SHARED RESPONSIBILITIES OF TEACHERS AND MENTORS IN A CURRICULUM-BASED TELEMENTORING PROJECT IN THE HUMANITIES

by

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ABSTRACT

This thesis explores issues and questions relating to the teacher's enabling role in a technology-based innovation called telementoring. Data originated from a SSHRC-funded research project entitled Tracking Canada's Past (TCP). In 2001 - 2002, a pilot project was conducted in two British Columbia schools to investigate the application of telementoring to high school Social Studies curriculum. The initiative, facilitated through the use of web-based groupware, brought grade 10 students, teachers and adult volunteers together in a geographically distributed learning community that pursued a variety of research projects related to the Canadian Pacific Railway. This study uses a combination of questionnaires, interviews, and automatically generated records of students' and mentors' online activity to investigate how teachers may contribute to the development of successful on-line mentoring relationships. Two case narratives illuminate the kinds of facilitation that teachers can do to foster productive telementoring relationships and a sustainable mentor pool.

DEDICATION

Before I was myself you made me. With love and patience, discipline and
tears Then bit by bit stepped back to set me free. I am who I am
because of thee

ɔ꙰ Nicholas Gordon

To my mother and father, my first teachers without whose love, encouragement and
guidance I would not be where I am today.

ACKNOWLEDGEMENTS

> We are often caught up in our destination that we forget to appreciate
> the journey, especially the goodness of the people we meet on the way.
> Appreciation is a wonderful feeling, don't overlook it.
> ❧ Author Unknown

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To my friends, new and old, I am grateful for the emotional support and encouragement you provided on this journey. Your sympathetic ears carried me through the most challenging times of completing my thesis. Our many trips to Tim Horton's will always be remembered. Thank you to my colleagues at work, without whose assistance the challenge of teaching full time and being a full-time student would have proved impossible.

I would like to thank my cousin Grace and the Peterson family for allowing me to retreat to the peacefulness of Quesnel, and giving me the opportunity to experience the pleasures of "country life"...including the bears! I especially want to thank my best friend, Wendy, for buying her house at just the right time when I needed a quiet place to complete my thesis. Thank you for persuading me not to give up.

Finally, to my immediate family, my parents, Winifred and Philip and my siblings, Alan, Arlene and Alison, thank you for your support and encouragement. Your continued love and understanding remind me of the words of Amelia Earhart:

> The more one does and sees and feels, the more one is able to do, and
> the more genuine may be one's appreciation of fundamental things like
> home, and love, and understanding companionship.
> ❧ Amelia Earhart

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CHAPTER 1.

A PEEK AT TELEMENTORING IN THE LIFE OF A CLASSROOM

Though short, the following chapter is designed to present the reader
with a glimpse at telementoring, or on-line mentoring, and how it unfolds
in the lives of teachers and students in a typical high school class. The
following narrative is intended to provide a basic understanding of what
telementoring entails, as well as to provide the reader with some
background information regarding Tracking Canada's Past (TCP) a
curriculum project that provides the context for this study. Readers
should note that while the dialogue between mentor and mentee is real,
details regarding classroom events and other characters are based in
large part on the shared experiences of research team members and
experiences of the author, while engaged as a researcher-participant in
TCP. In all cases the names of participants have been changed to
preserve anonymity.

(In the staffroom, days before the TCP project is set to begin)

"I notice you only have 3 computers in the classroom", states Dr. Sitt. "I'm wondering
how..."

"Oh yes, that is not a problem. We often work in small groups on the computers.
Students take turns during the assigned time for computer use. They also have the
opportunity to work on the computers if they have completed their other subject work.
Of course, we also have a computer lab in the school with enough computers for
everyone", Mr. Sanderson says.

"That's great, sounds like we have everything set then. Do you have any more
questions? The professor pauses. "Well, of course you know where to reach me if you,
or the students, have any questions." They both take a moment to gather up their
materials.

"Shall we head to the class then?" asks Mr. Sanderson. "Lead the way", replies Dr. Sitt. "Alright class", says the teacher. "As promised, today we are going to begin that project. We have with us Professor Sitt. She will explain the details to you...professor."

"Good morning, everyone. Each of you has chosen to research one aspect of the building of the Canadian Pacific Railway. Your teacher has shown you the video we sent her....Right?" Blank faces stare back at the professor. One outspoken young lady yells, "No! I didn't see no movie." The boy behind her retorts, "You were probably skipping class that day". His comment earns him a stern stare from the young girl. The professor glances at the teacher for approval; Mr. Sanderson grins and nods. "Our research team", continues the professor "has grouped you with other students who have a similar interest to yours but may live across the country. Each of you has been assigned an on-line mentor, or as we call them telementors, to help you research your topic. You will post messages in the data base telling the mentor what work you have accomplished thus far, and ask for any guidance you think you may need. The mentor will post a response to your notes and so on." The professor pauses to take any questions, then continues to boot up one of the computers in the classroom.

"Okay...where were we...Yes, the project is about the building of the railway in Canada and....oh, oh, oh...I almost forgot....Remember," cautions Professor Sitt, "this mentor is not there to give you all the answers but offer advice and guidance about how to approach the questions. Some mentors have worked for the CPR, others are teachers, and still others have quite a bit of experience working with primary resources and doing the work historians typically do." The professor pauses momentarily until she is sure she has regained everyone's attention. A young boy at the back of the classroom grudgingly raises his hand. "Yes", acknowledges the professor. "What's the point of writing to this person if they can't give us the answers?" says the boy. A small group of students quickly cheer the boy for asking the daring question. Embarrassed, the teacher half smiles, and draws a pen from within the desk drawer, desperately trying to look busy.

"Each of our mentors", began Professor Sitt, "has been selected to participate in this project because they have something valuable to share with you about the work of historians. In some ways this is like carrying on a conversation with the mentor. I know many of you are familiar with chat rooms and MSN Messenger. Well, this is similar but you can see the messages others post and you can also see who reads your messages. So in that respect it is not like the private e-mail you may be used to." She pauses briefly, looking at the faces before her. The answer appears to have satisfied the young man's curiosity— or at least, it has left him to reflectively consider how some complete stranger, a faceless entity, could possibly help him pass Grade 10 Social Studies.

A young lady at the back of the room raises her hand. "Yes", says Dr. Sitt. "I don't understand what "milestone" assignments are. Can you explain it?" The professor nods her head. "Good question. The milestone assignments, and there are five, are a series of assignments meant to help you 'do history' in a way that parallels how historians work. Each assignment leads into the next, so you wind up writing a well-researched historical narrative piece by piece. What you will wind up with in the end is quite different from typical research assignments in social studies, which merely ask you to summarize what others have written. You will actually write a piece of history yourself – about people and places near where you live, that are interesting to *you*, as opposed to just what the textbook authors found interesting." The professor pauses, allowing the students to digest what she has just said. "Well" she says. "I hope that answers the question. If there are no more questions then maybe we should login." No one says a word. They sit on the edge of their seats, anxious to find out what Tracking Canada's Past (TCP) is all about....or perhaps, they are just eager to log on to the computers.

"I think you will understand more about the project once you get started with the software, Knowledge Forum", adds professor Sitt. The inquisitive young man and his friends spring from their seats to the neatly organized computers at the back of the classroom. One young boy attempts to check his e-mail but is promptly redirected by his teacher to log in to the TCP database.

"Okay" says Dr. Sitt. "The first step is to login with the password we set for you. Once you have entered the assigned view, much like the chat room so many of you are familiar with,....Oh...I guess I should say more about the Views. You may remember from the video that there are several views or assigned spaces created for the groups you have been placed in. For example, if you are investigating how the telegraph relates to the building of the CPR, then you are working within the Communications View. First you should read your mentor's bio. He or she has posted it in the assigned view. Once you have read this, you should post your first note introducing yourself to your mentor. Post all your notes in your assigned view. You may choose to tell your mentor a little bit about yourself – your likes, dislikes, hobbies...your favourite subject...that sort of thing. The most important thing is to tell your mentor what it is you would like to research. Okay. Are there any questions?" No one raises their hand.

Jennifer logs in and is welcomed by the message on the Welcome Page:

> Welcome to the Tracking Canada's Past community! I'm excited to have all of you involved with the project this year. As you may have figured out already, the title of the project carries a double meaning. The most obvious one relates to the many influences between the Canadian Pacific Railway and all the Canadian communities it touches. These influences have taken and continue to take many forms.
>
> Less obviously, the word "tracking" suggests the idea of following clues or hints, they way a bloodhound tracks a scent. In keeping with this sense, a central goal of the project is to involve teachers, students and a variety of knowledgeable adults in doing the "detective work" of history together. While we explore the connections among our communities and the CPR, we will also develop deeper understanding of the nature of historical evidence and of story telling in history. In other words, we will learn in new ways what it means to "do history".
>
> I'm glad to be on board with you all this year. Thanks for participating.

At another computer, Wendy is posting her first message to her mentor. She entitles it, *Intro to my Mentor Tim Bud*.

Hey Tim

My name is Wendy, and I attend Riverside Secondary School. I am
privileged to know that you are my mentor because my teacher has told
me that you know a lot about my topic. My topic is Building the Railway
(building the track, the bridges, and tunnels.) I have some information
but I believe you can help me narrow down the more important
information. I am interested in this topic I want to become a Civil
Engineer after high school, and I thought I could get an early view of
what I am getting into. My questions are why did they lay the tracks
where they lay now? And what material did they use to lay the tracks? I
look forward to hearing from you.

Wendy

Wendy briefly reflects upon what she has written then closes and sends the note. Over
the course of the next week she checks in regularly to see if her mentor has responded.
Mr. Sanderson does not set aside time for the project on a daily basis, so Wendy often
checks the database from home or when she has spare time at school.

[Days later...and at the other end of the country...]

Sitting down to his computer, shortly after his son has gone to bed, Tim logs in to
Knowledge Forum. He reads several messages posted by the mentees in his charge then
responds to each one. When he has finished, he logs off the computer and heads to
bed.

[On the other side of the country...Six days after her initial posting]

Delighted Wendy anxiously opens the message from her mentor. The look on her face
reflects mixed emotions. Wendy is elated, since some of her peers have received no
response from their mentors yet. Others received short notes with what *they* considered
very little useful information. Wendy begins reading the message.

Hi Wendy

My area of knowledge is more on the Western side of the CPR, so these
are more generalities than facts that fit the entire country.

For your first question, you may have to switch majors to Political Science as politics and speculation were the biggest influences on where the tracks were laid. If CPR could not own the land around the track, they went somewhere they could. The 1879 Order in Council that created the CPR stipulated the first navigable tidal waters as the Western Terminus. Lots thought it would be New Westminster because it had been the Capital of the Mainland. Some thought it would be Victoria (island hop from the Mainland near Bella Bella to the North end of Vancouver Island) as it was now the Capital of the Province of BC. Others thought it would be Port Moody....

One civil engineering decision that came from another political decision for the Terminus was to cross the Fraser River (to get to Port Moody you had to cross the Fraser somewhere so may as well cross where the river is narrow).

For your second question:
As much local material as possible were used such as aggregate for the roadbed or timber for trestles and ties. I don't know if they had a preferred species of tree to make ties but I believe they were untreated. You should research 'creosote' as when it was developed. At the Western Terminus they also had trouble with saltwater worms that bored into wood, destroying its structural strength. For the rails on the Western end, track were shipped from Wales and brought to Port Moody. (An engine was also shipped in to help with the construction.) Track size is identified in mass per three-foot length. (Rails were 39 feet long so you can figure out how many men would be needed to carry one rail) I've heard figures from 35 to 65 pound rail were used for initial construction. At the Museum, I have some 1935 Algoma rails that is 85 pound. I understand the ribbon rail used today is 125 pound, so as loads went up so had to the size of the track.

As for the spacing between the tracks, Standard Gauge is based on the width of two horses.

Hope this gives you some ideas and I hope this 'builds-on as well'.

Regards
Tim

Wendy is pleased by her mentor's response, but at the same time she feels a little overwhelmed by the amount of text and information offered. She knows about B.C. from Geography class but recognizes few of the other names her mentor mentions. Her sense of confusion may explain why 11 days later, Tim has not heard back from his mentee.

He becomes concerned and follows up with a brief message entitled, *How are you doing, Wendy?*

> Hope your project is going OK.
>
> I responded earlier to this note but have had a few difficulties. Did you see the response?
>
> Hope all is well
> Tim

Two weeks pass before Wendy posts a message entitled Milestone 4. Mr. Sanderson has set aside class time to complete the task. Wendy does what she can to complete the assignment; completing the milestone is worth 4 marks. The tone of her message, however, suggests the upcoming due date is weighing on her mind.[1]

> a. *descriptive title. (Though it comes first, you probably want to write this last.)* The title I have chosen to name my paper is "CPR Tracks"
>
> b. *A well-written definition of your topic helps your reader to understand what you are interested in, and why....you should have narrowed down your topic considerably from the one you chose in Assignment #1. ....*I am interested in where the tracks of the CPR were laid and why they were laid there. I wanted to know why the tracks were laid where they are because I found it most interesting to know where the tracks were laid.
>
> ...
>
> f. *An explanation of how you intend to produce answer your questions using the sources you have found, or intend to find (your "methodology").* I will attempt to go back to the library and find some more information I need to work extra hard seeing the fact barely

---

[1]   The bold italicized text denotes the milestone guidelines.

nothing has been included. It would be great for me if I was to get help
and spend some extra time on this project

In her message, Wendy provides the Milestone guidelines for Tim and simply inserts her information after the guidelines. Though she never clearly states what she wants from her mentor, her closing remarks convey her cry for help.

[Days before the final project is due. In Mr. Sanderson's classroom]

"Alright everyone, this is the last time I have set aside for you to correspond with your mentor. You should have been maintaining contact with your mentor at home as well. Use your time wisely."

"Excuse me, Mr. Sanderson." Wendy sheepishly says. I didn't really get much feedback from my mentor. I sent a message outlining my work for Milestone 4 but he didn't tell me what to write about."

"So what are your choices now?" asked Mr. Sanderson. "Let's look at what information you did get from your mentor." Wendy sits down in front of the computer with Mr. Sanderson. Other students focus intently on their screen, actively gathering information from the notes of their mentors, as if they have just discovered a gold mine.

> The above conversation between Wendy and Tim is by no means complete. The narrative is intended to provide only a glimpse of how a telementoring relationship may unfold, and the challenges it faces, amid the confusion and conflicting priorities of a secondary Social Studies classroom. It should be noted that though brief, the conversation reveals the role of the mentor and hints at opportunities for the teacher to play a constructive role in facilitating a meaningful exchange. Wendy's relationship with her mentor is characteristic of many on-line mentoring relationships, where students ask for assistance as needed, often times waiting until due dates are fast approaching before seeking help. Nonetheless, it should be noted that some students, unlike Wendy, maintain an ongoing relationship with their mentor. In chapters 5 and 6, I will analyze and compare successful and derailed relationships, and their implications for the work of teachers hoping to enrich their students' experiences through telementoring.

CHAPTER 2.

RATIONALE, RESEARCH OBJECTIVES AND RESEARCH QUESTIONS

2.1. Introduction

While some schools hesitate to invest large amounts of money in computer technology without a strong indication that students will learn better as a direct result, many do make the investment (Fuchs & Woessmann, 2004). This hesitance is compounded by teachers' reluctance to use technology (Cuban, 2001). Yet as the Internet takes up residence in our offices, homes and schools, the prerogative to view technology as optional no longer exists. As citizens we need only reflect on our daily schedule, from the moment our alarm clock sounds to the time we log out of our e-mail account, or the instant we shut off the television before bed, to see how technology permeates our daily lives. Recent curriculum changes in Ontario illustrate how the infiltration of technology has become central to preparing youth for a world saturated with technology. Information Technology courses prepare students for an existence that relies increasingly on a rapidly changing electronic technology. In addition, projects funded under the Technology Incentive Partnership Programme include Literacy for the New Millennium (Ontario Ministry of Education, 1997, Projects funded under the Technology Incentive Program, ¶. 1), a technology-based literacy programme aiming to show literacy development takes place at any age; and Towards 2000: Celebrating Literacy and Technology, (Ontario Ministry of Education, 1997, Projects funded under the Technology Incentive Program, ¶ 10) a comprehensive programme established to introduce staff, students and parents to the potential for learning using electronic mail

and the Internet. Through TV Ontario's E-Learning Division, the province-wide public education broadcaster is providing technology-based training programmes that were previously only available in classrooms or workplaces. These programmes are developed with employers, industry organizations, unions, and educators. The flexible learning system accommodates adult learners' work schedules and family responsibilities, encouraging the realization of lifelong learning. These are only a few of the initiatives directed to changing the face of the classroom and thus the ways in which educators teach. It is important, therefore, to examine the impact and design of technology as it is increasingly employed in all curricula.

2.2. Rationale

Since most studies regarding the implementation and integration of on-line mentoring are conducted in Science classrooms (O'Neill, 2001c), one important motivation for this study is to explore the possibility of developing and sustaining on-line mentoring relations in Humanities classrooms. In particular, this study addresses the roles of teachers in ensuring positive experiences for participants in telementoring relationships. The term Humanities typically includes the disciplines of Social Studies and English. Though this study focuses on a curriculum-based telementoring project in Social Studies, the potential roles for teachers and mentors may relate to telementoring projects in English classrooms as well, or any curriculum-based telementoring project for that matter. The shared responsibilities for teachers and mentors discussed in this study are based on the data from two Social Studies 10 classes in British Columbia.

One specific focus of this research is the connection between teaching methods already employed by classroom teachers and a larger inquiry based on-line project designed to develop historical reasoning skills and bring students to a deeper understanding of the nature of historical knowledge. Interviewing the participants in the Tracking Canada's Past project, analyzing the correspondence between all parties involved (in particular, on-line computer-mediated forums), and exploring more about the context in which the

students, telementors and teachers work, illuminates the roles of adults in on-line mentoring relationships. This study draws from interviews with telementors, students and teachers regarding their attitudes toward and experiences of on-line mentoring relationships in Humanities classrooms.

2.3. Research Goals and Questions

For many years, knowledgeable adults have assisted schools in educating students. Adult participation includes such activities as conducting in-school presentations for students, meeting students through field trips, and leading presentations on career days (O'Neill & Harris, 2004; Harris et al. 1996). Another traditional volunteer activity in education is mentoring. In the context of K-12 schools, mentoring involves a relationship between a student and an older, more experienced person on a regular basis over an extended period of time (O'Neill, 2001a). The objective of the relationship usually is to improve educational achievement. However, physical distance, conflicting schedules and increasing budget constraints, mean opportunities for interaction between knowledgeable adults and students have diminished. Fortunately, the Internet and electronic communications have made it increasingly possible for students and teachers to transcend the confines of the classroom walls and build geographically distributed learning communities. The Internet has helped bridge communities of discourse and practice that have traditionally been separated. This kind of on-line mentoring or mentoring at a distance is called "telementoring".

Tracking Canada's Past (TCP), currently being conducted at Simon Fraser University, is one example of how telementoring can be used to build a geographically distributed learning community. The project sees teachers, students and mentors from across Canada work together to understand the building of the Canadian Pacific Railway, an enterprise that had, and continues to have large implications for the development of the nation (Berton, 1971). The principle goal of the researchers is to assist students in

gaining a deeper understanding of the nature of historical knowledge while they cover mandated content.

Every context for telementoring has its own challenges. This study looks at a new curriculum-related telementoring initiative, and the diverse population of mentors it draws upon. With respect to adult volunteers who serve as research mentors for students, the Tracking Canada's Past research team aimed to gain a better understanding of what makes telementoring relationships successful and explore necessities for sustaining a mentor pool. This study intended to gain a better understanding of the teacher's role in telementoring relationships, and how that role might contribute to both the success of the relationships and the sustainability of the mentor pool. The research study aimed to answer the following questions:

1. What roles do adults play in on-line mentoring relationships?

2. What, in particular, is the role of the teacher in on-line mentoring relationships in the context of K-12 classrooms?

In the early stages of the research project difficulty presented itself in addressing such broad questions. For this reason, the following focused questions were posed:

1. What can a qualitative case analysis reveal about teachers' motivations to introduce students to such telementoring projects?

2. What can a qualitative case analysis reveal about conditions, both prior and during the project, that facilitate positive experiences for the telementors?

