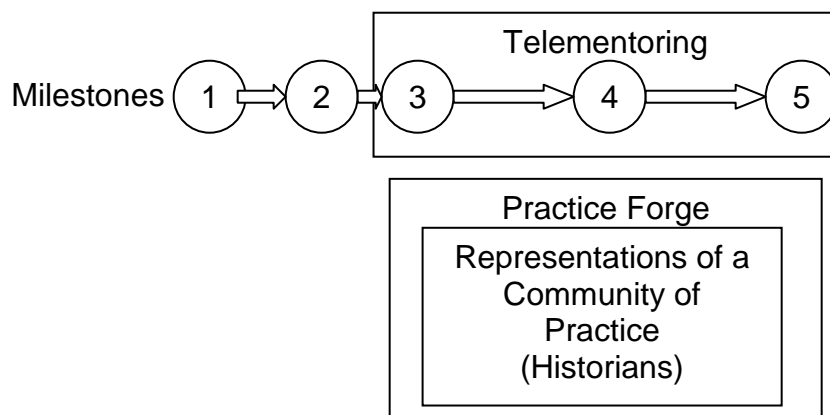
To document historians, I used email lists and informal peer-networks to extended invitations to graduate students, academic historians and local historians to participate in opening the practices of historical inquiry for educational purposes. An archivist introduced me to a history professor who

agreed to participate. A president of a local history society forwarded my invitation to local historians whom he knew and three people responded.

This phase of design work entailed documenting historians, historical research, and the settings in which historical research occurs, entailed video and audio taping participants. The first documentary session I conducted was of a historian engaged in an actual situated practice of historical inquiry in a library reference room. He was examining phone directories and taking notes for a project he was working on (Image 6.3).

Image 6.3   Situated historical inquiry
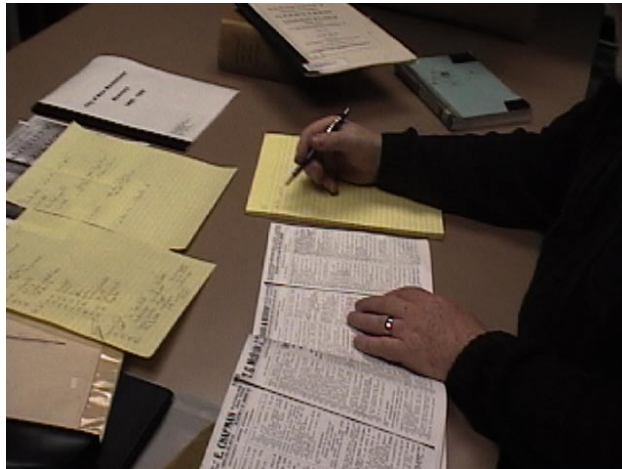
I found it interesting watching him at work. He knew exactly where his primary sources and research implements were. Furthermore, he proceeded through each step without hesitation. For example, in a manner of minutes, he had his desk covered in notes, timelines and source materials and had a clear sense of purpose of how to use the array of artefacts before him.

His long bouts of sitting at a desk reading silently, prompted me to question my documentary strategy. It was obvious I could end up with a tape of him silently reading with periodic bursts of note taking. I was concerned that students would find this boring so I decided to interrupt him with questions about what he was doing. He addressed the camera and explained his actions in response to my questions.

The video recording I collected for Practice Forge can be described as a representation and description of situated historical inquiry. Through this recording session, my belief grew stronger that descriptions about inquiry were important for understanding how to engage in historical inquiry. In future sessions with historians, I was open to recording their descriptions of doing historical research when it was not possible to document their actual situated inquiry.

Due to a constricting window of opportunity, my documentary efforts intensified. I made arrangements with history graduate students, a history professor, and a local historian to meet in a setting in which they routinely did their historical work. I requested they make available materials such as notes or drafts from recent or current historical projects in which they were involved. The purpose was not only to document settings and artefacts they used in doing historical research but also to focus our discussion on situated historical practice.

Of the seven participants I interviewed, all but one participant agreed to these arrangements. I met and documented six participants in their homes or their offices. For the one participant who did not want to meet under such circumstances, I arranged to conduct an interview in a meeting room at Simon

Fraser University. I used a video camera or an audio recorder to document these sessions with participants. The choice of recording device was based on their comfort level. In two situations where participants did not want to be video recorded, they agreed to allow me to take pictures of their work settings and materials (e.g., notes, primary sources) they used in historical inquiry.

The structure of each session was unique to the circumstances and ranged from 30 minutes to 120 minutes. Usually, I would begin by asking them to tell me about themselves and how they became interested in history. At some point in these discussions, I would ask about the settings we were in and its relations to their historical research. This would lead to a short tour of the setting. In one situation, I documented a PhD history graduate student in her office. She showed me a large box in which she stored some of the primary sources amassed during her master's degree. She also discussed how she would discuss ideas about history with her office-mate. Another participant, also a history graduate student, invited me into his home and gave me a tour of his bookshelf and filing cabinet where he kept all his primary source documents and carefully organized notes.

Meeting these participants, seeing their project materials, and listening to their reflections on historical inquiry and the importance of history was important for me. It intensified my belief in the value of sociocultural theories of learning (Vygotsky, 1978; Lave & Wenger, 1991; Rogoff, 2003) and underscored for me that an educational technology, which documented history as a community of practice, was a promising strategy for teaching students historical inquiry.

To document common settings of historical research, I emailed the BC Provincial Archives, and asked if I could tour the archives and interview archivists about historical research. They agreed. An official arranged for me to meet several archivists working in different parts of the archives. An archivist showed me how she restored water damaged books before they were made available to the public, another archivist gave me a tour of art vaults, and another archivist, in a white lab coat with white gloves, showed how carefully an archival fond is prepared. Even though most, if not all, students would never step into back rooms of a major archive, I chose to document these settings because they revealed a hive of cultural activity focused intensely on something central to historical research: primary sources. To avoid discussing the situated practices of archivists, I prompted archivists with questions about the relationship between archivists, archives, and historical research.

While at the BC Archives, I also documented rooms students would likely see if they did historical work in archives: reading areas. In these rooms, I explained to archival patrons who were examining documents, or reviewing documents on microfiche readers, about my project. I asked for their permission to record them at work in these settings, to which they all agreed.

Some of my documenting efforts were spontaneous so as to seize unanticipated opportunities. For example, prior to entering the main reading room in the BC Provincial Archives, researchers are required to leave their belongs in a locker and register at a security desk. I video recorded the locker area and the security desk (Image 6.4).

Image 6.4   Security desk at entrance of the BC Provincial Archives reading room

I asked the archivist I was interviewing, to explain why such imposing regulations were necessary. She explained the dual role of a public archive is to preserve historically significant materials, and to allow public access to those sources. Security is needed to ensure documents are not stolen and would remain available to the public.

Documenting people is a time and labour intensive practice. I began to shift my attention to other materials that could document history as a situated, social practice. While searching a university archive's website, I discovered a collection that contained working papers of a deceased historian. I went to the archives to examine the fond. It contained a variety of papers: timelines on lined yellow paper, a small collection of 3 X 5 inch cue cards on which were notes, a coffee-stained essay in scraggly hand writing, and a copy of a letter to the Director of the Center for British Art at Yale University.

Dear Sir or Madam:

It has been called to my attention that the Mellon Collection at the Center may include some works by Sigmund Bocstrom, an eighteenth-century draughtsman who was close to Sir Joseph Banks.

There are a number of Bocstrom's drawings in Canadian collections and I am interested in learning more about him and other examples of his work.

Should you have work by him, I would appreciate black and white copies of photographs of them, and any documentation you may have of the artist and the pictures.

Thank you for your consideration. Yours Sincerely,

This letter and the response from the director documented how a historian communicates with an archivist and reminded me of an exchange between Brenda and her mentee. Brenda had contacted the Canadian Pacific Railway archivist on Anne's behalf to find source materials for her. I took pictures of many of the documents so they could be included in the Practice Forge repository.

I found the materials in the fond intriguing. It was as if I had privileged access to secrets of historical research. After reading the papers, I could vividly imagine historical research. In many ways, the fond was similar to the design concept of Practice Forge since it was a repository for some textual artefacts of historical research. My confidence that Practice Forge could be a unique and promising educational technology intensified.

Looking for other texts that documented historical inquiry, I turned to the Social Sciences and Humanities Research Council (SSHRC). SSHRC is the federal agency that funds research in social sciences and humanities. While

reading SSHRC's website, I learned that successful grant applications were accessible under Canada's freedom of information legislation, the Access to Information Act. I realized that grant applications might provide insights into academic research and communicate to students that historians actively construct knowledge of the past. Although I did not expect students to understand what historians were studying, I did expect some parts of the applications such as sections that describe how grant money will be allocated (e.g., travel to archives, hiring graduate students, etc.), to prompt students to ask questions about historical research. I completed an Access to Information Form asking for copies of successful grant applications. When they arrived, I scanned them so they could be stored in Practice Forge's media collection[30].

The audiotapes, videotapes, and documents, continued to accumulate in my apartment. In stages, I digitized audio recordings and converted the video from tape to a popular digital video file format. For ease of viewing and listening, the video and audio files were segmented into blocks of roughly five minutes. Documents were scanned and stored with the audio and video files on an external hard drive.

The media collection of Practice Forge was large. In total, I conducted interviews with one full professor of history (male), one historian who had completed her masters in history and was presently working as an archivist, a PhD history student who completed her masters in history, a masters student in

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[30] As the purpose of use was for research, review, and criticism, reproducing the materials fell within the fair dealing clause of the Canadian Copyright Act allowing for attributed reproduction without permission from or payment to the copyright holder (CAUT, 2008).

history (male), two published local historians (one with a background in journalism, and the other archival management; both male), and eight archivists (three male, five female). Table 6.1 lists all of the material that I gathered for the initial collection of Practice Forge.

Table 6.1   Inventory of media collection

Audio Recordings	
Interview with history professor (one male)	120 minutes
Interview with history graduate students (one male, one female)	100 minutes
Interview with local historians (two male, one female)	100 minutes
Video Footage	
Historian working in archives (one male)	45 minutes
Historian collecting data at cemetery (one male)	40 minutes
BC Archives (exterior)	5 minutes
Interview with archivists (three male; five female)	240 minutes
Presentations at history conference	30 minutes
Images	
Archival warehouse	2
Archival fond of historian working papers (e.g., outlines, letters to archivists, etc.)	50
University archives (interior)	6
Documents	
List of historians' salaries*	2 pages
Acknowledgement from history theses/dissertations*	4 pages
Historian's application for research funding	2
Historian's application for funding for history conference	1

* These items were collected after interviews with teachers

After gathering a significant amount of media for Practice Forge, I began

the software development phase. My imagined users of Practice Forge were

categorized into four groups[31]: Administrators, Media Uploaders, Teachers, and

Students. Administrator users are responsible for setting up Practice Forge. The

Administrator first's task is to create a Communal Repository that will eventually

be "populated" with representations of various aspects of communities of

historical inquiry. The Administrator is also responsible for creating user

accounts, such as those of Media Uploaders and Teachers, and associating

them with the Communal Repository (Image 6.5).

Image 6.5   Creating a communal media repository

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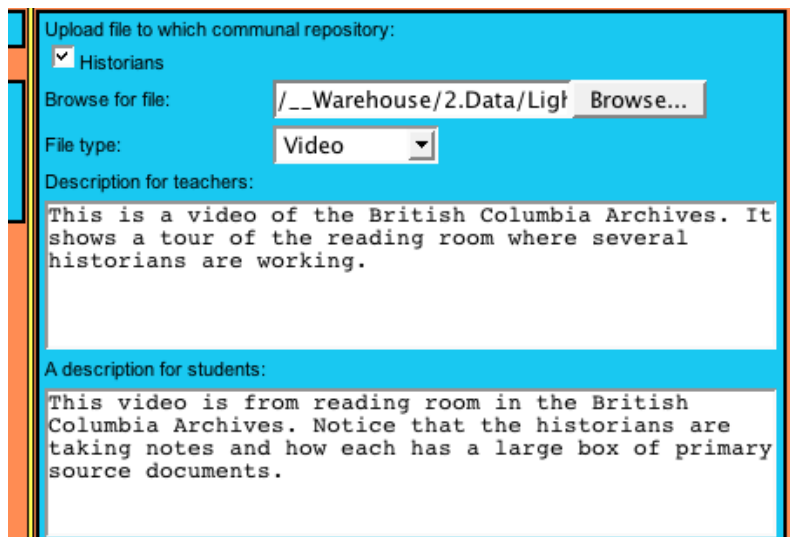
[31] Following a convention used in software documentation, I treat significant entities from the application as proper nouns and capitalize the first letter of their name (e.g., Administrator, Communal Repository).

Media Uploaders are responsible for documenting a community of practicing historians. After they acquire media representations, whether images, movies, documents, or audio files, Media Uploaders upload the files into the Communal Repository created by the Administrator. Media Uploaders are a separate user class from Teachers or Administrators because I imagined documenting a community of historians would be an extensive endeavour conducted by a university-based research team.

Before uploading a file, the Media Uploaders provide two descriptions of the content. Teachers can access the first description, which is intended to inform them about instructional uses of the media file. The second description is accessible by both Teachers and Students and is intended to serve as an explanatory note to describing the content of the media file (Image 6.6).

Image 6.6   Uploading media into Practice Forge

A third class of users is Teachers. Teachers use Practice Forge in two ways. First, they create Classroom Repositories for each class they teach. A Classroom Repository is a collection of media files selected from the larger Communal Repository as appropriate to the specific class. It is analogous to a set of books a teacher selects from the school library to support students' classroom work on a specific project. A Teacher may wish to have distinct Classroom Repositories for each class they teach. For example, for his grade 10 Social Studies class, a history teacher may want a Classroom Repository that contains media files depicting historians working from document-based evidence of the past, while for his grade 12 World History class he might want a Classroom Repository containing media files that emphasize how historians construct accounts from oral testimonies (Image 6.7).

Image 6.7   Creating a Classroom Repository
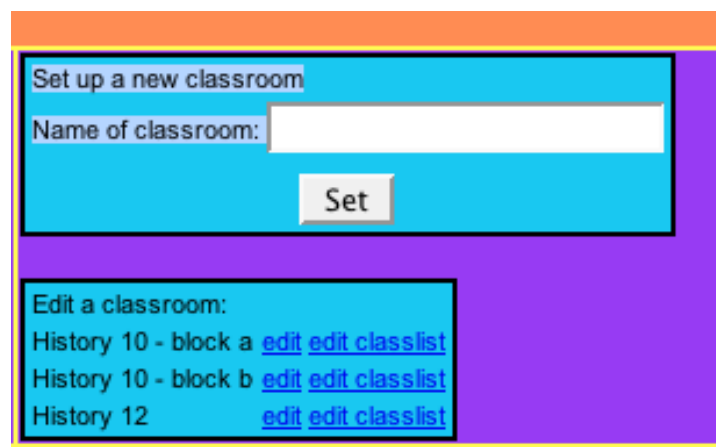
Students are the fourth class of users. Unlike Teachers users, who have access to both Communal and Classroom Repositories, Students can browse

through the Classroom Repository and access any media file. Students can also build a personal collection of resources relevant to their project (Image 6.8).

Image 6.8   Students accessing media from Practice Forge's classroom repository.

A headphone icon indicates an audio file, a document icon indicates a PDF file and a picture indicates a video.

Once I built the Practice Forge prototype, I conducted semi-structured interviews with two teachers who had participated in Tracking Canada's Past. Prior to the interviews, the teachers were sent images of the prototype, a description of the technology, and scenarios of how it could be used. I conducted interviews with the teachers in locations of mutual convenience, either at their

school or a local café. Interviews lasted approximately forty-five minutes. I transcribed the interviews and used the transcripts as an opportunity to reflect on and question assumptions guiding my design. For example, one teacher told me that although students would need to know how historians conduct research, they would also value learning something about the personalities of historians.

Based on these interviews, I returned to collecting media to try to find materials that documented the personalities of historians. For example, I digitized the acknowledgement sections of history dissertations. These sections contained expressions of historian's gratitude, and revealed them not to be narrowly focused on research but also the quality of their personal relationships.

It was during this phase I found a report published by American Historical Association (Bender et al., 2004). The report was based on an extensive survey of 158 doctorate-granting history programs, employers of public historians, and history graduate students in the United States. It documented current trends in the education of history graduate students (Bender et al., 2004). The report also included a summary of the results of several other surveys conducted by organizations such as the United States Department of Education. Initially, I thought some of the findings could be included in Practice Forge as a way of showing students that history encompassed a very large community of inquirers. But these reports also revealed a major problem with which I would struggle.

6.3 Practice Forge Blocked: The Demographics of Historians

The results of the American Historical Association's survey revealed significant disjunctions between the general population of the United States and the population of academic historians. According to the American Historical Association's report, "among full professors of history, the profession is still overwhelmingly white and male (82 percent male; 91 percent white)" (Bender, et al., 2004, p.13). Also, there has been "a shift toward greater class advantage for those receiving PhD's in history" (Bender et al., p.33).

Other studies reported similar findings. According to a 2004 survey by the United States Department of Education, 30% of the faculty members in history departments in the United States are women and 70% are men. Although this percentage is an improvement from 1980 when women occupied only 14% of history faculty positions, Townsend reports that recent trends indicate a "slowing growth" (2008) in the participation of women in history. The demographic homogeneity amongst academic historians starts years before an appointment to a tenure track position. At the graduate level, in 2006/2007 of new PhDs in history, roughly 40% were women and 60% men (Townsend, 2008). Academic history, as it is presently practiced in the United States, is disproportionately a community of practicing men.

In the United States, approximately 41% of the population are visible minorities (Townsend, 2002). However, this percentage is not found among historians. Although 59% of the population of the United States are white, a 2004

survey conducted by the United States Department of Education indicates white people make up 85.3% of the faculty members in history departments in United States universities (Townsend, 2008). One can conclude that academic history in the United States is presently a community of practicing whites.

The American Historical Association report also examined historians based on paternal education and economic status. The authors found evidence that offspring of parents of lower economic status "presently make up a smaller proportion of [history] doctoral students than they did two decades ago." (Bender, et al, 2004, p.13). Bender et al. (2004) also examined data collected between 1960 and 2000 about educations level of fathers of history doctorates. In 2000, 64% of fathers of PhD historians had a college degree or higher whereas 28% of adult males in the general population achieved that level of education (Bender et al., 2004, p.33). The authors drew two conclusions:

> First, doctoral students in history have come and continue to come disproportionately from relatively privileged family backgrounds. Second, the proportion and number of students in doctoral programs from first-generation college families is declining (Bender et al., 2004, p.34).

Bender et al. commented on the implications for the health of history profession. They noted under such conditions "the profession loses vitality and students of potential lose an opportunity to pursue what may be to them a substantively, if not practically appealing life work" (Bender et al., 2004, p.34). Similar results were found a year later in an analysis of socioeconomic class in accessing PhD history programs in the United States. Townsend concluded:

> as we look back over the past 40 years, we find that after decades
> of lowering the barriers of class and privilege, the ranks of new
> history PhDs are growing less diverse and more likely to draw from
> a narrow range of elite institutions (Townsend, 2005).

The implication is academic history in the United States is presently a community

of practice of the adult offspring of affluent families.

While unable to find equivalent surveys of historians at Canadian

universities, I found a survey conducted by Canadian Association of University

Teachers (CAUT). The study profiled faculties at Canadian history departments

with categories of "Men: Women." During the 2008-2009 fiscal year, men were

the primary holders of faculty positions in history (Table 6.2).

Table 6.2   Historians in Canadian universities by sex (2008-2009)

History	Men	Women	Total
All Ranks	67.8%	32.2%	1044
Full Professor	80.3%	19.7%	366
Associate	65.2%	34.8%	336
Assistant	57.3%	42.7%	330
Other-Lecturer	50.0%	50.0%	12

Source (CAUT, 2009, p.13).

Similar trends are found amongst students enrolled in history programs at

Canada universities. According to the 2006 Canadian census, the majority of

graduates from university history programs, at all levels, are "Men" (Table 6.3).

Table 6.3   Earned history degrees for Canadian population (2006)

Canada (degree in history)	Men	Women
PhD	68.7%	31.3%
Masters	56.9%	43.1%
Bachelors	55.8%	44.2%

Statistics Canada, 2006 Census of Population, Statistics Canada catalogue no. 97-560-XCB2006013.

For my purpose as a developer of Practice Forge, the demography of academic historians was a significant problem. My purpose in making Practice Forge was to furnish classrooms with digital representations that reveal practices of historical inquiry to students so that they could use them to guide them through their school-based history projects. However, it seemed most of the content in Practice Forge would be of how whites, men, and the adult offspring of affluent families "do history." The backup system, as far as I could reason, would support whites, males, and the offspring of affluent families rather than the much larger heterogeneous population that schools also serve. Empirical studies have warned that the misrepresentation or exclusion of social groups in school textbooks negatively affect student self-image, career aspirations, academic achievement, and attitudes towards social groups (Wirtenberg, Murez, & Alspektor, 1980). Additionally, a large amount of scholarship in history education has criticized curricular materials that privilege the representation of whites, men, and the off-spring of affluent families, along with their political and military accomplishments at the expense of social groups not fitting within this narrow demographic profile (Hirschfelder, 1975; Anyon, 1979; FitzGerald, 1979;

Tetreault, 1986; Cruz, 1994; Kuzmic, 2000; Clark, 2005; Morgan, 2008; Zajda, 2008). From the sociocultural theoretical perspective I endorsed (see Chapter Four), I also found warning signs. I saw Practice Forge as explicitly requiring students who were non-whites, non-males, and the offspring of non-affluent families to make more sacrifices to adapt the cultural practices of academic historians to work in their own cultural circumstances. Explaining to some students that if they were to succeed then they would have to make more sacrifices than others was not something I was willing to say and so not something I was willing to endorse in my design work. In sum, I recognized that I faced a serious risk of developing an educational technology that taught students they were unwelcome outsiders to historical research. Mindful of the socioeconomic demography of the students who participated in Tracking Canada's Past 2004 iteration, I began to doubt Practice Forge would be the useful classroom resource I had intended.

In software development, a "bug" refers to an undesirable behaviour in a program. Computer scientists have documented many types of bugs. Some bugs are relatively minor and do not impede the software's release. A "blocker bug" is the most critical type of bug since its presence prevents the software from being released. While technically, the demographic imbalance between populations of academic historians and the general population is not a software malfunction, it nonetheless reveals a serious flaw in the conceptualization and design of Practice Forge. In my view, Practice Forge faced a blocker bug.

As a methodological framework, design-based research requires design-researchers to respond to unanticipated problems that occur while engaged in educational design (Collins, 1992; Brown, 1992; Collins et al., 2004; Barab & Squire, 2004). When I encountered reports that revealed a demographic imbalance between populations of academic historians and the public at large, I tried to respond in several ways, as documented in the sections that follow. I did not feel comfortable with any of these responses.

6.3.1 Response One. Reject Social Homogeneity, Change the Content of Practice Forge

6.3.1.1 Response #1: Encouragement

My first design response was to try to populate Practice Forge with representations of social groups that reflected the demography of the general population. To do this, I considered including media that depicted or documented how communities of women, visible and ethnic minorities, or people of low-income family valued academic history. The idea was to build "encouragement scaffolds" that could offset the discouragement students might feel after searching for, but not finding, cultural tools among academic historians in Practice Forge. These scaffolds would show students under-represented among academic historians that, although the cultural tools of historical inquiry might require adaptation, it would be worth the extra effort because their socio-cultural group values historical research. For example, I found on the Internet a scanned note in which the Chinese-Canadian Veterans Association invited a history

graduate student to present the results of her research on the history of Chinese-Canadian soldiers at the association's annual meeting.

While having representations of under-represented groups valuing historical research may have encouraged under-represented students to adapt and appropriate the ways academic historians mediate historiography, it also seemed coupled with another more discouraging thought. Students might use these representations to think under-represented groups can only be consumers of historical texts. This possibility conflicted with the overall goal of Practice Forge to provide resources to support students as producers of historical knowledge. Moreover, requiring some students to spend extra time seeking "encouragement" was an educational strategy that required more from some students than others and so I did not follow this design response further.

6.3.1.2 Response #2: Changing the meaning of historical research

Another response I entertained was to change my definition of historical inquiry to include ways in which non-academic communities inquire into the past. By broadening the definition of historical inquiry in such a way, Practice Forge could achieve the level of social heterogeneity I felt was necessary from which to derive educational resources for use in public schools. However, a problem with this response was it required that I change Practice Forge's goal to support students in making historical accounts in a manner akin to academic historians.

Scholars of history education who endorse a Disciplinary Thinking approach to history education have faced a similar problem as I described for

myself above. For Seixas (2004), the common distinction made between history and collective memory is troubling because it "has the flavour of a baldly Eurocentric model of progress, where the modern West 'has' historical consciousness, and the rest do without, until they achieve Western modes of understanding" (p.9). Seixas prefers to use the term 'historical consciousness', which can accommodate both history and collective memory:

> It will serve our purposes, therefore, to adopt an inclusive notion of historical consciousness by incorporating all those modes of understanding that are included in 'collective memory.' At the same time, this notion should allow for the coexistence in any one culture, and indeed, in any one individual, of fundamentally different *types* of historical consciousness. These may (or may not) be related to the tools and practices of professional, disciplinary history… (Seixas, 2004, p.9-10).

It occurred to me while developing Practice Forge, I could broaden the definition of "making history" to be inclusive of not just "making academic history" but to also include "making collective memory." In this way, Practice Forge would incorporate multiple communities of practice including "collective memory" communities of practice along side academic history communities of practice. However, this response required I change the goal of Practice Forge, which was to teach students to produce academic historical knowledge. I was unwilling to change an educational goal to accommodate demographic inequities.

To mitigate the problem of populating Practice Forge with representations of a privileged homogeneous community, I considered over-representing academic historians who are the offspring from less affluent families, women, and visible minorities. This 'affirmative action' design response would achieve a

social heterogeneity among the social groups represented in Practice Forge.

However, I wanted to avoid strategies I understood would accommodate social

problems rather than change them. Moreover, this design response also

misrepresented academic history to students and might give students a message

that academic history was a heterogeneous community, when in fact, evidence

showed otherwise. I rejected this response.

6.3.2   Response Two. Accept Social Homogeneity, Challenge Students

A second response I considered was to accept that Practice Forge would

contain representations of homogenous social group (i.e., whites, men, off-spring

of affluent families). This response could be pursued in one of two ways.

6.3.2.1   Some Critical Tools

I considered a design response that would support students in becoming

critical of practices of historians that may be barriers to students. An example of

this strategy can be found in the history education literature. Levstik and Smith

(1996) provide a case study of a grade three class in which students were taught

a simplified form of historical inquiry. Aware that "introducing inquiry as largely

skill or knowledge acquisition…runs the risk of uncritically reproducing a cultural

practice" (Levstik & Smith, 1996, p.88), the researchers accordingly adopted a

perspective of historical inquiry that

> was not conceptualized as a one-dimensional transmission from
> teacher or text to individual students. Rather, students were
> perceived as active agents in *communal* and *multidirectional*
> construction of learning… This meant that there was a great deal of

conversation, not just about the content of history, but about the processes of historical inquiry. (Levstik & Smith, 1996, p.93, italics in original)

Practically, this required the teacher to participate in historical inquiry with the students and to "engage in talk about the learning task that externalizes in speech the internal mental process involved in the task, forming a dialogic co-construction of meaning that facilities both learning a new task and critiquing that task" (Levstik & Smith, 1996, p.88). In this way, the pedagogical techniques made classroom-based disciplinary-inquiry amenable to change.

Drawing from Levstik and Smith, I began to add a software feature to Practice Forge that would allow students to write notes to critique the representations of historical inquiry documented by Practice Forge or pose alternative courses of action. However, while developing this feature I abandoned this response because it became clear to me that by doing so much critical work, teachers and students themselves would still be the ones changing in response to the demographic differences between academic historians and the general population. I rejected this as my design response.

6.3.2.2 "No one's written your destiny for you…you write your own"

A final response considered was to not alter Practice Forge in any way. This response would be accompanied by an educational position derived from two assertions. To illustrate this sort of response and the two assertions, I refer to the 2009 speech on education the President of the United States, Barack Obama, presented to the students of the United States (Obama, 2009). The first

assertion acknowledges that students having to deal with inequities as a condition of education is offensive. This assertion can be expressed sympathetically. To quote President Obama:

> I know a lot of you have challenges in your lives right now that can make it hard to focus on your schoolwork. I get it. I know what that's like. My father left my family when I was two years old… (Obama, 2009).

The second assertion is "all students are capable of transcending any limitation or barrier they face." To quote Obama again:

> No one's written your destiny for you. Here in America, you write your own destiny. You make your own future. (Obama, 2009).

This second assertion evokes feelings of hope while implying students have no excuses for non-achievement in schools. To quote Obama again:

> at the end of the day, the circumstances of your life – what you look like, where you come from, how much money you have, what you've got going on at home – that's no excuse for neglecting your homework or having a bad attitude (Obama, 20009).

If I accepted this stance, I could then propose that students use Practice Forge with no revisions and advance a position that students could overcome any of its shortcomings. But I rejected this "write your own destiny" response because it did not allow me to talk about demands students could place on others to participate in dismantling the inequities they faced. I saw this response as evading a responsibility and so rejected it.

It is possible at this stage in my software's development, I had fashioned straw men proposals where I excluded the rhetorical *piece de résistance* that transforms a flawed proposal into a viable one, and then rejected it on the basis

of that exclusion. But having assessed and rejected each proposed response, I did not want to continue developing Practice Forge hoping that I would find the piece de résistance that would turn a straw man proposal into a viable proposal. Rather, I trusted my assessments. Although it is an unusual decision to make for an educational technologist after such a lengthy commitment to a software development I chose to halt the development of Practice Forge.

7: DESIGN NARRATIVE THREE: RECALLED TO INQUIRY

Recalled to Inquiry

LOG IN

Username

Password

☐ Remember my username and password

Log In

7.1 Introduction

In the previous chapter, I presented a design narrative to document the program design phase of software development (Royce, 1987). Unwilling to proceed with the production of an education technology that would require students to learn to do historical research amidst social and economic inequities, I halted development. The problem I understood to impede software development was social and economic inequities. Following a design-based research methodological framework, I understood myself as having to respond to this problem (Collins, 1992; Barab & Squire, 2004; Collins et al., 2004).

As will be documented in this chapter, to fashion a response, I disengage from the question of how to develop an educational technology for history education and confront the question of how to dismantle inequities that impede schools from achieving their educational objectives. It should be noted that in fashioning my response, my understanding of in/equities is not limited to statistical ratios, even though that was what prompted me to revise my focus. Simple statistical ratios of social groups such as "men: women," simplify the complexity of in/equities. Beyond such primitive statistics are additional layers of conceptual sophistication. For example, within a population of 50% men and 50% women, one can ask what expressions of maleness and femaleness are permitted? Are academic settings in/hospitable to males who dress as females (Ekins, 1997)? And to what degree are academic environments supportive of aspiring historians concerned with pregnancy and childcare (Norman, 2008)? In

sum, in refashioning my design study in the wake of the first cycle of software development, I understand an adequate response to inequities cannot simply be based on an analysis of ratios but also requires careful attention to layers of complexity associated with a multitude of human experience and difference (de Castell & Bryson, 1998, p.106-107).

7.2 Examining the Context of Schooling

The report of the American Historical Association offered some explanation for the demographics of academic historians (Bender et al., 2004). The offspring of less affluent families may be underrepresented among populations of academic historians because many history departments have regulations that restrict students from receiving funding while holding outside employment (Bender et al., 2004, p.36). Under such regulations, history graduate students must pay for their graduate studies from sources such as families, savings, loans, or scholarships. The adult children of less affluent families may not be able to access such resources. However, they might also not be pursuing the study of history due to long-term financial concerns, as the report of the American Historical Association notes:

> The uncertainty of employment in history may be discouraging students from first-generation college families from pursuing history careers. One can understand their preferences for more secure career paths (Bender et al., 2004, p.34).

The American Historical Association did not offer explanations for the low proportion of non-whites and non-males among historians or why whites and males pursued the study of history.

7.2.1 Attending to Non-School Public Institutions

The explanation for offspring of low-income families not pursing the study of history can be considered within a larger economic context. The behaviour of organizations external to low-income families influence the economic conditions faced by those families. For example, the performance of the Department of the Treasury, Department of Labour, and the Department of Commerce influence the economic conditions of the United States, and so their actions need to be factored into explanations of the over-representation of the offspring of affluent families among university history departments. A similar consideration could be made for the behaviour of institutions accounting for the over-representation of whites and males among historians in history departments in the United States[32]. Given that many public institutions influence social and economic conditions, questions worth asking are: (1) how can public institutions be prevented from perpetuating social and economic inequities, such as those found among the population of historians? and, (2) how can public institutions participate in dismantling the conditions that create social and economic inequities among the population of historians? Answers to these questions are directly related to the barrier I faced during the production of Practice Forge described in Chapter Six.

To address these questions, it is necessary to disengage from the particulars of history education and re-engage with broader literature that examines how non-K12 public institutions affect social and economic inequities.

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[32] I draw attention to economic class here because the AHA's report only offered a (brief) explanation as to why the offspring of low-income families might not be pursuing the study of history.

To find an authoritative position for curriculum and education scholars, I searched academic literature on the topic of how government and public institutions support the formal learning of employees within their organizations.

7.2.2 Diagnosing Public Servant Curriculum

An extensive academic literature on public administration curriculum can readily be found. However it appears largely focused on university-based undergraduate and graduate programs offered at universities (Geva-May, Nasi, Turrini, Scott, 2007)[33]. In conceptualizing this literature, it also appears fair to say its conceptual focus is centred on university-based curriculum for aspiring public servants[34]. Van Wart, Holzer, and Kovacova (1999) reviewed literature on university-based programs for working public servants. Although they had discovered numerous university-based programs offering continuing education programs for public servants, they found much less literature on the topic. The authors concluded "it seemed particularly interesting to us that we could find so little research on university-based continuing education with a public administration focus" (p.70).

Similar conclusions can be made about research on government-based programs for public servants. Although Van Wart, Cayer, and Cook (1993) document numerous rationales and strategies that government bodies in the

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[33] Geva-May et al. (2008) do discuss Australia and New Zealand School of Government (ANZSOG), a partnership between five governments and eleven universities that provides curriculum for working public servants in Australia and New Zealand (p.198-199).

[34] In a comparison of public administration curriculum in the 1980's and in the twenty-first century, Ellwood "excluded programs in sustentative field and continuing education programs" (2008, p.173).

United Stated have used to meet the learning needs of government employees, they also comment on the lack of attention to the topic:

> Approximately one out of every seven workers, or nineteen million people [in the United States], are employed by federal, state, and local governments; yet, *until now, no major publication has focused on these employee's training and development* (Van Wart, Cayer, & Cook, 1993, p. xi, italics added).

More recently, the International Journal of Public Administration published a special issue on the topic of civil service training (Stephen, 2004). While the articles documented post-entry public service training in Ghana, China, Canada, India, Nigeria, and Turkey, they did not appear, as far as I could tell, to be part of an existing comprehensive literature on post-entry government-created public servant curriculum. Anderson, Hardy, and Leeson (2008) provides perhaps the most accessible account of a government institution with a mandate to provide an extensive curriculum for government employees. Anderson documents how he and a group of senior executives under the direction of the United States Department of Defense transformed scattered training facilities into an award winning 'corporate university' (Wasyluk & Burge, 2007; Elkeles & Phillips, 2007) for civilian and military personnel specializing in military procurement.

Informal searches were much more productive at finding examples of public servant curriculum. My member of federal parliament, an employee of the British Columbia government, and a clerk in a municipal government directed me to sites of public servant learning within their level of government: the Centre for Intercultural Learning at the Department of Foreign Affairs and International Trade (DFAIT, n.d.), the Learning Services Branch within the Government of

British Columbia's Public Service Agency (BCPSA, 2007), and a curriculum for

senior municipal employees offered through Burnaby City Hall (BCH, 2007).

Searches of the Internet also retrieved examples such as the Canada School of

Public Service, the National School of Government in the United Kingdom, and

the Federal Executive Institute in the United States.

7.2.3 Probing Public Servant Curriculum through Freedom of Information

The discrepancy between observable government commitments to public

servant curricula and the scant academic literature on the topic was puzzling.

Freedom of information legislation assures a high level of government

transparency making it relatively ease to access documents related to how public

institutions design and deliver public servant curricula. As a concept, freedom of

information refers to a set of rules within a political regime that create a norm of

public access to government records while making state secrecy the exception.

In the years leading up to the July 1st, 1982 passing of Canada's first freedom of

information legislation, the Access to Information Act, Francis Fox, Secretary of

State and Minister of Communication, described this reversal in the House of

Commons:

> Simply put, the bill reverses the present situation whereby access
> to information is a matter of government discretion. Under this
> legislation, access to information becomes a matter of public right,
> with the burden of proof on the Government to establish that
> information need not be released (Drapeau & Racicot, 2001, p.162).

The first political regime to pursue a norm of access was Sweden in 1766 (Mustonen, 2006)[35]. For most of the world's population, however, the right to access government information has arrived much more recently. In 1966, two hundred years after Sweden, the United States of America adopted the Freedom of Information Act (FOIA) to become only the fourth country where a citizen's right to access government records was defined by statute. Ten years later, in the wake of the Watergate Scandal, a political power play occurred: Congress passed strong amendments to FOIA, which President Ford vetoed, who was subsequently overruled by Congress (Roberts, 2006a). Following the United States, freedom of information legislation was adopted around the world at an exponential rate: in the 1970's, four countries adopted access laws; in the 1980's, six countries; in the 1990's, twenty countries; and between 2000 and 2009, fifty-six countries (Vleugels, 2009).

To establish a norm of access, many freedom of information legislations are structured in the following way:

> (1) Establish a statutory obligation for government authorities to grant the public access, through prescribed methods, to all records in their custody,
>
> (2) Establish in statute a set of limited and specific exemptions that authorizes the government to deny the public access to specific categories of information, and

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[35] The history after Sweden constitutionally established and legislatively defined citizens' right to access government records in 1766 should not be construed as a time of uninterrupted access. With a coup in 1772, "the restoration of the power of the monarchy under King Gustav rolled back the Age of Freedom in Sweden" (Blanton, 2006, p.82) but access was restored in 1809 (Björkstrand & Mustonen, 2006, p.4).

(3) Establish a body, independent of government, such as an Information Commissioner, to review allegations of government non-compliance with (1) and (2).

The inversion of the norm of state secrecy with civic access has had tectonic effects within otherwise established public institutions. On January 1, 2005 the United Kingdom's freedom of information legislation became enforced. Less than four and half years later the House of Commons would rattle from an opprobrium that ended numerous political careers, including the Speaker of the House who was forced to resign after a vote of non-confidence making him the first Speaker to be fired since the British parliament was unified in 1707[36]. Journalists had used freedom of information to acquire expense accounts of members of the House of Commons. The documents revealed extensive misuse of public funds by elected officials (Hencke, 2009). State insiders, not only in United Kingdom but also in Canada, are responding to the perceived crisis using various techniques to restore the norm of discretionary disclosure (see critical observations made in: BC FIPA, 2004; Roberts, 2006a, 2006b; Hencke, 2009; Rees, 2009; Tromp, 2010a).

7.3 Recalled to Design: Entering the Second Cycle of Software Development

Having ended software development as a result of widespread social and economic inequities, I found a glimmer of hope in the thought that government

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[36] Michael Martin was the first speaker of the house to resign since the formation of the unified parliament, but not the first speaker to resign in English history. Prior to the unification of the parliaments of Scotland and England, Sir John Trevor, speaker of the house in the English parliament was forced to resign in 1695 (Guardian, 2009).

created curriculum for public servants can offer a basis for non-school public institutions to remediate inequities without shifting the burden of fundamental social change to schools. With little academic writing available on the topic of public servant curriculum, I recognize that freedom of information legislation provides a means to acquire records about public servant curriculum that can support the development of what I take to be a crucially needed literature. This glimmer of hope and the recognition of the opportunity created by freedom of information legislation propelled me into a second cycle of software development.

For this second cycle of software development, described in the following section, I create a research technology centred on exercising access rights provided by freedom of information legislation. I use this research technology extensively to make governments disclose documents related to public servant curriculum. Scholars and researchers who associate under the broad banners of education and curriculum studies can examine these documents (see Chapter Eight and Electronic Appendices One to Ten) to support growing discussions about how public institutions and their curricula can dismantle social and economic inequities that impede schools.

This second cycle of software development is presented as a design narrative written using the conventions of ethnographic impressionism (Van Maanen, 1988). Impressionism is used for two reasons. First, to understand my design study as a serious attempt at interpretivist design-based research (see Chapter Three), it is important that I use representational strategies that acknowledge the presence of myself in the course of software development.

Impressionist ethnography uses writing conventions that renders the fieldworker within the text and so is compatible with interpretivist design-based research.

A second reason for using the conventions of ethnographic impressionism is because it represents researcher authority in a way consistent with my epistemic authority throughout the second cycle of software development. In confessional ethnography, the fieldworker appears as self-reflective and self-questioning but ultimately a source of authority. Impressionist ethnography, in contrast, presents a fieldworker as beginning in an initial state of ignorance but ending up more knowledgeable (Van Maanen, 1988). Lack of knowledge about freedom of information and public servant curriculum characterized my epistemic authority as I began the second cycle of software development. Ethnographic impressionism thus provides useful writing conventions with which to represent a growing understanding of public servant curriculum and freedom of information.

As an impressionist tale, the design narrative uses literary writing conventions such as scene setting, dialogue, and dramatic tension. The narrative that follows should be judged not with scientific criteria such "accuracy or representativeness" (Van Maanen, 1988, p.105) but with literary criteria, such as believability and level of engagement.

7.4 "Recalled to Inquiry"

"What kind of software will I make?" I thought, staring at my computer.

I didn't know much about using the Access to Information Act. I had used it once to access some grant applications written by historians. But that didn't give me much experience or ideas for designing software. To make matters worse, my cultural environment didn't offer much to help me think clearly either. According to cultural historical theories of psychological development, higher-order thinking first appears in an inter-psychological plane between people before appearing within the intra-psychological plan of an individual (Vygotsky, 1978). But apparently Canadian universities are not places for thinking about the Access to Information Act. According to reports by the Canadian Government, in the last twelve years academics have filed approximately 1.0% of the total requests made through the Access to Information Act[37]. With approximately 31,000 full-time university teachers in Canada[38] and roughly 240 requests made to the federal government each year, Canadian academics institutions are not yet avid users of the federal freedom of information legislation.

The infrequent use of disclosure laws is not limited to Canadian academics either. In the mid-1980's, academics made only 3% of the freedom of information requests submitted to the Australian government (Hazell, 1989, p.201). Lee reports that in recent years approximately 1% of freedom of

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[37] Based on annual Info Source Bulletins published by the Treasury Board of Canada Secretariat between 1996-1997 and 2007-2008.

[38] Average of full-time Canadian university teachers between 1996-2004 (CAUT, 2007, p.6).

information requests made to the Federal Bureau of Investigation and the United

States Environmental Protection Agency were from academics (2005). Others

have observed that, as a method of inquiry, disclosure laws in the United States

"have been virtually ignored by sociologists" (Keen, 1992, p.43). Of the small

percentage of academics presently using disclosure laws, historians are reported

to be the most frequent users as they gain access to documents before they are

archived (Aldrich, 1998; Wasserstein, 2001, p.103; Lee, 2005)[39].

Without a community of academic users of freedom of information, the

requirements gathering phase of software development would be difficult if not

impossible (Royce, 1987). So, I found myself in the program design phase of

software development. I sketched a few ideas on a sheet of paper. Then

scratched over them. Sketched a few more. Then scratched over them too.

Without having experience with freedom of information and being a part of a

community of freedom of information users, I was unable to recognize what

design of a program would actually be useful.

Fed up with sketching ideas, I decided to find the requirements myself. I

would use freedom of information legislation extensively until I had accrued

enough experience to recognize what kind of software I needed. In make these

freedom information requests, I decided to only send them to public institutions

not typically associated with elementary, secondary, or even post-secondary

education. Instead, I would focus on institutions like the Canada Revenue

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[39] The Research Information Network in the United Kingdom has in recent years hosted a series
of workshops attempting to raise awareness among academic researchers about the potential
of freedom of information-based inquiry.

Agency, Environment Canada, or Industry Canada. For a student of curriculum

and education to engage with such non-school public institutions might seem

unintelligible to many who participate in current academic discourse communities

about schooling. But because I wanted to avoid "sense making" discussions that

resulted in the ethical burden of responding to the economic and social problems

being place only on schools, teachers, or students I accepted that I would have

to cross a threshold of intelligibility where my excursions into non-school public

institutions would be difficult to understand for many. However, through such

excursions, I believed that I would find a more stable position from which to place

expectations on a group of people to respond to the problems that impede

schools. This position, I believed, would allow for a more educationally sensible

discourse than was presently available.

My first step was to find instructions on how to make an Access to

Information request. I found some on the Treasury Board of Canada's website:

> 1. Determine which federal government institution is most likely to have the information you are seeking.
>
> 2. To apply for information under the Access to Information Act, complete the Access to Information Request Form. Describe the information being sought and provide any relevant details necessary to help the institution find it...
>
> 3. Forward the access request to the Coordinator of the institution holding the information. Enclose a $5.00 money order or cheque. Note: Cheques and money orders are payable to the Receiver General for Canada (TBCS, n.d.a)

For my first request, I decided to ask for something from the Canada

School of Public Service. But I wasn't sure what. The Canada School's website

was a public relations masterpiece—welcoming images, balanced colours, clear layout—but it didn't reveal much about what the school did. So I guessed and cast my net widely:

Please send me the following:

a) Current by-laws respecting the conduct and management of the affairs of the School,

b) Current organizational charts of the Canada School of Public Service,

c) Contracts for the provision of teaching and research services to the School and for other professional services connected with the management of the programs of the School for the period June 01 - July 01 for the fiscal year 2005-2006,

d) Minutes of both meetings of the Board of Governors for the fiscal year 2005-2006.

Having filled in the Access to Information form, I found a list of the mailing addresses of all the Access to Information and Privacy Offices in the various federal departments on the Treasury Board of Canada's website (TBCS, n.d.b). Amidst the list of over 230 federal departments and agencies, I found the address of the Canada School:

Canada School of Public Service
Access to Information and Privacy Coordinator
373 Sussex Drive
Ottawa, Ontario, K1N 6Z2

Finally, I wrote a $5.00 cheque payable the Receiver General of Canada and bundled the request into an envelope and took it to the postal box. The "paper-stage" of software development had started.

■

Two weeks passed. I opened the mailbox in the mailroom in the lobby of the student residence where I was living and removed a letter. It was from the Canada School of Public Service.

> The following request under the Access to Information Act was received on October 4, 2007:…
>
> We will process your request under the provisions of the Act.
>
> If you have any questions relating to your request, please do not hesitate to contact….

Back in my apartment, I opened my desk drawer and added the letter to a file folder labelled "Canada School of Public Service" that contained a copy of the original request.

■

Three weeks later I was back in the mailroom to check my mail. In the mailbox was a thick envelope from the Canada School of Public Service. I hurried back to my apartment where I opened the envelope. There were over 100 pages of documents! It was receiving a birthday gift![40] But as I flipped through the pages I felt a growing anxiety and found myself occupied with foreboding thoughts and I began to rebuke myself for intruding into the affairs of the government. I tried to reason with myself. "I haven't done anything wrong. I'm allowed to see these documents." But it wasn't until I focused on something peaceful—a maple leaf curled around the branch of a tree outside my window—

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[40] Cuillier and Davis (2010) make a similar observation about the thrill of acquiring documents.

that a sense of calm returned. I look at the documents and began to read[41]. Here

were the bylaws:

> … The Board is responsible for the conduct and management of
> the affairs of the School, and as such:
>
> 1. reviews and approves the objectives, goals and policy orientation
> of the School's programs;
>
> 2. reviews and approves the School's overall strategy as well as all
> its related implementation plans…[42]

And flipping some more, was the organizational chart[43]:

> • President, Ruth Dantzer
> > • Vice-President, Individual Learning, Donna Achimov
> > > • Senior Director, Blended Learning Centre of Expertise,
> > > Barbara Lukaszewicz
> > > …
> > • Vice-President, Organizational Leadership & Innovation, Michael
> > Keenan
> > > • Director General, Innovation in Public Management,
> > > Mary Quinn
> > > …
> > • Vice-President, Registrar, David Waung
> > > • Director General, Evaluation & Quality Assessment,
> > > Hervé Dévy
> > > …
> > • Vice-President, Policy, Governance & Communication, Brian
> > Johnson
> > > • Senior Director, Marketing, Conferences and Special
> > > Events, John Prentice
> > > ...

And then the records of contracts for research and teaching services[44]:

> …

---

[41] See Electronic Appendix One.

[42] Canada School of Public Service (2004). CSPS Board of Governors By-laws, Revised April 1,
2004.

[43] Canada School of Public Service, Senior Management Structure, October 1, 2007.

[44] Canada School of Public Service, Automated Material Management Information System.

E.S. Tunis & Associates, Professional Services $16,050

Four Directions International, Professional Services & Travel $32,635

Dominque Rankin, Professional Services & Travel $22,811
…

And finally, the minutes of a meeting of the school's board of governors:

> …. Pilot testing of the authority delegation training is underway and has received positive reviews. This has included DM orientation sessions, where a case study approach was used, and a session for Heads of Agencies. The full launch of the on-line assessment instrument to assess the knowledge of existing managers is slated for June 2006… [45]

Reading through the documents, I began to imagine the internal workings of the Canada School of Public Service. And the more I imagined, the more access to information requests I sent. In a short period of time, a great number of requests arrived at the Canada School's Access to Information and Privacy Office with my return address on them.

But I also turned my attention to other departments in the Canadian Government. I sent requests to the Department of Foreign Affairs and International Trade, Canadian Heritage, the Canadian Housing and Mortgage Corporation, and the Department of Finance. And soon my desk drawer became filled with a great quantity of file folders, copies of outgoing letters, acknowledgement letters, and disclosed records. Eventually, I had to buy a plastic crate to store them. The "paper-stage" of software development was spreading from my desk drawer into my living room.

---

[45] Canada School of Public Service (2006). CSPS Board of Governors Meeting Record of Decision, March 27, 2006.

■

Months passed and handling freedom of information requests had become part of my daily routine. I studied the Access to Information Act and read rulings issued by the Information Commissioner of Canada and the Supreme Court. My apartment was slowly becoming reorganized to make writing requests easier. For example, I kept postage stamps, envelopes, return addresses labels, and my chequebook near my printer. My goal was to minimize the amount of time it took to go from "idea" about a freedom of information request to actually sending it.

Reflecting on my revised daily routines and my material environment revealed a pattern of activities and experiences that helped me imagine how a software application could take away some of the stress and make things easier. After months of making freedom of information requests, I started to program.

My plan was to do all the software development on my iBook that ran Mac OS 10.3.9 and had a Unix-like kernel. My software development environment consisted of open source products, such as Apache, the most popular web server used on the Internet, and MySQL, a popular open source relational database management system. I was going to do the software programming in Perl, an open source, general purpose programming language. The program needed a name and so I called it Five & Stamp, referring to the five-dollar application fee and the stamp that accompanies each request (Image 7.1).

Image 7.1   Five & Stamp's initial interface

Software development had formally started and where it was going to take me, I'd soon discover.

∎

By April 2008, the basic features of Five & Stamp were working. I could use an HTML interface to enter basic information about a request (Image 7.2).

Image 7.2   Five & Stamp's "Add a Request" interface

When the "Add" button was pressed, the information about the request would be stored in a database and Five & Stamp would display all the requests in a queue. Even at this early stage, I was using Five & Stamp to take on some of the burden of making requests. I had used it to bring in documents from the Canada School of Public Service, Statistics Canada, the Department of Foreign Affairs and International Trade, and the Department of Finance.

Although software development was underway, I still wasn't entirely sure what features would be needed. In software development, the requirement phase typically precedes the program design phase (Royce, 1987). But I didn't have that luxury here. In fact, it could be said that the requirement phase and program design phase where running in parallel trying to keep up with me as I made more freedom of information requests.