3. In what ways may telementors and students be supported?

4. In what ways can the success of a telementoring relationship be strengthened by the relationship built between the teacher and the telementor?

5. In what ways can the success of the telementoring relationship be strengthened by the relationship between the teacher and student?

6. What formative design changes are necessary to TCP to sustain such telementoring relationships?

These questions were addressed in this qualitative study. Concurrently, questions related to the impact of students' notions of success to their involvement in telementoring relationships and to their understanding of History were addressed in a quantitative study by other members of the research team (Asgari and O'Neill, 2004). Findings from that study will be mentioned when relevant to the present analysis.

2.4. Description of Background/Context

The project outlined in this study illustrates the learning potential offered by Internet technologies. The project also attempts to overcome three key factors that typically hinder the realization of the potential of telementoring.

First, TCP addresses the organizational effort required to locate volunteers and "match" them with appropriate mentees. This process was coordinated by a member of the research team. Such a time-consuming task risks becoming a scrap on the already full plate of teachers today. However, it should be noted that teachers themselves serve as volunteers in the project, both as mentors and through their choice to introduce students to the on-line project.

The second limiting factor is researchers' limited understanding of the demands that telementoring relationships place on both students and adult volunteers (O'Neill & Harris, 2004). This lack of understanding, logically related to the first limiting factor, impedes rather than realizes the potential of telementoring. In current telementoring projects around North America, managerial tasks of recruiting and matching volunteers are usually performed by university researchers funded through government grants (e.g. Bennett, Hupert, et al., 1997; Harris, O'Bryan et al., 1996). This was the approach enacted with TCP. Yet, this approach proves troublesome for two reasons. First, it can lead to researchers investing more time in making telementoring happen than in the required analytical work needed to improve develop and support successful telementoring relationships. In addition, this approach is not sustainable, for it requires

the continuous contributions, of both time and money, on the part of researchers (O'Neill, Weiler & Sha, 2005).

If the potential of telementoring is to be realized, it must be manageable for those directly connected with the venture: the educators, students and mentors. For this reason it seems logical to address the ways in which scaffolding strengthens the support participants provide for one another. Dr. O'Neill and Sohbat (2003) explain the scaffolding built into TCP:

> A number of efforts have recently been made to develop richly-structured collections of multimedia artefacts for studying historical events (Rosenzweig, 2001; Saye and Brush, 2002). In these efforts, various kinds of scaffolds are provided in software to support reasoning and argument of a more authentically historical kind. Our approach is different from, but complimentary to this approach. Mindful of the fact that a large portion of social studies and history teacher have limited background in the discipline of history themselves (Bognar, Cassidy et al. 1997), we set out to provide a practical way for students and teacher to engage directly with practitioners of history who could provide support to their work.

Opportunities for scaffolding student learning and adult roles in on-line mentoring projects already exist in TCP. In addition, recent work has been done on software applications to meet the needs of educational institutions who may be deterred from telementoring. Free software such as the *Telementoring Orchestrator*, developed by the On-line Learning Relationships Lab at Simon Fraser University (O'Neill, 2004) will likely increase the variety of telementoring initiatives being undertaken and reported in the literature over the next few years. With a no-cost software application available to educators to run telementoring projects, the findings of this study will be important to understanding the design of such educational ventures and how to make them successful.

The third factor limiting the realization of telementoring's potential stems from limitations of the medium that has most frequently been used to sustain it: e-mail. Asynchronous, text-based media like e-mail are very practical technologies for

telementoring, since they allow busy volunteers to contribute their time and thoughts at their convenience. However, the inherently private nature of e-mail limits the true power of telementoring. Conducting mentoring relationships via private e-mail often means that students who need to see models of successful mentoring fail to get the opportunity. In the worst case this leads to what O'Neill calls a "rich get richer" dynamic: The students who have previously experienced supportive relationships benefit most from such learning partnerships. Statistical evidence from a recently completed study suggests that more public access to their peers' telementoring dialogues can help students develop more sophisticated ideas about what telementoring relationships can and should do for them (O'Neill, 2004). This model is what O'Neill and Scardamalia refer to as "mentoring in the open".

Tracking Canada's Past is one example of mentoring in the open. The description that follows is that of those who have initiated this unique on-line venture:

> The project attempts to build a geographically distributed learning community. The project aims to develop students' abilities to think historically through work with primary sources in a diverse on-line community. Briefly, in this community teachers and students from cities and towns across Canada will work together to research a historical phenomenon that has influenced them all: The Canadian Pacific Railway. As some readers will know, this was the first transcontinental railway in Canada, and the first great national project for the handful of British colonies that entered Confederation in 1867. More than a decade in the making, the project ignited a political controversy. It threatened to bankrupt the young country, and nearly ended the career of its Prime Minister. Many cities and towns across Canada owe their very existence to the railway, and as a result have unique, unpublished sources of evidence about it, as well as unique vantage points about what the endeavour meant (O'Neill et al., 2003).

Investigating and discussing the building of this railway unites the members of Tracking Canada's Past. The on-line community provides a context in which the passengers – students, teachers and adult volunteer mentors – explore diverse sources and perspectives in order to construct their own historical accounts of facets of history that are of interest to them. In addition to supporting and encouraging an ill-structured

historical inquiry to develop historical reasoning skills and, as researchers propose, a deeper understanding of historical knowledge, TCP draws upon Shemilt's research on the development of adolescent thinking about historical evidence and methodology (Shemilt, 1987). Shemilt's work is based on many hours of interviews with British adolescents. He uses a four-stage scheme to describe the adolescent thinking about historical evidence and methodology. Since Shemilt's four-stage scheme is central to understanding both the design of Tracking Canada's Past and the research around it, I will take the time now to briefly review the model.

At the lowest level of understanding according to Shemilt's model, students read and remember history. At this stage, the only difficulty students associate with history is that of memorization. In this respect, students think of historians as individuals who possess an uncanny ability to retain an abundance of information and stories about the past. Students move to Stage 2 thinking when they realize the past speaks in several voices. In essence, Stage 2 thinkers recognize several viewpoints may exist for a single historical event; yet, they only accept one story as being valid and true. The only explanations Stage 2 thinkers can offer for differing viewpoints is the unreliability of evidence (e.g. some people witnessed the events in question and others did not) or that some reporters may be bias. At Stage 2 students equate the work of the historian to that of a detective.

For Shemilt, Stage 3 students acknowledge that historical knowledge can never be absolutely certain. Students at this stage agree that we can use available evidence about the past (only some of which is other people's stories) to reduce the uncertainty of our knowledge about the past. For Stage 3 thinkers, understanding historical scholarship involves meticulous reasoning with evidence until one constructs an account that represents the most likely and believable testimony. For Stage 3 thinkers, historians do this methodical work. Finally, in the 4th and most advanced stage of Shemilt's model, students recognize that it is possible to have more than one story of the past. At this stage students both recognize and acknowledge it is possible to have

several equally defensible accounts of the past. Like a kaleidoscope, history's "patterns are ordered and determinate, but do not yield a stable picture". (Shemilt, 2000)

Tracking Canada's Past uses telementoring to assist students in moving to a higher stage in Shemilt's model of historical reasoning. Through close examination of the interaction amongst passengers tracking Canada's past, this study provides insights into the ways in which mentors and teachers may provide the scaffolding needed to aid students in their development of historical thinking. Emphasis is placed on the role of the teacher. Drawn from the analysis of the correspondence between all parties involved in the on-line computer-mediated forum, are suggested design considerations that may help participants support one another. The findings of this study may have bearing on future on-line mentoring relationships in the Humanities.

2.5. Curriculum-Based Telementoring Projects and Prescribed Learning Outcomes

The Tracking Canada's Past project reveals how adoption of new forms of technology, coupled with educators' existing strategies, can add to the building of learning-communities and help students to think differently about History. A brief glimpse of the connection between TCP and the prescribed learning outcomes for Social Studies 10 is presented, followed by the connection between TCP and the more general Applications of Social Studies (British Columbia Ministry of Education, Integrated Resource Package, Prescribed Outcomes Social Studies 8-10). Finally, the chapter ends with a discussion of the connections between telementoring, and critical thinking, and the principles of learning that guide B.C. curriculum.

In TCP students are encouraged to explore a range of topics connected to the railway. Each of these topics relates to an aspect of the B.C. Social Studies curriculum which is organized into units. The first unit of the Grade 10 curriculum appears to fit with the theme of immigration. The building of the Canadian Pacific Railway (CPR) saw the arrival of many cultural groups in Canada. Some came strictly for the purpose of building the

railway while others came for new opportunities and fortunes, as the early settlers had done (Berton, c1971). Those involved in the building of the railway were not immune to the hardships faced by Canada's early settlers.

In studying the CPR, students meet the learning outcomes of the Society and Culture unit in the Grade 10 curriculum. In particular, students explore "the influence of immigration and the contribution of immigrants to the building of our nation in the unit entitled Society and Culture: Canada from 1815 to 1914" (British Columbia Ministry of Education, Prescribed Outcomes Social Studies 8-10, p. 59 ¶2). The building of the railway and a discussion of immigration appear to fit nicely within the required outcomes.

In studying the second unit, Politics and Law, students explore the impact of western expansion and federal policies on Aboriginal people. Similarly, in the unit focusing on Economy and Technology, students discover not only the technical aspects of such an engineering feat, but they also learn how a technological innovation affects settlement and employment patterns. In particular, through TCP students may explore "the impact of the National Policy on western expansion" (British Columbia Ministry of Education, Prescribed Outcomes Social Studies 8-10, p.60¶ 2). The connection between TCP and B.C. Social Studies curriculum culminates in the final unit, Environment, in which learning outcomes address how geography influenced economic, historical and cultural development of Canada.

As students participate in instructional activities that focus on applications, they need opportunities to model, discuss and review the criteria for effective work" (British Columbia Ministry of Education, Prescribed Outcomes Social Studies 8-10, p.21¶ 1). Telementoring projects like TCP provide these opportunities in a supportive knowledge-building community.

Curriculum-based telementoring projects such as TCP go beyond curriculum specific outcomes; however, the project provides "opportunities to think critically and apply skills

and processes of social studies."(British Columbia Ministry of Education, Prescribed Outcomes Social Studies 8-10 ¶ 1). Students first identify and clarify their inquiry. In the research phase students continue to develop their critical thinking, learning to evaluate the validity, reliability and relevance of their primary and secondary sources. This process pushes students to assess a variety of positions on controversial issues as they plan, revise, and present their positions on controversial topics. Throughout the process students are encouraged to "think critically, evaluate information, and practice effective communication" (British Columbia Ministry of Education, Prescribed Outcomes Social Studies 8-10 p.9¶ 5).

Finally, a curriculum-based telementoring project such as TCP is guided by the three principles of learning that support the K-12 Education Plan in B.C. (British Columbia Ministry of Education, Prescribed Outcomes Social Studies 8-10 p.9¶ 1).

- Learning requires the active participation of the student
- People learn in a variety of ways and at different rates
- Learning is both an individual and group process

Telementoring matches can provide contextual learning opportunities in which students learn by doing (British Columbia Ministry of Education, Prescribed Outcomes Social Studies 8-10 p.90¶ 7). With a telementoring project so neatly matched to both the outcomes of curriculum content, and the fundamental principles of learning, it only seems right that we explore the potential roles teachers may play in curriculum based telementoring projects such as TCP. It seems fitting that we should do so in British Columbia – the province in which the last spike was driven to complete the railway that unites a nation.

CHAPTER 3.

REVIEW OF LITERATURE

This chapter examines the gradual development of telementoring. The first section recounts the promise of technology as it has been presented to educators, and the factors that impede or slow down the realization of this promise. Understanding these barriers may not only help understand teachers' hesitance to adopt educational technology, but may also help teachers find a role in on-line mentoring projects like TCP. Regardless of how the relationship develops between mentor and mentee, it is the teacher who introduces the on-line relationship into the classroom, takes the initial step – at least at this stage in such on-line projects. Thus, it seems logical to discuss the elements of technology and professional development required for pedagogical change if more teachers are to welcome on-line mentoring relationships as part of their teaching repertoire. The learning potential in telementoring relationships and the knowledge building that can occur when communities of individuals work together are then explored. Finally, a look at how theories of critical thinking may apply to such on-line mentoring projects connects to how teachers can employ already valued theories to encourage more telementoring relationships in the Humanities.

3.1. The Digital Classroom:
Teacher Meets Computer Technology

> There can be no vulnerability without risk; there can be no community
> without vulnerability; there can be no peace, and ultimately no life,
> without community.
>
>   *cs* M. Scott Peck, *The Road Less Travelled*

Despite the efforts of reformers to sell new technology as doing things teachers did and
could not do in the past, technologies such as radio, film and television failed to
transform classroom instruction (Cuban, 1986). From 1954 to 1983, television was
hurled at teachers. The technology and its initial applications to the classroom were
conceived, planned, and adopted by non-teachers, just as radio and film had captured
the imaginations of earlier generations of reformers interested in improving instructional
productivity (Cuban, 1986). By the 1980s many innovations passed through the doors
of schools all across North America. By reformers' standards television, another
technology that had promised to revolutionize the classroom, failed to meet its full
potential. Teachers' fear of being replaced led reformers to see teacher reluctance as
an obstacle to overcome. Then, there was a new innovation on the scene.

The introduction of computers to classrooms set off an unchecked hope that technology
would bring about the same changes with more sophisticated technologies seen in
science, industry, and business (Cuban, 1986). In these arenas, technology's role
seemed obvious from the start. In science, measurement and analysis never before
possible were allowed by automated computation. In industry, repetitious and well-
specified processes suggested computerized and roboticized solutions, eliminating the
errors and hazards associated with human boredom. Even so, the productivity payoff
from IT in the business world is not entirely clear (Kirkpatrick, 2002). It took decades
for industrialists to realize that electricity made multi-story factories unnecessary.
Similarly, it is only once companies have been networked electronically that they can
easily connect with their suppliers and work can be passed along from worker to worker,
regardless of location. Companies such as Delta Airlines have saved millions with the

adoption of outsourcing policies, moving their call centres to India (Kirkpatrick, 2002). In short, technology has changed the way business is conducted and the ways in which people work. The notion of productivity in other industries does not easily equate, however, to the concept of performance in schools. An equivalent change has not materialized in education.

Perspectives on learning are constantly changing and images of teaching vary widely as a result (Sandholtz, Ringstaff & Dwyer, 2000). Instead of reaping the benefits of IT, we are in a slow evolution of educational technology that is closely tied to the changes in teachers' beliefs about learning and their level of comfort with various technologies. To a large extent teachers still rely heavily on traditional teaching methods, using Internet primarily for e-mail and student research-projects (Becker, 2000). Hence, computer technology has not fully delivered on its promises for Education.

To meaningfully integrate computers as educational tools we must ask what schools are for, why teachers teach certain content, how they should teach, and how children learn. "If computers are to be truly integrated into classroom curriculum, educators need to ask four questions: What is the nature of the innovation? How is it being introduced? Who are the users and how is the innovation being used? And perhaps the key question that is often not asked is should computers be used in the classroom at all?" (Cuban, 1986). Before exploring telementoring further, we should consider how teachers may receive such on-line projects, and why they may be hesitant to welcome such projects into the classroom.

In recent years there have been a number of research studies that aim to discover the barriers and facilitators of technology adoption amongst teachers (Levin & Donsta-Schmidt, 1997; Guha, 2000; Rogers, 2000). In particular, studies have focused on the role of availability and accessibility (Glennan & Melmed, 2000; Anderson & Becker, 1998; Becker, 2000); agents of change (Polonoli, 2001; Eib, 2001; Findley & Findley, 1999; Wilson, 1999); and self-efficacy, confidence, teacher's computer skills and pedagogical beliefs and practices (Becker, 2000; George & Camarata, 1996; Ertmer, 2001) as

mediating factors. According to many of these theorists, fear and unfamiliarity are in large part the biggest barriers to teacher adoption of technology. Hence, it is agreed that self-efficacy – the personal beliefs about one's capability to learn or perform – and confidence are the key variables in technology adoption (Ertmer, 2001). Studies show individuals who become technology leaders within their schools, are those who are most comfortable with the technology. This level of comfort is often supported by the principal (George & Camarata, 1996; Gibson & Oberg, 1997) therefore allowing individuals to adopt less traditional and more creative applications of technology within their classrooms. In the process of adopting technology teachers are often forced to confront their established beliefs about instruction and their roles as classroom teachers (Earle, 2002).

The way teachers interpret their role as an educator is in many respects linked closely to one's philosophy of education (Levin and Donsta-Schmidt, 1997; Gibson and Oberg, 1997; Kirkpatrick & Cuban, 2000). I speculate that so long as a majority of teachers value teaching above learning, we are unlikely to see dramatic changes in student performance as a result of computer technology. The most confident educators welcome different methods for teaching, even those who are less familiar with computers, so long as they benefit student learning and achievement (Cuban, 1986; Gibson & Oberg, 1997). As will be illustrated later, the success of telementoring projects, like Tracking Canada's Past requires of teachers this shift from a focus on teaching to learning. In addition, on-line mentoring projects require the teacher marry the new pedagogical venture with a variety of teaching strategies already employed in the classroom.

3.2. Telementoring

> Education either functions as an instrument which is used to facilitate
> integration of the younger generation into the logic of the present system
> and bring about conformity or it becomes the practice of freedom, the
> means by which men and women deal critically and creatively with reality
> and discover how to participate in the transformation of their world.
>
>   ଔ Paulo Freire

Experiential learning is defined as students' authentic experience of events and
activities. It is through a process of hands-on participation and reflection that students
acquire knowledge, skills and values (Fenwick, 2000). Like the pedagogical theory of
participation, Healy and Welchert (1990) and Kram (1985) suggest that experiential
learning, which is closely associated with mentoring, has a developmental-contextual
definition. In other words, the learning is rooted, not in the head of the person, but in
the situation or community in which a person participates (Lave & Wenger, 1991). Kram
(1985) notes the mentoring relationship helps the young individual to navigate in the
adult world and the world of work.

Dating back thousands of years to Homer and his epic poem, *The Odyssey*, the idea of
mentoring has a long history. In the poem, Telemachus (Odysseus' son) has a wise old
sea captain named Mentor who serves as his teacher and guide. Mentor guides
Telemachus to manage the results of his father's absence because of the Trojan War
(O'Neill & Harris, 2004). Today, the term "mentor" is used to describe "almost any kind
of relationship in which a knowledgeable person assists a less knowledgeable person to
acquire skills or information" (Wheeldon & Lehman, 1999). O'Neill and Harris (2000)
assert,

> ...while researchers, and the general public tend to differ on what they
> mean by the term, 'mentoring' generally denotes a supportive relationship
> between an older, more experienced person and a younger protégé that
> serves to initiate her into a new profession, organization, or stage of life
> (p.4).

Since the early 1990s, e-mail and computer conferencing systems have provided a new medium for mentoring in circumstances where face-to-face relationships would be difficult or impossible. Telementoring relationships are "virtual" mentoring relationships in which students encounter authentic educational experiences outside the confines of the classroom or laboratory (O'Neill & Gomez, 1996; Bennett, 1997). The collaboration is fostered by way of technologies like e-mail, the World Wide Web, and shared discourse spaces such as Knowledge Forum® (Learning in Motion --Innovative Educational Software). Telementoring programmes have flourished using e-mail. Started in 1995, Hewlett Packard's Telementor Programme points to the potential scale such a project may reach. Via e-mail, employees motivated 1, 500 students in Grades 5-12 to excel in Math and Science and improve communication and problem-solving skills (Foster, 1999).

These benefits require substantial investment from educators, however. According to Wheeldon & Lehmann (1999), telementoring via e-mail demands substantial support from educators. Teachers need to monitor interactions, anticipate the possible difficulties between all parties, help students read and write e-mails if necessary, support new ideas when on-line interaction decreases, and ensure there is mutual respect between all involved in the relationship. The case narratives outlined in this thesis will show the importance of the teacher's role in open mentoring relationships. Offering new educational partners, telementoring incorporates an epistemology of construction that helps students and teachers see their work differently. The case narratives found in Chapters 5 and 6 attempt to illustrate how teachers may adopt new visions of their work, as they define their role in telementoring projects like TCP.

There are two distinct kinds of telementoring: private mentoring like that conducted via e-mail, and "open" mentoring or mentoring in a computer mediated "knowledge society". Here more needs to be said about both mentoring in the open.

O'Neill (2004) suggests that "mentoring in the open" may facilitate the building of equitable and sustainable on-line learning communities for participants of diverse age

and expertise. The physical distance between programme developers and participants, however, presents a great temptation to match mentors with protégés then provide little in the way of coaching, training, and follow-up (Single & Muller, 1999). Such temptation draws attention to the features of mentoring relationships and the challenges involved in sustaining such relationships. For this reason the role of the teacher becomes important in helping to sustain the mentoring relationship, and in the long term, encouraging positive experiences that invite on-line mentors to continue to volunteer for such projects.

However, projects like TCP cannot serve every need, and establishing and sustaining mentoring programmes such as this is not an easy task. For example, asynchronous messaging may alleviate issues associated with frequency of exchange; however, it does not remove the technical challenges or unforeseen daily events that may interfere with the progress of on-line mentoring relationships. Hence, it appears preparation, facilitation, and closure will always be issues with which to contend (Bennett, 1997). Addressing these challenges, nonetheless, may require employing the very vision that telementoring proposes to produce – a knowledge-building society.

Scardamalia, Bereiter and the Knowledge-Building team envision students taking more of an active role in their learning. Hence, the students become more aware of their own, and others' processes of constructing knowledge. "This 'knowledge-building' pedagogy (Scardamalia, 1991) is enabled by a software application called Knowledge Forum®, which supports students' efforts in creating, sharing and building upon a communal knowledge base" (O'Neill,2001c). Using text, graphics, and sets of markers called "scaffolds" learners' present understandings of the world are mirrored in the community resource. These scaffolds help foster awareness about various contributions to an inquiry (Scardamalia and Bereiter, 1994).

The ultimate extension of a knowledge-building pedagogy, it has been argued, would be a computer-mediated "knowledge society" (Scardamalia and Bereiter, 1996) including

students and adults working together to advance the state of knowledge. Tracking Canada's Past is founded on this vision of a knowledge building society.

In 1997-1998, O'Neill and Scardamalia's research focused on the long-term goal of developing practical strategies and technologies to involve all students in a computer-mediated or "knowledge society" which was heterogeneous in terms of knowledge and age. They note that matching every student and providing equal support are not enough to make telementoring equitable. O'Neill and Scardamalia (2000) identify a "rich get richer" dynamic:

> ...the students with previous experience of supportive learning partnerships actively pursue the opportunity to work with telementors, while those with relatively little experience throw the chance away. (p.2)

Similarly, students who are not aware of positive telementoring experiences among their peers may develop a pessimistic view of telementoring, seeing it as an unnecessary "extra". One may ask to what extent this "rich get richer" dynamic applies to teachers and mentors as well? One teacher in the Tracking Canada's Past Project noted how such a dynamic applies to teachers:

> Carl: [From year to year, and often from one class to another, teachers recognize that even the best planned lessons need to be refined] ...and it works so why mess with success kind of thing. Whereas now I'm like going to try THIS today, if it doesn't work I'll know for next year, I won't try this again, but if it works I'm sure I can improve on it for next year and that's the approach I take now. But I think that goes back to this mentoring thing where somebody opened my eyes and allowed me to see what is out there.

Mentors and teachers may benefit from increasing exposure to more positive mentoring relationships. Engaging in more positive on-line relationships gives the participants experiences from which to draw upon for future relationships. Certainly the tendency for teachers and students to continue to employ methods with which one has encountered success is witnessed in many classrooms (Rogers, 2000; Ertmer, 2001). It seems logical then, that mentors who have shared in positive telementoring relationships will be more likely to continue to volunteer as on-line mentors. In this

sense then, the "rich get richer" applies to mentors as well. The sustainability of the mentor pool therefore begs the question, what is needed to ensure that all mentors may have a positive experience and continue to serve as volunteer mentors. Thus, one may consider in what ways the dialogue between mentor and educator can ensure a positive experience that leads to fruitful mentoring relationships in the future

O'Neill at al. (2000) believe that "one of the great promises of telementoring lies in [the] capacity to support and scaffold students so that they can take on challenging academic work with less fear of failure". A good telementor, they state, should reflect an appreciation for students' due dates and the insecurities they produce. The researchers also describe the importance of students' motivation in the success of telementoring relationships. Students may start their research projects with various levels of knowledge about the topic, but if they are motivated by mentors, students may be prompted to investigate further. Thus, a telementor can play an integral role in encouraging students to do their best. The case narratives that follow will show how the teacher can assist a telementor in the role of motivator, and in various ways that encourage successful telementoring relationships.

3.3. The Cyber Village: Learning in the Digital Village

It takes a whole village to raise a child.
ભ African proverb

What does technology mean for society? The answer is not a simple one. Yet, one example illustrates the powerful potential technology has to offer: In the early part of the 1920s, several writers and artists crossed the ocean to spend time with other artists and thinkers. This trend of expatriation was driven not only by Prohibition in North America, but also the bohemian counter-culture that paralleled bourgeois capitalism. The appeal of gathering in a shared space was made possible by developments that made international transportation a real option: high speed passenger steamers made the voyage feasible, and upon arrival in Europe, the recent popularization of the bicycle,

automobiles, and motorized trams and subways ensured the accessibility of the new locale (Kennedy, 1993). Today, with various forms of on-line conferencing, we can transcend distance and build electronic communities around shared interests, issues and goals (Rhinegold, 1993).

However it has been argued that computer technology, and telementoring in particular, can be used either to help connect people to the world of humanity or to separate them from it (Brand, 1990; McKibbens, 1992; McKenzie, 2003). In addition, providing the proper kind of experience at different ages helps shape not only intelligence, but also habits of mind (Bailin, 1999). The case narratives that follow illustrate one way the Tool of Technology can shape the habits of several minds as people work together, in a knowledge-building society, towards a better understanding of our world.

Tracking Canada's Past brings together researchers, mentors and educators to share responsibility of developing students' understanding of historical knowledge. Through sharing ideas, experiences and resources, the collegiality of telementoring illustrates how communication in the "virtual village" can help members of the community realize their own potential and the value of education. Telementoring and problem-based education open lines of communication between adults and youth that all too often have been shut (Brand, 1990; Miller, 2002). In keeping these lines of communication open, members of both the real and virtual village can share in the raising of the child. Through discourse, adults and youth redefine knowledge.

Theodore Sizer (1984) recommended a shift to interdisciplinary work that would allow students to concentrate on problems instead of artificially and rigidly compartmentalized subjects. The work of O'Neill and others who focus on telementoring recognizes this shift to interdisciplinary work. O'Neill's work introduces a problem-based approach to education. Students are encouraged to explore issues that interest them with the assistance of members in the community. The use of e-mail and asynchronous discussion software like Knowledge Forum® facilitates discussions between students and "experts" in the community. One of the greatest benefits of this design is the

opportunity to extend notions of education and knowledge beyond the four walls of the classroom. In this respect the educational technology facilitates a more holistic approach to education, as students come to make connections with those around them and evaluate their understanding of the world.

3.4. The Lifelong Critical Thinker

> Learning without thought is useless,
> thought without learning is dangerous.
> ℛ Confucius

The installation of computers and the Internet in schools introduces the possibility to improve student ability to read, write and reason (McKenzie, 1998; El-Amin, C. et. al., 2002). However, few schools have approached the challenge of preparing young people with the skills needed to manage the tasks, the media and the relationships of the next decade (McKenzie, 2003). There is still much to be learned about teaching with the tools of technology and much to be discovered about learning digitally.

Earlier innovations illustrate that educational technologies are likely to have little impact on students' ability to learn without experienced adults to guide and frame their use. If we focus on strategic teaching and student learning, there is good reason to believe we can significantly improve student reading, writing and reasoning in ways that are measurable (Slavin and Madden, 2001). We should heed the old adage and avoid throwing the baby out with the bath water; in short, we must find ways to unite new educational technologies with age-old methods of teaching.

We need to focus our attention and resources on those who will mediate between learning tools and understanding. Only then can schools help students develop the critical thinking skills needed to survive the journey through cyber-space and into the global community. Here space is devoted to discuss principles that have had and continue to have significant bearing on K-12 curriculum and curriculum-based projects like TCP. It should be noted, however, that these theories should not be equated with

TCP. First, I discuss Benjamin Bloom's Taxonomy as it fits with Denis Shemilt's four stages of understanding History and the TCP project. Then I present the ideas of Sharon Bailin et al. (1999) on conceptualizing critical thinking and briefly discuss how they relate to TCP. Analysis of the case narratives in Chapters 5 and 6 will show how these theories, already employed by many teachers, can serve as entry points in defining a clear role for teachers in telementoring relationships within the context of K-12 classrooms.

3.5. Higher Order Thinking and the Understanding of History

> Every good historian is almost by definition a revisionist. He looks at the accepted view of a particular historic episode or period with a critical eye.
> ‿ Johnson Paul

Certainly not the originator, but perhaps one of the most profound supporters of critical thinking, Rousseau calls us to use history critically. His emphasis is on the difference between past and present, rather than the continuity. Rousseau introduced the dichotomy of "child-centeredness" versus "subject-centeredness" (Egan, 1999). This debates colours the discussion of how we should teach History (McIntyre, 2003) and certainly the debate of why we study history. Ironically, subject-centeredness has had a strong hold on the History classroom, and is only now beginning to lose its battle with student-focused education (Brooks & Brooks, 1999). However, the introduction of educational technology, and on-line projects such as TCP, move us to think of history critically.

"Critical thinking is defined as the thinking through of a problematic situation about what to believe or how to act where the thinker makes a reasoned judgement that reflects competent use of the intellectual tools for quality thinking" (Case, 1997). In essence this is what Bloom, Shemilt and the TCP research team present to students – the challenge to decide, and make an informed judgement, about what one believes regarding the shared understanding of history. In being "child-centred", TCP encourages students to develop, rather than simply accept, their understanding of the

world. Students are encouraged to come to a deeper understanding about things around us that we may take for granted. In fact, these may be the result of accident, particular decisions, and particular actions of individuals around us. In exploring the "what ifs" of history, students can then make connections between the past and present. Such thoughts expand our understanding of how the world works, how humans behave, and how past and present relate; it gives us a common basis for communicating about these understandings. History education informs our judgment, thereby serving as a guide to our actions and our roles in society. It provides us with the language and concepts that enable us to participate in the ongoing human dialogue (McIntyre, 2003).

Our traditional methods of teaching history presented chronological narratives from textbooks that have only encouraged students to read and memorize a series of authoritatively presented dates and events. There is no real evidence that suggests that at the end of their education, students are able to construct narrative frameworks to structure their knowledge of the past or to relate that knowledge to the present (Nash, 1996). For this reason, Denis Shemilt, like those involved in setting National Standards for History (Nash, 1996; Seixas, 1993), suggests that we adopt an approach sometimes called "postholing" (McIntyre, 2003). Postholing recommends abandoning the superficial coverage of an overview of history in favour of digging deeper into larger themes and questions. Such an approach to teaching is fashioned to provide students with opportunities to engage in activities that include hands-on projects and simulations such as Civilization III (Squire & Barab, 2004). The engaging experience of writing history presented in TCP is hopefully more appealing to the student than the monotonous routine of cracking the textbook and memorizing details of the past.

Despite efforts to help students see the broader picture and become more critical readers, students' knowledge and understanding of history continues to be compartmentalized – a series of dates and data memorized from books and quickly forgotten (Granatstein, 1998). Few students achieve the higher order thinking skills on which teachers build their lessons. Here I take time to show how the work of Bloom,

commonly used by teachers, fits with the work of Shemilt and the work conducted in TCP. The discussion is intended, not as a comparison, but to help readers understand how theories already adopted by educators can be married with new ways of understanding History, and hence new ways of understanding our world.

The work of Benjamin Bloom has long been employed by educators to dare students to become critical thinkers in all disciplines. Bloom's Taxonomy has long been used as a way of classifying educational objectives and describing thinking skills. (Ontario Ministry of Education, 2003, Early Reading Strategy ¶6; BC Ministry of Education, 2004, Social Studies 11 Cognitive Levels for the Provincial Examination ¶1). In fact, the adoption of Bloom's Taxonomy and its incorporation of higher order thinking skills as a primary objective in educating students are embraced as national policy despite the absence of a national system of education in Canada. This may be explained by the long touted necessity of critical and creative thinking as a component of democratic societies to produce responsible citizens. Certainly, the initiation of Civics curriculum in Ontario illustrates the desire to provide a breadth of knowledge that is important if students are to be responsible citizens able to participate in society.

> ...In Civics, students explore what it means to be a "responsible citizen" in the local, national and global arenas. They examine the dimensions of democracy, notions of democratic citizenships, and political decision-making processes. They are encouraged to identify and clarify their own beliefs and values, and to develop an appreciation of others' beliefs and values about questions of civic importance. (Ontario Ministry of Education, Canadian and World Studies: The Ontario Curriculum, Grades 9 and 10 – Civics Overview)

Not all students will be historians, but we hope they will appreciate what historians have established and how they have done so. This is one focus of curriculum and curriculum-based projects like TCP.

Though Benjamin Bloom outlines six levels of task demand, Shemilt is not unlike Bloom in his categorization of the cognitive domain. Shemilt (1987) classifies the levels of abstraction that commonly occur in History classrooms, and outlines the development of

adolescents' thinking about evidence and methodology in History. The skills of knowledge and comprehension addressed in the first two stages of Bloom's Taxonomy are the same required of Stage 1 thinkers in Shemilt's model. The understanding of basic facts such as dates, names and places, are required of all students participating in TCP. Similarly, the higher-order thinking demanded in Bloom's upper levels of the taxonomy (analysis, synthesis, and evaluation) are required of Shemilt's Stage 3 and 4 thinkers, as well as critical thinkers. Thus, in a project such as TCP, where students are called to rethink history, and ultimately write their own narratives of history, the skills presented by advocates of critical thinking are useful tools on the ascending voyage through Shemilt's model for understanding history. For both Bloom and Shemilt, the journey to a deeper understanding, requires employing a critical eye in order to reach a higher level of knowledge. I will argue that telementoring encourages critical thinking in two ways. I turn here to a brief discussion of the concept of critical thinking.

Though support for teaching critical thinking at all levels of education is strong in North America, scholars debate the meaning of critical thinking (Bailin et al., 1999). Bailin and her colleagues defend a conception of critical thinking that they believe provides a firm foundation for the development of curricula and programmes for teaching critical thinking. They suggest that critical thinking has three features: "it is done for the purpose of making up one's mind about what to believe or do; the person engaging in the thinking is trying to fulfil standards of adequacy and accuracy appropriate to the thinking; and the thinking fulfils the relevant standards to some threshold level." Bailin and her colleagues refine the concept further, arguing that critical thinking should not be seen as separate from creative thinking since critical thinking often involves imagining possible consequences, generating original approaches and identifying alternative perspectives. She contends that critical thinking takes place within such arenas as problem solving and decision making.

Furthermore, Bailin et al. argue that good thinking is more than just good evaluation of intellectual products. In the case of TCP, good thinking means the student has considered plausible evidence-based alternatives to the initial stories presented in the

textbook. The student must engage with the basic knowledge (facts), employ the imagination to consider the "what ifs", and use Bloom's familiar taxonomy (though they may not call the process such) to and evaluate the stories presented.[2] Finally, the student will construct an individual understanding of history. According to Bailin et al. the best way to regard the critical thinker is in terms of intellectual resources. These intellectual resources fall under five kinds, and are best outlined in the chart on the following page.

It should be noted Bloom, Shemilt and Bailin et.al. are all in agreement that students must begin with background knowledge. Although all five kinds of intellectual resources are evident within the critical thinker, and intellectual resources already employed by teachers can easily be illustrated with TCP, for the purpose of this study the primary focus will be on habits of mind and the ways in which these habits help members of on-line communities develop critical thinking through discussion and dialogue.

By the time they are in primary school, students are already making and criticizing judgments. One need only think of the youngster whose response to nearly every statement is "but why?" In telementoring projects such as TCP, the roles of the educator and mentor are to encourage the students' inquiry in a more discriminating and self-conscious way that is characteristic of history scholars.

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[2] Though students may not readily identify tasks as levels in Bloom's Taxonomy, they are familiar with the key words (synthesis, evaluate etc.) commonly used by teachers. Furthermore, some educators, like me, teach a learning styles unit in which students learn about Howard Gardiner's Multiple Intelligences and Bloom's Taxonomy, so that they can better understand what they must do to succeed in school.

"Critical thinking involves imagining possible consequences, generating original approaches and identifying alternative perspectives." (Bailin et al., 1999) Students engaged in on-line mentoring projects like TCP begin to think critically when they consider plausible alternatives to the stories presented in their textbooks. Second, "critical thinking very often takes place in the context of persons thinking things through together by means of discussion and dialogue." (Bailin et al., 1999) In this respect, the shared electronic space for "mentoring in the open" facilitates a discussion and dialogue and provides opportunities for students to develop critical thinking skills.

Table 1. **_Conceptualization of Critical Thinking_**

Intellectual Resource	Explanation	TCP EXAMPLES
Background Knowledge	What one knows, or is able to find out about an issue or question, and about the context in which it must be solved	_TCP example:_ _When was the railway built?_ _Who built the railway?_ _How did the railway change people's lives?_ Students in the TCP project gather information on their selected topics. Information is available from a variety of resources: classrooms lectures and discussions; class texts; library books; Internet resources; archives
Criteria Judgment	Standards for judging intellectual products (arguments, work of art etc.) Critical judgment involves judging which one of the alternative ideas, products or actions makes most sense. Principles for guiding inquiry	_TCP example:_ _Have I outlined all the ways that the railway changed the lives of Canadians?_ _Have I searched for and paid attention to disconfirming evidence?_ Pre-surveys presented students with a set of competing narratives each concerning the Canadian Pacific Railway and the question, "who benefited most from the construction of the railway?" After reading the narratives, students were asked to conclude comment on which accounts were most believable. This task required students use the principles of guiding inquiry to determine which narrative made most sense.
Critical Thinking Vocabulary	Concepts that help the thinker distinguish different types of intellectual products. Appreciating the differences between fact and fiction, pro and con, premise and conclusion, bias and point of view.	_TCP examples:_ _What primary and secondary evidence supports my conclusions about the railway's impact on people's lives?_ _Have I considered the lifestyles of different groups in Canada at the time the railway was built?_ In TCP students are required to understand the differences between primary and secondary evidence. In addition, they must know the difference between accounts (stories) and traces (evidence that is not a story). Primary source evidence needs to be contextualized for students.

Intellectual Resource	Explanation	TCP EXAMPLES
Thinking Strategies	Strategies for guiding performance in a variety of thinking tasks (for example – making a list of pros and cons)	*TCP example:* *Use a Venn diagram to summarize the similarities and difference in the ways people in Upper and Lower Canada reacted to the railway.* *Use a semantic web to illustrate how the railway helped build a nation.* A variety of learning tools, familiar to both teachers and students, may proof helpful in the task of comparing competing narratives.
Habits of Mind	The other tools are insufficient without accompanying habits, attitudes and sensitivities: *Inquiring attitude* – question clarity of and support for claims and seek justified beliefs and values; *Open mindedness* – willingness to consider evidence opposing their view and to revise their view should the evidence warrant it; *Fair-mindedness* – willingness to consider impartial consideration to alternative points of view and not simply impose their preference *Independent – minded* – willing to stand up for one's firmly held beliefs	*TCP example:* *What questions are you asking of that document? What information does that document reveal about a particular event or person in history?* Fascinated with Louis Riel, one TCP participant was challenged to decide if Louis Riel was a hero or traitor. In coming to a decision, the student would have to employ open-mindedness and fair-mindedness, and consider that the person she saw as a hero may in fact be a traitor. The student would have to ask several questions of the evidence encountered, before coming to a decision.

This discussion of Bloom, Shemilt, Critical Thinking and TCP demonstrates that we can build upon the theories that educators already embrace, and employ these in our navigation of the abundant resources that technology has brought into classrooms. In this way, we use technology not only to make information more accessible but also to develop communities that will help us journey together to higher levels of understanding. This is the true potential that lies within educational technology.