Currently, Five & Stamp was tracking four requests: (1) educational CD-ROMs from the Department of Foreign Affairs and International Trade's Centre for Intercultural Learning, (2) reports of required training from the Canada Public Service Agency, (3) terms of reference of all committees responsible for curriculum planning at the Canada School of Public Service, and (4) floor plans for the Ottawa headquarters of the Canada School of Public Service from Public Works and Government Services. But with growing ambitions, I wanted to see if I could reach for something that had, until that point, been beyond my imagination:

> Please send me: For the years 2005-2008, the names of courses, workshops, videos, educational computer programs (e.g., CD-ROMS), and other educational resources that are provided either internally by the Bank of Canada or by external providers (excluding the Canada School of Public Service) to employees of the Toronto regional office of the Bank of Canada.

> In fulfilling this request, I ask that I be provided with as many names as possible within the five hours allocated to this request.

Oblivious to the inner workings of the Bank of Canada, my request was searching[46]. The second paragraph related to a clause in the Access to Information Act, section 11.2, which allows government institutions to charge a processing fee in situations where searching for and preparing the records takes more than five hours. Each additional hour costs approximately ten dollars.

Before saving the request in Five & Stamp, I did a final task that had lost all its novelty and was now tedious. I cut and pasted the text of the request into a word processor, formatted it, printed a copy, and then printed the envelope. I

---

[46] This request is what Cribb et al. refer to as a "fishing expedition" as it is broad in scope and uses open-ended language (2006, p.160).

then wrote a cheque for five dollars stapled the cheque to the letter, folded the

request, and slid it into envelope. Sealed it. Stamped it. Put it by the door so I

would remember to mail it. Once done, I clicked the add button and Five & Stamp

saved the request and displayed a Tracking Queue (Image 7.3).

Image 7.3   Five & Stamp's queue for tracking freedom of information requests

	Request			Acknowledgment			Response		
	To:	Regarding	Date Sent	Date Received	Date request was acknowledged	Extension taken	Expected date of arrival	Days until arrival	Date that the requested records arrived
1 ☐	Canada Public Service Agency	reports on annual training	Jan 29, 2008		Feb 5, 2008	60 days	May 6, 2008	12	
2 ☐	Foreign Affairs and International Trade	Educ-CD Roms	Apr 16, 2008				May 24, 2008	30	
3 ☐	Public Works and Government Services	Floor plans	Apr 24, 2008	Apr 28, 2008			Jun 1, 2008	38	
4 ☐	Bank of Canada	Learning Resources	Apr 24, 2008				Jun 1, 2008	38	
5 ☐	Canada School of Public Service	Curriculum planning committees	Apr 17, 2008	Apr 18, 2008	Apr 18, 2008	30 days	Jun 21, 2008	58	
6 ☐	Canada School of Public Service	Campus Direct Info	Dec 2, 2007	Dec 6, 2007	Dec 6, 2007	60 days	Mar 9, 2008	4	Mar 5, 2008
7 ☐	Dept of Finance	Required training & screenshots	Jan 29, 2008		Feb 4, 2008		Mar 7, 2008	-4	Mar 11, 2008
8	Foreign Affairs and	course	Jan						

Although the whole process took less than five minutes, the monotony

was so agitating within my daily routines that it was becoming a barrier. Luckily

by this time I had learned that I didn't need to fill in the access to information

request form but could simply write the request as a regular letter.

As I continued to make freedom of information requests, requirements for Five & Stamp features began to present themselves. For example, wanting to become fluent in the language of public servant curriculum without the benefit of an academic literature about it, I began to take notes about the documents I was requesting and leave myself questions, such as "Does the Centre for Intercultural Learning at the Department of Foreign Affairs and International Trade have certificate programs?" These questions were to "bootstrap" me into comprehension (Smith, 1985). To support this bootstrapping, I added a feature that associated a text area called "Private Notes" with each request (Image 7.4).

Image 7.4   Adding a "Private Note" to a request

Response from the Government		
Government file number	2008-0021	
Date request was received	Feb ▼ 4 , 2008	
Date request was acknowledged	Feb ▼ 6 , 2008	
Extension taken	0 days	
Date that the requested records arrived	Mar ▼ 7 , 2008	

Private Notes about Request

```
This request is for records that describe the operations of the Centre
for Intercultural Learning, the annual activities of the Centre for
Intercultural Learning; courses offered through the Centre for
Intercultural Learning.

Who decides what courses are offered?
Do any programs give certificates?
```

For a while, this bootstrapping was useful. When I returned to the notes, I could think about the questions I left myself with renewed energy and use them to write subsequent requests. But once I had "bootstrapped" myself up to a

greater level of comprehension, I stopped using the "Private Notes" field. However, I would discover a much better use for it when dealing with the Government of Canada.

■

June 10th, 2008. The Tracking Queue indicated several requests were coming due this week and several were now overdue. I went to the mailroom to see if anything had arrived. My requests had been so varied that I wasn't sure what would be in the mailbox. Some days it contained materials from the Canada School of Public Service, like their course calendar (see Electronic Appendix Two), documents presented to the board of governors, like the document titled "Transforming the Public Service Through Learning" (see Electronic Appendix Two), or promotional videos (see Electronic Appendix Three). Some days there were materials from the Government of British Columbia, like the courses employees of British Columbia's Ministry of Education enrolled in at the BC Public Service Agency (see Electronic Appendix Four).

But today an enveloped rested on its side in the shadowy chamber. It was from the Bank of Canada. Finally, it had arrived. It was more than a week overdue. The envelope wasn't as thick as I had expected. I tore open the envelope and removed the contents:

> This is in response to your request received on April 17, 2008 under the Access to Information Act...

> You will find attached, copies of all the accessible records requested within the 5 hours of search you are entitled to by the Act. Please note that some of the records have been severed in accordance with section 25 of the *Access to Information Act.*

Seven pages were included. They looked like invoices. It wasn't what I was

expecting. I continued to read the Bank's cover letter:

> In fulfilling this request in its entirety, an estimate of 29 hours would
> be needed to complete the request.

> The *Access to Information Act* grants you the right to file a formal
> complaint with the Information Commissioner within sixty days of
> the date of receipt of your request if you are not satisfied with our
> handling of your request. Complaints should be addressed to:
> Office of the Information Commissioner of Canada, 112 Kent
> Street, 22nd Floor, Ottawa, Ontario K1A 1H3

It was disappointing to learn that it would take 29 hours to complete the request.

Back in my apartment, I logged into Five & Stamp and selected the Bank's

request from the Tracking Queue. In the Private Notes field, I added note about

the 29 hours beneath a record of communications I had with employees working

in the Bank's Access to Information and Privacy Office (Image 7.5).

Image 7.5   Using "Private Note" field to track communication with government

> **Private Notes about Request**
>
> June 3, 2008, morning. I called Chantel Demers (she's away until june 5, but left
> alternative message). I left message on that machine (782-7518) asking about a status on
> my request.
>
> June 3, 2008: The information was sent yesterday. It sounds like its only one letter
> though?! for more info call: 613-782-7518
>
> June 10, 2008: 29 more hours to complete it;
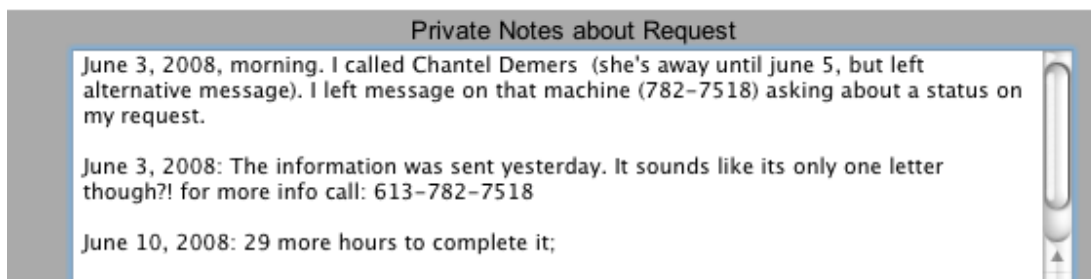
By this time I was no longer using the "Private Notes" field to bootstrap my

comprehension of public servant curriculum. Instead, I was using it to log

communication with Access to Information and Privacy Offices who were late in

disclosing requested records. Using the "Private Notes" field this way was inelegant and so I added "build communication logger" to my to-do list.

Before closing the Bank of Canada request, I flipped through the files to see if they had sent me what I had requested. I read through the invoices: a Writing For the Web course offered at the University of Ottawa, a three day course from The Retirement Planning Institute, a course on Microsoft Excel 2002 from Polar Bear Corporate Education Solutions, a first aid course from St. John Ambulance, reading materials for an online course at the Canadian Securities Institute, a one day Handling Critical Conversations course at the Centre for Leadership, and a course from a professional coaching firm in Ottawa. Pleased that my request had returned something, I was about to close the request. But something stopped me and I reread the cover letter more closely.

The Bank said it would take 29 hours to process my request. To come up with that estimate they must have done a preliminary search for documents. Yet they only retrieved seven pages in five hours. That meant it took them forty-five minutes to find each page. "That couldn't be", I thought. A decent jogger could have run a 10-kilometre race in the time it took the Bank of Canada to find a single page. "Something isn't right," I thought. So I mailed the Bank of Canada and asked them to waive the fees and process the remainder of my request:

> As per section 11.6 of the Access to Information Act, I ask that the head of the Bank of Canada waive any and all fees associated with completing this request (cost estimate $290). Records of the learning resources that are available to employees of the Bank of Canada are of obvious interest to the public of Canada.

Two weeks later, the Bank of Canada responded:

> I would like to inform you that the Bank has considered your request to waive the fees associated with searching for relevant records but maintains its position that the assessed fees still apply… The information that you have requested is not normally made available to the public and we are of the view that this information is of limited benefit to the general public.

The Bank's response surprised me. "How could records about the Bank's learning materials be of limited interest to the public? Its obviously important!" I wrote a third letter asking them to reconsider:

> As I am sure you know, the Canadian news media has been reporting on the possibilities of a national recession. A recession would undoubtedly affect the lives of millions of Canadians. How employees of the Bank of Canada receive training, learning, and professional development opportunities is important for understanding how the Bank of Canada performs during periods leading up to and surrounding periods of economic difficulty.
>
> While it is possible that the records may bear no relevance to matters such as a national recession, this would be all the more reason why the records are of public interest as I am sure Canadians would be eager to learn what learning resources are not provided to employees of the Bank of Canada. This though, can only be known in the light of what learning resources are provided.

Confident that the Bank would waive the fees now, I mailed the letter. But on August 20, 2008, the Bank replied:

> With respect to your request to waive the fees the Bank maintains its position that the assessed fees still apply. In addition, I would like to reiterate that the Bank is of the view that the information is not in the public interest and that it is of limited benefit to the general public due to the nature of the training… Therefore, please consider this letter as our final response.

What bothered me the most about the letter was that they wrote, "please consider this letter as our final response." "Well, if they think it's *my* last

response, then they have an other think coming!" And so I wrote a letter to the

Office of the Information Commissioner of Canada:

> I am lodging a complaint against the Bank of Canada. I believe their refusal to waive a fee associated with my request is unreasonable…
>
> My opinion is that the fee should be waived because the documents are of public interest… My rationale is that in light of the economic struggles Canadians are facing, as documented extensively in the news, the issue of what learning resources are being provided to employees of the Bank of Canada is important for the economic wellbeing of Canadians.

I opened the desk drawer (the old stomping grounds of Five & Stamp),

filed a copy of the complaint in a new manila file folder labelled "Information

Commissioner - Complaints", and hurried to the postal box.

■

September 2008. Five & Stamp wasn't doing so well. Tracking dozens of

freedom of information requests at once put demands on Five & Stamp and

required I add and modify features quickly. But Five & Stamp's code base wasn't

elegant enough. The only solution was to stop development and rebuild the

whole thing using a more robust application framework. I searched for various

open source content management systems I could use and finally decided to

redevelop Five & Stamp within the Open Journal System (Willinsky, 2008), web-

based software for hosting online academic journals.

I downloaded the Open Journal System code and installed it on my laptop.

Within a few days I knew the architecture well enough to begin redeveloping Five

& Stamp. And within a couple of weeks, almost all the original features of Five &

Stamp where now embedded in the Open Journal System environment. I renamed the software Open Government Records (Image 7.6).

Image 7.6   Initial interface of Open Government Records

In this new application environment, I was hoping to add more features that could help me make even more freedom of information requests.

■

Mid-September, 2008. New York City, NY. Lehman Brothers filed for bankruptcy and economic sirens wailed throughout Wall Street. The credit markets froze and major financial firms were in danger. CEOs pleaded with the United States government to be bailed out. Panic spread throughout the United States financial system. Stock traders were crying on the floor of the New York Stock Exchange while politicians scrambled through the halls of Congress and the Senate to find financial lifelines to save the entire country from rolling over and sinking into an economic abyss. Television, newspapers, radio, and blogs reported of an impending financial catastrophe while the President of the United States gave sombre assurances to the anxious country. An economic tidal wave was headed towards Canada and public institutions charged with the duty to

protect the financial wellbeing of Canadians were about to be hit—institutions like

the Bank of Canada.

■

Mid-September. "Where are the documents?" I thought peering into my

empty mailbox. The lesson into government delays was becoming more

apparent. Open Government Record's Tracking Queue indicated that several

requests were late, a violation of section 7 of the Access to Information Act:

> Where access to a record is requested under this Act, the head of
> the government institution to which the request is made shall …
> within thirty days after the request is received… give the person
> who made the request access to the record or part thereof.

The Government of Canada had thirty days to disclose the records and they

were now violating the Act. According to section 10.(3) of the Access to

Information Act, the government was now refusing to give me access:

> Where the head of a government institution fails to give access to a
> record requested under this Act or a part thereof within the time
> limits set out in this Act, the head of the institution shall, for the
> purposes of this Act, be deemed to have refused to give access.

Although I was frustrated about these refusals what was tolerable about

the whole process was that for the most part records were being disclosed like

clockwork. The Communication Logger was also finished which helped me track

late requests and communications with Access to Information and Privacy

Coordinators—so I was better equipped to deal with delays. The logger stored

three pieces of data: the last date the government contacted me, the last date I

contacted the government, and a field to log communications (Image 7.7).

Image 7.7   Communication Logger associated with each freedom of information request

My familiarity with the Open Journal System architecture was increasing too. I was comforted by the idea that, in theory, the "Proteus of machines" (Papert, 1980, p.vii) could shift its shape to respond to government delays.

■

In early October, a letter from the Office of the Information Commissioner arrived acknowledging my complaint against the Bank of Canada:

Dear Mr. Weiler

This is to acknowledge receipt of your complaint dated August 28, 2008, under the Access to Information Act, against the Bank of Canada.

The Office of the Information Commissioner is committed to undertaking thorough and fair investigations of complaints. Although this office has a significant number of complaints to review, you can rest assured that an official from our office will contact you as soon as possible.

I opened my desk drawer and retrieved the manila file folder labelled "Information Commissioner - Complaints" and stapled the acknowledgement letter to the original letter of complaint sent weeks earlier.

■

Developing features in the Open Journal System environment was easier than with Five & Stamp. I added a feature that allowed me to distinguish different types of requests. *Draft Requests* hadn't been sent. As I became familiar with the Access to Information Act, I began to draft funny and far-fetched requests. For example, could I access the Prime Minister's laundry instructions? Most of the time I didn't send these types of requests but writing them exercised my imagination. *Waiting Requests*, on the other hand, had been sent and were being processed by the government. Once a request's statutory timeframe for disclosure had elapsed, it automatically became a *Late Request. Arrived Requests* were requests for which records had arrived.

A request could also be given a status of *Hold Onto*. This flagged it for special attention, which was needed when a department in the government was acting strange. For example, while searching the Internet, I found the text of an access to information request that had been submitted to the Department of National Defence in 1993. The request was for peacekeeping curriculum delivered between January 1992 and December 1993 at the Land Forces Central Area, a branch of the Canadian Armed Forces. Since the records had been released fifteen years earlier, I expected the records would be released quickly

and so I made an access to information request for them[47]. For this reason, I found it odd that the Department of National Defence took a 120-day extension beyond the 30-day release period stipulated in the Access to Information Act. And after the 150 days lapsed, National Defence still hadn't released the records. Weeks and months continued to pass. National Defence was not responsive to my phone messages and barely said anything in their replies to my emails. Puzzled as to why it was taking so long, I made a second access to information request asking them to send me a report generated by the software program called ATIPFlow, a computer program used by many Access to Information and Privacy Offices to log actions and consultations that occur while a request is being processed (Roberts, DeWolfe, & Stack, 2001). National Defense promptly disclosed the ATIPFlow report. It revealed a bureaucratic hive of activity.

National Defence was consulting the Chief of the Canadian Army as well as the Department of Foreign Affairs and International Trade who, in turn, was consulting with the United Nations. The Information Support Team, a group within National Defence's Strategic Joint Staff, which the media refers to as the "Tiger Team" (OICC, 2008a), was reviewing my request. According to the Office of the Information Commissioner, this team:

> reviews, prior to their being released, all documents subject to an
> access request that contain information related to Canadian Forces
> operations. In particular, [Strategic Joint Staff's Information Support

---

[47] Cribb et al refer to this as a 'surgical approach' as it entails ordering very specific documents (2006, p.160). See Electronic Appendix Five. CBC news investigator David McKie and journalist instructor at Carleton University and Algonquin College refers to the technique of ordering a previous access order as 'piggy backing' (personal communication, May 2010, with permission).

Team] recommends exemptions and exclusions for information that could prejudice the success of these operations and endanger the safety of Canadian and allied personnel (2008a).

It baffled me that records released 15 years earlier now required a review to determine if they were related to Canadian Forces operation or if they could somehow jeopardize someone's safety. After 424 days, National Defense released the records and I finally learned the significance of the request (see Electronic Appendix Five). The Land Forces Central Area oversaw the training of the Canadian Airborne Regiment, a military group who while participating in a humanitarian effort in Somalia saw two of its member's torture and murder a Somali teenager in March 1993. The torture, murder, and the resulting military cover-ups came to be known as 'the Somalia Affair', which is known as one of Canada's greatest shames (Razack, 2004). The *Hold Onto* status was to prevent requests like this from getting lost in the compounding distractions of daily life.

With access to information requests categorized this way, a Tracking Queue was created for each type of request. With multiple Tracking Queues, I could easily track dozens of requests at various stage of disclosure (Image 7.8).

Image 7.8   Open Government Record's multi-tabbed Tracking Queue

HOME   ABOUT   USER HOME   ANNOUNCEMENTS   FOI REQUESTS

TRACK REQUESTS

TRACK REQUESTS   ADD REQUESTS   TRACK INFORMATION COMPLAINTS   ADD INFORMATION COMPLAINTS

		Sent					
All Requests	Drafts	Waiting	Late	Hold Onto	Closed	Arrived	
183	58	29	10	6	27	72	

		Request			Acknowledge	Communication			
						Last Date You Contacted Gov't	Last Date Gov't Contacted You	Expected Release Date	Days Until Release
	Recipient ∪ ∩	Regarding	Date Sent ∪ ∩	Date Received Ext ∪ ∩		∪ ∩	∪ ∩	∪ ∩	
1 ☐	US	General Services Administration, USA	Floor Plans and Pictures of FEI	Jul 15, 2009	Jul 16, 2009			Aug 5, 2009	14	Update
2 ☐	US	US Office of Personnel Mangement	Manual & Screenhots	Jul 16, 2009				Aug 5, 2009	14	Update
3 ☐	UK	House of Commons, UK	Learning supports for request handlers and managers	Jul 18, 2009				Aug 15, 2009	24	Update
4 ☐	UK	House of Commons, UK	F. Irving Request; Learning supports for request handlers...	Jul 18, 2009				Aug 15, 2009	24	Update
5 ☐	UK	Prime Minister's Office, UK	Request Handler Training, Learning, and Development	Jul 19, 2009				Aug 16, 2009	25	Update
6 ☐	CA/ON	University of Toronto	University of Toronto Press - Learning Policies and...	May 12, 2009				Jun 11, 2009	-41	Update

The next major item on my to-do list was to add a feature that would allow me to publish the requests on the World Wide Web.

∎

October 21, 2008. "BANK OF CANADA WARNS OF GLOBAL RECESSION, CUTS POLICY RATES ONE-QUARTER" blared the headline of the Canadian Press. The article reported "the central bank now says Canada won't emerge from the [economic] malaise until 2010." The Bank was receiving fierce criticism from some economists "for trimming the rate when they said a chop was needed." An economist was quoted as saying "[the Bank of Canada] should have stepped more firmly in front of the problems ahead and cut more

aggressively." I printed the article and sent it with a letter to the Office of the

Information Commissioner:

> I request that this letter and attached news item be included in my complaint file to further substantiate the legitimacy of my complaint and appeal for a full waiver… As this news article indicates, the Bank of Canada has become a figure of great interest to the Canadian public in these past weeks. I ask that the Information Commissioner recognize with me that the Bank of Canada's refusal to waive $290 to allow a review of how one of their major branches engaged in learning services thwarts the public's ability to make political judgments about the Bank of Canada as a stakeholder in our Canadian economy. This further thwarts the efforts for the Canadian public to gain strength and political will as we move ahead in the months and years to come.
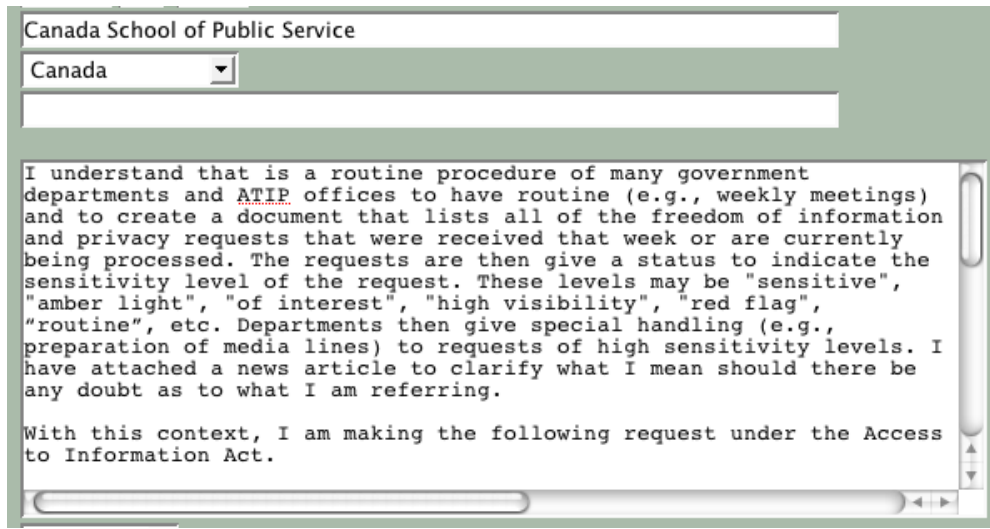
> The Bank of Canada may defend their decision by saying that the learning resources are of little value or of little public interest. Recognize with me that this defence only substantiates my argument that the records should be released due to public interest: should not the Bank of Canada have been using learning resources that are of a great value and great significance? What knowledge did the Bank of Canada hold to be valuable in the years and months prior to the difficult economic situation that we now face? What knowledge and in what form was the knowledge made available to them? What knowledge and learning services should the Bank of Canada have in the months and years ahead?

A sunken Bank of Canada surely would make it difficult to have equity amongst

historians in Canadian universities.

■

After making over a hundred requests, something was frustrating me.

Open Government Records stored the text of a request as basic unformatted text

(Image 7.9).

Image 7.9   Open Government Record's initial method for storing text of freedom of information request with an HTML textarea input field

Although this made it easy to store the text of a request, it also meant that I had to cut and paste the body of the request into a word processor and format it before mailing it. This step slowed down the process of making requests. So I integrated a plug-in called TinyMCE into Open Government Records. TinyMCE transforms a typical HTML text box into a web-based HTML WYSIWYG text editor creating an HTML-based word processor (Image 7.10).

Image 7.10 Open Government Record's revised method for storing text of freedom of information request with a JavaScript/HTML-based WYSIWYG text editor

Recipient:	Canada School of Public Service
Regarding:	HRSDC enrollment in CSPS
Date Sent: (yyyy mm, dd)	Nov ▾ 8 , 2009
Jurisdiction:	Canada ▾

Cover Letter (the cover letter will remain private if you decide to publish the request):

Example Cover Letter FOI Mailing Addresses Legislation

KIN 6Z2

Nov 8, 2009

Dear Ms. Thorne,

This is an access to information request. Please send me the enrollment statistitics of employees from Human Resources and Skill Development Canada in courses (on-line or face-to-face) provided through the Canada School of Public Service for the period Nov 8, 2008 to Nov 7, 2009.

Thank you

Mark Weiler

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≡ ≡ 〝

This feature allowed me to format and print letters directly from Open Government Records and was immensely helpful for mailing requests.

■

April 29, 2009. A letter from the Office of the Information Commissioner arrived indicating that an investigator had been assigned to my complaint against the Bank of Canada. Wanting to know the procedures and what would happen next, I called him. He was friendly and explained that he had been in contact with the Bank of Canada and that I could submit a representation by email. According to section 35(2)(a) of the Access to Information Act, complainants have a right to

file a representation with the Information Commissioner. I wasn't sure what to write so I began by stating my opinion:

> It is my opinion that the Bank of Canada should waive the $290 fee based on public interest.

I gave an overview of my early correspondences with the Bank and wrote about the magnitude and implications of the economic crisis:

> Hundreds of thousands of Canadians are facing job losses or loss of pensions and savings. The effects of the global economic recession are affecting all Canadians in one way or another. In July of 2008, the Bank of Canada failed to see the records of learning resources in the Bank of Canada as being a matter of public interest. Surely now they must be having second thoughts. Surely they won't dare to claim that the records are of little relevance. If there is a paucity of learning resources for the Bank to disclose, then that is incredibly significant! It would be like the Captain of the Titanic saying the lack of iceberg avoiding training resources is insignificant. The fact that there are no iceberg avoiding training materials is what makes it significant!
>
> As Canadians sink into the cold waters of a global economic recession, we need to know what learning resources the Bank of Canada has available. Please tell the head of the Bank of Canada that it is in the interest of the public of Canada that we know what learning resources the Bank has or does not have. Ask the head to waive the $290 fee. If the Information Commissioner does not side with me, then I am afraid to offer my opinion that Canadians are being thwarted from holding accountable the institutions that keep this country afloat. Let Canadians inspect these records of the "unsinkable" Bank of Canada, to see if we were ready for the economic iceberg of October 2008 — and any more on the horizon.