3.6. Summary

Today, several years after the rash introduction of computers in our classrooms, we stand at a crossroad. Like those in the 1920s we can choose to explore the ways in which technology can bring people together. We can choose to explore the many ways

in which tools such as the Internet may improve student ability to read, write and reason. Tracking Canada's Past (TCP) illustrates one way in which historical knowledge building and critical thought may be fostered through scaffolding and discourse. The tools and resources available in schools, and homes today, can transform learning into something more enticing, more valuable and more widespread. This is one reason why Tracking Canada's Past aims, not to replace books or lectures, but rather to marry these traditional technologies with newer ones as we journey to a new level of knowledge. The Internet's capacity for collaboration offers new models for teaching and meaning making. There is significant data to show that when it is used well, technology can have a marked effect in improving student learning (Weimer, 2003). Thus, the question of computer use in schools is one of "how" not "whether". Acknowledging the learning potential offered by computers when used in new and creative ways, the researchers involved in Tracking Canada's Past connect students with adults in the community. The project demonstrates how adoption of new forms of technology, coupled with educators' existing strategies, can contribute to the building of learning-communities and help students to think differently about History.

The case narratives described in Chapters 5 and 6 focus on two particular relationships in the TCP project. The first case illustrates how students may be guided to reach a Stage 4 understanding of History, with the help of volunteer mentors. The example demonstrates how the mentor, in some respects, presents and builds upon familiar resources already associated with classroom learning. Beginning with connections between the world of school and the discipline of history, mentors aid students to a deeper understanding of historian's work. The second case addresses some of the ways in which the telementoring relationships were challenged and, more specifically, what can be done to set derailed relationships back on track. In both case narratives, the role of the teacher and mentor in achieving positive experiences with the students are examined. Ways in which the teacher may assist the mentor are discussed. If as O'Neill asserts there is a "rich get richer dynamic" then one must ask in what ways such a dynamic holds true for the adults as well. The answer may have tremendous bearing on

the sustainability of the mentor pool. In other words, if a mentor has a rewarding telementoring experience, then the mentor is more likely to volunteer again. Examination of the teacher's role in curriculum-related telementoring relationships, therefore, is paramount in supporting on-line mentors in encountering positive telementoring experiences. Better understanding of the ways in which the adults need be supported will contribute to sustaining a mentoring pool and increased adoption of such on-line mentoring relationships in Humanities classrooms.

CHAPTER 4.

RESEARCH METHODOLOGY

4.1. Participants

A pilot phase of Tracking Canada's Past (TCP), conducted in B.C., was completed in June 2002. The original timeline indicated a duration of twelve weeks. However, due to scheduling difficulties and technical problems, the length of the pilot phase was just six weeks in length, running from the middle of May until the end of June. The study described herein was drawn from this larger pilot study.

Data were collected in two high schools in British Columbia. The participants were a mixture of high school Social Studies students and teachers in British Columbia, and adult volunteers from British Columbia and Ontario who served as research mentors. A total of 2 teachers, 55 students and 8 mentors were involved with the pilot phase of the project. One school, located in Riverside, was chosen for its proximity to the railway. With its population of roughly 32, 000 it is a good example of how the railway influences small cities. In Riverside, the railway was a dominant industry, well known to the locals. For some students whose parents worked for the CPR the presence of the railway played a dominant role their lives; for others, the existence of the railway simply faded into the background. Twenty-six students from the Riverside Secondary School participated in the project. An asset for the Riverside students was a small Museum and Archives, which are open on Thursdays and Fridays. Volunteers primarily staff the Archive so students benefited from both face-to-face contacts with those at the archives as well as correspondence with their on-line mentors.

The second school located in British Columbia was chosen for its diverse student population. Twenty-nine students from Metro South Secondary School participated, many for who English is a second language. It should be noted, that though none of the Metro students had experience with telementoring, many of them spent hours on-line using MSN Messenger and surfing the Web. In addition, their teacher's comfort with and interest in technology, plus the accessibility to six workstations in their own classroom and frequent access to a large computer lab, should be kept in mind.

Recruitment of interested teachers was done through personal contacts and limited solicitation through professional channels such as notices in professional bulletins. The Metro South teacher, who has a background in Information Technology, came to know of the project through the School Board's coordinator of technology. This teacher's participation in the project was partly motivated by the opportunity to learn more about the Knowledge Forum software. The teacher in Riverside, whose interest in History first attracted him to the project, saw the potential to use the local archives and history of the region to enhance his instruction. Also enticed by the technology, in the teacher interview the Riverside teacher expressed the desire to try "something different from the usual textbook teaching to participate in something more like the historical process."

Recruitment of mentors was handled in a similar way. Recruiting messages seeking interested volunteers were posted in several list serves for historians. In addition, personal contacts were sought. The pilot project ultimately matched 8 mentors from both British Columbia and Ontario with students involved in the project. These included adults who had a special interest in the subject of the railway, such as members of the West Coast Rail Association, a historical society committed to preserving equipment, and graduate students in History who had expertise in historical research methods. The mentors ranged in age from 27 to 65, with equal representation of males and females. Half of the mentors had earned, or were earning, Master's degrees in History. All but one of the others had at least a bachelor's degree, with a strong interest in History. The last was completing a bachelor's degree as a mature student, and had taken several History courses. The majority were employed full or part-time, with an average annual

income level between $40 000 and $80 000. The mentors in the TCP project were not dissimilar to the sample profiled in Statistics Canada's 2000 National Survey of Giving, Volunteering and Participating (O'Neill et al, 2003).

While there is no one perfect way to arrange mentor matches (O'Neill, 2000; O'Neill, 2001b; Miller, 2002), the partnering was done to ensure that each mentor was advising students on a topic identified as an area of comfort, and that the mentoring load was as evenly balanced as possible among the volunteers. For the purpose of this study, each telementoring match was treated as a case. Since some research themes proved to be quite popular among students, it was not possible to make the division of labour perfectly equal. However, the largest number of students that any mentor worked with was eight. The researchers would have preferred this number to be smaller, but a couple of volunteers were unable to participate at the last minute. In fact, one member of the research team with a background in History was called upon to replace a mentor.

In order to match students with mentors, students first declared their research interests to their teachers and then were organized in "working groups" of varying sizes. The mentors were also asked to identify the areas or themes with which they were comfortable. Then the research team did its best to ensure that each group of students with their specific interest was working with a mentor whose area was the same or similar. There were eight areas or themes that were of interest to the students.

- Technology in the 19th Century
- Arts in Canada
- Native People of Western Canada
- Settlement of Western Canada by Non-Natives
- Communication in Canada
- History of Work and Working People's Lives
- Exploration of Canada by Non-Natives
- Development of Tourism in Canada

4.2. Data Collection

The pilot phase of the research used a mixture of data collection instruments and processes. These were surveys, interviews, focus groups, samples of students' work and automatically-generated records of student and mentor activity with the Knowledge Forum® software. The data collection instruments and processes used in the study described herein (as opposed to the larger pilot study) are detailed below.

4.2.1. Surveys

Surveys, designed by Dr. O'Neill and members of the research team, were given to mentees both prior to and after the curriculum unit. Pre-surveys intended to gather demographic information helped to paint a picture of the classroom and all participants. Student background variables from the student pre-survey, for example, included such data as parent's educational attainment, personal education goals, ethnic heritage and attitudes towards writing. A 6-point scale was used to learn about students' attitudes regarding learning and intelligence (O'Neill, D.K., Sohbat, E. et al., 2003). Dr. O'Neill and his research team included in the pre-survey their adaptation of Dweck's instrument for measuring ideas about the nature of intelligence (Dweck, 2000). Also, included in the pre-survey was The Historical Accounts Differences (HAD) task designed by Dr. O'Neill and a Ph.D student as a practical classroom measure of students thinking about historical evidence and Methodology (O'Neill and Sohbat, 2004). The HAD attempts to locate students relative to Shemilt's four stages of historical thinking. In the present analysis these data are used to help understand how students responded to advice from mentors.

In addition to the same HAD task, post-surveys asked mentees to complete a likert scale for the mentor's helpfulness, ideal actions of mentors, individual relationship with a mentor, and the overall success of mentoring. Mentees were asked to answer questions

about their Internet use during the project, their overall impressions of Knowledge Forum® and the nature of the final report written for the project.

Data collected from the pre-survey also included the expectations of the participants. A list of 13 functions mentors may provide mentees was included. Each participant was asked to rate these functions to the extent to which they expected to receive each function on a scale from 1 to 7 (where 1 = a little and 7 = a lot).

Mentor pre-surveys focused on salient characteristics of those who volunteer to mentor as well as the specific wishes telementors had regarding their work with students. Mentors were also asked to share their reasons for getting involved in the project. The expectations of students and mentors in the 2003 Tracking Canada's Past project, and their assessment of successful telementoring relationships are discussed at length in the work of another research team member (Asgari and O'Neill, 2004).

For the purpose of this study, data gathered in the pre-survey were used to establish a sense of the expectations of those involved compared with the satisfaction expressed in the post-project focus group, and helped gauge the success of the telementoring relationships in meeting both the expectations of participants, and the goals of the project (Copies of the pre-survey and post-survey are included as Appendix A and Appendix B respectively).

4.2.2. Teacher Interviews

Face-to-face interviews with teachers were conducted before and after the unit. The semi-structured interviews, designed and conducted by Dr. O'Neill, provided an opportunity to address issues of a thoughtful or sensitive nature that could not be addressed in the demanding school environment. Such interviews allowed the teachers to provide feedback about their roles in establishing and sustaining the telementoring relationships. For this study, data from the teacher interviews were analysed to determine teacher expectations of the project, their assessment of the project's success

and their thoughts on telementoring. For example, prior to the project's commencement, teachers were asked to comment on the personal reasons for participating in the project, and the conceptually difficult aspects of the project they expected students would encounter. In the post-project interview, teachers were asked to comment on the series of "milestone assignments" used to assist students in developing their inquiries. These milestone assignments, which attempted to explain the work of a historian, were written with the help of a Ph.D. student in History, and intended to provide a common frame of reference for students, mentors and teachers, while reflecting students developing understanding of source material.

4.2.3.   Telementor Interviews

One member of the research team conducted telephone interviews with each volunteer mentor at the conclusion of the project. (The post-project interview protocol is included in Appendix C.) These interviews revolved around: volunteers' expectations of telementoring, the nature of the relationship they experienced with students and their teachers, central moments of the relationship, how telementoring fit into their work routines and their organizations, and their desires to continue telementoring. Some questions posed in the interview were:

- What do you have to say about your experience with telementoring?
- Was your experience what you expected?
- Is there anything you would have liked to have known ahead of time that you didn't know?
- What would have made the experience more rewarding for you?

The data collected from the telementor interviews were used in this study to inform ways in which teachers may support telementors and the telementoring relationship. In addition, data from the telementor interviews were used to highlight potential ways in which such support of telementors may contribute to the sustainability of the mentor pool.

4.2.4. Knowledge Forum Postings

As mentioned earlier, TCP used an electronic workspace (Knowledge Forum®) that was accessible to participants both inside and outside of school. This workspace was intended to allow students to share their work with peers in other locations, as well as with mentors and teachers.

After matching students and mentors, an e-mail sent to all the mentors provided instructions for using the software, Knowledge Forum®. Students discussed their ongoing research with one another and with their mentors in the Knowledge Forum® by clicking the link to their respective themes in the database, then posting their messages within the shared space known as their "home view".

Automatically-generated records of students' and mentors' activities in the Knowledge Forum® were collected throughout the curriculum unit. In addition to being a non-intrusive method of data collection, the database notes allow for a more detailed analysis of the telementoring relationship. The ability to visualise and track how many messages are posted, how many are read, and how one message relates to another, helps explore the extent to which students seek out assistance, as well as ways and the degrees to which volunteer mentors respond.

In this study the Knowledge Forum® postings were analysed in relation to the student-mentor theme. Quotations from the data are used to provide a picture of the nature of the conversation between students and mentors. In particular, the Knowledge Forum® postings highlight the themes of decomposing and role modelling illustrated by mentors. In shedding light on the student-mentor relationship, the Knowledge Forum® postings also highlight opportunities for the teacher to help support the telementoring relationship.

4.2.5. Focus Groups with Students

Additional data were collected through focus groups with selected students. Interviewees were selected based on their responses to the post-unit survey and the level and nature of activity exhibited in the Knowledge Forum views. More active views in the shared electronic space were deemed to be on the track to success, while inactivity was suggestive of derailed telementoring relationships.

For the purpose of review at a later date, each focus group discussion was videotaped. (A copy of the Student Post-Telementoring Focus Group guide is found in Appendix D). The focus group discussions provide an interpretation of the mentor-mentee correspondence by allowing participants to express the meaning they place on the events of the relationship. In addition, in this study, interviews allowed for the chance to probe for fuller explanations of the ways in which teachers may support telementoring relationships. In this study, data from the post-project surveys and focus group interviews were used to assess how students evaluated their own telementoring experiences. The data was also used to enrich my sense of how relationships succeed and fail.

4.3. Ethical Issues

Care was taken to insure that individuals involved in the study did so voluntarily, and that confidentiality was maintained throughout the study. Prior to the data collection, written consent was obtained from parents or guardians. Similarly, adult volunteers were informed of the purposes of the research and written consent was granted. The research team also did reference checks on the mentors prior to permitting them to correspond with students. All source data, both physical and electronic, was secured in offices at Simon Fraser University to protect the confidentiality of all participants.

4.4. Research Design

Characteristic of qualitative research methodology, the research questions in this study evolved prior to and during the data collection and data analysis processes. Although Chapter 3 presents the review of relevant literature and uses that as a basis for refining research questions, formal data collection processes were occurring simultaneously with the literature review. Therefore, the research questions were clarified and refined through understandings gained from the literature as well as continued involvement with the TCP project, both as a researcher and a teacher-participant.

It struck me as odd that although teachers in a variety of K-12 settings were conducting mentoring projects with greater and lesser ability and more or less satisfactory results, no literature that I knew of, addressed the role of teachers in making telementoring projects succeed. My emphasis in this study then is on understanding the teacher-student-mentor triad. With time and involvement with the TCP project, the broad question was focused. The results presented in Chapters 5 and 6 emphasize particular focus questions:

1. In what ways may the telementors and students be supported?

2. In what ways can the success of the telementoring relationship be strengthened by the relationship built between the teacher and telementor?

3. In what ways can the success of the telementoring relationship be strengthened by the relationship between the teacher and student?

4. What formative design changes are necessary to TCP to sustain such telementoring relationships?

5. What formative design changes are necessary to TCP to sustain the mentor pool?

The chapters that follow look at the roles of adults, in particular the roles of teachers in curriculum-based mentoring projects. The use of the HyperResearch (Qualitative Data Analysis) software program was employed in the coding and organization of the semi-structured interviews, focus-group interviews and automatically generated postings, as I

formed a comprehensive analysis of the roles of teachers in telementoring relationships. In the case narratives that follow, more will be said about possible roles teachers may play in curriculum-based telementoring relationships.

The following sections outline my reasons for choosing the case study approach, the procedures used in selecting the case narratives presented in Chapters 5 and 6, the methods employed in the analysis of the data, and finally, the construction of the case narratives.

4.5. Selection of the Case Narratives

The case study approach (Stake, 1995) was chosen for this study for three reasons. First, the relative infancy of such telementoring projects leaves much to be learned about how mentors and mentees relate, and what roles teachers play in the success of these on-line relationships. The case narratives presented in the following chapters are not true case studies as defined by Stake. In particular, questions asked in the teacher interviews were not created with this study in mind. As a result, the triangulation noted by Stake (1995) was not feasible since questions did not converge on the same phenomenon – the roles of adults, and in particular teachers, in curriculum-based telementoring projects. Nonetheless, the case narratives presented here provide some ideas of the potential roles adults my play in telementoring projects.

Through the analysis of the case narratives that follow I hope readers will understand in greater detail how a telementoring relationship unfolds, and see some opportunities for teachers to help the relationship. It seems fitting, therefore, to stimulate interest and inquiry about the nature of telementoring relationships and the sustainability of a mentoring pool, through a qualitative approach. In the same way that telementoring promotes historical knowledge building and critical-thinking, I hope that the case narratives presented here will contribute to the understanding of telementoring

relationships, and the roles teachers may play in curriculum-based telementoring projects.

Where survey data alone would not yield a clear picture of the potential role of the teacher, the various methods of data collection in this study facilitated an opportunity for detailed feedback from participants involved. "With intrinsic case studies, our primary task is to come to understand the case. It will help us to tease out relationships, to prove issues, and to aggregate categorical data, but those ends are subordinate to understanding the case." (Stake, 1995) From this study I hope that readers gain an understanding of the particular case narratives presented and explore when and where teachers may intervene to help the telementoring relationship reach its full potential.

Finally a third reason for adopting the case study approach stems from the current focus in the study of History. Seixas (2002) asks, "If expert's disciplinary knowledge about the past represents a silencing of other voices and an appreciation of others' stories, then how to end the silence and give voice to others without collapsing one's own disciplinary tents?" The answer to this conundrum, for many historians today, is to study how non-historians, non-experts understand and understood the past. In a very significant way, the choice to use the case study approach is driven by my own understanding of History. According to Peter Seixas (2002), and other historians today (McInytre, 2003; Granastein, 1998) the word 'history' connotes the world 'out there'; the collective memory, on the other hand, is the link between the past and present, personal experiences. Our personal experiences are tied to the experiences of those before us. We interpret each event in relation to previous experiences. We attribute meaning to our interactions and dialogues with others, each taking away a different meaning of what transpires. I suggest that, life is a series of case narratives in which our personal experiences are intrinsically tied to the experiences of those before us. The ways we interpret our interactions, and the ways in which we make our decisions are influenced by our environment, social upbringing, and values. In this respect, our understanding of history is coloured by who we are and what is important to us.

While every case offers a glimpse of the phenomenon being studied, and each case itself is unique, the constraints of time and space force every writer to limit the selection of cases on which to focus. Selecting a case of some typicality, but also those case narratives that seem to offer opportunity to learn, my choice is to take cases from which I believe we can learn most. Selected for this study, therefore, is a case of a relationship deemed successful, and one that appears to have struggled, though it may not have had the participants been supported in different ways.

In a telementoring program such as Tracking Canada's Past (TCP), one may define "success" in a variety of ways. Three criteria were used to distinguish successful versus less successful case narratives: The rates of participation, the nature of the dialogue, and the comparability of the two mentors, who despite some similarities in their qualifications, had two very different telementoring experiences. While it is understandable that the three criteria selected are by no means the only criteria by which to judge the success of a case, I have selected these criteria in light of the overall goals of the TCP project. Different criteria and a different perspective from which one judges could define the first case narrative as practical and the second as more theoretical. Outlined below is a description of the three criteria I used to judge the success of the telementoring relationship, followed by a discussion of how the case narratives discussed at length in Chapters 5 and 6 measure up to these three criteria.

4.5.1. Rates of Participation

"Providing an online community is crucial, TCP research members believe, in bringing about student's productive engagement with primary sources – the 'raw stuff' of history." (O'Neill and Sohbat, 2004) One of the chief objectives of the TCP curriculum design was to confront students with conflicting historical evidence and accounts in a community that could support their understanding of them. In their study involving participants from the 2003 TCP project, O'Neill and Sohbat (2003) noted that the number of notes written did not correlate significantly with gains on the Historical

Accounts Differences (HAD) task. The strongest correlate was students' impression that the mentor gave them a good sense of what historians do. Hence, though not sufficient to move students to another stage in Shemilt's model, it may be argued that sustained dialogue makes it easier for mentors to achieve the goal of making clearer for students how history is done.

The volume of notes posted may also be explained by the mentees' perceptions of their mentor's usefulness. In other words, mentees made the effort to correspond with their mentors because the mentor seemed helpful. This would be in keeping with the findings of Asgari and O'Neill (2004) who addressed participants' assessments of success in the 2003 TCP project. The degree to which mentees in this study participated in the shared electronic space may be deemed to reflect the success of the telementoring relationship in a limited sense. In this study, the case deemed successful was selected partly because mentees and their mentor wrote the largest number of notes overall.

4.5.2.   Nature of the Dialogue

As noted in the review of literature, a mentoring relationship can be almost any kind of relationship in which a knowledgeable person assists a less knowledgeable person to acquire skills in an unfamiliar domain. A sustained dialogue is in itself not sufficient to deem a mentoring relationship successful. Rather it is the nature of the dialogue that determines its success. In on-line mentoring projects such as TCP, it is not as important that mentees and mentors maintained an on-going discourse, as it is what they discussed during this sustained relationship. Since the goal of TCP was to help students learn more about the work of the historian, it follows that successful dialogue would centre on the themes of historical methodology and the writing of history. The nature of the dialogue between mentor and mentee, therefore, was my second criterion for determining the success of the telementoring relationship.