I pressed "Send" and the email vanished into the electronic ether. Would this plea to the investigator at the Office of the Information Commissioner fall on deaf ears? Or would he listen and hear what I was saying?

■

The challenge of storing all the disclosed records was pressing itself into my apartment. I had amassed two office crates of records. I needed a better way to store the files. Fortunately, I had discovered section 4.(2.1) in the Access to Information Act:

> The head of a government institution shall… provide timely access
> to the record in the format requested.

In the request letter sent to the government, I cited this section and asked that they send me the records in electronic format. As the CD-ROMs began to flow in, I developed a feature for uploading the disclosed records into Open Government Records to store them (Image 7.11).

Image 7.11 Uploading records that were disclosed from a freedom of information request into Open Government Records
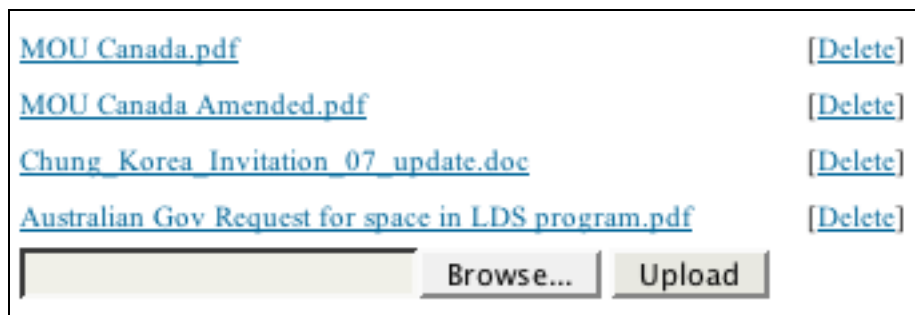
The burden of organizing storing records in physical crates was eased.

■

On May 11, 2009, an email from the investigator from the Office of the Information Commissioner arrived:

Mr. Weiler

Thank you for providing me with your additional representations. After reviewing the information that you had provided on file with your original complaint, and cross-referencing your original request, I had more discussions with the Bank of Canada.

In your letter to [the Bank of Canada] dated August 1, 2008, you wrote "I am sure that Canadians would be eager to learn what resources are not provided to employees of the Bank of Canada. This though, can only be known in light of what learning resources are provided." In multiple other locations you write "learning resources", such as in your letter of complaint to our office dated August 28, 2008, again in another letter to our office dated October 21, 2008…

His command of what I had written surprised me. I didn't have a good feeling

about where this was going.

I find this to be significant as it deviates from the wording of your original request in that you have dropped the portion concerning the names of the workshops provided and have chosen to focus more on the educational resources available to employees of the Bank of Canada.

He was commenting on the weaknesses in my written submissions and it felt like

I was sinking. He went on to explain the result of his investigation:

As is common in most federal institutions, training is a decentralized process. Training taken would be paid under a local budget under an employee's manager in most cases with a few exceptions. Training is then paid for like a financial transaction. For this reason, this makes records relating to training taken difficult to obtain. To find these documents, one would have to search through all financial transactions in the identified period above to find those that are related to training.

Still learning about the record keeping in bureaucracies, I found myself struggling

through the maze of his rationale. He continued:

If you pursued your request for the names of courses provided internally or externally, you may not discover what resources are available that the employees did not avail themselves of. As there

are different branches in different locations of the Bank of Canada, employees in Ottawa and in Toronto may not avail themselves of the same resources and therefore may not be indicative of what the Bank of Canada is really doing in terms of learning resources to get through these difficult times. Learning and development is often an individual's choice. Learning plans are put together with the local manager and may be for many different purposes such as career development, professional development or for job specific training.

I felt myself being moved towards the conclusion that it simply was too difficult for

the Bank to process my request. The investigator proposed a solution:

> The Bank of Canada has gotten back to me and let me know that they have two training policies that focus on available training resources and how they deal with training internally, either locally or nationally. They would be ready to provide these policies to you. I believe that this may more accurately provide you with the information you are seeking and would also eliminate the estimated search fees.

Feeling sunk, I wrote an email to move towards a compromise. But as soon as

"Send" was pressed, a swell of regret began to fill me. After a few minutes of

thought, I quickly wrote to the investigator:

> I apologize because I now change my position from the one I wrote earlier today and return to my original position. That is, it is my position that the Bank of Canada waives the entire $290 for the reasons stated in my previous representations. I believe the Bank of Canada and the Information Commissioner needs to remember the opinion of Justice Le Forest who wrote of the Access to Information Act:
>
> "The overarching purpose of access to information legislation is to facilitate democracy by helping to ensure that citizens have the information required to participate meaningfully in the democratic process and that politicians and bureaucrats remain accountable to the citizenry."
>
> The $290 is a pittance compared to the economic catastrophe that is entering the lives of present and future Canadians.

I hit "Send" and felt recalled to life. Had I compromised, the Bank would have avoided answering the question of whether or not they thought that learning materials used by Bank employees in the years leading up to the worst economic crisis Canadians have faced in seventy years was a matter of public interest.

■

Having come a long way in developing Open Government Records, I began to reflect on it for emergent design principles. Darrell Evans, founder and executive director of British Columbia's non-profit society, the BC Freedom of Information and Privacy Association, had told me that an insider to the British Columbia government had told him "the prime directive inside government is to limit citizen entitlements."[48] Upon reflection, the prime directive for Open Government Records, its design principle, was "*Be fast to assert your access entitlements.*"

■

Open Government Records needed a way of publishing the requests online. Open Journal Systems provided users with the means to publish online academic journals. Instead of journals, the publishing entities that Open Government Records created were called Freedom of Information Repositories. The idea was that each repository would support groups of users to make, track, and publish freedom of information requests online around a particular topic. And

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[48] Personal communication; used with permission.

with that, I launched the Freedom of Information Repository of Public Servant Curriculum (Image 7.12).

Image 7.12 Making freedom of information requests available through the Freedom of Information Repository of Public Servant Curriculum
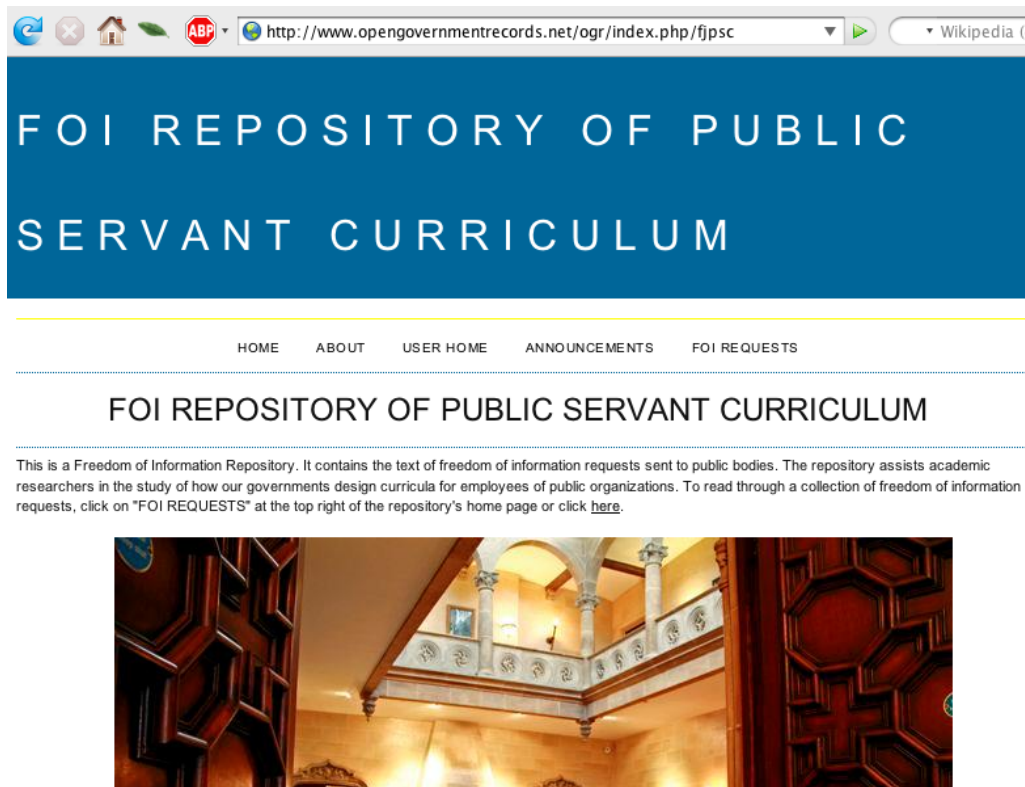
I started to use the FOI Repository of Public Servant Curriculum to publish on the World Wide Web freedom of information requests and disclosed records of public servant curriculum from the governments of Canada, British Columbia, Ontario, Saskatchewan, Manitoba, the United Kingdom, Michigan, New York, and the United States of America.

∎

Mid-June, 2009. I made my way down to the mailroom and pulled a letter

from my mailbox. It was from the Bank of Canada. Walking back to my

apartment, I tore open the envelope and drew out the letter:

Dear Mr. Weiler,

This is further to your request under the Access to Information Act
… The purpose of the Access to Information Act is to provide a
right of access to information in records under the control of a
government institution. In the spirit of the Act, the Bank has
reconsidered its decision and agrees to waive the fees assessed to
search for records for training provided by the Bank to employees
of the Toronto regional Office[49].

It was a delightful victory that put new life in my step! The experience with the

Bank of Canada and the Office of the Information Commissioner made me

realize that Open Government Records needed a Complaint Tracker to help

make and monitor complaints filed to appeal bodies (Image 7.13).

---

[49] See Electronic Appendix Nine.

Image 7.13 Open Government Record's Information Complaint Tracker

	Lodged Against	Regarding	Date Sent	Date Received	
1 ☐	Privy Council	Learning Plans		Apr 10, 2009	Update
2 ☐	Canadian Housing Mortage Corporation	"Not Relevant" as invalid exemption			Update
3 ☐	Canadian Institute of Health Research	Application			Update
4 ☐	Canada School of Public Service	Application Process		Aug 27, 2009	Update
5 ☐	HRSDC				Update
6 ☐	Legal Services Society	Software			Update
7 ☐	Treasury Board of Canada Secretariat	Auditing Curriculum		Sep 11, 2009	Update
8 ☐	Treasury Board of Canada Secretariat	Learning policy		Sep 11, 2009	Update
9 ☐	National School of Government	Program evaluation			Update

[Delete]

The Complaint Tracker listed all the complaints I filed against the public bodies and was the final feature I added to Open Government Records.

7.5 Discussion

This chapter used the conventions of impressionist ethnography to construct a design narrative of the second cycle of software development. The purpose of this chapter was to draw attention to contextual factors that impinged on the development process and the resulting software application. Impressionist writing was used to render myself as an interpretable dimension of the design work while conveying a vivid account of software development at the intersection of two fields that academics have little experience with or knowledge of: freedom of information-based inquiry and public servant curriculum.

As the design narrative conveys, at the start of the second development cycle I was uncertain what kind of software application to make. Through

prolonged engagement with using freedom of information, designing a software

application became a matter of reflecting on my purposeful, grounded

experiences in using freedom of information to acquire documents about public

servant curriculum. Upon completing Open Government Records, I recognized

that the software constituted a form of computer-assisted inquiry, or what I call

computer-assisted freedom of information-based inquiry (CAFII)[50]. Figure 7.1

provides a schematic of the overall CAFII design of Open Government Records.
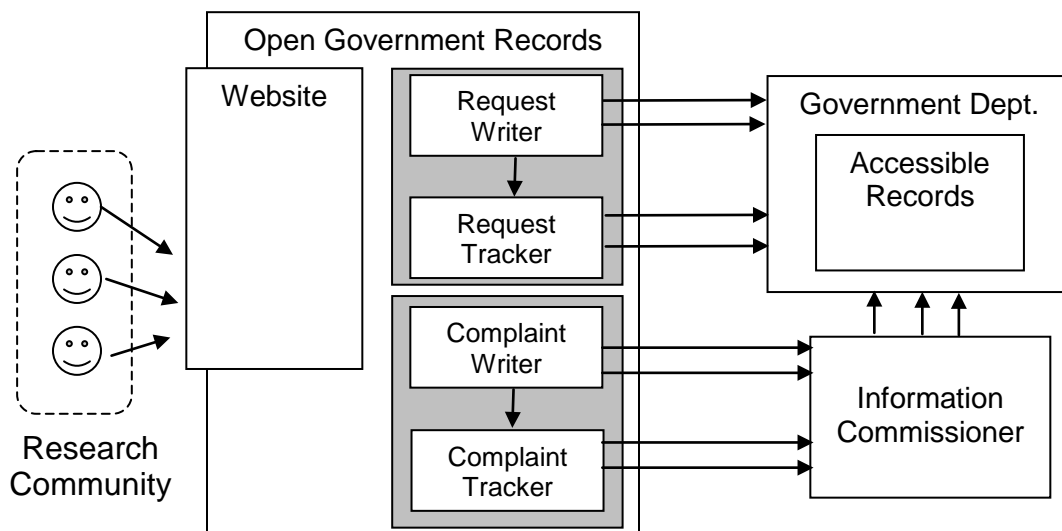
Figure 7.1   Resulting design of Open Government Records

Open Government Records is comprised of two principal components: a

Request Component and a Complaint Component. The Request Component

includes a Request Writer and a Request Tracker. The Request Writer supports

the user to write requests for access to government records. The Request

Tracker component contains Tracking Queue*s* and Communication Loggers

(Figure 7.2). Tracking Queues provide the user with oversight of multiple

---

[50] Additional examples of computer-assisted freedom of information-based inquiry will be
    presented in Chapter Nine.

requests in various stages while the Communication Logger assists the user in managing their communications with the government organization about the status of their requests.

Figure 7.2 Open Government Record's Request Tracker

```
┌─────────────────────────────┐
│ Request Tracker             │
│   ┌───────────────────────┐ │
│   │ Tracking Queues       │ │
│   └───────────────────────┘ │
│                             │
│   ┌───────────────────────┐ │
│   │ Communication         │ │
│   │ Logger                │ │
│   └───────────────────────┘ │
└─────────────────────────────┘
```
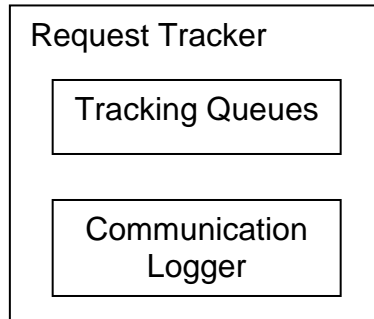
The Complaint Component contains a Complaint Writer and a Complaint Tracker. Grounding software development in the practical experience of using freedom of information legislation also revealed that Open Government Records needed a Complaint Component. This component mirrors the Request Component in that it contains writing and tracking sub-components, which support the user to write, lodge, and track complaints against government organizations for non-compliance with freedom of information legislation. Open Government Record's Complaint Tracker presently does not provide multiple Tracking Queues because at the time of development I had not submitted enough complaints to determine whether or not multiple queues were needed. Future versions would benefit by including multiple tracking queues for various stages in an investigation, such as Draft, Submitted, Assigned (to an investigator), Hold On To (for peculiar complaints), and Resolved.

An important linguistic confusion should be noted about the Request Component. Upon completing the second cycle of software development, I realized the word 'request' is misleading with respect both to the freedom of information legislation and the principle of creating the condition where access to government records is the norm and state secrecy the exception. The word 'request' communicates a sense that a person is asking for records and that the government retains some discretion as to whether or not to satisfy the request[51]. However, under freedom of information legislation the government is only authorized to withhold information when it can satisfy the burden of proof that information falls within a statutorily defined exemption[52]. Until that burden of proof is satisfied or if no exemptions apply, the institution has a statutory obligation to disclose the information. When using freedom of information legislation, a person is not *asking* the government for records; s/he is *ordering* the government to send records.

The unreflective use of the word 'request' risks a progressive warping of interpretations relating to the rights and obligations stipulated in freedom of information legislation. For the vast majority of the documents in its custody, the government simply has no authority to exercise discretion as to whether or not to withhold information[53]. 'Request' is only appropriate in situations where the state

---

[51] "request, *n.*[1a] "an instance of asking for something, [especially] in a polite or formal manner; a petition or expression of wish; a document expressing such a wish" <u>OED Online</u>, March 2010, Oxford University Press, 5 May 2010 http://dictionary.oed.com/cgi/entry/50203588

[52] With respect to the Access to Information Act, see section 48 ("the burden of establishing that the head of a government institution is authorized to refuse to disclose a record requested under this Act or a part thereof shall be on the government institution concerned").

[53] The only choice the state has is whether or not to violate the law.

retains some authority to exercise discretion in releasing information. Exemptions in freedom of information legislation generally fall within two classes: mandatory and discretionary exemptions. In general, the state must not disclose information to which mandatory exemptions apply whereas in the case of discretionary exemptions, it does have an option[54]. The word 'request' is thus appropriate when seeking information to which discretionary exemptions are known to apply but inappropriate when neither mandatory nor discretionary exemptions apply because the state does not have the legal authority to withhold the information.

Phrases that reclaim the spirit of freedom of information while resisting misleading interpretations include 'record disclosure order,' 'record order', 'disclosure order,' or simply 'order.' Word choice is important because language endows social interactions with thought, emotion, and courses of action. When we are told the health authorities withheld documents after "the Daily News first requested all records pertaining to the spread of [clostridium] difficile at [Nanaimo Regional General Hospital] back in September 2008"[55], we might be unmoved as the health authorities may have been within their rights to do so. But when told the health authorities withheld documents after "the Daily News *ordered* all the

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[54] Depending on the legislation, mandatory and discretionary exemptions can be dissolved. For example, in the Access to Information Act, mandatory exemptions apply to information about individuals. However, if individuals give consent, the information must be released. Additionally, some disclosure legislations include "public interest overrides" where if certain conditions are met that establish the importance of the information, then the mandatory exemption dissolves and the information becomes accessible, and in some situations must be voluntarily released.

[55] Spalding, D. (May 21, 2010). Killer hospital disease investigation will go ahead. *Nanaimo Daily News*.

records pertaining to the spread of [clostridium] difficile be sent", we are awakened to defiance within our public institutions.

In "Recalled to Inquiry", I used the word 'request' because when I started development I uncritically appropriate the word from various documents, such as the actual text of freedom of information legislation, published instructions, online guidelines, and numerous scholarly publications. Future development work needs to revise Open Government Records to remove effects arising from this linguistic mistake. Having noted the mistake in using 'request', Chapters Eight and Nine will use 'order', 'document order', 'disclosure order', or similar phrases.

7.6 Conclusion

During the program design phase of the development of the educational technology documented in Chapters Six, I encountered evidence of inequities that diminished the educational soundness of the software. Rather than proceed, I halted development and asked how curriculum in non-school public institutions could participate in dismantling inequities. Pursuing this question amidst a relative absence of literature on the topic of public servant curriculum despite a legislative means of accessing records about it, I entered a second cycle of software development. The goal of this second cycle was to produce an application that could help start discussion on the glimmer of hope that public servant curriculum can participate in dismantling inequities that impede schools from achieving their goal of providing equal access to educational opportunities, including opportunities to learn how to do meaningful historical research.

This chapter provided a design narrative of the second cycle of software development. Entwined in this narrative are excerpts of documents related to public servant curriculum. The narrative, however, did not present the actual documents to their full extent possible. In the following chapter, I provide demonstrations of the range of documents that can be acquired through freedom of information legislation.

8: DEMONSTRATIONS: PUBLIC SERVANT CURRICULUM

The purpose of developing Open Government Records was to facilitate the formation of an academic discourse community around the question of how public servant curriculum can participate in dismantling inequalities that impede schools from achieving their educational objectives. The previous chapter provided a design narrative of the development of a research technology for supporting freedom of information-based inquiry. The design narrative, however, documented public servant curriculum only to the degree that it told the story of the development of Open Government Records. This chapter, in contrast, substantiates the viability of public servant curriculum as a field of academic inquiry through a series of demonstrations. A feasibility report that focuses on the cost of freedom of information-based inquiry follows these demonstrations.

8.1 Demonstrations

The purpose of the demonstrations that follow is to establish public servant curriculum as a viable field for academic inquiry. While I could have presented many other documents I have acquired, I chose the ones that follow because of their capacity to support the formation of an academic discourse about public servant curriculum. The choice and order of the documents presented in these demonstrations may initially seem disorienting. I begin first with a presentation of documents about public servant curriculum in the United Kingdom and then move to a series of documents acquired from the Government

of Canada. The first demonstration involves a set of images, while the remainder of the demonstrations shift to textual and numeric reports. The demonstrations also involve dramatic contrasts of scale. For example, one demonstration presents an evaluation report of a two-week phase in a leadership development program involving 193 government employees offered at the Canada School of Public Service. This is followed by a presentation of a report that focuses on approximately 44,000 senior government employees in the entire executive branch of the Canadian government. I also selected demonstrations that attempt to shock readers into awareness of how a government attempts to control the distribution of information about public servant curriculum. For example, one demonstration documents extensive, coordinated layers of bureaucracy that the Government of Canada employed prior to sending documents I ordered. To intensify emotional engagement, another demonstration documents the most senior office in the Government of Canada's apparent disregard or gross ignorance of their legal obligation to send documents. As a whole then, these demonstrations include numerous contrasts. Such contrasts create a heightened level of dissonance, which I believe is necessary if an academic community is to make sense of the new field of public servant curriculum.

None of the demonstrations that follow present material acquired from organizations typically associated with education or curriculum, such as elementary, secondary, or post-secondary institutions. Although such a decision may seem confusing, it was done for a reason. As explained in Chapter Seven, I deliberately avoided institutions traditionally associated with education because

although I felt it was necessary to engage in discussions about how major barriers that impede schools from achieving their educational goals could be removed, I did not want to contribute to discussions in which schools, students, or teachers were solely responsible for their removal. Instead, I believed a more sensible educational discourse would include discussions about how non-school public institutions could share in the responsibility of dismantling those barriers.

At the end of each demonstration, I indicate the cost and length of time it took to acquire the records. I do this to substantiate the claim that the formation of a discourse community about public servant curriculum does not face barriers of time or money.

8.2 Demo #1. Sunningdale Campus

In this first demonstration, I wish to establish the material status of public institutions that deliver public servant curriculum. I did this by using freedom of information legislation to order an institution where public servant curriculum is delivered to send me photographic evidence of their campus.

8.2.1 Background

The National School of Government is a department of the United Kingdom government that provides learning services to public organizations (National School of Government, 2008). Although the National School of Government was established in June 2005, the government of the United Kingdom has a longer history of delivering curriculum to government departments. The delivery of public servant curriculum began during the growth

of the British government during World War II (Bird, 1995). The principal campus

of the National School of Government is the Sunningdale Institute, which is

located just west of London.

8.2.2 Document Order

I sent the following freedom of information order to the National School of

Government by email:

I would like to know how the facilities and grounds at Sunningdale
Institute are laid-out and what they look like. Please send me:

a) maps of the grounds & facilities (including the use of space
within the facilities)

b) a floor plan of the buildings

c) copies of photographs that NSG has in its custody that document
the exterior and interior of the main buildings and any secondary
buildings, the grounds, lobby, instructional & meeting rooms, offices
areas, residency, etc.

8.2.3 Content of Dispatched Records

The National School of Government sent the records: a map of the

grounds of Sunningdale Institute, three floor plans, and twenty-five pictures. The

campus map and three images are provided below (Images 8.1 to 8.5; Electronic

Appendix Six contains more dispatched records).

Image 8.1   The inner hall of Northcote House, National School of Government, United Kingdom

Image 8.2   Lee Bradbury Room, National School of Government, United Kingdom

Image 8.3   Interior of Albert Day room, National School of Government, United Kingdom
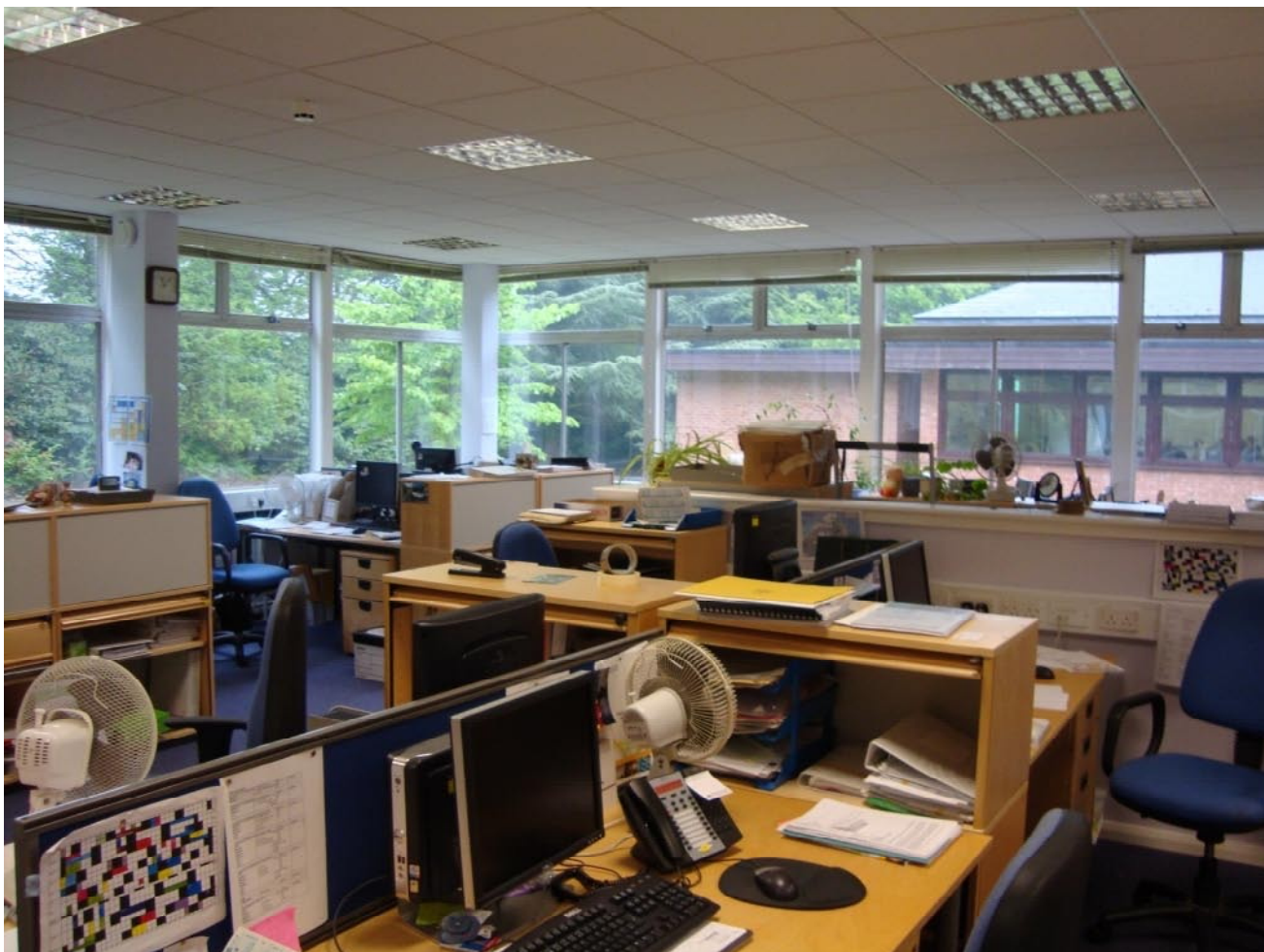
Image 8.4   Exterior of Evelyn Sharp lecture theatre, Sunningdale Institute, National School of Government, United Kingdom

Image 8.5   Campus layout, Sunningdale Institute, National School of Government, United Kingdom
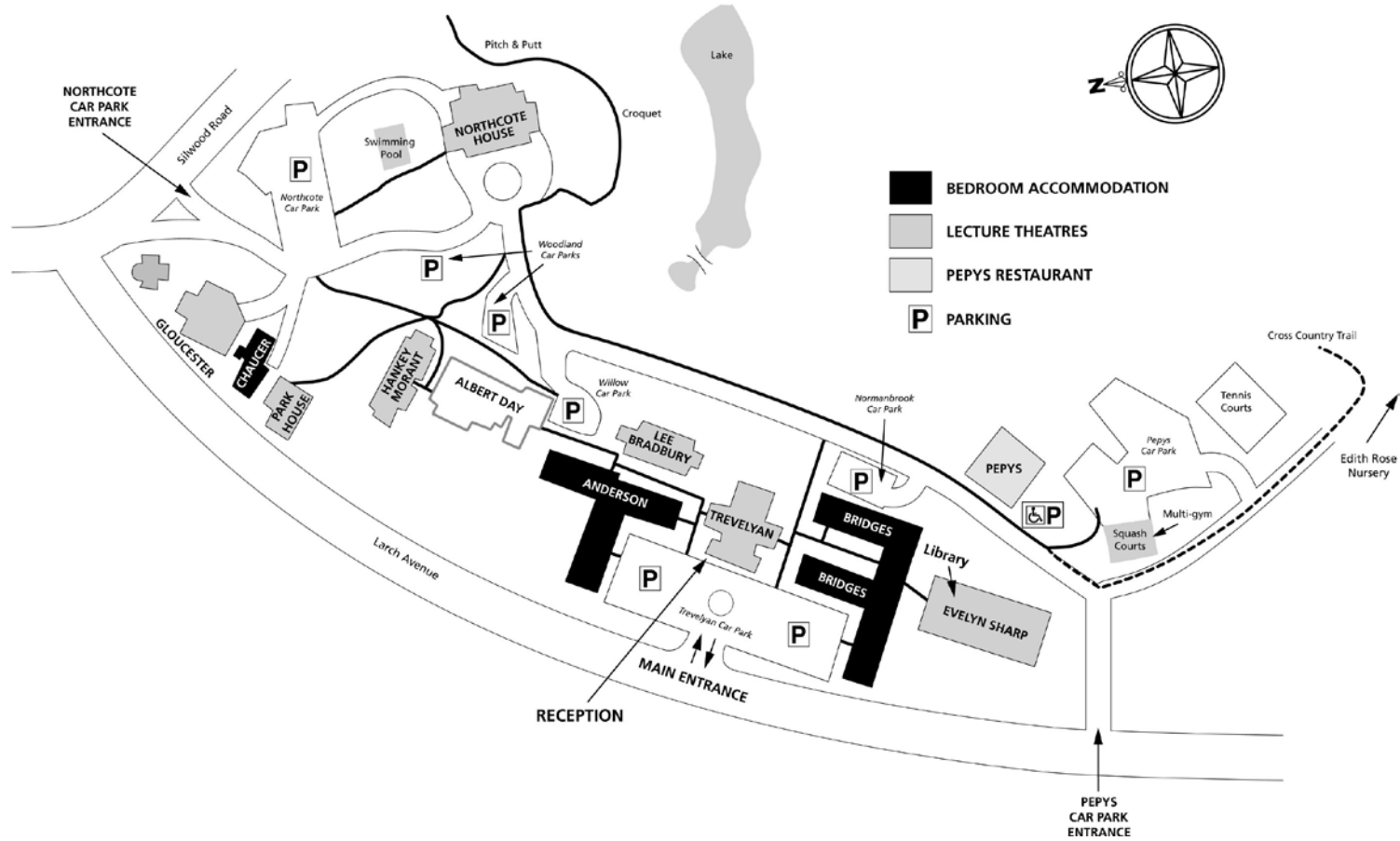
© Crown copyright 2009 Reproduced with permission of the National School of Government

8.2.4 Cost of Order and Length of Time to Dispatch Records

This cost of this order was $0.00. The National School of Government dispatched the records within 22 business days.

8.3 Demo #2. Program Evaluation

The previous demonstration acquired photographic and diagrammatic evidence of the physical structures of a major government organization that delivers curriculum to public servants in the United Kingdom. The second demonstration shifts geographically, moving to public servant curriculum found in Canada. This second demonstration also focuses on a different aspect of the phenomenon of public servant curriculum. It focuses not on the physical structures of a site of public servant curriculum but on an evaluation of a two-week phase in a single program offered at the Canada School of Public Service.

8.3.1 Background

In June 2003, the federal parliament voted in favour of the Canada School of Public Service Act which merged the Canadian Centre for Management Development, Training and Development Canada, and Language Training Canada into a single entity to support the learning, training, and development needs of senior managers and executives working in the federal government (Canada School of Public Service, n.d.a). On April 1, 2004, the Canada School of Public Service opened its doors. A review of its website reveals that the Canada School of Public Service delivers curricula in multiple modes (Canada School of

Public Service, n.d.b). The School not only provides curricula in the form of face-

to-face and online courses but also through a wide range of online learning

materials available through the online forum, CampusDirect, conferences,

research publications, and lectures hosted at the school's headquarters and

broadcast live over the Internet (referred to as "Armchair Discussions"). The

School also complements its curriculum with partnerships with visiting scholars

from Canadian universities. In 2007/2008, the Canada School of Public Service

offered 160 courses (Canada School of Public Service, 2007). A sample of

course titles, listed alphabetically, is provided below[56]:

> Aboriginal Issues and Self Government (S113)
> Basic Skills in French Writing (T019)
> Canada in the World: An Introduction (G205)
> Developing a RMAF/RBAF for Grants and Contributions (F408)
> Effective Decision-Making (T904)
> Financial Literacy in a Government Environment (Z116)
> Gender-Based Analysis (GBA) Policy Training (T114)
> How Ottawa Works (G203)
> Improving Listening Skills (T022)
> Labour Relations for Human Resources Advisors (P703)
> Managing Government Information Throughout its Life Cycle (I220)
> Negotiating Skills (T006)
> Organization and Classification Program Tolls and Methods Part 1 (P911)
> Planning and Managing the Labour Relations Framework (G246)
> Quality and Excellence in Client Services (T409)
> Records management (I001)
> Safeguarding sensitive Information and Assets (I706)
> Teaching Techniques for Occasional Trainers (v707)
> Understanding and Applying Strategic Communications (T712)
> Values and Ethnics in Public Sector Governance (D102)
> Working in Teams (T412) (Canada School of Public Service, 2007)

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[56] For the complete catalogue, see Electronic Appendix Two.

A significant portion of the Canada School of Public Service's curriculum

focuses on leadership development. One of the development programs offered at

the School is called Di*rex*ion. According to the course catalogue:

> "Di*rex*ion is an intensive leadership development program designed specifically for aspiring managers and executives in Canada's Public service…
>
> Di*rex*ion applies theoretical and experiential learning methods within an action-oriented environment. This unique program draws on a wealth of expertise provided by exceptional guest resources. With their guidance, participants develop – and learn how to apply – the leadership competencies and self-management skills sought after by organizations committed to public service modernization and renewal.
>
> The six-week program is divided into three two-week phases over two fiscal years. Intensive, rigours and cutting-edge, Di*rex*ion promotes deep internalization of the concepts presented….
>
> Program Objectives:
>
> The overarching program objects of Di*rex*ion are to:
>
> - Enable participants to gain a better understanding of the regional diversity of Canada and the resulting implications for governance, public policy, service delivery and Public Service Renewal
>
> - Impart a better understanding of the challenges facing the Public Service, and
>
> - Assist participants in developing a vision of their future in the Public Service and the contribution they can make to improve the quality of life of Canadians" (Canada School of Public Service, 2007, p.38-39)

8.3.2 Document Order

Through a document order made and tracked by Open Government

Records, I acquired an evaluation report of Di*rex*ion for 2007-2008. The text of

the order and dispatched documents can be found in Electronic Appendix Two.

8.3.3 Dispatched Records

The Canada School of Public dispatched an evaluation of the Di*rex*ion

program (see Electronic Appendix Two) . The evaluation was based on three

questionnaires: a participant profile, a phase one evaluation questionnaire, and a

level one questionnaire. The Canada School of Public Service acquired its

evaluation framework after "a review of best practices (especially from the World

Bank Institute)."[57] The evaluation framework that the school adopted follows

Donald Kirkpatrick's four-level approach to learning evaluation (Kirkpatrick,

1998)[58]. The evaluation report for Di*rex*ion sent by Canada School of Public

Service contained the results of a level one evaluation, which measures learner

satisfaction after participating in a formal organizational learning program.

According to the evaluation report, in 2007/2008 one hundred and ninety-

four public servants participated in Di*rex*ion. The participants were divided into

nine groups each approximately twenty-two students in size and organized

based on language. Seven groups spoke English and two spoke French. The

groups met at the Asticou Centre located at 241 Cité des Jeunes Boulevard in

---

[57] C. Morin & D. Pentland "Guidelines for the CSPS: Level Two Training Evaluations" Draft. Issue Date: May 13, 2008. Acquired through the Access to Information Act.

[58] Kirkpatrick developed his model of evaluation while a PhD student at the University of Wisconsin, Madison and published it in 1959 in a series of four articles in the journal, Training and Development (Kirkpatrick, 1998, p.xv).

Gatineau Quebec. Fifty percent of the students were between the ages of 40 and 49. The participants were almost evenly divided between men and women (47.2% and 52.8% respectively). Sixty percent of the students came from the Ottawa area. The evaluation report indicated that in terms of highest educational attainment 48.3% of the students had earned a bachelors degree, 24.4% of the students had a masters degree, 12.5% had a PhD, and 8% a certificate[59].

In the first of three phases, the groups meet for two weeks. The objective of the first week was to develop an awareness of inter-subjectivity in the workplace. In the second week, the objectives largely revolved around issues of diversity in the workplace, self-management, coaching, and forming partnerships. The groups engaged in a variety of activities, including participating in simulations/debriefings, team development, horizontality and partnership exercises, practicing "elevator stories", training with computers, "polarity discussions", fitness exercises, completing a Strength Deployment Inventory and a Learning Style Inventory, appreciative inquiry, giving and receiving feedback, check-ins and check-outs, introduction to theoretical perspectives, and discussions on values. Guest speakers included Monique Boudrias, Michel Bourdon, Martha Nixon, and a speaker from the United Way.

Students had mixed reactions to these exercises. Some felt the simulations and debriefings to be very helpful while others found them "humiliating"; fitness and exercise activities were held to be "unnecessary" by some but others made the suggestions that "walks" were a way to improve the

---

[59] 7.0% left the question unanswered.

course. The evaluation report was not entirely transparent as to who taught the course. The report indicates that in the classrooms were "facilitators" and "course managers." But exactly who these people where, what their qualifications were, and how many were present with each group through the two weeks, was not clearly documented. However, reflections of these people can be found in student comments about the facilitators/course managers, such as "Perfect – so far beyond expectation", "supportive", "stretched our limits", "helpful"; "quiet", "adapted quickly", "humorous", "friendly", "efficient", "joie de vivre", "oozes sincerity", "graceful", "reflective", "created a safe space", "welcoming", "sense of humour", "enthusiastic", and "insightful." Comments that could be construed as reflecting a negative perception of the facilitators/course managers included, "too strict", "speak louder and with more confidence", "would like to have had more insights shared", "some individual feedback more effective than others", "should limit check-outs to one story", and "wanders off course."

The evaluation report also documented student satisfaction with the course and the degree to which they thought the program had met its objectives. These evaluations were largely based on quantitative assessment instruments. The report included 19 tables and charts that presented quantitative data. Twelve tables included the mean score of items that measured student perception of the course meeting its objectives. A five-point scale was used to measure these responses. The evaluation report also include qualitative information, such as quotes from the students:

> "I do not see Phase 1 as being of value to my organization. It is my contention that we would be far better served by not sending

247

candidates to this course using the money to develop a course that better suits our needs."

"Highly recommended. Wish I had the opportunity 20 years ago!"

"I wonder if this program or an abridged version shouldn't be reformatted as a refresher course so that EXs can follow (refresh) every 3-5 years."

"An excellent learning activity and one I thoroughly enjoyed. My only comment is that organizations, departments, and agencies may not be identifying and sending the right people to Direxion. Attendees must already have a significant level of self-awareness to get any benefit."

"I have hope for the PS if you are developing its leaders."

"Raise the bar! Address director competencies from a higher level."

8.3.4 Cost of Order and Length of Time to Dispatch Records

The cost of the order was $5.00. The records were dispatched in 62 days (32 days beyond the legislated due date).

8.4 Demo #3. Results of Required Training

In the first demonstration, Open Government Records tracked an order that returned photographs and maps that revealed the physical structure of a government-based campus that provides public servant curriculum to the government of the United Kingdom. The second demonstration disengaged from the material site of public servant curriculum delivery by focusing on a single leadership development program offered at the Canada School of Public Service. This third demonstration increases the scale dramatically, requiring readers to make sense of the relationships between public servant curriculum and the

entire executive branch of the Government of Canada. This demonstration is comprised of three orders made through freedom of information legislation. The first order is for reports of required training. However, an inexplicable delay prompted me to issue a second order for documents about the handling of the first order. This second order opened up the record dispatch process, revealing extensive bureaucratic coordination and the withholding a second set of documents, which were then acquired through the third order.

8.4.1 Background

On January 1, 2006, the Treasury Board of Canada's Policy on Learning, Training, and Development came into effect (TBCS, n.d.e). The policy applies to the core administration of the executive branch of the government, approximately seventy-five federal departments and agencies. According to the Treasury Board, the purpose of the policy is "to help build a skilled, well-trained and professional workforce; to strengthen organizational leadership; and to adopt leading-edge management practices to encourage innovation and continuous improvements in performance" (TBCS, n.d.e). Three months later the Treasury Board of Canada's Directive on the Administration of Required Training came into force (TBCS, n.d.h). According to this directive, on June 30th of each year all the departments in the core administration of the federal government are required to submit to the Canada Public Service Agency a report that documents how department's managers, executives, supervisors, functional specialists, and new employees performed on required training. The directive also made the Canada School of

Public Service responsible for both developing the assessment instruments for

the required training and delivering the training to the departments.

8.4.2 Document Order #1: Results of Required Training

In late January 2008, I sent the following order to the Canada Public

Service Agency:

> With reference to the Directive on the Administration of Required
> Training, please send me the 2006/2007 Annual Reports on
> Required Training for each of the core public administration (the
> core public administration being defined in section 2.1 of the
> Directive on the Administration of Required Training). These reports
> have likely been inputted by departments through the "HR
> Reporting Portal" with policy name being "Learning, Training and
> Development." The Directive on the Administration of Required
> training section 6.1 requires these reports to be submitted to
> PSHRMAC [Public Service Human Resource Management Agency
> of Canada] (i.e. Canada Public Service Agency)[60]

This order required the Canada Public Service Agency to dispatch reports of

required training of senior public employees working in seventy-five departments

across the Government of Canada.

The Canada Public Service Agency mailed an acknowledgment letter

indicating that they had received the order and informed me that they were

availing themselves of their right to take a 60-day extension to the 30-day time

limit required of them by the Access to Information Act. Section 9 of the act

allows government bodies to take extensions under certain circumstances,

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[60] Public Service Human Resource Management Agency of Canada was renamed the Canada
Public Service Agency at the time the request was submitted.

including when "consultations are necessary to comply with the request that cannot reasonably be completed within the original time limit."

Ninety-seven days later, the Canada Public Service Agency mailed me a 178-page package of reports that listed the outcomes of the required training of 44,032 public servants working within seventy-five departments in the Government of Canada. Each report in the package was approximately two pages long and consisted of tables of numbers and brief comments, most of which were left blank. Given the factual nature of the content of each report and the fact that departments had used a common template to submit their reports, it seemed to me that it would be uncomplicated for an Access to Information and Privacy coordinator to redact any information that the Access to Information Act required to be withheld. Wanting to understand why it took 97 days to dispatch the records, I ordered all the emails and memos that the Canada Public Service Agency had circulated about the first order.

8.4.3 Document Order #2: Handling Records

> With respects to request A-2007-00056, please… send copies of all communications (e.g., email, memorandum, electronic or paper-base notes, issue sheets, records of phone calls, recommendations of disclosure, briefing material, and etcetera) about the request that were sent/received internally within CPSA or to/from external organizations.

8.4.4 Document Order #2: Dispatched Records

On August 7th 2008, I received a CD-ROM containing two files; the first comprised of 596 pages of emails and documents and the second 302 pages. The number of pages documenting the handling of the first order was more than

five times greater than the pages dispatched in response to that order. The files revealed how the Canada Public Service Agency had responded.

Many departments in the executive branch of the federal government have an Access to Information and Privacy Office responsible for complying with the Access to Information Act and the Privacy Act. The Canada Public Service Agency's Access to Information and Privacy Office received my order on February 5, 2008. Details about it were entered into a document that contained a large table where each row corresponded to an order made under the Access to Information Act or Privacy Act currently being processed by the Agency. Table columns were labelled *Request Number*, *Status Description*, *Date Received,* and *Visibility*, to name a few. Fourteen other orders were in the table; seven made through the Privacy Act and seven through the Access to Information Act. All the orders, including mine initially, had been assigned a visibility of "Routine." However, the Canada Public Service Agency would eventually change the visibility level for mine to "Sensitive" (see Appendix Three).

At approximately noon on the day my order arrived, the Access to Information and Privacy Coordinator handling my order emailed the Correspondence Coordinator to the Senior Vice President's Office in the Leadership and Talent Management Sector[61]:

> The following Routine Access to Information request [was] received in the ATIP Office on February 5, 2008:

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[61] Unless otherwise noted, emails and government documents cited in the following section were acquired through the Access to Information Act from the Canada Public Service Agency (file number A-2008-00019). The titles of public servants are based on the titles provided in their email signatures.

[Text of original request]

Your branch has been identified as an "Office of Primary Interest". Therefore, you are required to undertake a search for all records relevant to the request. If you believe that information relevant to this request may be held in other sectors within the institution, please advise the ATIP office immediately.

If you estimate that the search and retrieval of the requested documents will exceed 5 hours please notify the ATIP Office within 48 hours. Please proceed with the search and retrieval unless otherwise instructed by the ATIP Office.

In order to comply with the 30-day legislative deadline records must be returned to the ATIP office with recommendations outlining any sensitivities regarding disclosure (signed by the branch head or delegated authority) no later than February 13, 2008. If no records are found, the return memorandum must still be complete and returned to the ATIP Office…

Please ensure to indicate whether media lines are required and the total time spent on search and retrieval[62].

The Access to Information and Privacy Office had identified the Leadership and

Talent Management sector as an "Office of Primary Interest," the group believed

to be in custody of the ordered documents (Roberts, 2006, p.90a).

One day after the Office of Primary Interest were notified, the Director of

Public Service Learning Policy in Leadership and Talent Management emailed

two public servants at the Canada Public Service Agency and two from the

Canada School of Public Service:

As a heads up, we received the following ATI request on required training.

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[62] Gasse, M. (2008, February 5, 11:55). New Access to Information Request A-2007-0056 – ACTION REQUIRED PROTECTED.

[text of original request]

We will have no problem collecting the info, and will share with you shortly. My sense is some lines of communications will be required. DO you have any existing that we can work off? Our deadline, Feb 13, 2008.

Thanks[63]

Later that evening, the Canada School of Public Service responded with an email labelled "confidential":

Thanks for the heads up Rocque, We will need to look at data and implications to determine comm. lines, as what we have on hand around required training may not be specific enough.

Are you "consulting" with us (through ATIP process) or just working on the follow-up for the release?[64]

The Office of Primary Interest also notified senior leadership within the Canada Public Service Agency. Two days after the order arrived, the Director of Public Service Learning Policy in Leadership and Talent Management emailed four people, including the Director General of Leadership Development:

Louise printed them [the reports] all. They are in a big binder in her office.

Sharon[65], I need you to look at them and think about where our risks lie, that will guide the development of media lines.

My opinion is only part 1, the section that related directly to the directive should be released.

---

[63] Gameiro, R. (2008, February 6, 4:48pm). FW: New Access to Information Request A-2007-0056 ACTION REQUIRED PROTECTED.

[64] Sherman, J. (2008, February 6, 7:36pm). RE: New Access to Information Request - A-2007-00056 – ACTION REQUIRED PROTECTED.

[65] Since two people in the email communication had the first name Sharon, it is unclear to whom this refers.

Outstanding issues

- how do we alert departments?[66]

Later that afternoon, the Director General of Leadership Development emailed a

Vice-President of the Canada Public Service Agency:

> A heads up – we have receive an atip request to provide departmental reports from the HR portal regarding required training (The School did not receive a similar request as we talked to them and they are aware of the request as they will also have to be prepared.)
>
> The issue is that our data will show that several departments have an issue … this is rather complex and I can brief you personally.
>
> That said, we have asked ATIP do we or does ATIP notify all the departments that these reports are being released; do we have the authority to release them; and what is the process to begin development of media lines[67] (ellipse in original)

The next day, the Vice-President of the Canada Public Service Agency replied:

> Thanks for [the] heads-up-[sic] let,s[sic] talk at our bilateral[68]

On February 13, 2008, the Director General of Leadership Development, on

behalf of the Vice-President, signed a three-page form addressed to the Access

to Information and Privacy Office and the Strategic Management Branch[69]. The

memo called for the preparation of media lines (Image 8.6).

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[66] Gameiro, R. (2008, February 7, 10:52am). RE: New Access to Information Request - A-2007-00056 – ACTION REQUIRED PROTECTED; (R. Gameiro did not answer author's request as to the last name of Louise).

[67] Squire, S. (February 7, 2008, 2:20pm). ATIP – Required Training Reports.

[68] Amyot, D. (February 8, 2008, 9:50am). Re: ATIP – Required Training Reports.

[69] Squire, S. per Amyot, D. (2008, February 13). Memorandum/Note de Service.

Image 8.6   Direction in official memo calling for the preparation of media lines

Media Lines / Infocapsules

For consideration: Do you expect any impact to occur regarding the release of any of the information attached? Are media lines required?

Pour considération : Est-ce que vous prévoyez des répercussions concernant la divulgation de n'importe quel des renseignements ci-joints? Est-ce que des infocapsules seront nécessaires?

Media lines/Infocapsules:

☒ Required / Requises

If yes, please insert contact name and telephone number for Communications Branch. /Le cas échéant, veuillez insérer le nom et le numéro de téléphone d'une personne-ressource pour la direction des Communications.

Contact name and telephone number of a manager were provided.

"Media lines" are documents that are prepared by a communication department and are given to departmental spokespeople in anticipation of their being contacted by the media with questions about records that have been dispatched that could result in criticism being directed to the Ministry (Roberts, 2006a, p.90, 92). In addition to ordering the preparation of media lines, the memo included a series of recommendations (Image 8.7):

Image 8.7   Recommendations in memo

Additional information as previously stated by email

```
It is recommended that
    • each department for which we are releasing data be advised of
      the release; and
    • the CSPS receive a copy of all information that will be
      released and be consulted on the development of media lines.
```

In addition to adding a summary of my order for records into an inventory of new and on-going orders, labelling my order "Sensitive", notifying senior officials in the Canada Public Service Agency, ordering the communication department to prepare media lines, and notifying the Canada School of Public Service, the Canada Public Service Agency also consulted with seventy-seven other departments in the core administration of federal government that had submitted reports on the results of required training. Twenty-three days after my order was received, the Access to Information and Privacy Office began sending departments notices about the dispatching of the records[70]:

> The Canada Public Service Agency is currently processing a request under the Access to Information Act for:
>
> [Text of original request]
>
> The attached documents were retrieved from our departmental records in response to this request. As the disclosure of the contained information may be of concern to your institution, we are seeking your advice. Should exemptions or exclusions be recommended, please provide the appropriate sections of the [Access to Information] Act as well as detailed explanation as to why the severance(s) applies.
>
> In order to meet our statutory deadline, we must receive your reply no latter than March 14, 2008[71]

Only three of the departments recommended exemptions be made and these were for information falling within section 19(1) (personal information)[72].