4.5.3. Comparability of Cases

Finally, the case narratives discussed here were also selected because of the similarities between the mentors. The mentors described herein in Chapters 5 and 6 were both in their 30s and in their interviews expressed the desire to encourage students to pursue more challenging studies and to learn more about teaching. Both mentors hoped their on-line experience would allow them to learn more about themselves while giving something back to their field. At the time, Sandra Caller, the mentor discussed in Chapter 5, was completing a Masters degree and working with first-year university students in tutorials and seminars. Similarly, Arnold Pleasant, the mentor discussed in Chapter 6, was at the time of the project completing a Bachelor of Education degree and working with students in the K-12 panel. Both mentors, at the time of TCP, were enrolled in a university program. In their descriptions of themselves, both mentors expressed a comfort in history methodology. Despite their similarities they appear to have had quite different telementoring experiences. It was hoped that the shared characteristics of the mentors may also allow for a revealing comparison of the mentor's experiences, lending to a better understanding of the roles adults can play in the telementoring relationship, as well as a better understanding of influences on the sustainability of the mentor pool.

My teaching experience has taught me that regardless of the time one spends planning in hopes of achieving perfection, there will always be an unexpected element; in particular when we deal with individual students a simple lesson may simply require tweaking, rather than scrapping, in order to provide the best benefits for the students. For this reason I felt it best to categorize the second telementoring relationship "less successful" rather than a failure. Thus, Chapter 6 presents a "less successful" telementoring case that with some support from teachers may have met the expectations of the participants, and the program designers in becoming more successful.

Keeping in mind that success is both a relative and subjective term, when I set out to evaluate the success of the case narratives for this study I did not expect a successful case to meet all three criteria outlined above, but rather that it meet at least two of the three criteria. It should be noted that while many of the on-line mentoring relationships in TCP may be considered in some respect to be successful according to some of the three criteria outlined above, only one succeeded on all three criteria. That telementoring relationship is discussed in Chapter 5. The telementoring relationship presented in Chapter 6 came close to meeting the three ways of assessing the success of the relationship; yet it fell short in some aspects. For example the nature of the discussion and the degree to which mentees' expectations of their mentors were met, did not seem to reach the same level of success. Hence compared to the case I deemed successful, the case presented in Chapter 6, though successful in some respects, is in comparison less successful.

4.6. The Case Narratives and the Three Selection Criteria

For the purpose of this study, the pre and post survey data, the automatically generated notes from the database, the mentor interviews, teacher interviews and focus group interviews were used to help assess the success of the telementoring relationships in the Tracking Canada's Past project. Below is a more detailed explanation of how the two case narratives for this study were selected according to the three criteria for judging the success of the telementoring relationships.

With every telementoring relationship there is a risk, as O'Neill notes (1998), of a relationship becoming stagnant. Thus when one finds an active group such as the one in the first case discussed in Chapter 5, Getting Up Steam: Building Successful Telementoring Relationships Together, it is worth asking what kept the passengers on this journey engaged. What supports aided the development of the on-line relationship? What role, if any, did or could the teacher play in supporting this relationship? What

skills or actions on the parts of the mentor or mentees contributed to the successful development of this relationship?

The case presented in Chapter 5 was deemed successful according to all three criteria for judging the success of the relationship. This case presents a sustained on-line relationship in which mentor and mentees were engaged in a discussion about how history is done. The level of activity in Knowledge Forum and, more important, the nature of the dialogue determined the success of the telementoring relationship. The experiences of the Communication group, presented in Chapter 5, generated the most notes in the database per student, begging the question "what was keeping participants engaged in this dialogue"? In addition, the mentor in this relationship placed a lot of emphasis on explaining the historian's methodology with 43.5% of the mentor's posted messages addressing how historians deal with evidence, think about perspectives, and consider author's bias (O'Neill, D.K., Sohbat, E. et al., 2003).

Helping the mentees navigate the overwhelming amount of on-line and print resources available for study, the mentor clearly met one of her mentees' strongest expectations. In addition, she managed to keep the relationship on track when she went beyond the role of on-line librarian to help the mentees decompose the larger task of their historical research into manageable chunks. Finally, as conductor, the mentor fulfilled her own expectations of providing more than resources, when she modelled historical work and helped mentees move towards their destination of coming to a deeper understanding of how historians work. The success of this on-line relationship was reiterated in the post-project interviews and focus group interviews when both mentor and mentees expressed satisfaction with the relationship.

The relationship between Sandra and one particular student, Kimi, was selected as the focus for this study because the correspondence between the two most clearly reflected a sustained dialogue about History. Correspondence between the mentor and other participants in this group, however, focused primarily on the "topic" and "secondary sources", something characteristic of many discussions in the TCP project. The

particular relationship with Kimi, however, most clearly met the project goal of increasing a student's level of sophistication in thinking critically about evidence and methodology, apparently bringing the student to a deeper understanding of the work of a historian.

The second case, entitled Righting Derailed Relationships suggests that with the right assistance, the average telementoring relationship could potentially become the powerful engine that brings students to a better understanding of a historian's work. This case, presented in Chapter 6, was selected because the Knowledge Forum records indicated the participants had the second largest discussion. In meeting the "level of activity" and the "nature of the dialogue" criteria, this group was the only one to have more discussion on "history", "historian's methodology" and "writing" themes than the "topic" theme (43.5%) (O'Neill, D.K., Sohbat, E. et al., 2003). Although the Social and Legal History group was similar to the Communication group in the nature of their discussion, the participants appear to have had very different experiences. This may be explained by the fact the mentees were also supported by archivists at a local archive, and hence they did not rely on their mentors to the same extent as the mentees in the first case narrative. Several voices from this group are presented in Chapter 6. The decision to allow these voices to resonate in the second narrative is influenced by the nature of this relationship. Though the nature of this conversation revolved around history, students in this relationship did not appear to make the same progress, according to Shemilt's stages, in their understanding of history. In this respect then, this second relationship fell short of meeting the project goal and the expectations of the participants.

Though the mentor in this relationship provided guidance for his mentees, their dialogue did not seem to progress as in the "successful" case. This may in part be because the participants did not make their expectations and ideas transparent. Thus, though the mentor in this case had a great deal to offer his mentees, he and his mentees seem to have had difficulty understanding one another. In addition, this case was deemed one

that struggled because the relationship was less successful in meeting the participant expectations.

At the time the pilot-phase of TCP was conducted, both mentors presented in this study were students themselves. Sandra Caller, the 38 year-old mentor presented in Chapter 5, was enrolled in a Masters Program at an Ontario university. Arnold Pleasant, the 32 year-old mentor presented in Chapter 6, was a teacher candidate at another Ontario university. Both mentors indicated their household income to be less than $40,000 and neither one noted any religious affiliation. In the pre-telementoring survey, when asked to identify personal motivations for mentoring, both Sandra and Arnold chose the following reasons for deciding to serve as a telementor:

- Cultivating interest in my field (making the public more aware of what I do personally)
- Encouraging students to pursue challenging studies in my field
- Learning more about teaching
- Learning more about myself
- Giving something back to my field

Sandra and Arnold differed on the following reasons to mentor. This is to say that only one of them selected the following reasons for deciding to serve as a telementor.

- Increasing the representation of women and minorities in my field
- Giving something back to society
- Realizing the potential of the Internet to change how society works

In addition to sharing similar reasons for mentoring, in the pre-telementoring survey, Sandra and Arnold desired similar mentoring activities. Each mentor was asked to use a 7-point scale (where 1= a little and 7 = a lot) to rate a list of 12 desired mentoring functions to the extent to which they would enjoy offering it to students. Both mentors identified the following mentoring activities as ones they strongly desired:

- Help students come up with a question or idea to investigate
- Ask questions to help students think through their research

- Help students understand or interpret the evidence they use in their research
- Help students to scope a research proposal so they don't bite off too much or too little
- Suggest books, magazines or journals that students should read
- Provide insights into the practice of scholarship in the field

Both Sandra and Arnold indicated the activity they least desired was to provide locations on the Internet where students might find resources for their research.

In painting portraits of a successful telementoring relationship and one that struggled to develop, the two case narratives that follow aim to develop ides as to how teacher support in telementoring relationships may provide more positive experiences for participants. In particular, the insight the case narratives provide about the potential roles for the teacher and insights regarding the sustainability of the mentor pool, rather than the details of the case narratives themselves, are important in yielding design advice. At the end of each case, space is devoted to a discussion of design changes that may help support future telementoring relationships in the Humanities, or more generally.

4.7. Data Analysis

A range of data collection allows for a more complete and accurate picture of the case narratives being explored. Data collected throughout the various phases of the project were organized both with the use of spreadsheets and HyperResearch® software. Data collected from the pre and post project surveys was organized by a member of the research team in spreadsheets outlining questions asked on the survey, and then used to paint a picture of the participants involved in the project. I grouped demographic information gathered from the pre-telementoring surveys and the interviews under the theme Participant and School Characteristics. These specifics about the TCP participants and classroom settings helped establish the context for each case. In addition, prior to the commencement of the project, both teachers and mentors were asked to share their

reasons for getting involved in the project. Responses to closed questions in the surveys were coded. For example, a "1" was recorded if a mentor selected a particular motivation for volunteering and a "0" if the option was not selected. These responses helped shed light on why mentors volunteer for such telementoring projects. This data was of interest in contributing to the discussion of sustaining the mentor pool as well as the possibility of curriculum-based projects in the future. I then used this data to compare mentee and mentor expectations. During the project, correspondence between mentor and mentee was collected in the Knowledge Forum® database. HyperResearch® software was then used to organize these notes according to codes that emerged from working with the data. Data from the post-project interviews and focus group interviews had first to be transcribed before they could be coded with the HyperResearch® software. This task was undertaken by the PhD student working as a member of the research team.

In coding the semi-structured interviews, the focus group discussions, and the automatically generated correspondence from Knowledge Forum®, I analysed the relationships of the triad according to potential relationships within the triad outlined below. It should be noted that the relationships between student and student, mentor and mentor, and teacher and teacher were largely absent in the data and as a result have been excluded from this study. Thus, only potential relationships within the triad, which were present in this study, are outlined below.

> **Mentor-Student relation**: instances in the relationship that may have a bearing on the relationship between the mentor and student; examples of opportunities to improve or factors to benefit the mentor-student relationship

> **Teacher-Mentor relation**: instances where correspondence between mentor and teacher may benefit the telementoring relationship

> **Teacher-student relation**: instances where teacher involvement may benefit the telementoring relationship; comments about the relationship between teacher and student

A closer examination of the Knowledge Forum® postings, the semi-structured interviews and the focus group discussions yielded additional sub-themes. There were 12 codes generated in the initial open coding, but for simplicity I will only discuss the ones most directly related to my research questions. The initial open codes are outlined in the following chart. A visual representation of the relation between codes is found on page 64.

Table 2.   *Description of Codes*

Code	Description
Appreciation	instances where mentees expressed thanks to their mentors
Assessment	instances where mentors commented on student performance with regards to writing and/or researching
Student's Background Experiences	prior experiences or educational and family background; factors that may have a bearing on the student's attitude towards school, intelligence, writing or history
Adult's Background Experiences	Prior experiences with volunteering or working with students; factors that may have a bearing on how the adult interacts or relates to a student
Participants' Expectations	expectations with which participants (mentors and students) may have entered the project; teacher guided lessons conducted in class that may have helped in the success of the telementoring relationship
Decomposing	instance where a participant, mentors in particular, assist the student in "breaking down" the larger task at hand; and opportunities where teachers may assist the students in breaking down the larger task at hand and in particular breaking down mentor's advice
Motivations	Mentors' reasons for volunteering as telementors; teachers' reasons for introducing on-line mentoring projects to their students
Design Considerations	Participant comments regarding features of the software or project that if included may have helped in the telementoring relationship
Overall impressions	Participant comments about the overall telementoring experience or TCP project
Sources	students and mentors exchanging information and discussed the value of primary and secondary materials, such as artwork, newspaper clippings, photographs, books or websites
Role modelling	students and mentors discussing general writing tips, without reference to specific historical genres; mentors providing examples of what historians do or how they work
Shared Responsibility	particular examples of where a shared responsibility or involvement by the adults involved might benefit the telementoring relationship; particular examples of where mentor-teacher communication might prove beneficial to the telementoring relationship

While codes like appreciation and assessment shed some light on the nature of the telementoring relationship, and in particular attitudes and feelings of mentors towards their mentees and vice versa, this data did not address the research questions for the study. For this reason I chose to focus on the remaining codes which appeared to more directly address the research questions listed in Chapter 2. The motivation code, for example, labelled data that answered the question about 'teacher's motivations to introduce students to such telementoring projects'. The code, background expectations, was used to identify details of the mentor's prior experiences as well as the teacher guided activities prior to the TCP project that may have contributed to the success of the telementoring relationship. This data was useful in addressing the second research question, 'what conditions, both prior and during the project, facilitate positive experiences for the mentors?' Data that answered the question 'in what ways may telementors and students be supported' was address by numerous codes including background experiences, participants' expectations, decomposing, design considerations, sources and shared responsibility. Research questions addressing the relation between the success of the telementoring relationship and the teacher-mentor and teacher-student relationship were also addressed by much of the coded data falling under design considerations, role modelling, sources, and shared responsibility.

A closer consideration of the data revealed connections between such codes as sources and decomposing or role modelling, and background experiences and shared responsibility. For example, the classroom lessons conducted by one teacher prior to the TCP project proved beneficial to mentees as they worked with primary and secondary sources during the project. In this respect, the teacher had clearly shared in the responsibility of moving students closer to their destination of understanding historian's work. Similarly, one mentor's prior experience as a teaching assistant made her familiar with the need to decompose the larger task and provide examples for students when working with a variety of sources. The connection between sources and background led to a reduction of the overall themes on which to focus; therefore, the themes presented in the case narratives of this study are decomposing, role modelling

and shared responsibility. I believe these themes begin to address the possible roles teachers may play in telementoring relationships. Before discussing these roles, however, I provide for the reader an outline of the structure used for constructing the case narratives.

4.8. Construction of the Case narratives

Labelled "successful" and "less successful or struggling" telementoring relationships, the case narratives presented in Chapters 5 and 6 respectively, are judged according to the three criteria outlined in section 4.5. In Chapter 5, the mentor's role in achieving and sustaining the on-line relationship is emphasized so that the discussion surrounding the role of the teacher may be situated in relation to supporting mentors in the on-line relationship. Chapter 6 focuses on aspects where the mentor and student relationship was in need of assistance. Both case narratives highlight roles the teacher may play in helping build successful telementoring relationships, contributing to more positive experiences for all, and ultimately to the sustainability of the mentor pool.

Each case begins with background information about the school setting, and the mentees and mentor involved in each case. Individual mentee and mentor's desired expectations of their telementoring experiences are compared. A discussion of the themes, decomposing, role-modelling and shared responsibility, along with supporting data is then presented. Finally, formative design changes based on the experiences and feedback of participants in each case, as well as the researcher's professional experience in the classroom are presented in Chapter 7: Potential Roles for Teachers and Formative Design Changes in Curriculum-Based Telementoring Projects.

Figure 1. *Visual Representation of Major Themes in the Analysis*
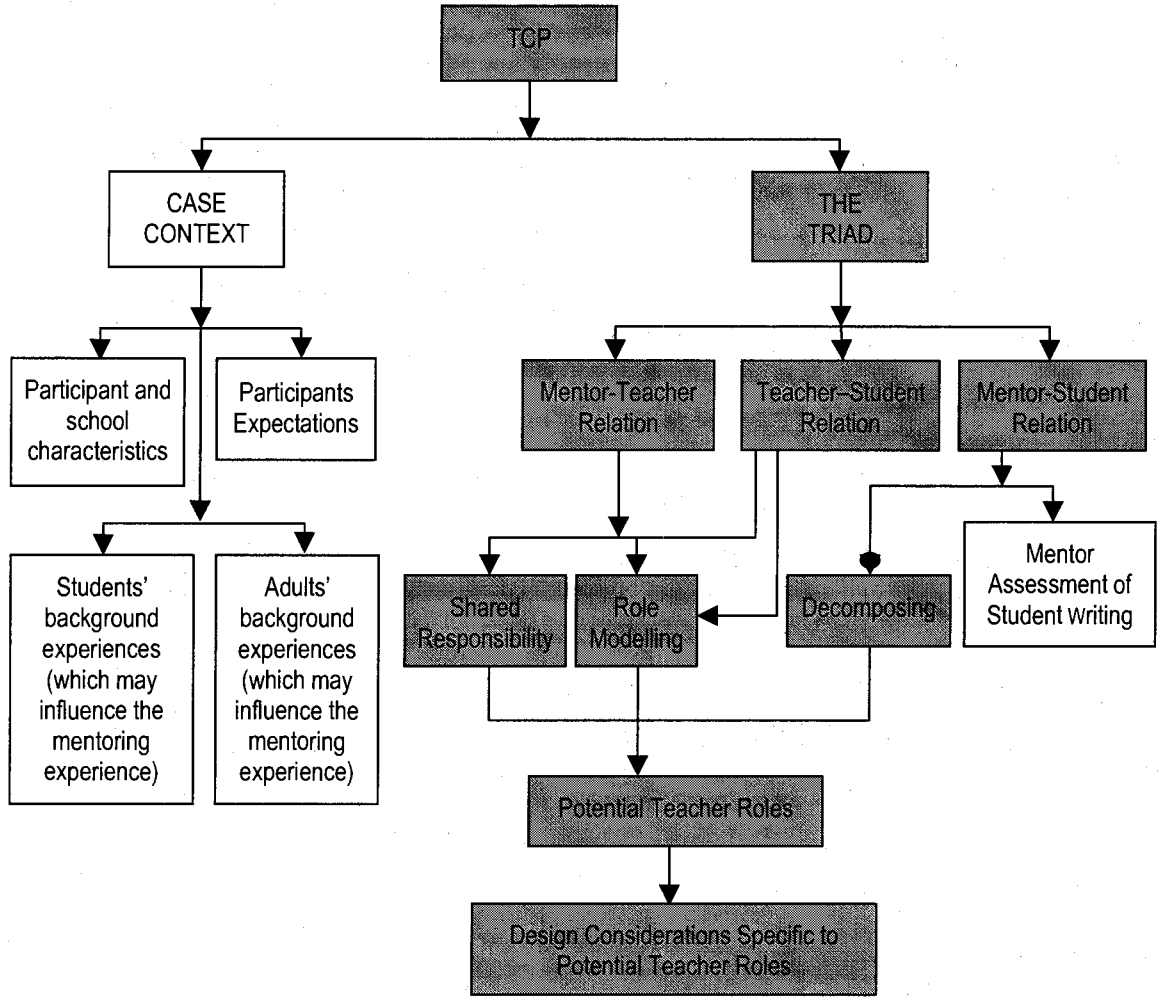
CHAPTER 5.

GETTING UP STEAM:
UNDERSTANDING A SUCCESSFUL TELEMENTORING MATCH

The narrative in this chapter focuses on the Communication group and highlights a telementoring relationship that appears to have met the project and curriculum goal of developing students' thinking about historical evidence and methodology. Commentary on historian's work is in large part influenced by personal understanding and conversations with a Ph.D. student who was a member of the research team at the time of the project.

This chapter is divided into three parts. In the first section I introduce the characters, providing background details that may have had a bearing on the success of the telementoring relationship. The next section showcases Sandra's work with several of her mentees. This second section highlights the mentor's role as a resource provider and her role as project task manager in helping students "decompose" or break down the larger project into smaller, manageable tasks. The third section focuses on Sandra's work with one particular student. Kimi, a student who of all the mentees in TCP that year, most clearly developed an understanding of what a historian's work entails. In the final section of the chapter I introduce from the details of the case some shared responsibilities between teachers and mentors that may help improve the telementoring relationships.