---

[70] "OIC Investigation Summary Report" prepared in response to a complaint I lodged against the Canada Public Service Agency. Acquired from the Office of the Information Commissioner under the Access to Information Act, file number: A-2008-00106; OIC file 3206-06771.

[71] Letter sent from the Canada Public Service Agency's Access to Information and Privacy Office to Public Service Human Resources Management Agency's Access to Information and Privacy Office (February 28, 2008). Near identical letters were sent to the seventy-six other departments in the core administration.

In the weeks leading up to the dispatch of the records, the matter of preparing media lines was still an issue. On April 25, 2008, more than two and a half months after I ordered the records from the Canada Public Service Agency, the Manager of Public and Parliamentary Affairs emailed the Manager of Special Projects in the COM – Director General's Office in Communications, an Access to Information and Privacy Coordinator, and an official in the Communication Branch:

> The ATIP item in question deals with required training for departments and reporting of same to CPSA.
>
> Having reviewed the nearly 200 page file, I don't see anything that could generate a need for the CPSA to prepare media lines.
>
> From my perspective, the only organizations that are susceptible to any media requests are several specific departments (that seem to have low completion rates for various types of training) and the CSPS who is frequently identified in the departmental reports as being the source of delays for the completion of required training (i.e., numerous references to CSPS capacity issues and waiting lists).
>
> I will provide a heads up to Pierre Marquis at the School[73].

On May 7, 2008, more than ninety days after I sent the order, the Canada Public Service Agency was almost ready to send the records. The Access to Information and Privacy Office notified the Office of the President of the Canada Public Service Agency indicating that the records would be sent:

> Leadership & Talent Management Sector provided the documents and recommended some changes which are included.

---

[72] Office of the Information Commissioner. Access to Information file number A-2008-0106, p.297

[73] Bowles, S. (April 25, 2008, 1:15pm). RE: A-2007-00056.

Communications Branch was advised on April 21, 2008. A release package was sent to the Canada School of Public Service on April 29, 2008

The document will be released on May 12, 2008[74].

Shortly after May 12, 2008, I received the package of documents. However, the cover letter that accompanied the documents indicated that this was only a partial dispatch. Consultations were still pending on the remainder of the documents I had ordered:

> as for the remainder of the information requested, a final response will be sent to you as soon as the consultations with the government institutions concerned are completed

This extra delay notwithstanding, the majority of the reports were dispatched in the first batch sent on May 12, 2008. The Canada Public Service Agency dispatched a much smaller set of reports in a second batch mailed on May 20th 2008. One hundred and five days after the order for records was received, the Canada Public Service Agency considered the matter closed.

To understand my relationship with this governmental procedure of dispatching the documents I ordered, it is important to note while visibility levels were being assigned, senior officials at the Canada Public Service Agency were emailing each other, and media lines were being called for, I was going about my daily routines oblivious to what the Canada Public Service Agency was doing.

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[74] ATIP (May 7, 2008). Communication Notification: Access to Information Request A-2007-00056. From investigation file. Office of the Information Commissioner. Released under access laws (File number: A-2008-00106, p.284). Unknown initials appear by the name of the sender on the memo. According to the Director of the ATIP Office at the Treasury Board Secretariat (into which CPSA was eventually integrated), the initials may have been that of consultants who worked at the CPSA ATIP Office at the time. I could not confirm the name of the person who sent it and so have not listed it here.

Periodically, events would happen that drew my attention to the Agency. For example when my software (then Five & Stamp) indicated that the document order was nearing its statutory due date I would vaguely think about the Agency. It was only when I flipped through the package of reports and was unable to understand why it had taken so long for them to be sent that I filed the second order, which drew back the curtains and revealed the additional layers of bureaucratic procedure beyond consulting with other departments and preparing the reports for their dispatch.

This additional layer of procedure that the order went through is called *amber lighting*[75]. Roberts describes amber lighting as "a procedure for handling politically sensitive requests" (2006a, p.89). The name "amber light" according to Roberts is used because it is "a warning to officials to proceed with caution in their handling of an [Access to Information] request" (Roberts, 2005, p.7). The intent of amber lighting, according to an anonymous senior communication officer cited by Roberts, is to "achieve the objective of proactive issues management" (Roberts, 2006a, p.89).

The issue of the Government of Canada amber lighting orders for records made through the Access to Information first broke in an article in the Toronto Star by investigative journalist Ann Rees (2003). Consulting the documents sent to Rees during her investigation and with further documents acquired through the

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[75] When contacted for comment, Rocque Gameiro, Director of Public Service Learning Policy in Leadership and Talent Management, informed me that s/he had not heard of amber lighting. After being told by an ATI office "that an ATI is amber lighted when it is a hot issue," Gameiro denied that CPSA had amber lighted my ATI order.

Access to Information Act, Roberts (2006a) described some features of the amber lighting procedure: (a) reviewing "incoming requests to identify those that are potentially sensitive" (Roberts, 2006a, p.89), (b) producing and circulating "a weekly inventory of new requests that have been flagged for potential sensitivity" (2006a, p.90), (c) notifying the Minister's Office and the Ministry's media staff about orders from media or political parties (2006a, p.90), (d) tagging for special attention any dispatched records that could be used to attack the Minister or the department (2006a, p.90), (e) preparation of 'media lines' or 'House cards'[76], (f) sending the package, comprised of the documents for dispatch and the communication products, to the Minister's office for review and approval (Roberts, 2006a, p.90-91)[77], and finally (g) dispatching the records.

According to Rees (2003) and Roberts (2005, 2006a), the Government of Canada widely practices amber lighting. They have documented amber lighting in Citizen and Immigration Canada, the Privy Council Office, the Department of Justice, the Treasury Board Secretariat, and the Department of Foreign Affairs and International Trade (Rees, 2003; Roberts, 2005, 2006a). Rees, in fact, reported that the most senior public office in the Canadian Government, the Privy Council Office, oversees amber lighting. The Privy Council Office advises the Prime Minister on a daily basis on matters related to the governance of the country as well as coordinating high-level communication between Ministries

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[76] 'House cards' are communication products that "provide the Minister with responses to questions that may be raised in Parliament" (Roberts, 2006a, p.90).

[77] Roberts notes that "The role of the Minister's Office at this final stage is a sensitive matter for [Access to Information and Privacy] officers. The formal position is that the purpose of this review is simply to give the Minister's Office a warning about the impending release." (Roberts, 2006a, p.90-91)

(Savoie, 1999). Rees reports that in the course of her investigation, Privy Council Office spokesperson François Jubinville conceded that his office plays a "central role in the co-ordination of all government communications, including monitoring of contentious access requests filed to his office and to various ministries" (Rees, 2003). Rees quotes François Jubinville as saying:

> [Monitoring contentious Access to Information disclosures] speaks to our fundamental role here in the secretariat which is to ... act as a co-ordinator of communications activities throughout the government

And further quotes him as saying:

> It is our role to make sure that ... the department releasing the information is prepared to essentially handle any fallout. (Rees, 2003)

Rees concludes that amber lighting is part of a "highly sophisticated, government-wide access to information surveillance system designed and controlled by communications spin doctors bent on protecting the political interests of their bosses from the public's right to know" (2003). Roberts (2005) similarly concludes that amber lighting is a mechanism for "spin control" and "damage control" that attempts to "rebut anticipated criticisms" (p.19) and "minimize the disruptive potential" resulting from their dispatch (p.19).

In September 2005 the Canadian Newspaper Association filed a complaint with the Office of the Information Commissioner of Canada about the government's practice of amber lighting. The association submitted evidence to support their allegation that federal institutions used secret rules to manage orders for records made through the Access to Information Act by journalists,

which resulted in unjustifiable delays. In response to these allegations, the Office

of the Information Commissioner investigated the dispatch practices of twenty-

one federal institutions and reported the findings in 2008. The Commissioner

found that of the twenty-one government institutions surveyed, sixteen (76%)

"make a distinction between 'normal' or 'routine' requests and those that are

variously described as 'sensitive', 'of interest', 'amber light', or 'high visibility."

(OICC, 2008b, p.7). The Commissioner also found that "requests labelled

'sensitive' take longer to process than those not so labelled" (OICC, 2008b, p.8)

and concluded:

> the system of labelling certain access requests as "sensitive" does,
> in a number of government institutions, create unfair and
> unjustifiable delays in the process of those requests so labelled.
> This system is not aimed at the media, but is largely determined by
> the nature of the information requested… We therefore find the
> complaint to have merit (OICC, 2008b, p.11-12)

The Information Commissioner's finding that the Government of Canada

does not have special rules of access for media is not reassuring given that he

found a systemic practice of government refusal to dispatch records in response

to orders labelled 'sensitive' to *anyone.* The claim of "government refusal" is not

hyperbole even if records were eventually sent after their statutory dispatch date;

it is a matter of legal interpretation. Under section 10(3) of the Access to

Information Act, records not sent within statutory time limits are deemed refusals

of access[78]. The Office of the Information Commissioner's finding that amber

lighting procedures "create unfair and unjustifiable delays in the process of those

requests so labelled" means that governmental drive to "handle any fallout" (PCO

spokesperson quoted in Rees, 2003) from dispatching sensitive records, results

in the government violating its legal obligation to send them.

Although delays arising from amber lighting procedures are illegal, the

Information Commissioner would not conclude that labelling access orders for

special attention contravenes any law. In his 2008-2009 Annual Report, the

Information Commissioner presented the findings of the investigation of the

Canadian Newspaper Association's complaint as well as the issue of amber

lighting. The Commissioner stated:

> In our opinion, there is nothing inherently wrong with labelling
> access requests as 'sensitive,' 'of interest' or 'amber light,' or with
> some other marker indicating special handling (OICC, 2009).

The primary concern of amber lighting for the Information Commissioner is the

unjustifiable delays associated with those orders.

To clarify my purpose in presenting this demonstration of amber lighting, I

should state that with respect to the reports of required training, I make no

assertion about the relationship between the extension or delays in dispatching

the records and the procedures that the Canada Public Service Agency used

while handling my order for 'sensitive' records. My purpose of presenting this

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[78] "Where the head of a government institution fails to give access to a record requested under
this Act or a part thereof within the time limits set out in this Act, the head of the institution
shall, for the purposes of this Act, be deemed to have refused to give access." Access to
Information Act, section 10(3)

demonstration is twofold. First, it reveals a bureaucratic process involving by my estimate over one hundred public servants across seventy-five departments[79]. It advises researchers using freedom of information to think twice about the package of records they receive and to periodically look behind the curtains.

A second purpose of presenting this demonstration is to suggest a novel way researchers can use the Access to Information Act to inquire into government-related topics, such as public service learning. The novel strategy entails issuing orders through the Access to Information Act to use the amber lighting system as a means to identify contentious issues within government bodies. This strategy is overlooked in reports that present amber lighting as a mechanism by which governments prepare for unwanted public attention (Rees, 2003; Roberts, 2005). Under the old regime where disclosure of information was at the government's discretion, amber lighting would impede the public's ability to discuss contentious issues. Ironically, with the Access to Information Act, amber lighting might actually direct public attention to contentious issues. This strategy will be illustrated in the fourth demonstration.

8.4.5 Document Order #3: Reports on Learning Policies

The emails and documents that were circulated during the handling of my first order also revealed that there was a second section to each of the reports that the Canada Public Service Agency did not send. I ordered those sections.

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[79] Twenty-five from the Canada Public Service Agency; 4 from the Canada School of Public Service; 75 from the Access to Information and Privacy Offices in other departments.

With reference to the Directive on the Administration of Required Training, send me section 2 ("Output/outcomes expected from learning, training, and development policies") of the 2006/2007 Annual Reports on Required Training for each of the core departments in the public administration (the core public administration being defined in section 2.1 of the Directive on the Administration of Required Training). Section 1. "Required Training" does not have to be included, unless it is more convenient for CPSA.

Twenty-three days later the Canada Public Service Agency mailed me a CD-ROM containing both the first and second parts of the reports (see Electronic Appendix 7).

8.4.6 Document Orders #1 and #3: Dispatched Records

The reports sent in response to the first and third orders revealed details about seventy-five departments in the core administration of the Government of Canada. Each report was comprised of two parts. The first part of the report listed statistical data pertaining to the results of required training for eight major employment categories (Tables 8.1 to 8.3). The Canada School of Public Service delivered required training to these employees. The second part documented departmental outputs and outcomes related to the Treasury Board Secretariat Policy on Learning, Training, and Development (Table 8.4).

Table 8.1 presents the number of senior employees from the core public administration of the federal government identified to enrol in required training for the year 2006/2007 and the percentage that actually enrolled.

Table 8.1   Required training enrolment percentages for year ending June 30, 2007

	Identified to Enrol	Enrolled : Not Enrolled
Existing Manager and Executives	21,601	97.1% : 2.9%
First Time Supervisors	2,358	42.8% : 57.2%
First Time Managers	2,404	69.9% : 30.1%
First Time Executives	842	73.6% : 26.4%
Newly Appointed Employees	12,311	46.0% : 54.0%
First Time Functional Specialists in Procurement	757	58.5% : 41.5%
Existing Specialists in Procurement	3,312	30.6% : 69.4%
First Time Functional Specialists in Information Management	447	51.2% : 78.8%
Total	44,032	71.9% : 28.1%

Nearly all (97.1%) existing managers and executives enrolled, whereas slightly less than one third (30.6%) of existing specialists in procurement enrolled[80]. Table 8.2 shows the percentage of senior employees who successfully completed required training.

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[80] Procurement specialists are responsible for purchasing goods and services from third parties.

Table 8.2   Percentage of enrolled senior employees who were successful in required training for year ending June 30, 2007

	Enrolled	Successful: Not Successful
Existing Manager and Executives	20,975	95.9% : 4.1%
First Time Supervisors	1,008	76.8% : 23.2%
First Time Managers	1,681	69.1% : 30.9%
First Time Executives	620	74.5% : 24.5%
Newly Appointed Employees	5,668	78.8% : 21.2%
First Time Functional Specialists in Procurement	443	26.9% : 73.1%
Existing Specialists in Procurement	1,014	29.0% : 71.0%
First Time Functional Specialists in Information Management	229	56.8% : 43.2 %
Total	3,1638	87.0: 13.0 %

Table 8.2 reveals a significant range in success rates of required training outcomes based on employment category. Whereas almost all (95.9%) existing managers and executives successfully completed required training, less than one third (29%) of existing specialists in procurement were successful.

According to the Directive on the Administration of Required Training, the Canada School of Public Service is to assess the knowledge that managers and executives have for properly exercising the authorities delegated to them. This knowledge is assessed through "authority delegation training"[81]:

> The purpose of authority delegation training is to ensure that managers at all levels understand their roles, responsibilities and

---

[81] Authority delegation training was mentioned in an excerpt in the minutes of the meeting of the Canada School's Board of Governors, presented in Chapter Seven's "Recalled to Inquiry."

their basic delegated authorities in finance, human resources, information management and contracting, that they understand corporate policies and priorities, and that they acquire the fundamental knowledge and skills needed to meet legal requirements and exercise delegated authority competently (Canada School of Public Service, n.d.c).

Failing the authority delegation assessment has consequences. According to section 7.1 of the Policy on Learning, Training, and Development, managers and executives who fail the online authority delegation assessment are to have their delegated authorities, such as financial and human resource signing authority, suspended (TBCS, n.d.e). Appendix Two lists departments in which 100% of enrolled managers and executives passed the authority delegation training. Table 8.3 lists the ten lowest ranking departments.

Table 8.3   Ten lowest ranking federal departments

		Registered	Pass : Fail
1	Office of the Privacy Commissioner of Canada	16	68.8% : 31.2%
2	Office of Indian Residential Schools Resolution of Canada	31	77.4% : 22.6%
3	Patented Medicine Prices Review	15	86.7% : 13.3%
4	Office of the Coordinator Status of Women	23	89.6% : 10.4%
5	Library and Archives Canada	115	89.6% : 10.4%
6	Department of Human Resources and Social Development	542	93.0% : 7.0%
7	Privy Council Office	72	93.1% : 6.9%
8	Department of Foreign Affairs and International Trade	1,063	93.3% : 6.7%
9	Canadian International Trade Tribunal	16	93.8% : 6.2%
10	Courts Administration Service	96	93.8% : 6.2%

Ten lowest ranking federal departments where existing managers and executives failed to validate their knowledge of their legal responsibilities for the year ending June 30, 2007[82]

If the Directive was followed, then almost one third of the executives and managers in the Office of the Privacy Commissioner temporarily lost their delegated authorities (e.g., financial signing authority). In fact, Table 8.3 can be used to conclude that 880 of 21,601 (4.1%) executives and managers across the Government of Canada failed required training.

The second portion of reports that were dispatched contained reports about how departments implemented the Treasury Board of Canada's Policy on

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[82] The Royal Canadian Mounted Police (RCMP) did not report the number of executives and managers who actually registered for knowledge assessment. 2,573 executives and managers in the RCMP were identified to have their knowledge assessed and 70.4% (1,812) were successful.

Learning, Training, and Development. Each report consisted of seven answers to yes/no questions and seven optional comment fields. Table 8.4 presents the percentage of federal departments that have policies on learning, training, and development, learning plans, and learning strategies.

Table 8.4   Departments in core administration with learning policies/plans/strategies

	Total with	Percentage
Departmental policy on learning, training, and development	52	69.3%
Requirement for employees to have learning plans	50	66.7%
Departmental learning strategy	43	57.3%

For year ending June 30, 2007 (total reporting = 75)

Table 8.4 reveals that approximately seventy percent of the departments in the core administration of the Government of Canada have policies about employee learning, training, and development. These results reveal that although the Canada School of Public Service offers curricula for senior public servants, Ministries and agencies also produce policies for public servant learning but within policy frameworks issued by the Treasury Board of Canada, a statutory committee of the Prime Minister's cabinet (Savoie, 1999, p.194ff).

Returning to the topic of what government officials at the Canada Public Service Agency were doing while preparing to dispatch the reports of required training, it is interesting to note that on May 12, 2008, the same day the first set of reports was mailed to me, a manager at the Canada's Public Service Agency's Leadership Talent and Management Development forwarded an email to over

one hundred employees in more than sixty departments across the Government

of Canada. The email was addressed to "Required Training Coordinators" and

contained an email from the Vice-President of Strategic Policy, Planning, and

Research from the Canada Public Service Agency, which stated "the opening of

the Consolidated Portal for Policy Monitoring and reporting (CPPMR)[i.e., the HR

Portal] will be delayed"[83]. Then on June 24th, six days before agencies and

departments across the executive branch of the Government of Canada were to

submit their reports on the results of required training, the same manager sent an

email to over 275 employees across more than seventy-five departments:

> The Canada Public Service Agency (CPSA), in keeping with the
> Clerk's priorities, has recently launched a project to look at reducing
> the reporting burden on departments and agencies. The ultimate
> objective is to ask only for information that is truly required… For
> this reason, <u>the June 30th deadline for the Annual Report on
> Required Training is not in effect this year</u> and the Consolidated
> Portal for Policy Monitoring and Reporting (CPPMR or HR Portal)
> will remain closed until further notice… As part of the Agency work
> on reporting, we will develop options for monitoring required
> training in the future…(italics added)[84]

Two years after the Treasury Board of Canada Secretariat's Directive on the

Administrative of Required Training came into effect requiring departments to

submit annual reports on required training and after only one year of collecting

the annual reports, the Government of Canada effectively terminated section six

of the directive—the "Monitoring and reporting requirement."

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[83] Wong, S. (May 12, 2008). Re: Consolidated Portal for Policy Monitoring and Reporting/Portail consolidé pour le contrôle et les rapports liés à la politique. Containing email from Bloom, M. (May 8, 2008). Acquired through access laws.

[84] Wong, S. (June 24, 2008). RE: Reporting on Required Training/Rapport sur la formation indispensable. Acquired through access laws.

8.4.7 Cost of Order and Length of Time to Dispatch Records

The cost of each of the three orders was $5.00. Records for the first was dispatched in 97 days, for the second 38 days, and for the third order, 23 days.

8.5 Demo #4: Using Amber Lighting as a Flashlight at the Canada School

In the previous demonstration, I described a strategy of using freedom of information to identify what a department in the Canadian Government considers to be contentious issues. This strategy recognizes that under the Access to Information Act, the government must dispatch the documents it uses to coordinate the amber lighting procedure. This strategy suggests that freedom of information-based inquiry can be used ironically where a government's attempt to reduce attention on contentious issues can in fact be co-opted by inquirers to identify those contentious issues. In this demonstration, I illustrate this strategy by using freedom of information legislation to order the Canada School of Public Service to send me documents that reveal issues that it considers to be contentious, and that under its own admission prefers not be made open to public scrutiny.

8.5.1 Document Order

This demonstration consists of two orders for records made to the Canada School of Public Service. In the first, I instructed the Canada School to dispatch 1) the sensitivity indicators that the School assigns to orders typically associated with the preparation of media lines and 2) the text of all orders that had been assigned that indicator. In thirty-three days, the Canada School of Public Service

responded. In the letter, the Access to Information and Privacy Coordinator

explained that the School began using sensitivity levels ("Routine" or "Sensitive")

in March 2006. Since then the School had assigned a "Sensitive" label to seven

orders made through the Access to Information Act. The letter informed me that

"the determination of media lines is done on a case-by-case basis" and that only

one of the seven "sensitive" orders had resulted in media lines. The text of the

order is presented here:

> This is a request under the Access to Information Act for
> documents that might [cast] light on challenges teaching French to
> senior public servants related to your school's new delivery model
> for language training, the model implemented on April 1, 2007[85].

As the first order did not instruct the School to send the media lines, I issued a

subsequent order:

> Please send me the media lines that were prepared for A-2008-
> 0014

Thirty days later, the Canada School of Public Service sent the media lines.

8.5.2 Dispatched Records

The "media lines" was a two page document with six headers: Issue,

Public Environment, Background, Media Lines, Key Target Audiences,

Recommended Products and Activities (see Electronic Appendix Ten). The text

beneath the Issue header summarized the matter:

> A recent request through Access to Information and Privacy (ATIP),
> concerning the new model for language training may result in some

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[85] Access to Information File, A-2008-0014/nl, received July 2, 2008

media coverage. Official languages has been the subject of considerable media coverage of late given numerous hearings held by the House of Commons Standing Committee on Official Languages concerning the renewal of funding for the Action Plan and Official Languages

The three paragraphs beneath the Public Environment header elaborated on the issue of language training in the Government of Canada:

The issue of public servants (mainly English speaking) being forced to take language training in order to meet requirements of the new directive on bilingual staffing has been a highly charged issue which received significant media attention…. The new directive became the subject of a class action complaint (lodged by many public servants) filed with the Commissioner of Official Languages. This issue resides with the Canada Public Service Agency as policy and directive holders concerning training and bilingual staffing. The School was impacted by the new directive…"

Beneath the Background header were four paragraphs explaining the new model of language training provided by the Government of Canada and why the Canada School no longer provided language training but instead had shifted "its role to focus on the development of new learning tools and methods to support maintenance of language skills; the provision of learning advice to departments; and quality assurance of external language training providers."

Beneath the Media Lines header was a bullet point list containing four sentences:

A new model was developed in response to a clear demand for a more effective way to provide language training.

The new model aims to improve accessibility, cost-effectiveness, and to provide support for the maintenance [of] second-language skills.

The model required that the School shift from providing direct training to facilitating access to quality-assured, external language training.

In support of the new model, the School also developed modern products and tools to support employees' in the maintenance of their second language skills

Beneath the Target Audiences header was a list that contained the names of specific groups (i.e., Canada Public Service Agency, Canadian Heritage, Treasury Board of Canada Secretariat, parliament's Official Languages committee) and generic groups (i.e., unions, parliamentarians, the media).

The final header, Recommended Products and Activities, advised the spokesperson to refer questions, to the Canada Public Service Agency or the School's website. The document's penultimate sentence read:

Given that the issue of official languages is highly sensitive and divisive, a proactive approach to provide information concerning the new model is not recommended.

This demonstrates illustrates that freedom of information legislation can be used in conjunction with amber lighting procedures to identify "contentious" issues that the Government of Canada is unwilling to proactively communicate for public deliberation.

8.5.3 Cost of Order and Length of Time to Dispatch Records

The cost of both orders was $5.00. The Canada School dispatched the first set of records after 33 days and the second after 30 days.

8.6 Demo #5. The Privy Council Office

The previous four demonstrations present stark contrasts. They have

differed in geographic location, modality (ie., images, texts, numeric data), and

scale (i.e., one campus, two-weeks in one program, entire executive branch of

the Government of Canada). The third demonstration included an order that

displayed another dramatic contrast, by revealing the internal bureaucratic

machinery at work when a government organization is ordered through freedom

of information legislation to send important documents. The fourth demonstration

presents an ironic contrast when I use freedom of information legislation to order

a government department to self-identify a contentious issue it did not want open

to public scrutiny. In the final demonstration, I show what appears to be a blatant

disregard of freedom of information legislation by the office of the most senior

public servant in the Government of Canada.

8.6.1 Background

The Privy Council Office is a department of over 700 employees closely

serving the Prime Minister of Canada and the Prime Minister's Cabinet. The Privy

Council Office is "the nerve centre of the federal public service" (Savoie, 1999,

p.109) and as a nerve centre its role in the governance of the country is

expansive and complex:

> [The Privy Council Office] briefs the prime minister on any issue it
> wishes, controls the flow of papers to Cabinet, reports back to
> departments on the decisions taken, or not taken, by Cabinet,
> advises the prime minister of the selection of deputy ministers and
> briefs chairs of Cabinet committees (with the exception of the
> Treasury Board), supports the operation of Cabinet and Cabinet
> committees, advises the prime minister on federal-provincial

relations and on all issues of government organizations and ministerial mandates, and prepares summaries of strategic memoranda (Savoie, 1999, p.109).

The head of the Privy Council Office's formal title is the 'Clerk of the Privy Council and Secretary to the Cabinet.' He is the most senior public servant in the Government of Canada. Through daily meetings, the Clerk connects the Prime Minister with the machinery of government (Savoie, 1999).