The first of the telementoring case narratives involves students at Metro South High School and a graduate student in Ontario who served as their mentor. As noted in Chapter 4, this relationship, deemed successful, generated the most notes in the database, and illustrates a sustained dialogue between mentor and mentees about how historians do their work. The mentor, Sandra Caller, was a M.A. student studying at a Toronto university at the time of the project. She brought to the relationship a wealth of knowledge on the topic since her thesis on "The Continuation of the Oral Tradition in

History in the Song and Lyrics of Gordon Lightfoot and Joni Mitchell", in part, focused on the Canadian railways.

Sandra entered into the telementoring relationship with the motivation to learn more about teaching and herself. Not unlike the other mentors (83%) involved in TCP that year, Sandra also wished to encourage students to pursue challenging studies in History. Unlike some other mentors (50%), however, realizing the potential of the Internet to change society was not a motivation for Sandra to mentor. Furthermore, she differed from all the other mentors in the project, in that she was the only mentor to indicate increasing the representation of women and minorities in her field as a motivation to mentor.

Sandra was not unlike other mentors in the TCP project, with respect to the mentoring functions she most desired to provide. Indicated in bold type are the percentages of mentors who, on a scale of 1 to 7 (where 1=a little and 7=a lot), noted on the pre-survey a strong desire for these activities by selecting "7" for each mentoring function.

- Ask questions to help students think through their research (66.7%)
- Help students to come up with questions or ideas to investigate (50%)
- Help students with challenging things for students to do to improve their research (50%)

Sandra differed from her fellow mentors in that she was the only one to indicate on the pre-survey a desire to answer students' questions about specific concepts or ideas, and a strong desire to provide specific strategies that may help students get their work done. Later in this chapter, I discuss how particular mentoring activities that Sandra desired, may have contributed to the success of her telementoring experience.

Sandra's mentees, Dave, William, Susie, Yen and Kimi attend a school where the student population is diverse. The students had very convenient access to Internet-connected computers, with 6 workstations in the classroom and regular access to a large computer lab. Though none of the Metro South students had experience with telementoring, many of them spent hours on-line using MSN Messenger and surfing the web. In

addition, their teacher's comfort with and interest in technology should be kept in mind since it may have some bearing on the students' comfort levels and the assistance they received when working in Knowledge Forum®.

In addition, mentees' background experiences, such as educational background, family background and academic self-concept, should be kept in mind since these factors may have contributed to the success of the relationship. For example, the mentees in this case all intended to attend university after high school. Half the students indicated that both their mother and father hold a graduate degree, while 50% noted that their mother did not finish school and that their father had graduated from college. This academic orientation may have aided the mentees in this case to stay on task in the curriculum-based telementoring experience. Furthermore, on the pre-survey, half the group identified themselves as 'B' average students, while the other half indicated they earned 'about half B and half C' grades. When asked on the pre-survey to rate on a scale of 1 to 5 (where 1= "I am NOT", 3=neutral, and 5 = "I AM") how they describe themselves, 50% of the students identified themselves as a Math person, and 50% indicated they were musical or artistic. It is interesting to note that 100% of the students in this case, were neutral when asked if they would identify themselves as an English or History person. While this may be explained by the degree to which each mentee enjoyed their specific class, it may have contributed to the success of the relationship if the student was persistent despite apparent difficulties in establishing a rapport that would help the relationship develop. Kimi, the mentee who most clearly developed an understanding of what historian's work entails, and the mentee on whom I focus in the third section of this chapter, regarded herself as a Math person.

For their project, Stan, Dave, William, Susie, Yen and Kimi were interested in studying the CPR's impact on communication. In particular, they looked at the development of the telegraph. The group developed a friendly partnership with their mentor that they seemed to enjoy.

The case reflects ways in which the mentor's adopted roles—resource provider (on-line librarian), task manager (assisting in the breaking down of tasks), and model historian – helped develop students' thinking about historical evidence and methodology. Traditionally, the teacher fulfils some of these functions. This relationship highlights the roles a mentor may play in helping students progress from a simplistic, chronological understanding of history to an awareness of a complete story built from carefully selected evidence (Shemilt, 2000). The case reveals the student's ability to think critically and accomplish some of the work of a historian when appropriate support is provided.

5.1. A Mentor's Role as Resource Provider and Project Task Manager

Thinking regarded as critical thinking, must be directed toward some end or purpose (Bailin et al., 1999). For the student passengers on the TCP, the final destination is a deeper understanding of the role of the historian and the process of doing history, in addition to a deeper understanding of the history that interests them. To reach this destination without prolonged delays, however, also requires identifying the milestones and barriers one may encounter on one's journey to making sense of our shared history.

Unfortunately, for many high school students, studying History involves only oversimplified, textbook accounts of historical events (Beck & McKeown, 1994). In this Stage 2 understanding of history, described by Shemilt (1987), the student regards the job of the historian as that of puzzle-maker. In other words, it is the job of the historian to read all the sources, remember the "facts" and then piece the information together to construct the story that will become our account of history. This challenge becomes all the more daunting when one considers the vast array of information available on the World Wide Web.

According to O'Neill (2000), telementors often fear they will be regarded by their mentees as no more than on-line librarians. According to the data collected in the pre-

telementoring survey, 66.6% of the mentees in this case, strongly expected their mentor to suggest books or other sources for them to read. In this respect, the mentees in this case are not unlike the mentees in the 2003 TCP project where 69% of the mentees expected their mentors to suggest books or other sources to read (Asgari and O'Neill, 2004).

The task of researching a topic is one of the first tasks a mentee must complete. The role of mentor as on-line librarian – provider of selective resources – becomes useful in establishing common ground for discussion amongst participants in the projects. As on-line librarian and project task manager or the one who helps mentees decompose the larger project into manageable tasks, the mentor fulfils what O'Neill (2004) refers to as jumpstart functions of research tasks. Some of the early correspondence between Sandra and her mentees makes clear their expectations and gets them grounded for the research task:

> Hello Sandra,
>
> My name is Dave Lin. It's glad to meet you as my mentor. I'm doing the communications during development of CPR. Could you help me to learn more about the development of communications in Canada?
>
> Thank you being our mentor. Lol

In his opening message, Dave asks Sandra for help in learning more about his chosen topic. Interestingly in the Knowledge Forum postings, Sandra replies to Dave and after receiving several messages from other mentees requesting assistance with starting their research, she reposts the message, this time addressing it to everyone:

> Hi everyone,
>
> After reading Stan's email I've been searching for some basic (starting point) sources for the CPR and the telegraph, they may give you other ideas.
>
> Robert Burnet has written a book called Canadian Railway Telegraph History, which has good photos, copies of old documents, and a good bibliography to give you ideas for other books.
>
> Harold Innis wrote a book called A History of the Canadian Pacific

Railway. The Public library in your area has copies - check their website. The call number for the book is 385.09 C22i1. Other books in the 385.09 section of the library may also be useful, take a look! There is also a webpage devoted to Canadian Railway Telegraph History at: http://railwayop.tripod.ca/crthindex.html

For a list of articles - and the articles themselves you can go via that website, or you can go direct to: http://railwayop1.tripod.ca/TeleHistory/history.html

Happy hunting,
Sandra.

As resource provider, Sandra has provided a wealth of information for her mentees, including call numbers, websites and general areas in the library where they may begin their research task. She addresses one expectation of her mentees to receive books or other sources from their mentor. In some respects the mentor's role of providing books and sources as a common starting point for discussion is similar to organizing the university seminar where students gather face-to-face to discuss a work that has been read by all participants. Sandra Caller's background as a M.A. student and Teaching Assistant at the university, may explain why she adopted a seminar-like approach in this telementoring relationship. Sandra suggested to her mentees books with which she was familiar. These resources served to jumpstart the discussion for the group.

Another one of Sandra's early messages to her mentees illustrates her efforts to minimize the overwhelming amount of information available to students, and at the same time lead them toward a more advanced conception of historical knowledge.

Sandra: There are two sets (two books to a set) of books you may want to see if your public library has. One is called A History of the Canadian Peoples Origins – 1867, and the second book is A History of the Canadian Peoples 1867-Present.

A Ph.D. student, Marion Lort, who was a member of our research team, described these classic textbooks as attempting both grand narrative and specific detail. The texts are cross-referenced with other texts, and websites, and include historiography sections ("Where Historians Disagree") that examine conflicting versions of a story. In directing her mentees to these sources, Sandra avoids "providing answers on a plate" and instead

provides students with sources that may help them learn about historiography; she ensures they start off on the correct track. As a mentor, Sandra is successful in meeting the desire she expressed in the pre-telementoring survey to "encourage students to pursue challenging studies". She has directed her mentees to examine conflicting versions of historical stories. As the project task manager, Sandra has fulfilled her first role as a mentor and met her students' expectations at the same time. She serves as an on-line librarian and resource provider in a way that has made research a manageable task for her mentees, and provides a common starting point for the group's discussion – a discussion that may expose essential truths about the complexity of historical knowledge.

Few of us would argue against having a student visit the library and seek the help of a professional librarian. So why then should we contest such a role for the telementor? Instead we may see it as an introductory step that will address one expectation of mentees – that their mentors will help them find useful resources. The sharing of intellectual resources may help aid the student in attaining the background knowledge required to think critically (Bailin et al., 1999) or, at least, to pass a test. Providing background knowledge by way of common sources may also help lay tracks for a more successful relationship between members of the on-line community, who may wish to dialogue around these shared resources.

Of course if the mentees are to better understand the work of historians, and progress in Shemilt's stages, then the mentor's role cannot be limited to that of on-line librarian. The mentors in this study desired to be more than an on-line source for factual answers, a role associated with Stages 1 and 2 thinking in Shemilt's model; instead in the pre-telementoring survey, 100% of the mentors in this study sought to suggest challenging things for students to do to improve their research. Asgari and O'Neill (in press) report a similar level of desire (93.3%) amongst the mentors in the 2003 TCP study. Nonetheless, when the mentor suggests resources, whether books or websites, mentees are expected to seek out the materials.

Sandra Caller, like a number of the telementors, had not been involved in any telementoring before. Though she suggested entering the project without any expectations whatsoever, in the post-telementoring interview Sandra noted that she was determined not to play the role of digital librarian:

> Sandra: The kids sometimes they were wanting more and more websites. I wasn't going to give it to them. They were basically asking for the answers to be handed to them on a plate and I wasn't going to do it [either]
>
> ...so if I knew what they needed, I didn't mind hiding it in four or five other things. But you know, let you go and find the books and figure out which one it's in, without even telling them it might actually be in one of them.

Sandra acknowledges, in the above quote, the need to avoid serving solely as an on-line librarian, but also notes the importance of providing limited and highly selective information for her mentees. In her response to Stan and the sharing of the note with others in the group, Sandra provided pre-selected evidence, and decomposed the larger task of a historical inquiry. Sandra helped her mentees avoid the overwhelming amounts of irrelevant information that may have interfered with their ability to make sense of what they were doing. More important, she kept the students on track by providing background information and Internet sources, one of the functions, according to the pre-telementoring survey, mentees desired of their mentors. Sandra was able to meet her mentees' expectations and satisfy her motivations for mentoring at the same time.

Whether intentional or not, Sandra's plan to hide the desired information in the texts may be used to simulate the historian's experience of following leads, in search of traces that both support and challenge one's story. Sandra acknowledges her mentees wish to receive more and more direct resources. She challenges her mentees to work through confirming and disconfirming evidence, just as a historian must do. In this respect, Sandra is able to go beyond the role of on-line librarian and conduct a journey into Canada's past.

5.1.1.   The Mentor's Role in Managing the Task of Research

Sandra's ability to be more than an on-line source of information is revealed in a good deal of her correspondence with her mentees on Knowledge Forum ®. This section illustrates how Sandra continued to build her rapport with her mentees while decomposing the larger task of research.

All of the mentees in this case welcomed challenging suggestions that would improve their projects. In addition, all students in this case expected their mentor to suggest specific strategies that would help them get their work done. Sandra shared this strong desire and this is illustrated in examples of her work with Susie below.

The following excerpt from the Knowledge Forum® records illustrates how Sandra built on her rapport with her mentees then decomposed the task at hand, encouraging them to challenge themselves in learning about historian's work.

> Hello, my name Susie. My topic is *communications*. I chose this topic because it was the only topic left in my interest. I lost my password and username, so I couldn't go on this thing for a while. Can you help me choose a subtopic to work on? (yes, yes, I know it's too late...blabla...but help me, please!!!)

Sandra's note illustrates a well-constructed response, in which she picks up on the mentee's fear that there is not enough time to complete the project. Sandra first alleviates this fear then provides some guidance.

> Hi Susie,
>
> Don't panic, its not too late, you just need to make a few decisions and sort a few thing out. Regarding choosing a narrower topic, take a look at the message I sent to Dave on May 29 titled, "Choices"...
>
> So, take a look at what I wrote to Dave, see if you can narrow the choices a bit for yourself. You may also want to take a look at the other e-mail I posted on the 29th, which has some books to look at (with the public library call number), and some websites. This sort of narrowing down will help you focus your ideas a bit. Then get yourself a piece of paper, or a blank page on the computer, however you prefer to work, and write some ideas down about your topic: What are the important

point, who are the important people, are there any important dates. So, it's not too late, you just need to do a bit of basic work, and you'll have a project under way in no time!

Sandra

Some may see Sandra as a bully – telling the mentees how to proceed with their research; others may see her as a combination of encourager and bully. In her message, Sandra provides her mentee with some steps on how to break the project down into a manageable size and avoid feeling overwhelmed. In fact, the passage illustrates Sandra's role of both on-line librarian and project task manager. She helps her mentee to break down the task of research, suggesting ways in which Susie may narrow down her topic. Sandra's note above begins and ends with encouragement, also reflecting her role as a cheerleader, and perhaps encouraging her mentee not to give up. More important, Sandra has guided her mentees through the first stage of doing history: gathering evidence and weighing the relevance of that evidence to one's topic. Once the mentees are comfortable with these stages, Sandra proceeds to guide her mentees through stages in the process of writing history. It is at this time Sandra's role moves beyond that of decomposing to modelling historical work. The reader should note, however, that though I have attempted to separate the two functions, Sandra fulfils the functions of decomposing and modelling throughout the telementoring relationship. In the following section I continue to discuss Sandra's role as decomposer as it pertains to the task of writing history, and leave my discussion of her function as role-model for section 5.4.

5.1.2. The Mentor's Task of Decomposing the Writing Process

Continuing to challenge her mentees to learn about historian's work, Sandra breaks down the task of writing history by first providing her mentees with an example to which they may relate. Her friendly and creative approach to providing guidance in writing history began with an analogy to the World Cup, which was being televised at the time:

Hey Sandra

Yupyup~! England and Germany are in the Final would be great!!...anyway, thanks for the information...I am gonna write the essay this coming up weekend. I don't think I will have any more class time to message you on....I'm glad that I have a mentor like you~!...well nice talking to you

Bye~!
Man the essay is gonna kill me!!
hehehe!!
Yen

Though he has not directly asked for assistance with writing the essay, Yen's comment about the grave task of writing the essay, may have alerted Sandra to her mentee's need for assistance in the writing process. Sandra's attention to this add-on in Yen's message may have been enough to keep her mentee on track. Sandra picks up on this detail in her response:

OK, point one. This essay is NOT gonna kill you!! But I might if you don't get it written this weekend ;-)

Two: What are your main points? Are they clear in your head (or better yet, on a piece of paper?)

Three: What is the POINT of your paper? What is the argument? What are you trying to PROVE?

Think of it as a football match if you watched Sweden draw with Argentina the other day (to knock Argentina out) you might say:
1. Argentina didn't score enough goals because they didn't attack well.
2. Argentina had too many fouls (and got too many yellow cards) to be able to concentrate on scoring goals.
3. Argentina were too worried about how their hair looked (trying to be fashionable) and forgot about the fact that they had to win to stay in the World Cup

Therefore you would have an essay with three main points....

Give it a go and let me know how you get on
Sandra

If there is one thing my professional experience has taught me, it is that all students, even those not identified with special learning needs, require something concrete to

which they can relate when pursuing a task that is new to them. Sandra appears to understand her mentees' need to relate the larger task of writing to a topic with which they are familiar before the mentees can extrapolate to writing history. The use of the soccer analogy may have allowed Sandra to communicate with her mentees in terms they understood and found less intimidating. Thus, before providing an example of historical writing Sandra first breaks down the task of writing a paper as it may apply to the topic of why Argentina lost the World Cup. She takes it as a historical event to be explained. In her example, Sandra does more than decompose the task of writing a paper. She introduces the idea of analysis by inviting Yen to consider possible reasons for Argentina's loss in the World Cup. Having done this, Sandra lays the tracks for her next role in the relationship, that of modelling historical writing.

5.1.3. The Mentor's Function as Role Model

Having fulfilled the jump-start functions of providing mentees with resources and helping them break down the larger project, Sandra has set the telementoring relationship on the right track. These early roles in the relationship may in part explain the sustained correspondence of this telementoring relationship. With the initial expectations of the mentees satisfied, Sandra is now able to focus on fulfilling both her own goals for mentoring and the project goal of improving student understanding of historian's work. It is in meeting these objectives that the mentor begins to function as a role model.

Using the World Cup analogy once again, Sandra continues with her friendly and creative approach to providing guidance. Her rather lengthy note from Knowledge Forum® entitled "CPR Tutorial: A few notes and ideas, names, dates & places" illustrates how Sandra built upon her previous example of decomposing the task of writing, to now provide one example of historical writing. To save space, only a small but informative portion of the tutorial is quoted below.

> Sandra: Hi everyone,
>
> I figured I'd give a go to the idea of an internet "tutorial", or the closest we can get to it! All quotes are used directly from books, with the name of the book author, and the page number in brackets after the quote:
>
> ... "in 1867, the lives of individual Canadians were being transformed by the Industrial Revolution." (Finkel & Conrad, 12) ...Within this structure of industrial growth "railroad companies were Canada's largest corporations in 1867.... Maritimers made an intercolonial railroad link one of their conditions for joining Confederation... [which was similar to] negotiations with British Columbia and Prince Edward Island." (Finkel & Conrad, 13)
>
> Louis Riel and "the Red River Métis' resistance in 1869-70 had made the Canadian Government conscious of the need for quick military access to the region, which only the railway could provide." (Francis, Jones & Smith, 51) ...

Sandra's message includes a rather detailed timeline in which she not only illustrates a method students should follow when citing sources they have consulted, but also illustrates how evidence may support her claim. She begins her argument by suggesting "the lives of individual Canadians were being transformed by the Industrial Revolution." Next, just as Sandra illustrated for Yen the process of explaining Argentina's loss through the provision of three points, Sandra introduces her three pieces of supporting evidence: growing corporations; conditions for joining Confederation; and government awareness of the need to build the railway.

Her opening argument hints at a discussion that will outline how the building of a railway led to both the positive influence of building a nation and the negative affect of further dividing the colonialists from the native people. By doing this Sandra provides feedback that is appropriate to the classroom setting. In other words, Sandra has modelled some of the work of the historian in a way that makes sense to the mentees because she has provided the similar structure through the familiar example of the World Cup. In this way, she attempts to bridge the work of the discipline with more familiar experiences. More important, Sandra begins to demonstrate for her mentees how the historian may use historical evidence and traces. Sandra's note may serve as a good introduction to a paper on how the Industrial Revolution changed the lives of

Canadians. With some work on their part, the mentees may see how the introduction to their own stories may follow Sandra's example. However, to avoid what Shemilt (1987) identified as Stage 1 thinking, (as well as any plagiarism) Sandra reminds the students that her tutorial is accessible by everyone and others will know should someone decide to simply copy her information:

> ...NOW REMEMBER: YOU WILL NOT BE ABLE TO QUOTE WHAT I HAVE JUST WRITTEN WORD FOR WORD FOR YOUR PAPER, AS EVERYONE CAN SEE WHAT I HAVE WRITTEN, SO EVERYONE WILL KNOW IF YOU COPY!
>
> However, above gives you an idea of some of the main events associated with the railway: some of the names, places, and dates you can look up further for yourself! I have tried to write in general terms, not specific to communications or the natives, because you guys have to do some of the work yourselves!!! There is more about the CPR, communications and the natives in both books I have used - all you have to do is look at a copy!

Again, Sandra reminds students that there is more about their topic in the books she has consulted; they must look at a copy themselves.

In providing a glimpse of their contents, Sandra attempts to spark the students' curiosity about the books. She has shown the students the wealth of information that can be gathered from only two books but also informed them that in this reliable source, there is still more of relevance to their research. Like any good educator, Sandra has provided content and guidance. Sandra is working to move beyond the role of on-line librarian in her mentees' eyes, to become a conductor on the journey.