According to records dispatched in the second demonstration, I learned that the Privy Council Office had prepared (1) a learning and development policy, (2) an annual report of learning plans submitted by Privy Council Office employees, and (3) a departmental learning framework. Through the Access to Information Act, I acquired these documents (see Electronic Appendix Eight). The report of employee learning plans listed eleven departments in the Privy Council Office in which 675 employees had prepared learning plans. Listed among the eleven departments was the office of the Clerk of the Privy Council and Secretary to the Cabinet, in which eight employees had submitted learning plans. According to the Treasury Board of Canada:

> a learning plan is a personalized action plan that outlines the learning activities an employee will do in support of the needs of their organization and their personal and professional development, including second language training. Learning plans are directly linked to organizational needs, such as workforce capacity and talent management, including succession plans[86].

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[86] Treasury Board of Canada Secretariat (n.d.f)

8.6.2 Document Order
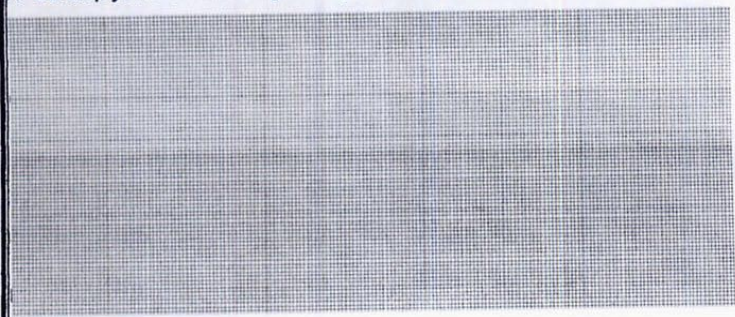
Through the Access to Information Act, I issued an order for the eight

learning plans submitted by the employees working in the office of the Clerk of

the Privy Council and Secretary to the Cabinet:

> A record disclosed in ATIP [Access to Information and Privacy] request number 135-2-A-2008-00495 shows a table that lists learning plans that have been received by the Privy Council Office. The table indicates that the PCO received eight learning plans from the Clerk and Secretariat to the Cabinet. Send me copies of those eight learning plans.

8.6.3 Dispatched Records

The Privy Council Office dispatched eight heavily redacted learning plans

(Image 8.8 and Electronic Appendix Eight).

Image 8.8   Employee leaning plan from the office of the Clerk of the Privy Council and Secretary to the Cabinet

Reproduced with the permission of the Minister of Public Works and Government Services, 2009, Courtesy of the Prime Ministers' Office

The Access to Information and Privacy Coordinator working within the Privy Council Office cited section 19.1 of the Access to Information Act as authorization for redacting the sections of the learning plans. Section 19.1 requires the government to redact material that contains personal information. In this case, the Access to Information and Privacy Coordinator claimed that the learning plans contained personal information.

The legitimacy of these redactions is questionable. The definition of personal information is provided by section 3 of the Privacy Act:

"personal information" means information about an identifiable individual that is recorded in any form.

Ostensibly, learning plans contain personal information as they are about

identifiable individuals. However, although the scope of personal information is

broad, it is not boundless. Section 3 also limits the definition of personal

information in specific circumstances:

> But for the purposes of sections 7, 8 and 26 and section 19 of the Access to Information Act, [personal information] does not include,
>
> (j) information about an individual who is or was an officer or employee of a government institution that relates to the position or functions of the individual including,
>
> …
>
> (iv) the name of the individual on a document prepared by the individual in the course of employment, and
>
> …

Section 3(j) of the Privacy Act limits the definition of personal information

in circumstances where a person is employed by the Government of Canada and

the information relates to their position or function. In such circumstances,

information is deemed not personal and consequently section 19 of the Access to

Information Act cannot be cited as a legitimate reason for withholding the

information. The Supreme Court of Canada has clarified the meaning of section

3(j). Information is not personal in nature "when the information — which is

always linked to an individual — is directly related to the general characteristics

associated with the position or functions held by an employee [of the federal

government]"[87]. The Supreme Court also explained the importance of making employee information accessible: "the purpose of s. 3(j) is to ensure that the state and its agents are held accountable to the general public"[88].

The Privy Council Office's citation of section 19(1) for redacting the "Name/Nom" field is particularly shocking because a name of an employee on a learning plan is an example of non-personal information provided in section 3(j)(iv) of the Privacy Act: "(iv) the name of the individual on a document prepared by the individual in the course of employment." The redactions to the principal sections of the learning plans are also questionable. Section 19(1) was cited but the question is: are learning plans *likely* to contain information that relates to the employees' positions or functions within the office of the Clerk of the Privy Council and Secretary of the Cabinet? According to the Privy Council Office, its learning and development policy was written "in accordance with the Policy on Learning, Training and Development of the Treasury Board Secretariat"[89] and according to the Secretariat "learning plans are directly linked to organizational needs, such as workforce capacity and talent management, including succession plans"[90] suggesting that the learning plans are about employees' positions and functions and consequently not personal information. I filed a complaint to the Office of the Information Commissioner of Canada asking for a review of the Privy Council Office's decision. The investigation is ongoing.

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[87] Canada (Information Commissioner) v. Canada (Commissioner of the Royal Canadian Mounted Police), 2003 SCC 8, [2003] 1 S.C.R. 66
[88] Ibid.
[89] Privy Council Office, Learning and Development Policy (see Electronic Appendix Eight, p.2).
[90] Treasury Board of Canada Secretariat (n.d.g)

It is interesting to note who is ultimately responsible for the redactions to the learning plans. The Access to Information Act states that the head of each institution is responsible for dispatching or withholding records as well as stating which section of the Act authorizes any redactions. In the case of the Privy Council Office, the designated head is not the Clerk of the Privy Council, but is the Prime Minister of Canada (Department of Justice, n.d.).

8.6.4 Cost of Order and Length of Time to Dispatch Records

The cost of the order was $5.00. The records were dispatched in 27 days.

8.7 The Affordability of Freedom of Information-Based Inquiry

In the preceding section, I provided a series of demonstrations that reveale public servant curriculum to be a viable field of inquiry. Each demonstration provides opportunities for readers to make sense of public servant curriculum, and thus begin to form a discourse community that makes sense of this important public curriculum. In this section, I move beyond demonstrating that public servant curriculum exists and can be studied, by showing that it is economically feasible to acquire documents about it. Barriers of access, therefore, do not impede the formation of an academic discourse community about public servant curriculum.

In the one-year period between October 1, 2008 and September 30, 2009, I used Open Government Records to make and track 128 orders for records to multiple governments through their respective freedom of information legislation. This averages to approximately eleven orders per month. The Canadian federal

government received fifty-five (43.0%) of these orders while government and public institutions within British Columbia received fifty-two (40.6%). I sent orders for records to government institutions in other nations, such as the United States of America and the United Kingdom, and also to regional governments in New York, Michigan, Ontario, Manitoba, and Saskatchewan.

This period of usage can be used to assess the feasibility of computer-assisted freedom of information-based inquiry. The total cost of sending 128 orders, including application fees, postage, and any additional fees associated with ordering records, was approximately $360. With an average of $2.81 per order, freedom of information-based inquiry has an almost negligible cost to researchers. In fact in some jurisdictions, such as British Columbia, the United Kingdom, and the United States, orders can be submitted by email and with no application fee, making the cost of initiating inquiry literally zero.

It is possible to estimate the amount of materials dispatched. The orders yielded approximately 1.3 metres[91] of paper-based documents, twenty-five CD-ROMs and DVDs, and ten emails that contained electronic records.

8.8 Conclusion

Whereas the previous chapter documented the development of Open Government Records with a design narrative (Hoadley, 2004), this chapter has provided a series of demonstrations of this software. Through the documents

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[91] I use the archival technique of assessing the size of a collection of documents by measuring the thickness of the total files.

acquired of the National School of Government's Sunningdale campus, an evaluation of a two-week phase in a leadership development program, quantitative data from seventy-five departments in the executive branch of the Government of Canada, to the learning plans completed by eight employees in the office of the Clerk of the Privy Council and Secretary to the Cabinet, these demonstrations have rendered a multi-modal, multi-dimensional image of public servant curriculum at various focal lengths. Some of these demonstrations have revealed government departments willing to dispatch documents, while others show the grimacing visages of government departments unwilling to dispatch records that relate to public servant learning.

These demonstrations have also revealed that acquiring documents can be relatively easy and time efficient for educational researchers and therefore substantiate freedom of information as an effective technique for acquiring information about public servant curriculum.

How can public servant curriculum participate in dismantling social and economic inequities that impede public schools from achieving their objective of providing students equal access to educational opportunities? How can public servant curriculum influence public institutions so as to bring about greater equality between academic historians and the general population that is needed when approaches to history education turn to historians as models or standards of pedagogical practices within schools? To answer these questions, or at least talk about them, freedom of information legislation may be important.

9: DISCUSSION

Writing in the dusk of the twentieth century, Bryson and de Castell (1994) observed three discourses—technist, critical, and post-modern—populating the field of educational computing, each "telling tales" about the relationship between computers and schools. They conclude with recommendations to carry educational computing into the twenty-first century:

> We suggest, then, that probably the most important job for researchers concerned to understand the scope and limits of educational uses of technology is to seek out those stories that are not being circulated, to stop 'making sense,' to look for educational technology's version of Foucault's 'subjugated knowledges' within which the complications, contradictions and complexities of this new educational domain are most likely and most productively to be discerned" (Bryson & de Castell, 1994, p.217).

Stories of educational technology are not often told or heard from the perspective of its material production. Production-based inquiry, which documents the building or creation of technology, therefore provides a site from which to discern some of the "complications, contradictions, and complexities" of educational technology (Bryson & de Castell, 1994, p.217). The material production of technology also provides unique opportunities for engaging with challenging theoretical problems to advance education and curriculum inquiry (Sandoval, 2004; Mateas & Sterns, 2005; de Castell & Jenson, 2007).

This dissertation told a story of the material production of two technologies united in a common goal of supporting secondary students learning to do

historical research. The first technology sought to support secondary students

learning how to do meaningful historical research. To achieve this goal, Practice

Forge was designed to provide students with access to curricular resources that

represented historical inquiry as mediated action within a community of practicing

historians (Vygotksy, 1978; Lave & Wenger, 1991). While students were doing

their own history projects, these resources were to support students in a form of

guided participation (Rogoff, 1995).

Significant demographic disparities between academic historians and the

general population served by schools brought the educational soundness of this

software design into question. Without greater equality between populations of

historians and the general population, I did not believe Practice Forge would be

able to provide students with equal access to opportunities to learn to do

historical research. This limitation prompted me to ask how public servant

curricula within non-school public institutions could help dismantle widespread

inequities that schools faced? The absence of academic literature on public

servant curriculum amidst the volumes of literature on school curriculum

prompted the development of a research technology that used freedom of

information legislation as a means to acquire documents about this important

public curriculum.

These two cycles of software development and the resulting two

technologies are harnessed together in pursuit of a common goal and told as *one*

tale of *two* technologies. This *Tale of Two Technologies* was presented as three

design narratives (Hoadley, 2004), "The Tracks of Canada's Past"*,* "The Code is

Dead", and "Recalled to Inquiry." The following sections highlight a number of the contributions made by this study.

9.1 First Cycle of Software Development: Contributions

9.1.1 A Three-Part Framework for History Education

Researchers of history education often represent the practice of history education as fitting within two broad pedagogical approaches, Collective Memory and Disciplinary Thinking (Seixas, 2000; Wilson, 2001; Lévesque, 2007). But this dichotomy can not adequately represent history education as it is practiced. This dissertation substantiates a third approach to history education, which I refer to in Chapter Two as the Making History Approach. Educational materials and pedagogical strategies in this approach are designed to teach students how to do basic forms of historical research.

Chapter Two included a number of examples of history education that fit within the Making History approach. Perhaps the most significant example documented in Chapter Two was the Junior Historian Movement. Between late 1938 and 1968, numerous secondary schools across the United States formed history clubs. These history clubs were organized into state-wide junior historical associations. In these history clubs, students engaged in rudimentary forms of research into local history, presenting their results at conferences and in junior history magazines. The significance of this example is due in large part to historians of Social Studies and history education overlooking the Junior Historian Movement (Hertzberg, 1981; Seixas, 2000; Evans, 2004; Osborne,

2006). But the example is also significant because it adds a historic dimension to the Making History Approach which helps to bring into focus contemporary examples, including: UCLA's Institute for Democracy, Education, and Access's critical public historian project (Morrell & Rogers, 2006), the massively popular National History Day (Gorn, 2001, 2008), and a series of large scale international initiatives found in Canada (Historica, 2006), Germany and Europe (see Chapter Two), and Australia (National History Challenge, 2009).

9.1.2 Telementoring: Backup Component

The first cycle of software development also contributes to the study of telementoring. Through participant-observation in a grade ten Social Studies class, I observed a telementoring-based instructional design in which mentors participated at lower than expected standards. Telementoring literature has focused on factors contributing to successful programs (Kochan & Pascarelli, 2005). My study suggests such focus might neglect important contributions. Although the opportunity for students to work with a subject-matter expert or enthusiast is a strength of telementoring, it may also be its Achilles' heel. Instructional designs using telementoring are susceptible to failure if mentors do not perform as expected. Without examining struggling telementoring programs, the literature leaves behind contributions important for advancing this innovative form of instruction. Future instructional designs may benefit from research that examines the strategies telementoring instructional designs use to adapt in situations where mentoring relations do not develop as expected. This type of

study would focuses on *successful adaptations* within *failed* instructional designs involving telementoring so as to identify adaptive strategies.

This dissertation documents one strategy whereby instructional designs are furnished with a cache of persistent resources serving similar functions as mentoring relationships. In situations where mentoring relationships falter, students and teachers can access these resources. Although I chose an ambitious technological project to implement this proposal, much simpler strategies could be pursued, such as providing students with guidebooks that document multiple perspectives on how and why historical research is done.

9.1.3 Educational Technology for History Education

History educators often use technology to provide students with access to collections of primary source documents (Myers, Perlin, Wallace, & Fusonie, 1991; Hillis, 1999; Merriman & Trinkle, 2000; Lee, 2002). This approach has not succeeded as expected (Hicks, Doolittle, & Lee, 2004). More recently, educational specialists and history educators have used computer technologies to create learning environments in which students are prompted into disciplinary forms of engagement with primary sources and historical narratives (Brett, Perfetti, Van Dyke, & Gabrys, 2000; Saye & Brush, 2001; Sandwell, 2005; Hicks & Doolittle, 2008; Lévesque, 2008). Some history education researchers have looked to the educational potential of computer games that simulate historic events (Squire & Barab, 2004; Kee, et al., 2009; Kee & Bachynski, 2009).

Against this backdrop of contemporary technological initiatives, the history unit within the Open University's 1971 "Introduction to Humanities" course, documented in this dissertation for the first time in over thirty years, stands in a class unto itself (Marwick, 1976). For the history unit, the Open University's educational specialists used television to present to students a reconstruction of how a historian conducted primary source research within institutional settings commonplace to historical research. This strategy may interest educators who draw on sociocultural theories of human learning (e.g., Vygotksy, 1978; Lave & Wenger, 1991; Rogoff, 2003), such as history educators who have looked to sociocultural theories of learning to pursue the agenda of teaching students to reason about the constructed nature of historical knowledge (Levstik & Smith, 1996; Bain, 2000; Van Sledright, 2002; Morrell & Rogers, 2006). For these researchers, the Open University history unit provides a novel instructional design for evaluating this agenda.

9.1.4   History Education: A Critical Contribution

The second phase of the first software development cycle brought to the foreground a critical contribution to the field of history education. While developing Practice Forge, I became aware of the social and economic demography of academic historians. According to reports by the American Historical Association (AHA) (Bender, et al., 2004), most historians working in American universities are white, male, and the offspring of affluent families. According to the Canadian Association of University Teachers (CAUT, 2009),

historians in Canadian universities are largely comprised of men though no statistics were presented about ethnicity or parental income.

The history education community's response to these demographic disparities can be evaluated against a prominent critical vein in history education. The critical vein examines history curricular materials, such as textbooks, for bias in the representation of social groups and their contributions to history. This critical scholarship challenges curricular materials that privilege the representation of whites, men, and the off-spring of affluent families, along with their political and military accomplishments, at the expense of social groups not fitting within this narrow demographic profile (Hirschfelder, 1975; Anyon, 1979; FitzGerald, 1979; Tetreault, 1986; Cruz, 1994; Kuzmic, 2000; Clark, 2005; Morgan, 2008; Zajda, 2008).

Given that the practices of whites, men, and the offspring of affluent families largely constitute the practices of historical inquiry, one would expect history educators to also be critical of pedagogies that are modelled after the social practices of academic historians. Accounts of "historical thinking," if derived from academic historians, privilege the experiences and achievements of a narrow portion of the population too. The reports by the American Historical Association and the Canadian Association of University Teachers give credence to Cutrara's recent critical observation that "the discipline of history is not a neutral body of conventions that ciphers out or eliminates bias from historical evidence" (2009, p.87). Criticisms of history education that draw attention to the social profile of academic historians, however, are not readily found.

292

Among those who endorse either the Disciplinary Thinking or the Making History Approaches, discussions might occur around important questions. For example, what is the educational soundness of deriving pedagogy for public schools from the practice of a largely homogenous social group? Although multiple responses to this critical observation are possible, history educators might consider the response documented in this design study and direct attention to questions of how history education communities can mobilize inquiry to non-school settings so as to increase equality in university history departments.

9.2 Second Cycle of Software Development: Contributions

The second cycle of software development was described in Chapter Seven. A series of demonstrations presented in Chapter Eight followed this phase of development. In this section, I highlight central contributions made during the second cycle of software development.

9.2.1 Conceptualizing Public Servant Curriculum

In Chapter Seven, I used "public servant curriculum" as a concept to refer to a general set of activities related to public servant learning. At the start of the second cycle of software development, I used two aspects to distinguish "public servant curriculum" from conceptually similar areas of study: (1) source of curriculum authority (i.e., university vs. government-based) and (2) employment status of the students (i.e., prospective public servants vs. working public servants). These aspects allowed me to build a conceptual fence between neighbouring fields of inquiry: university-based curriculum for prospective public

servants (Geva-May, Nasi, Turrini, & Scott, 2008) and university-based curriculum for working public servants (Van Wart, Holzer, & Kovacova, 1999). Although these distinctions provided conceptual boundaries for articulating what I was *not* referring to, at the start of the second cycle of software development a positive meaning of "public servant curriculum" was still vague.

With the advantage of an extensive examination of public institutions in the second phase of software development, I can now provide a positive definition of public servant curriculum. In the remainder of this chapter, public servant curriculum refers to a family of sociocultural practices occurring within non-school public institutions. This larger family includes public servant learning, public servant teaching, and public servant education. The term "public servant curriculum", as I use it, refers to the interests, concerns, and expertise of those who presently associate under the banner of education and curriculum studies, reassembled within the organizational hierarchies of non-school public institutions, with the restraint that the students or learners are public servants.

This definition means the reassemblage is not identical however. Strong dualisms distinguish public servant curriculum and public school curriculum as domains of sociocultural activity. Public schools are mandatory for all youth, whereas public servant curriculum is for select adults hired to work in public institutions. Another dualism is that public school curriculum should be oriented towards preparing students for meaningful participation in society, whereas

public servant curriculum, as far as I can tell, is largely oriented towards performance within public institutions[92].

Although there are dualisms between these domains of activity, there is also unity. Based on the nomenclature in the documents acquired in Chapters Seven and Eight (see also Electronic Appendices One to Eight), public servant curriculum and public school curriculum are part of the same family of cultural activities as both deal with issues related to ethics, knowledge, and learning. Public servant curriculum and public school curriculum are also unified in an important normative respect as both are normatively intended to serve the population as a whole.

9.2.2 Public Servant Curriculum: Endowed to Talk

The second cycle of software development was prompted by a glimmer of hope that public servant curriculum could participate in dismantling the inequities that impede school education, specifically history education. It is important to acknowledge that I have not presented an argument that public servant curriculum can actually achieve such a goal. The construction of any argument is a social achievement and so requires first establishing that we can *talk* in an empirically grounded way about public servant curriculum and its relations to the impediments schools face.

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[92] Some public servant curriculum pertains to retirement and in this regard is not about performance within public organizations. These courses and learning materials appear to be an incentive for recruiting employees.

This dissertation makes two contributions in this regard in two ways. First, Chapters Seven and Eight documented that public servant curriculum is operative in public institutions. Public servant curriculum is not a linguistic abstraction or figment of the imagination; it is something tangible in the world. It has buildings, students, teachers, course materials, registrars, evaluations, and so on. Second, Chapter Eight established that documents about public servant curriculum can easily and affordably be accessed through freedom of information legislation. We have a wealth of documents that we can use to talk about public servant curriculum.

Being able to talk is an achievement with important consequences. When we talk about something, we produce a social space where meanings are negotiated. As meanings change, so do associated networks of meaning and practices. This observation is important when we recognize that researching, writing, and reading about the relationships between public servant curriculum and schooling has not, as far as I could find, constituted an interpretative practice for curriculum and education scholars. As a result, established meanings and our understanding of the practices that construct them are ready for significant change to the degree that a plausible relationship between the goals of public school and public servant curriculum does or might exist.

9.2.3 Methodological Contribution

The second cycle of software development made a third contribution by documenting in narrative form the acquisition of records through Canada's freedom of information legislation, the Access to Information Act. Presently,

social researchers do not extensively use of freedom of information legislation as a means of supporting inquiry. Consequently opportunities to advance social knowledge are missed (Keen, 1992; Lee, 2001; Lee, 2005; Brown, 2009). Brown (2009) offers three reasons why social researchers are infrequent users of freedom of information legislation: (1) unfamiliarity with access entitlements and the procedures for exercising them, (2) perception that freedom of information is antagonistic and damages the prospects of future research opportunities involving voluntary forms of participation (e.g., interviews with public officials), and (3) cynical attitudes that governments will only obstruct the dispatch of contentious information.

To the degree that perception and attitudes are false and go unchallenged, current and future researchers will be debilitated in using freedom of information to make important contributions to social knowledge. It is worth noting that on its own, freedom of information legislation is not adversarial. It simply provides a statutory assurance of access to most records. That public servants would perceive an order for records made through freedom of information legislation as antagonistic is not obvious. A comment by a government official illustrates this point. India's Public Cause Research Foundation hosts an annual National Right to Information Awards ceremony. A government official who was nominated for an award is quoted as saying:

> I have always felt that [Right to Information Act] has come as a boon for the well-meaning bureaucrats. They are the bureaucrats who want to apply the law and resent any political interference. They now have RTI to mobilize social pressure against those who want to corrupt the system (PCRF, 2009).

Social research might benefit by questioning perceptions that freedom of information is a source of antagonism so as to make room for more optimistic perceptions, such as it being a source of synergy or philanthropy[93].

Attitudes that emphasize government unwillingness to dispatch contentious information may also debilitate social research. Although studies critical of government's resistance to access legislation substantiate these attitudes (Roberts, 2005, 2006a, 2006b; Rees, 2003, 2009), cynical conclusions drawn from these studies need to be tempered. These critical studies often use freedom of information as a means to gather information to conduct their studies, and so retain a modicum of hope for the efficacy of access legislation. Moreover, numerous examples of successes of freedom of information abound (Rubin, 1990; Campaign for Freedom of Information, 2007; Tromp, 2010b). Social research might make advancements if academics encouraged the channelling of cynical conclusions into refocused criticism.

To increase academics' knowledge about their access entitlements and the procedures for exercising them, researchers have suggested including freedom of information as a topic in research methods courses (Lee, 2001, 2005; Brown 2009). In the context of journalism education, numerous guidebooks describe important strategies for using for access legislation (Jobb, McKie, &

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[93] An alternative explanation as to why social researchers are infrequent user of freedom of information legislation is social conditioning. According to Fuller (1988), certain domains of inquiry are "forbidden research terrains"—"whole areas of possible investigation, which may be geographically, intellectually or institutionally defined, where social scientists are strongly discouraged from pursuing research" (1988, p.99). The psychological effects of the enforcement of these terrains may persist as a form of 'learned helplessness' even though researchers now have a means to access these interesting fields of inquiry.

Vallance-Jones, 2006; Brooke, 2007; Cuiller & Davis, 2010). Social researchers

provide condensed guides in scholarly articles (Keen, 1992; Lee, 2001, 2005;

Brown, 2009). These guidebooks and scholarly articles offer numerous insights

into freedom of information-based research drawn from extensive experience of

people use access legislation within their professional careers. However, it is

unclear how widely scholarly monographs or articles will be able to open the door

for education into freedom of information-based inquiry. Given that freedom of

information legislation is so new within our cultural history and that it attempts to

reverse a long-standing norm of non-access to state documents, we might

benefit from recognizing that our thinking about access legislation is likely in

need of remediation. Some education scholars have argued that narratives are

an important precursor to the formation of theoretical forms of thought (Egan,

1997). Therefore, narratives that tell engaging stories about freedom of

information-based inquiry might serve to educate academic researchers about

using freedom of information.

In this regard, Chapter Seven makes a contribution. "Recalled to Inquiry"

documents in narrative form numerous techniques and experiences in freedom of

information-based inquiry. As a result, "Recalled to Inquiry" gives a more vivid

portrayal of techniques used to access government documents than are provided

by the more austere descriptions provided in a scholarly form in journal articles

and monographs (Lee, 2001, 2005; Cribbs et al., 2006; Brookes, 2007; Brown,

2009; Cullier & Davis, 2010). For example, Cribbs, Jobb, Mckie, and Vallance-

Jones (2006) describe two broad approaches for writing disclosure orders.

'Fishing exhibitions' are orders that "are broader in scope and use open-ended language. They tend to request records about a particular subject using phrases such as: 'including, but not limited to, memos, reports, studies and briefing notes regarding…'" (2006, p.160). This approach can be found in Chapter Nine's "Recalled to Inquiry" with the order sent to the Bank of Canada which was searching for documents. The 'surgical approach,' in contrast, entails ordering specific documents (Cribbs et al., 2006, p.160). An example of this surgical approach is found in "Recalled to Inquiry" when I ordered specific documents from the Department of National Defence.

A strategy documented in the second cycle of software development is what I call 'FOI-chaining.' This strategy entails using documents referenced in one batch of dispatched documents in subsequent orders. The strategy of chaining disclosure orders is documented in Chapter Eight's third and fifth demonstrations. Beginning first with records of the required training from the Canada Public Service Agency, I chained together four disclosure orders that ended in the release of learning plans from the office of the Clerk of the Privy Council Office. 'FOI-chaining' may be an effective way of extracting more layers of documents than a single 'fishing expedition' or 'surgery' can achieve alone.

 "Recalled to Inquiry" also documented problems of delays and provided concrete strategies for dealing with them. To deal with delays, I used a communication logger to keep track of phone calls and email exchanged with

officials about the delays[94]. Although delays happen, they should not dissuade researchers from using their access entitlements. Almost all the documents released in the five demonstrations in Chapter Eight were released in approximately thirty-days.

Delays may be significant for journalists who are pressed against deadlines (Cribbs et al., 2006; Cuiller & Davis, 2010) but for social researchers delays may be less of an issue. In fact, delays may actually be a site from which to launch 'fishing expeditions' to determine the reason for the delays. For example, in Chapter Eight's third demonstration, an inexplicable delay prompted me to order internal documents pertaining to the handling of my first order. The fishing expedition returned almost 900 hundred pages of emails and documents. Amidst these pages was evidence of the 'contentious issue handling' procedure known as 'amber lighting' (Roberts, 2006a) and also references to a set of withheld reports on learning policies, which were subsequently ordered. These handling documents revealed a bureaucratic hive of activity spreading upwards within an organizational hierarchy and outwards across departments.

9.2.4 Computer-Assisted Freedom of Information-Based Inquiry

The second cycle of software development made an additional contribution by documenting the development of a category of technology I refer to as computer-assisted freedom of information-based inquiry (CAFII). As the

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[94] Public-interest researchers and journalists have also suggested the need to keep track of communications (Rubin, K., 1990, section 2; Cribb et al, 2006; Brooke, 2007, p.42; Cuiller & Davis, 2010, p.30).

name implies, CAFII refers to technologies that facilitate the use of freedom of information legislation. Open Government Records is not the only example of CAFII software. The marriage between freedom of information and computer technology is being explored in different ways around the world. In 2008, a United Kingdom charity group, MySociety, launched WhatDoTheyKnow.com. This website supports users to make freedom of information disclosure orders to approximately 3,700 government and public bodies in the United Kingdom. The texts of the disclosure orders, the responses by the public officials, and the disclosed documents are all posted online for public viewing. Launched in 2008, WhatDoTheyKnow.com has achieved considerable success. In 2009, over 15,000 orders were submitted through the site.

In Canada, the largest producer of computer technology to support the public's use of freedom of information has been the federal government. Unfortunately, the original intent of the government was not to support public use of the Access to Information Act. In 1990, Public Works and Government Services created the Coordinated Access to Information Request System (CAIRS). This technology allowed the government to monitor disclosure orders made to all federal departments (Roberts, DeWolfe, & Stack, 2001). The government did not enable a feature that would allow public access to the CAIRS database. CAIRS became a form of CAFII when access scholar Alasdair Roberts used the Access to Information Act to acquire the contents of the entire

CAIRS database, which he then posted in a searchable form online[95]. On April 1, 2008, the Canadian Government shut down CAIRS, much to the disappointment of journalists, parliamentarians, and public interest researchers who had made good use of it (Canadian Broadcast Corporation, 2008). CAFII is thus in a state of flux, both with significant accomplishments and significant struggles.

9.3 Future Contributions

It is orthodox to end a text of this nature with suggestions about future research and scholarly contributions. In this concluding section, I outline two related strands of inquiry. These two strands relate to what I believe to be the pressing question identified in this dissertation: how can public servant curriculum participate in dismantling inequities that impede schools from achieving their educational goals?

9.3.1 Surveying the Public Sector for Public Servant Curriculum

The design study has documented the existence of public servant curriculum and a method of accessing records about it. However, for research to proceed more thoughtfully, a more systematic profile of public servant curriculum is needed. This survey could be organized into multiple layers, including: national governments, aboriginal governments, provincial governments, municipal governments, and non-governmental public services. Each layer can be further divided into internal segments appropriate to that layer. For example, national

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[95] As of May 2010, the CAIRS database is hosted by CBC investigative journalist David McKie at http://http-server.carleton.ca/~dmckie/CAIRS.htm

and provincial governments can be segmented into executive, judicial, and legislative branches. This survey could locate forms of public servant curriculum within each layer or segment by collecting data about: (1) departments or offices that are responsible for staff learning, (2) legislation and policies that authorize and regulates it, (3) and employee categories that have access to it. This multi-layered, multi-segmented survey of the public sector could provide a profile helpful for facilitating research agendas about public servant curriculum. Given the size of the public sector, especially at the municipal level, appropriate sampling techniques would be needed.

In conducting such a survey, freedom of information-based research may be useful for achieving a high response rate. If data could be stated in the form of an order for documents[96], then public bodies would have a legal obligation to respond. However, depending on jurisdiction, access legislation may not be useful for surveying some branches of the public sector. For example, judicial and legislative branches of the Canadian Government are not governed by the Access to Information Act. In this case, other methods would be needed, such as traditional elicitation studies involving interviews or voluntary surveys, examining publicly available materials, or examining archival holdings. In some countries, such as the United Kingdom, however, the judicial and legislative branches of government are within the ambit of access legislation and so freedom of information-based methods could be used.

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[96] For example, "Send all policies that presently authorize learning for entry level employees."

A comprehensive survey of public servant curriculum is needed because of the massive size of the public sector. Although I have documented public servant curriculum largely in the executive branch of the Canadian Government, I have not surveyed public servant curriculum as a whole. If education and curriculum scholars are to inquire into public servant curriculum and how it impinges on the social and economic conditions in which schools pursue their goals, it is important to know "where it lives."

9.3.2 Teaching Public Servants to Use Freedom of Information

The second cycle of software development was motivated by a need for academic discussion about how public servant curriculum can participate in dismantling inequities that impede educational initiatives. Although I have demonstrated that freedom of information can acquire documents for facilitating discussion about public servant curriculum, to this point I have not proposed an answer. Proposing an answer risks over-simplifying an exceptionally complex and important problem of how to pursue equity amidst a multitude of human difference. But to defer to complexity as reason for not providing an answer risks perpetuating inequity. In the remainder of this chapter, I offer an answer as to how public servant curriculum might contribute to the production of greater equity.

As documented in Chapter Nine's "Recalled to Inquiry", I was sometimes frustrated when departments refused to send records. Frustration grew when I talked with employees who did not understand access legislation. Trying to understand what public employees knew, I would occasionally order learning

materials offered to employees at the department that taught them how to comply

with access legislation. When ordering these documents, I would often ask for

policies or learning materials instructing public servants in using freedom of

information as a means to improve services provided by their department. These

orders usually returned a package of materials containing policies and

instructional materials about procedures for compliance, and a cover letter

stating that they did not have policies or learning materials pertaining to

employees using access legislation as a means to improve public services. After

follow up phone calls or emails with officials, I concluded that public institutions

are not sites where freedom of information legislation is often used.

Another source of support of this conclusion is from the Treasury Board of

Canada Secretariat's Chief Information Officer, the position responsible for

information management policy within the Government of Canada. From this

branch, I ordered policies, reports, and research pertaining to public servants

using access legislation as a means to benefit public institutions. The response

from the Treasury Board of Canada Secretariat indicated they had no such

documents:

> The courts have clearly expressed the view that the 'basic principle
> of these statutes is to codify the right of public access to
> Government information.' Government of Canada institutions do not
> resort to using the Act to obtain information.

Although the Access to Information Act codifies the right of public access

to government information, I have found nothing that would indicate that a

department in the Government of Canada does not have recourse to the Act as a

means to access information within the Government of Canada. From the use of the word 'resort' in the above quote (and other interactions I have had with people about freedom of information), I conjecture that an attitude that freedom of information legislation is an extreme or undesirable course of action regulates how government officials perceive it. This attitude contributes to the inhibition of public institutions from perceiving themselves as users of such legislation.

This conjecture is supported with empirical evidence. In a recent ten-year period the Government of British Columbia received almost twenty thousand orders for general information through the provincial freedom of information legislation (BCMCS, 2010). Of these, almost 96% came from individuals, media, political parties, law firms, interest groups, and businesses. However, only 2.2% came from other from public bodies. These results suggest that public institutions in British Columbia are amongst the most infrequent users of freedom of information legislation.

Why does this matter? Public institutions engage in purposeful social action within fields of human difference. Given the complexity of human difference, I believe that the actions of our public institutions need to be evaluated not against a standard of general principles or accrued practical experience but a standard of flexibility capable of "taking the measure of difference in a way that does not suppress the truth of difference" (de Castell & Bryson, 1998, p.105). A metaphor for this standard of evaluation de Castell and Bryson provide is a measuring device, a ruler, used by the ancient builders on the island of Lesbos capable of "identifying and engaging irregularities in

307

surfaces that are not straight" (p.105). According to American philosopher Martha Nussbaum, "good deliberation, like the Lesbian Rule, accommodates itself to the shape that it finds, responsively and with respect to complexity" (1990, p.70).

But with a momentum of history producing thoughts that freedom of information is antagonistic, what is missed is the perception that before anything else, an order made through freedom of information legislation is a statement. It is a statement of commitment: a commitment to not negotiate for access to records one is entitled to access. This commitment means that freedom of information allows for the social action to bend around points of non-negotiation, points of diminishing communication. Around these fixed points social action can articulate. The more orders for records made through freedom of information, the more flexible social action is to social irregularities. This suggestion does not mean that the advance of non-negotiation is accompanied with austere silence. Rather, it suggests communication occurs around accessing information the state retains discretion in disclosing rather than what the state must disclose.

What might happen when public institutions engage in purposeful social action within fields of human difference without using freedom of information legislation, without advancing into non-negotiation? I contend that in this case a public institution loses flexibility. It finds itself using more public resources, communicating more, and negotiating more to secure what it is already entitled to access. In so doing, a public institution loses points around which it could otherwise bend in response to irregularities of human difference without suppressing the truth of difference.

While freedom of information continues to be interpreted as antagonistic, it is difficult to imagine our public institutions using access rights. If, however, freedom of information comes to be viewed as necessary for our public institution to make public commitments and pursue public goals, it is easier to imagine our public institutions as sites where freedom of information is routinely used to set points around which flexible social action bends. What sort of public servant curriculum might be able to support the production of equity? The proposal here is for education and curriculum inquiry to understand public servant curriculum as a site for learning about the practical application of freedom of information legislation. In this regard, public servant curriculum becomes a site where our public servants learn to use freedom of information legislation as a means to acquire information from their own and other departments, to learn to write freedom of information policies and implement programs based on commitments, on points of advancing non-negotiation needed to pursue public goals. This proposal is a call for a radical renewal of the state, grounded in the norms of access already available.

9.3.3 Future Research Directions

Although I have claimed there appears to be a norm that public institutions comply with but do not use freedom of information legislation, there are exceptions. As indicated earlier, statistics reveal that public institutions in British Columbia are amongst the most infrequent users of freedom of information legislation. It is towards these handfuls of exceptions that I would direct the attention of education and curriculum studies. What public bodies have been

using their access entitlements? What documents have they been ordering? What have been their rationales for using freedom of information legislation? How were the decisions made to use it? And what had they learned such that they could understand themselves as capable of using it?

Representatives from those public organizations could be contacted for interviews. Case studies could be prepared. As public institutions are the focus of this inquiry, freedom of information legislation could be used to these ends. What lessons could be derived from these cases to prepare a public servant curriculum that teaches public servants how to use freedom of information? Encouraging the use of freedom of information legislation amongst public bodies might be an important step in setting conditions favourable to public schooling.

What might this dissertation suggest as future directions for those who pursue the study of history education? Scholars of history education interested in studying Collective Memory might be inclined to use freedom of information legislation to document how governments participate in constructing collective memories through such means as official state memorial ceremonies; those who endorse Disciplinary Thinking history might be inclined to use freedom of information legislation to find novel ways to document for students what funding agencies consider to be historically significant; and those who endorse a Making History approach might be inclined to use access legislation to document how historians pursue historical inquiry in settings such as public universities, public libraries, or public archives.

These directions, however, are not ones that I endorse. In my view, educational agendas that are derived from the practices of inequitable communities are questionable for schools to pursue. Rather, I endorse a direction in which researchers and educators sacrifice some of the time they would spend talking in the usual ways about education, and instead start discussing how public servant curriculum can help bring about conditions more favourable for schools to achieve their educational objectives. While sacrificing usual ways of talking so as to bring life to new ways of discussing may initially be uncomfortable, it might well be a far, far better thing that we do than we have ever done.

APPENDICES

Appendix 1. Student & Faculty Intellectual Property Agreement

With reference to Simon Fraser University's Intellectual Property Policy R30.03 (July 22, 2004), I, Kevin O'Neill, agree that pursuant of any relevant law pertaining to the ownership of intellectual property, Mark Weiler is the sole inventor or author, as the case may be, of the technology described in this dissertation.

_____

Faculty Signature

_____

Date

_____

Student Signature

_____

Date

Appendix 2.
Departmental Success in Required Training

Departments in the Canadian federal government where 100% of the managers and executives who enrolled in Authority Delegation Training required training passed (year 2006/2007).

1. Atlantic Canada Opportunities Agency
2. Canada School of Public Service
3. Canadian Artists and Producers Professional Relations Tribunal
4. Canadian Dairy Commission
5. Canadian Environmental Assessment Agency
6. Canadian Forces Grievance Board
7. Canadian Grain Commission
8. Canadian Human Rights Commission
9. Canadian Human Rights Tribunal
10. Canadian Industrial Relations Board
11. Canadian Radio-Television and Telecommunications Commission
12. Canadian Transportation Accident Investigation and Safety Board
13. Copyright Board
14. Correctional Service of Canada
15. Department of Citizenship and Immigration
16. Department of Public Safety and Emergency Preparedness
17. Economic Development Agency of Canada for the Regions of Quebec
18. Hazardous Materials Information Review Commission
19. Military Police Complaints Commission
20. NAFTA Secretariat - Canadian Section
21. National Parole Board
22. Office of Infrastructure of Canada
23. Office of the Chief Electoral Officer; Elections Canada
24. Office of the Commissioner for Federal Judicial Affairs
25. Office of the Commissioner of Official Languages
26. Office of the Governor General's Secretary
27. Office of the Registrar of Lobbyists
28. Registry of the Competition Tribunal
29. Royal Canadian Mounted Police External Review Committee
30. Royal Canadian Mounted Police Public Complaint Commission
31. Supreme Court of Canada

Appendix 3.
Access to Information and Privacy Disclosure Order Intake Log

The Canada Public Service Agency's Access to Information and Privacy intake log indicating that the disclosure

order for required training was giving a visibility level of "Sensitive" (see bottom row).

A-2008-00009	A list of the names of persons who have accepted an offer of employment or commenced work as an incumbent in a term or casual position with this institution in the NCR during the month indicated below. …. February 2008	Business	Routine	New	HR Management & Administrative Services	May 08/08		Jun 09/08
A-2008-00008	A list of the names of persons who have accepted an offer of employment or commenced work as an incumbent in a term or casual position with this institution in the NCR during the month indicated below. …. April 2008	Business	Routine	New	HR Management & Administrative Services	May 06/08		Jun 05/08
A-2008-00007	Requesting a list of call-ups issued to Canada Public Service Agency against the Standing Offer for Temporary Help Services in the National Capital Region for the month of March 2008. Also a list of the names of persons who have accepted an offer of employment or commenced work as an incumbent in a term or casual position during the month of March 2008	Business	Routine	New	HR Management & Administrative Services	May 06/08		Jun 05/08
AC-2008-00006	Requesting all briefing notes that provide an overview of the Federal Accountability Act implementation strategy and its timelines as well as all documents describing the FedAA communications plan, from Dec. 12, 2006 to the present.	Federal Institution	Routine	Ongoing	**Final Release being reviewed.**	Apr. 24/08		May 12/08
P-2008-00005	I would like a copy of my correspondence of Jan 4, 2006 that was answered by Michelle Chartrand on April 18, 2006. My letter was again discussed in a response by Monique Boudrias on July 27, 2006. Please send a copy of my correspondence as an attachment to my email.	Public	Sensitive	Closed	**Final Response was sent to the applicant.**	Apr.23/08		May 23/08
A-2008-00003	I seek all Callups under the terms of the RMSO for HR Support Services in the NCR for Services provided in the NCR during the period indicated below: Jan, Feb, March 2008	Business	Routine	Closed	**Final Response was sent to the Business**	Apr. 11/08		May 15/08
A-2008-00002	Please provide the number of employee, both full time & consultants if possible, for each federal department by region, or ideally by city.	Business	Routine	Closed	**Abandoned**	Apr. 10/08		May 12/08
A-2007-00056	… with reference to the Directive on the Administration of Required Training, please send me the 2006/2007 Annual Reports on Required Training for each of the core public administration…	Public	Sensitive	Ongoing	Leadership & Talent Management Sector **Interim Release being reviewed.**	Feb.05/08	60	Apr.07/08

892

Columns were labelled: Request, Subject, Source, Visibility, Status, Status Description, Date Received, Days Extended, and Statutory Deadline (Released under Access to Information Act [A-2008-00019]; 892 in the lower right hand corner is the page number in the release package).

ELECTRONIC APPENDICES:

The electronic appendices can be access in two ways:

1)   Through the Digital Video Disc (DVD) attached to the printed version of this dissertation at the Simon Fraser University library contains.

2)   Through the Institutional Repository (IR) at the Simon Fraser University library. The files listed in the following appendices can likely be downloaded from:

         http://www.lib.sfu.ca

         http://ir.lib.sfu.ca/handle/1892/112

         http://ir.lib.sfu.ca

Both the DVD and the files in the Institutional Repository form a part of this work.

As of the date of the approval of this dissertation, the PDF (.pdf) files can be opened with most PDF viewing applications; the MPEG-4 files (.mp4, .mv4) can be watched with most video playing software applications, and the JPG files (.jpg) can be viewed with most software capable of rendering images.

Electronic Appendix 1.
Canada School of Public Service—Collection One

The electronic file listed here contains: Canada School of Public Service by-laws, organizational chart (October 1, 20007), teaching/research/professional service contracts (June 1 to July 1 for fiscal year 2005/2006), and minutes from the Board of Governors meeting (2005/2006). The Canada School of Public Service dispatched these documents in response to an order issued through the Access to Information Act.

The file can be found in ETD6098_MWeiler_ElectronicAppendices_1-2.zip. Instructions for accessing the documents can be found in the introduction to the electronic appendices section above.

File Name	File Type	File Size
ETD6098_MWeiler_ElectronicAppendix1.pdf	PDF	12.7 MB

The files in the electronic file were created by the Canada School of Public Service and have been reproduced with permission from the Canada School of Public Service and the Minister of Public Works and Government Services Canada, 2010.

Electronic Appendix 2.
Canada School of Public Service—Collection Two

The electronic file listed here contains: the Di*rex*ion Evaluation Results for

Phase One 2007-2008, Canada School of Public Service Course Calendar 2007-

2008, and "Transforming the Public Service Through Learning" (submission to

the Board of Governors Meeting, December 12, 2005). The Canada School of

Public Service dispatched these documents in response to orders issued through

the Access to Information Act

The file can be found in ETD6098_MWeiler_ElectronicAppendices_1-

2.zip. Instructions for accessing the documents can be found in the introduction

to the electronic appendices section above.

File Name	File Type	File Size
ETD6098_MWeiler_ElectronicAppendix2.pdf	PDF	7.0 MB

Direxion Evaluation Results for Phase One 2007-2008 (Cohort A-I). (2008). Canada School of Public Service, 2008. Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2009.

Canada School of Public Service Course Calendar. (2007). Canada School of Public Service. reproduced here with the permission of the Canada School of Public Service and the Minister of Public Works and Government Services, 2010.

Transforming the Public Service Through Learning. (2005). Canada School of Public Service. reproduced here with the permission of the Canada School of Public Service and the Minister of Public Works and Government Services, 2010.

Electronic Appendix 3.
Canada School of Public Service—Promotional Videos

The electronic files listed here are promotional videos produce by the

Canada School of Public Service. The Canada School of Public Service

dispatched these videos in response to an order issued through the Access to

Information Act

The file can be found in ETD6098_MWeiler_ElectronicAppendix_3.zip.

Instructions for accessing the documents can be found in the introduction to the

electronic appendices section above.

File Name	File Type	File Size
ETD6098_MWeiler_ElectronicAppendix3_Eng.mp4	MPEG-4	10.0 MB
ETD6098_MWeiler_ElectronicAppendix3_Fra.mp4	MPEG-4	9.8 MB

Canada School of Public Service Promotional Video (English), Canada School of Public Service, 2009. Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2009.

Canada School of Public Service Promotional Video (French), Canada School of Public Service, 2009. The reproduction of this video is in compliance with Crown Copyright and Licensing of Public Works and Government Services Canada's announcement "Changes to reproduction restrictions for personal or non-commercial purposes." The reproduction is a copy of an official work by the Government of Canada and has not been produced in affiliation with, or with the endorsement of the Government of Canada.

Electronic Appendix 4.
BC Public Service Agency—Ministry of Education Enrolments

The electronic file listed here contains enrolment statistics of employees of the BC Ministry of Education in courses offered by the BC Public Service Agency. The BC Public Service Agency dispatched these documents in response to an order made through British Columbia's Freedom of Information and Protection of Privacy Act.

The file can be found in ETD6098_MWeiler_ElectronicAppendices_4-6.zip. Instructions for accessing the documents can be found in the introduction to the electronic appendices section above.

File Name	File Type	File Size
ETD6098_MWeiler_ElectronicAppendix4.pdf	PDF	0.6 MB

Electronic Appendix 5.
Department of National Defence—Disclosed Records

The electronic file listed here contains documents regarding peacekeeping training programs delivered by the Land Force Central Area between January 1, 1992 and December 13, 1993.   The Department of National Defence dispatched these records in response to order issued through the Access to Information Act

The file can be found in ETD6098_MWeiler_ElectronicAppendices_4-6.zip. Instructions for accessing the documents can be found in the introduction to the electronic appendices section above.

File Name	File Type	File Size
ETD6098_MWeiler_ElectronicAppendix5.pdf	PDF	5.5 MB

National Defence. Reproduced with the permission of the Minister of Public Works and Government Services, 2010.

Electronic Appendix 6.
National School of Government (UK)—Images and Layout of
Sunningdale Campus

The electronic file listed here contains images and campus map of the

Sunningdale Campus of the National School of Government in the United

Kingdom. These files were acquired through the United Kingdom's Freedom of

Information Act 2000 (no file number).

The file can be found in ETD6098_MWeiler_ElectronicAppendices_4-

6.zip. Instructions for accessing the documents can be found in the introduction

to the electronic appendices section above.

File Name	File Type	File Size
ETD6098_MWeiler_ElectronicAppendix6.pdf	PDF	8.5 MB

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Electronic Appendix 7.
Canada Public Service Agency—Results of Required Training and Learning Policies

The electronic file listed here contains 2006/2007 reports of the results of required training as well as status reports on learning, training, and development policies. As was required by the Treasury Board of Canada Secretariat's Directive on the Administration of Required Training, departments in the core administration of the Government of Canada submitted these reports to the Canada Public Service Agency. The Canada Public Service Agency dispatched these documents in response to an order issued through the Access to Information Act (A-2008-00048).

The file can be found in ETD6098_MWeiler_ElectronicAppendix_7.zip. Instructions for accessing the documents can be found in the introduction to the electronic appendices section above.

File Name	File Type	File Size
ETD6098_MWeiler_ElectronicAppendix7.pdf	PDF	23.6 MB

The HR Reporting Portal-Policy on Learning, Training, and Development, Pages 1-337. Reproduced with the permission of the Minister of Public Works and Government Services Canada, 2009.

Electronic Appendix 8.
Privy Council Office of Canada—Learning Policies, Appraisals, and Plans

The electronic file listed here contains Privy Council Office's learning, training, and development policy, learning framework, a report on submitted learning plans, and learning plans completed by eight staff in the Office of the Clerk of the Privy Council and Secretary to the Cabinet. The Privy Council Office dispatched these documents in response to two orders made through the Access to Information Act (135-2-A-2008-00495, 135-2-A-2008-00562).

The file can be found in ETD6098_MWeiler_ElectronicAppendices_8-10.zip. Instructions for accessing the documents can be found in the introduction to the electronic appendices section above.

File Name	File Type	File Size
ETD6098_MWeiler_ElectronicAppendix8.pdf	PDF	8.9 MB

Learning Framework 2007-2009, List of Learning Plans & Performance Appraisals 2007, Learning and Development Policy 2007. Reproduced with the permission of the Minister of Public Works and Government Services, 2009, and Courtesy of the Privy Council Office.

Privy Council Office Learning Plans 2008, Reproduced with the permission of the Minister of Public Works and Government Services, 2009, and Courtesy of the Privy Council Office.

Electronic Appendix 9.
Bank of Canada—Learning Materials

The electronic file listed here contains Bank of Canada learning materials. The Bank of Canada dispatched these documents in response to an order made through the Access to Information Act.

The file can be found in ETD6098_MWeiler_ElectronicAppendices_8-10.zip. Instructions for accessing the documents can be found in the introduction to the electronic appendices section above.

File Name	File Type	File Size
ETD6098_MWeiler_ElectronicAppendix9.pdf	PDF	2.1 MB

Bank of Canada Documents, Reproduced with the permission of the Bank of Canada and the Minister of Public Works and Government Services, 2010.

Electronic Appendix 10.
Canada School of Public Service—Media Lines

The electronic file listed here contains media lines prepared by the

Canada School of Public Service. The Canada School dispatched this document

in response to an order made through the Access to Information Act.

The file can be found in ETD6098_MWeiler_ElectronicAppendices_8-

10.zip. Instructions for accessing the documents can be found in the introduction

to the electronic appendices section above.

File Name	File Type	File Size
ETD6098_MWeiler_ElectronicAppendix10.pdf	PDF	0.7 MB

Canada School of Public Service (2008) "Media Lines – New Model for Language Training." The reproduction of this document is in compliance with Crown Copyright and Licensing of Public Works and Government Services Canada's announcement "Changes to reproduction restrictions for personal or non-commercial purposes." The reproduction is a copy of an official work by the Government of Canada and has not been produced in affiliation with, or with the endorsement of the Government of Canada.

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