Role modelling was important for Sandra's mentees since their teacher did not provide examples of ways to work with different sources. The teacher, Carl, acknowledged this oversight:

> Carl: When they read something they don't question its source, or... they take it at face value and they have a belief that because it's written it's the truth.... They are not accustomed to working with historical evidence other than using a textbook or, you know, on-line resource, watching a video. I guess part of that is that I haven't brought in artefacts or something and had kids do things with it. So when they see something

they don't know how to begin to analyze or ask the right questions or ask any questions regarding who, what, where, when, why, regarding an event or a piece of artefact or whatever.

Sandra helps her mentees begin to understand how to analyze resources related to the broader topic of how the Industrial Revolution transformed the lives of individuals. Sandra demonstrates for students how they may work with the sources they have gathered. She models the first few levels of Bloom's Taxonomy. Sandra has read and understood the sources; she has achieved knowledge and comprehension. In modelling for the Stage 1 thinkers the tools of critical thinking and the early stages of a historian's work, Sandra may help her mentees move to Stage 2 in Shemilt's model.

As the relationship developed, more facets of Sandra's role as telementor became evident. Many of the jumpstart functions Sandra addressed may have been fulfilled by a teacher in the classroom. The section that follows focuses on the responsibilities shared by mentors and teachers in ensuring the success of the telementoring relationship. I present the shared responsibility as it pertains to the Mentor-Student relationship, then discuss the Teacher-Mentor relationship and speculate about ways in which strengthening this relationship may help foster more telementoring relationships as successful as Sandra's.

5.2. Moving Mentees to a Deeper Understanding of History

In ambitious curriculum projects, there is often a need for telementors to simplify the problem for students (O'Neill & Gomez, 1996). Similarly, in a history-based project such as TCP the role the telementor plays in decomposing problems and role modelling authentic work is a crucial one. Sandra's relationship with one student in particular provides numerous examples of this. The relationship presented in this section highlights the potential of "mentoring in the open", the scheme in which mentors and mentees not specifically assigned to one another can still interact. I begin with some background information about Kimi.

Having heard from her boyfriend that his mentor was "really nice", Kimi sought out the assistance of Sandra. On the pre-survey, Kimi identified herself as more of a Math person than an artistic individual. She noted she spent one hour a day doing homework, listed her average grades to be mostly Bs but saw herself attending university in the future. Kimi indicated that both her mother and father held graduate degrees, a factor that may suggest Kimi possesses a healthy cultural capital[3] that helps her in school. This may explain Kimi's ambitious attempt at the higher order tasks of synthesis and evaluation in Bloom's Taxonomy. Through her topic of Natives and Communication, Kimi is making connections between prior classroom experiences and the TCP project.

Having studied Louis Riel and the Rebellions in class, Kimi noted in the Knowledge Forum® notes, as well as the focus group interviews that, in her words, she had an "infatuation" with Louis Riel, whom she regarded as a hero. In fact, this was the reason Kimi noted for originally selecting Natives and Communication for her project.

Not unlike all the other mentees working with Sandra, Kimi had a strong expectation that her mentor would help her understand materials she read, suggest challenging things for her to do that could improve her project, and help keep her on track. Like half the mentees in this case, Kimi did not expect her mentor to ask her questions to help her think about her project. In this respect, Kimi and Sandra were initially at polar opposites; yet, they appear to have had a positive telementoring experience.

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[3] The term "cultural capital" was coined by French sociologist, Pierre Bourdieu. It suggests that an individual's prior experiences, for example home life or socio-economic status, may serve as an advantage or disadvantage when the individual enters school.

Some interesting evidence regarding the nature of the classroom and the rules which govern it can be drawn from Kimi's introductory note to Sandra.

> Kimi: Hi, Sandra
>
> I know I am not suppose to post a message here cause my topic is Natives. But you seem really nice to all the people in my class. I have read all your messages.
>
> I am just wondering are there any connections between Natives and Communication?? Or how Natives communicated with each other?? Through mail? : Thanks:)
>
> Kimi

The reader should note that the research team had instructed students not to change mentors over the course of the project. This policy was put in place to prevent popular mentors from being overworked and to protect the feelings o f mentors who might feel abandoned. This was deemed necessary to sustain the mentor pool. Nevertheless, with the approval of her teacher, Kimi broke this policy and sought out the advice of another knowledgeable adult. Kimi opted to seek the advice of Sandra, and Sandra somewhat hesitatingly agreed to work with Kimi:

> Sandra: I opened up the box one day and I had this message from her and she was ... "I've been reading what you've been writing and is it OK"; and I figured so long as I don't get any nasty Emails [from her assigned mentor] saying "give me my kid back", so long as a kid, you know, wants to talk to somebody, as far as I'm concerned that's fine.

There is nothing in the database to suggest that Kimi's relationship with her assigned mentor was struggling. Her decision to seek out another mentor may simply have been a result of her boyfriend's participation in Sandra's group, or because Kimi decided Sandra was "really nice". Regardless of her reasons, Kimi's willingness to seek out the advice of another adult and Sandra's willingness to give advice is a perfect example of the potential of mentoring in the open. The relationship developed successfully; nonetheless, it may just have easily have been derailed if either one of the participants had not been responsive. In this case, the participants' flexibility opened doors to the discussion and dialogue needed for students to understand the work of the historian.

As in her note to Susie, presented in section 5.2, Sandra asks Kimi a series of questions to help her decompose the larger topic of her research. She invites Kimi to consider the route she will take in her investigation of natives and communication.

> Sandra: Hi Kimi,
>
> I don't mind answering questions from people not in my group (if I can). ...When you say "natives and communication" do you specifically mean the telegraph, or are you thinking of other sources of communication as well?
>
> ...Do you want to answer both (natives communicating with native systems, and natives communicating with European/Canadian systems, or just one of the two?
>
> ...Give this a think...and let me know which communications systems you mean specifically, because the more specific you can be, the easier it is. Do you mean just the telegraph? Do you want to include the mail? Which dates are you looking at (ie. between 18?? And 18??, or whatever).

In posing this series of questions to her mentee, Sandra models for Kimi part of the process of working toward less ambiguous questions. The task of identifying Kimi's framework of assumptions calls attention to the specifics and details required of historians as they produce histories that have depth. In defining her framework of assumptions, Kimi may employ all the intellectual resources of critical thinking. In the last paragraph in the passage above, Sandra encourages Kimi to answer the series of questions in order to clearly define her topic. Sandra also introduces Kimi to a variety of sources to be consulted. The following passage illustrates Sandra's deliberate attempt to direct Kimi towards the details of her story.

> Sandra: I see you also asked "why was Riel a traitor?" Well, do you think he was a traitor? And if so, who would see him as a traitor? The Métis? The European / Canadians? First of all, you have to define "traitor" as you are going to use it for your project.
>
> ...Most public libraries have the Heritage Minutes video series, which has a Heritage Minute about Reil take a look at that as a starting point. Then, there is a book by Thomas Flanagan titled Riel and the rebellion: 1885 reconsidered. That may be of use to you. There is also The trial of Louis Riel: Justice and Mercy denied: A critical, Legal and Political Analysis, by George Goulet.

Here Sandra once again fulfils the role of on-line librarian, meeting Kimi's expectations of her mentor. More important, in role-modelling the inquiry process of asking questions, Sandra models for Kimi the historian's process of asking questions of secondary sources. Sandra is introducing Kimi to the Shemilt's Stage 4 thinking where history is seen as a kaleidoscope of knowledge. Sandra is encouraging Kimi to see that depending on whose perspective she adopts, more than one story may be told about Louis Riel. By insisting Kimi define her terms and ensure every word she uses in her project work is used precisely, Sandra appears to encourage the kind of accuracy required of historians. With the question "Do you think he was a traitor?" she prods Kimi to use the tools of the critical thinker, in this case making explicit the criteria for her judgement. In the same conversation, Sandra offers the analogy of a parent who tries to protect a child even if the government forbids such action:

> Sandra: If Riel lived with the European/Canadians, and then betrayed them, that would make him a traitor to them, but was that what he did?
>
> Do you think Riel was just standing up for the rights of his peoples? If that was the case, even if he made other people unhappy, did that make him a "traitor"? For example, if I had children, and tried to protect them, even if the Canadian government told me not to, would that make me a "traitor", or would it make me someone who was just protecting people close to me?

Here, Sandra once again provides feedback appropriate to the setting. Much as she bridged the work of the discipline to the World Cup in section 5.3, Sandra uses the example of the parent protecting the child to help Kimi through the critical thinking process. With the analogy and familiar sounding situation, Sandra is able to illustrate the ethical problem with which Kimi will have to grapple to determine her own stance as a historian in relation to the story she is telling. Sandra is pressing Kimi to consider whose story is being told, and asking Kimi to determine the point of view she takes when she begins writing.

In the same message, Sandra also introduces the idea of intellectual dialogue between historians. She teaches Kimi that history always includes room for debate and re-examination of the same events. If, as Shemilt (1987) suggests, there are 4 stages of

understanding written history that range from a knowledge that is given to an acknowledgement that history is no more (and no less) than a reconstruction of past events, Kimi certainly seems to be drawing closer to her destination of Stage 4 thinking. Her responses to Sandra's messages indicate this maturity:

> Kimi: I think Riel is a hero, how can he be a traitor? He was born to be a Métis; of course he should protect the Métis rights. ...what I should write for this project, rewrite the History?

Kimi's question seems to indicate that she still has some reservation about presenting a "new story" that differs from the textbook account. The question suggests that Kimi recognizes a kaleidoscope of stories may exist, but that her experience of history has been that of Stage 1 and 2 thinking. This question may be the point at which Kimi moved to Stage 4 thinking in Shemilt's model, and though she readily broke the project rule regarding contacting mentors, Kimi is a little unsure that conflicting stories are welcomed in the discipline of History. Her mind may be on what her final grade will be should she attempt such a task. Her dilemma may also be explained by a lack of exposure to conflicting historical accounts, or similarly, an exposure to only a limited selection of historical accounts. In this sense, it is important that the teacher clearly inform students that writing an account different from what is presented in classroom texts is legitimate, provided adequate supporting evidence is presented. More important, the teacher may share conflicting historical accounts with students, so as to reinforce Stage 3 and 4 thinking about History. Sharing this viewpoint requires that the teacher model the open-mindedness and fair-mindedness required in critical thinking.

In doing this, Sandra seems to help Kimi to start thinking critically. The passage below illustrates Sandra's ability to achieve two goals: First Sandra, as she did for Yen in section 5.3, suggests to Kimi how the task of writing may be decomposed; second, Sandra She invites Kimi to re-examine her own thoughts on Riel and see if they change when the CPR is introduced into the story.

> Sandra: There are many different ways in which to look at history, which is what makes it so interesting; there is always something to look at, and

usually someone to disagree with. Think about it, look at the email you
sent me last night, if we were just dealing with Riel and not the CPR as
well, you would have a good basis for a paper on Riel just from what you
wrote to me! You (1) "don't think there is anything wrong with protecting
one's deserved rights." (2) You think Riel is a hero. (3) You think as a
Métis, Riel should protect Métis rights. (4) You think people who called
him a traitor were wrong. With those four points alone, you could write a
really good undergraduate paper. You have your perspective and your
argument clear in your mind, all you would have to do is fill out your
thoughts, and provide evidence in the form of quotes.

In her message to Kimi, Sandra outlines the points Kimi may use to write a well-
supported paper defending Riel as a hero. More important, Sandra's message also
introduces to Kimi the idea of conflicting stories and an existing historical dialogue. The
opening sentence of Sandra's note suggests, not that "anything goes" in History, but
rather that the existence of differing stories is possible. She challenges Kimi to
substantiate the Métis viewpoint. In the extensive advice Sandra offers about writing
the paper (omitted here to conserve space), she emphasizes some of the practical
questions of organizing material. The above passage allows Sandra to encourage her
mentee's thinking, while at the same time inviting her to consider alternative viewpoints.
Sandra is laying the tracks for future messages in which she presents Kimi with the
notion that History is not the telling of many stories but an ongoing dialogue about
events and people that help us understand the present.

What historians hope to achieve is not so much telling different stories, but an on-going
dialogue in which each historian re-examines the facts available, and tests the stories
that have been written against the evidence. For the historian, who you are and when
you live affects what you write (Collingwood, 1946). Kimi first hears this message in her
classroom. Her teacher, Carl, explains how he tried to convey this message:

Carl: I know that if you read different accounts at different time periods,
and we've talked about how when we write about history we talk about
using that day's standards and norms, so we haven't really done too
much work with comparing different pieces at different time periods, but
I know we brought it up with TV for example....We're changing, and
always changing,...same as when we write, we use our beliefs of today

when we write about history, so different time periods, different beliefs, same event.

Kimi's teacher introduced the idea of conflicting but equally justifiable stories in areas other than History. Sandra helps Kimi see this idea as it applies to the discipline of History. Here lies an example of the mentor's function mirroring that of the teacher. Though post-telementoring interviews indicated that teacher and mentor did not correspond during the telementoring relationship, this is an example of teacher and mentor, unintentionally reinforcing each other's messages to the mentee. The example begs the question, could greater success of telementoring relationships be fostered by correspondence between mentor and teacher?

In the exchanges I have shown, Sandra seems to have helped Kimi find a place for herself in relation to her subject. She presents to Kimi the idea that reportage is the means, but not the end of History. In a lengthy message, Sandra then provides Kimi with detailed advice for writing her final paper. Although lengthy, the richness of the text makes it worth including this passage in its entirety:

> Sandra: What I was trying to do with those questions yesterday was get you thinking of the different questions which have to be answered in any author's mind when they are dealing with Riel. Higher up through the system you go, you have to write a paper that is NOT a list of events in the order that they happened, but, a paper with an argument to it, what is known as a thesis statement. For example, you could have two people in the same history class, both are writing a paper about Riel. The first person decides Riel was a hero, and that is what they are going to say in their paper. They then have to basically consider the questions I sent yesterday, and come up with answers to those questions, and quotes from sources, which PROVE Riel was a hero. The second person decides to write their paper about Riel being a traitor. What they then have to do is consider roughly the SAME questions, but come up with answers to them, and quotes from sources, that PROVE Riel was a traitor. It's all about the PERSPECTIVE you choose to write your paper from.

It is important to note that in her response Sandra presents two possible answers. She is giving Kimi two possible routes in the journey of writing history. More important, she does not make the decision for Kimi but instead suggests either route is acceptable.

Before offering advice about writing the paper, Sandra spells out for Kimi the goals she was pursuing with her earlier message: She decomposes her own message for Kimi. This step is a crucial one in maintaining the conversation. In case she was not able to do so on her own, Sandra ensures Kimi has made the connection between the questions that are asked from different perspectives and the construction of written history. Sandra has helped Kimi in several respects: First, she has broken down the problem and helped Kimi to decompose what could be an overwhelming task. At the same time she fulfils the role of on-line librarian, providing some sources Kimi may wish to consult. Third, Sandra has encouraged "fair-mindedness" (Bailin et al., 1999), giving fair consideration and seeking out evidence that may substantiate alternative points of view. The teaching of History must be reinforced as a journey in which students encounter and compares conflicting stories. And in the process of critically examining conflicting stories, students learn to break the larger task of doing History into manageable tasks research, writing. If more students are to learn, like Kimi, what historians do.

In addition to seeking out different viewpoints and resources, Kimi admitted in one message to asking the opinions of others, dialoguing about history in order to come to a better understanding of the stories and what she, as a historian, needs to do in order to construct the story she will tell. Perhaps the strongest paper submitted in the Metro class, Kimi's paper reflects not only competent reportage, but also a well-argued thesis.

Kimi's final paper suggests that she did reach the level of sophistication described by Shemilt in the fourth stage of understanding history. Her opening paragraph starts with a quote from a book by Hugh Dempsey "...The Canadian Pacific Railway linked the hearts of all Canadians."(Dempsey, 1984) Kimi identifies the majority viewpoint then goes on to challenge it in her subsequent remarks:

> "However, is this the real picture of what the CPR brought to ALL
> Canadians? What about the First Nations?...Did the CPR link their hearts
> also? I don't think so. Their hearts were torn into pieces as Donald Smith
> drove the last spike of the CPR"

Eureka! Kimi's question, "Is this the real picture...?" sums up the fundamental question that motivates historians. She understands that there is more than one justifiable story to tell about the building of the CPR. Sandra played an important role in helping Kimi travel to the point where she could see that there are different and equally defensible points of view, each contributing to the complexity of a "whole story".

In some ways Kimi was an atypical case. Of all the mentees involved in the 2002 TCP project, Kimi most clearly achieved Stage 4 thinking. Her parents' academic orientation may have had some bearing on her experiences in the project. In addition, unlike her peers, Kimi chose her own mentor. In this respect, regardless of her academic success, Kimi had a special commitment to her mentor.

Her relationship with Sandra was built upon historical events related to Riel, unlike her peers who worked with the colloquial analogy of the World Cup. Nonetheless, we need only look at the ways in which Sandra treated her mentees, both as a group, and as individuals, to see how the sort of experiences Kimi had may be made more common, allowing more students to advance in Shemilt's stages of understanding History.

As in her "on-line tutorial" noted in section 5.3, Sandra would on occasion post messages addressed to everyone. When Sandra felt the content of messages may benefit all mentees, she addressed the message to everyone and clearly entitled the message, encouraging all her mentees to read her message. In many respects, Sandra's approach is similar to the large group or whole class lessons. Similarly, in the messages where Sandra decomposes the task of writing, she parallels the conference approach teachers may take when dealing with student's individual needs. With Yen, Sandra builds upon the analogy with World Cup, illustrating how he may build his argument in an analysis of why Argentina lost the tournament.

In a similar way, Sandra builds upon Kimi's interest to help her understand the dialogue that exists amongst historians. In both scenarios, Sandra recognizes the need to address general concepts through large group discussions and individual research questions in

more intimate conversations. Though grouped by a common theme, Sandra acknowledges each mentee's individual research topic. In this respect she employs the habits of mind each historian requires to recognize the many stories waiting to be told. Sandra makes her dialogue with her mentees appropriate to the setting and helps each mentee move the next stage in their personal journey in Shemilt's stages of understanding history. In short, Sandra recognizes that each of her mentees begins their journey at a different stage, and although they will travel together in their shared dialogue, the likelihood of ending up at very different destinations is great. To expect all her mentees to reach Shemilt's Stage 4 thinking by the end of a short telementoring experience such as TCP is an ambitious venture that could potentially place tremendous demands on the mentor pool. However, my professional experience has taught me that when adults work together to serve as role models for students, and together encourage students to become critical thinkers, the gains are enormous. I turn now to a discussion of how teachers and mentors may work together to bring more students to a deeper understanding of History.

5.3. Laying the Tracks for Historical Knowledge Building

Sandra showed skill as a telementor, perhaps due in part to her experience as a Teaching Assistant for undergraduate students. Her expertise in the subject matter, in particular research methodology, proved advantageous in conducting the students' journey to a deeper understanding of the job of the historian. Her ability to conduct a successful journey may have been aided by the teacher's role in the classroom.

Though Sandra fulfilled the jumpstart functions of providing mentees with books and other resources, reaching their destination required students board the train, and in their Knowledge Forum notes, Sandra's mentees suggested they "didn't have enough time" to go to the library. Here the teacher may have helped conduct a more successful journey by organizing a field trip to the local library or archives. Had they corresponded during the project, Carl may also have been aware of the resources Sandra

recommended, and if unable to organize the trip to the library, may have arranged to have the books available in the classroom. This may also have helped Carl continue earlier classroom discussions about working with historical evidence.

Prior to their TCP journey, Sandra's mentees discussed working with different historical accounts with their classroom teacher. In large class discussions, Carl discussed the modern day standards and norms by which we judge the past. He used the familiar example of television to address the topic. However, Carl may have taken the discussion one step further, just as Sandra did with her on-line tutorial. Dividing the class into small groups, Carl may have had the students compare different historical sources. Through a classroom activity where students work with primary sources, Carl may have developed a better sense of whether the students understood their earlier discussion about judging the past.

In addition, just as Sandra asked Kimi to reflect on Riel from different perspectives, Carl may have presented his students with conflicting stories of a particular historical event. This may have reinforced Stage 4 thinking, and may have encouraged students to abandon Stage 1 and 2 views of regarding history as a collection of "facts". More important, the presentation of conflicting stories in the classroom may have opened the door to a classroom discussion about how to write history when one is confronted with differing stories.

Just as Sandra presented Kimi with a series of questions to consider before she determined how she regarded Riel, Carl may have pressed his students to grapple with different stories of the past before they began writing history. Had he been aware of Sandra's on-line tutorial, Carl may have developed his own ideas of parallel activities for the classroom. In short, had the concept of team teaching been extended to the adults in the project, both teacher and mentor may have worked together to help the students better understand the work of the historian.

As a mentor, Sandra fulfilled several roles. She began her journey with her mentees, meeting their expectations to be a resource provider. Meeting her own expectations of the telementoring relationship, Sandra then proceeded to challenge her mentees to become historians. She helped them with this challenge by decomposing the larger tasks and making the research project more manageable. In addition, to decomposing larger tasks, Sandra pushed the mentees to think critically about the materials they encountered, a challenge she shared with the teacher.

As will be shown in the second case, *Righting Derailed Relationships*, building a mentor pool that includes members knowledgeable in research methodology, may not always be desirable-- nor does it guarantee successful telementoring relationships. Thus the diversity of the mentor pool may necessitate additional scaffolding for all participants.

CHAPTER 6.

ANALYSIS OF A DERAILED TELEMENTORING MATCH

> The case in this chapter focuses on the Social and Legal History group. The narrative features a less successful telementoring match. No one mentee in this group appears to have made significant progress according to Shemilt's Stages, and for that reason I have opted not to single out the voice of any one student. Instead this case focuses on some challenges encountered in a telementoring journey; in particular I draw attention to classroom activities, in particular those commonly used in schools today, which may support the telementoring relationship.
>
> This chapter is divided into three parts. In the first section I introduce the characters, providing background details that may have had a bearing on the lack of success in this telementoring match. I then examine Arnold's work with several of his mentees. This second section highlights the mentor's difficulty in providing jumpstart functions and meeting his mentees' initial expectations. The third section focuses on Arnold's apparent difficulty in role modelling some of the work of a historian. The analysis of this telementoring relationship highlights ways in which teachers may help overcome similar problems, thereby providing positive experiences that contribute to positive program outcomes and the sustainability of the mentor pool.

The relationship between Sandra Caller and her mentees, presented in Chapter 5, approximates a model telementoring relationship in many ways. That case clarifies what teachers, telementors and students can achieve through telementoring. In contrast, this second case examines a much less successful experience in terms of meeting project goals and the expectations of the participants. The details of this second case appear to reveal important limitations on the role of telementors in curriculum-based projects, and the teacher's role in supporting on-line mentoring relationships to achieve the highest possible rate of success. The challenges illustrated by this case include:

- The challenge to connect local sources, stories and themes to national stories and themes in the curriculum.

- The mentor's lack of connection with local stories as a challenge in meeting some jumpstart functions.

- The need for strong ties between on-line and in-class activities in order to avoid disjunction and confusion, and prevent the project from becoming an excuse to resign to prescribed curricular goals.

- The challenges of expressing in writing individual expectations.

- The need to meet jumpstart functions before moving towards bigger goals of providing guidance for mentees.

The reader is reminded that while Knowledge Forum records illustrate ways in which this telementoring relationship fell short of being a successful match, the absence of sustained teacher-mentor correspondence in this relationship, makes many of the suggestions presented herein necessarily speculative. Nevertheless, if we expect teachers to welcome the opportunities existent in such curriculum-based mentoring relationships, then we must be willing to explore potential roles for teachers. Highlighted in this case are the mentor's missed opportunities to keep the telementoring relationship on track.

6.1. All Aboard!
Passengers Journeying on this Route of the TCP

Arnold Pleasant, a 32 year-old teacher candidate, brought to the project a rich background including graduate studies, experience teaching in Japan, and a comfort level in history methodology. In addition, in the interview, Arnold reported having studied theology and acknowledged his strong academic background and positive school experiences. His travels had taken him to many different parts of Canada, including time spent in Saskatoon, Saskatchewan, Prince George, B.C and Kingston, Ontario. At the time of the project, Arnold was a teacher candidate at an Ontario university. It is understandable, therefore, that in the pre-telementoring survey, much like Sandra, Arnold expressed an interest in learning more about teaching. In fact, Arnold was not

unlike other mentors in the 2002 TCP project with respect to the mentoring functions he most desired to provide. Indicated in bold type are the percentages of mentors who, on a scale of 1 to 7 (where 1=a little and 7=a lot), noted on the pre-survey a strong desire for these activities by selecting "7" for each mentoring function.

- Ask questions to help students think through their research (66.7%)
- Help students to come up with questions or ideas to investigate (50%)
- Help students with challenging things for students to do to improve their research (50%)

Where Arnold differed from Sandra, and the other mentors in the project, is that he did not desire to answer questions from students about specific ideas or concepts. This may provide one explanation as to why Arnold struggled to build a successful relationship with his mentees in terms of meeting their expectations and his, and in addressing the project goals. His telementoring experience as evidenced in the Knowledge Forum® records seems to illustrate a difficulty in communicating with his mentees. As this case will illustrate, Arnold's struggle in fulfilling the functions of breaking down tasks and role modelling draws attention to the teacher's possible role in enabling telementoring relationships.

For their journey into the past, Amanda, Dawn, Andrew and Darrin opted to explore the social and legal history associated with the building of the CPR in their community. The CPR held a prominent position in the lives of these mentees: the railway was either in close proximity to where they lived or family's jobs were in some way linked to the railway. The importance of the CPR was reinforced by the existence of the local archives. The students, who attend high school in Riverside, B.C, had a high degree of access to community archives, but limited computer access. Their teacher, an experienced educator with over 20 years of teaching experience, placed a good deal of emphasis on local history during the project. This was a notable difference from the previous match with Sandra and her mentees, where the teacher at Metro South had been teaching for only 8 years and no access to archives. The Riverside students, during four class visits to the local archives, confronted students with the reality that

history does not always come packaged in the textbook form to which they are accustomed. In addition, their teacher indicated in the interview, a desire to emphasize for his students an understanding of local history.

The success of this telementoring match may also have been influenced by the mentees' background experiences, such as educational background, family background and academic self-concept. For example, on the pre-telementoring survey, when asked to rate on a scale of 1 to 5 (where 1="I am NOT; 3=neutral, and 5= "I AM") how they describe themselves, 40% of the mentees in this case described themselves as an English or History person. In addition, 66% identified themselves as earning "mostly As", and only 66% intended to attend university after high school. All mentees in this case indicated their mothers had graduated from college. While 66% of the mentees indicated their fathers held a graduate degree, only 33% of the mentees indicated that their father had some education after high school. Arnold's mentees had a strong academic familial background is atypical of the parents in Riverside. It may however, explain why the mentees identified themselves as being academically successful. Yet, despite their academic orientation, academic self-concept and access to the local archives, the mentees appear to have struggled in moving to Shemilt's Stage 4; therefore, I ask what further scaffolding in the telementoring match may have aided in making this telementoring relationship more successful. The mentees' apparent failure to gain a deeper understanding of some of historian's work, may suggest simply encountering an abundance of new sources of information is not enough; instead it may demonstrate the need for adults to play active roles in bringing students to a deeper understanding of what it means to know and understand history. This case clarifies some ways in which mentors and teachers may work more effectively together to bring students to that deeper understanding of History.

6.2. Who Is Conducting This Train, Anyway?
A Mentor Struggles to Fulfil the Jumpstart Functions

Curriculum-based telementoring initiatives beg the question, whose journey is it anyway? In projects such as *Tracking Canada's Past*, where the intention is to encourage students to write history rather than simply digest accounts of the past, provincial standards need to be met. In addressing these, the teacher, who has a professional responsibility to ensure students meet the provincial standards, is conscious of meeting the curriculum expectations within the timeline of the academic year. On the other hand, the sustainability of a mentor pool may depend on meeting the expectations of the mentors, who likely enter the relationship with their own criteria for success. And, if as O'Neill suggested, there is a "rich gets richer" phenomenon with students, we may reasonably argue that positive telementoring experiences for telementors may be sufficient to encourage them to invest additional time in similar projects. (My personal experience with volunteer coaching, certainly suggests such a pattern). The same may hold true for teachers who choose to introduce students to on-line mentoring projects simply because they have had a good experience in the past. Yet, the expectations and interests of all participants must be held in balance.

First, let us consider such projects from the perspective of the student. In the pre-project survey, the mentees in this case 100% indicated that the mentoring function they most strongly expected of their mentor was answering questions about specific people, events or ideas in history. As noted in the previous section however, this was the one mentoring function which, unlike other mentors in the project, Arnold did not expect to fulfil. Thus, the contradictory expectations of mentor and mentees may have served as one barrier.

6.2.1.   A Mentor's Struggle to Provide Local Resources

In the previous chapter Sandra Caller successfully fulfilled the jumpstart functions before beginning to decompose the tasks of research and writing for her mentees. Arnold

appears to struggle with how to best help his mentees with the task of beginning their research. As noted in the following correspondence from the Knowledge Forum® notes, Arnold's struggles begin very early in the telementoring match.

> Dawn: Hey Arnold,
>
> I am currently researching the development of CPR...with my class...and I [was] wondering if you knew any interesting facts or the site of the first monastery in which they had to close down because the train would go right through the settlement.

The vagueness of Dawn's introductory request introduces the need for the teacher to assist students in composing their messages. Her request for "interesting facts" may have led to Arnold's somewhat apologetic response:

> Arnold: Actually, I haven't any idea where the monastery was, nor, indeed, do I have any interesting facts on it in my possession. In fact, I hope you will not be disappointed in my saying that I've never even been to Riverside.

The reader may recall that Sandra responded to Yen's message of desperation with a sense of hope and a little humour. Here, the apologetic tone with which this message began may have been enough to break Dawn's confidence in Arnold, and derail the relationship. Dawn's request seems to suggest she wants to explore the relationship between the building of the railway and its impact on the development of settlements. In this note, Arnold has fulfilled his role as cheerleader; however, honesty about his unfamiliarity with local resources and stories leaves the mentee to believe Arnold has nothing to offer. Dawn seems to conclude Arnold is unable to provide either "interesting facts" or books in which she may find those facts. In fact, there is only one record in the Knowledge Forum® postings in which, at the end of a rather lengthy, detailed message Arnold provided a resource for his mentees. It is possible that Arnold introduces a form of critical thinking that his mentees are not yet ready to handle. Fortunately, Dawn and her peers received some assistance with resources from both their teacher and the local archivists. Teacher-mentor correspondence may have

provided Arnold with the local resources he needed to establish a rapport with his mentees. More will be said about teacher-mentor correspondence in Chapter 7.

More important here, Arnold seems to have failed to make his reasoning clear to his mentee. Dawn may not have understood that she could look at the large land claim issue of how land was repurposed and bought by the CPR. In fact, we have no indication that Arnold actually confirmed that the land on which the monastery stood was sold to the CPR. Here Dawn may have been misled to believe that her mentor had little to offer because he had "never even been to Riverside". Although he is unable to provide the "interesting facts", Arnold does offer a course of inquiry for Dawn. However, he does not suggest a specific means for her to explore the topic, the way a teacher would be expected to do so. Using his strength as a methods mentor, Arnold may have built upon Dawn's prior knowledge and helped her move beyond the Stage 1 and 2 fact-based thinking.

First, Arnold may have pressed Dawn to explain what information she deemed "interesting". Next he may have stated that the development of a region requires decisions be made about how land will be used; then Arnold may have posed a series of questions for Dawn to consider: What role did the missionaries play in early British North America? Why was the fur trade important in British North America? These initial questions, addressed in curriculum covered prior to the study of the CPR, may have helped establish Dawn's knowledge of early historical events. Paralleling the monastery to the missionaries and the CPR to the fur trade, Arnold may have encouraged Dawn to speculate on why the monastery would close rather than build the railway around it. The process of reflection may have helped make Arnold's comments about competing visions more transparent. The connection to prior learning expectations from the course may have contextualized Arnold's remarks about rival dreams; and may also have given Dawn a sense of confidence as she proceeded in her research. Arnold may have continued with questions leading to his comment about the competing visions for Canada, helping Dawn to see the connection between historical events. Arnold may also have asked the questions, "What type of interesting facts are you looking for? How do

you plan to incorporate these interesting facts in the final paper?" Posing these questions may have served to help Dawn decompose the larger problem of researching the connection between the CPR and the development of settlements. The questions may also have helped move her beyond Stage 1 and 2 thinking, where "facts" figure so prominently in students' understanding of history.

Arnold has no means of confirming if his mentee has understood the connection he has suggested she explore. Unfortunately, the Knowledge Forum® notes do not reveal any occasion on which Arnold clarifies this connection, nor does Amanda ask for clarification in any of the subsequent correspondence. Here the teacher may have supported this mentoring match by providing Arnold with information about the monastery, as well as helping Dawn unpack the message from Arnold. The absence of teacher support, combined with the challenge to connect local stories to national themes, leaves Arnold struggling in this telementoring match.

This early struggle as the participants prepared to leave the station and begin their journey is evidenced in the correspondence between Arnold and another one of his mentees, Andrew. Andrew's research involved Billy Miner, a legendary American train robber. Billy Miner was important to Canadian history because he was the first person to rob a Canadian train and was considered a controversial hero in the eyes of the Canadian public of his time. Among his many heists, Miner robbed CPR trains near Riverside. He was captured and sentenced to life in prison, although he managed to escape and eventually died in a Georgia jail at the age of 69. Andrew's curiosity about Billy Miner may have been piqued since the train robbery occurred near Riverside:

> We are curious about the second train robbery, how was Billy Miner involved and if any one else was, help us find the information... help would be appreciated.
>
> Which attempted train robbery was Billy captured and how long of a sentence did he have to serve?
>
> Andrew
> Lots of love

Arnold's response begins with a glimpse of hope. The simple fact-based questions may have led to something deeper once Andrew engaged with the evidence. However, the manner in which Arnold provides some direction for Andrew is, from a teacher's vantage point, not explicit enough.

> Andrew,
>
> I think I've heard of this Billy Miner, but could you introduce him to me? I too wonder about his capture, trial and sentence. I would certainly be interested in looking at the transcript of the trial from the BC archives to try and determine why he was so famous, and why the state and the CPR felt so threatened by him. I'm sure that his sentence would reflect their fear that the CPR--and a lot of big money--was very vulnerable, and that potential train robbers had to be stopped at all costs.
>
> Arnold

His opening sentence suggests he may have something to offer his mentee since, unlike Dawn's dialogue about the monastery, Arnold at least appears to recognize Billy Miner. However, the second half of his opening line may lead Andrew to believe his mentor does not really know Billy Miner. Rather than ask Andrew to "introduce" Billy Miner, Arnold may have asked his mentee to tell him what he already knew about the topic so that he could avoid repetitious information.

More important, the passages again illustrate how Arnold's less adept method of providing resources may have been enough to derail this telementoring match. Rather than simply directing Andrew to return to the archives and look for the transcript of the trial, Arnold speaks of his interest to see the document. Arnold does not make clear what he is offering to do, nor does he say what the mentees should do. Had Arnold told Andrew to look for the transcript at the local archives, the two may have been able to engage in a deeper conversation about the trial of Billy Miner. Andrew is left to decompose Arnold's message and glean the advice his mentor offers. There is no evidence in the dialogue to indicate that Andrew understood his mentor's advice, nor is there any indication that Andrew ever learned of Billy Miner's sentence. Here again the teacher may have played a supporting role in decomposing the mentor's message. The teacher may have encouraged Andrew to seek out the trial transcript on their next visit

to the archives and share the results of his search with Arnold. In this respect, the teacher may have provided the link between online and in-class activities.

The students working with Arnold expressed an interest in exploring the ways in which the CPR influenced their city. This concern with local history may have been influenced by the teacher's agenda. Despite his unfamiliarity with his mentees' hometown, Arnold could have guided his mentees through the process of research, given some necessary support. Unfortunately, this journey was challenged by the way in which Arnold worded his advice to his mentees and the lack of connection to local resources. A similar roadblock is created when Arnold's mentees ask him to help decompose the task of writing.

6.2.2. A Mentor's Struggle to Help Mentees Manage the Task of Writing

The process of bringing students to an awareness of using evidence to write history is a challenging one in which the telementor is often called upon to guide students in reflecting on and breaking down the issues. Arnold's correspondence with Amanda illustrates the importance of keeping students' interests at the forefront in telementoring dialogues. Amanda's research focused on how the Boivin Hotel, now a local drinking 'hole' was once a grander hotel and the site of glamorous gala events. In one of her early messages to Arnold, Amanda reveals her need for guidance in both researching and writing about the hotel.

Designed to provide a common frame of reference for participants, the researchers created a series of five milestone assignments. Mentees were required to post their prospectus in the database for all participants to see. The following note from the Knowledge Forum records was Amanda's draft prospectus, submitted for Milestone Assignment #4.

> The importance of the railway in the development in Riverside in terms of
> the Boivin, and the development of social standards is great. The railway

for one, provided work for the people who eventually bought, and developed the Boivin Hotel. Once the Boivin had been more developed and became a popular place to go for entertainment, or just somewhere to go, and stay in general, the CPR brought many people into Riverside. This started a small amount of tourism because the Hotel was once considered high class. The issues of liquor licensing began to appear in result of the people coming into the Boivin through the CPR. Being able to sell liquor would most likely bring more people into the Hotel; however there were people who strongly disliked the idea, and wanted to oppose it. The railway was the thing that brought the two buyers of the Boivin together, by working together, and helped them become a family who passed their high class hotel down for a few generations, before it became what we now know as downtown Riverside scum.

Thesis

The CPR had a great importance in the development of entertainment, and social standards in early Riverside. The CPR was a bridge between the rest of Canada and Riverside, in terms of entertainment, which brought different types of people, with different types of standards into Riverside, and often causing controversy.

Amanda's message reflects a developing understanding of the influence of the CPR on changing social standards. She includes her thesis for Arnold to see, but does not directly request any assistance or comments to help her in the process of writing history. Perhaps because he is unaware of what exactly his mentee expects, Arnold writes a rather lengthy response. To conserve space, only a portion of Arnold's message is provided below.

Amanda,

You have a great start there. The CPR represented great social and economic change to Riverside and that always involves controversy. This process happens everywhere and is ongoing. Think of the Internet. Not everybody is "online" if you catch my meaning. Some people think change is good and others bad. More specifically, those that can benefit from change like it, while those that cannot don't.

And so the CPR challenged those who worried about the new ideas, economic changes and rif-raf that would accompany it. The "liquor problem" was often defined by social conservatives and directed at itinerant labourers and workers who were perceived to be 'low', especially in the company of alcohol.... Note: there were class, racial and gender

issues here all at once. The hoteliers probably told the public, if you
want to have people stay in Riverside then you need to serve liquor.

Apart from the opening line of encouragement, Arnold has failed to comment directly on
Amanda's work. This may not have been the case, had Arnold been told by the teacher
what expectations regarding the prospectus were discussed in class. Also, Arnold may
have commented on the draft had Amanda noted what feedback she sought. Instead he
expands on the information Amanda presented in her message, and leaves her on her
own to decompose his rather lengthy and detailed note. She cannot know what he
expects her to do. Arnold has missed the opportunity to simulate the historical reasoning
which Sandra demonstrated with Kimi. More will be said about this in Section 6.2.3.
Here my focus is on addressing Arnold's missed opportunities to help his mentees
decompose the larger task of writing history.

Perhaps because she did not receive the advice she expected from her mentor,
Amanda's next message to Arnold (also her last) only vaguely requests some guidance
in the writing process:

> Amanda: If we were to write a report on what we have found, (1) it
> would most likely be on how the Boivin owners, and founders were
> directly linked to the CPR in that they worked there beforehand. (2) It
> would also be on how the CPR ended up bringing people into Riverside to
> stay at the Boivin for the purpose of business and entertainment, and (3)
> how different people had different views on the forms of entertainment
> (alcohol, etc) were changing the town....

> Arnold: You know there never is enough time, is there? And sadly, this
> problem never disappears. However, if you start early in the project with
> a good "thesis statement" – the statement in your introduction that you
> are trying to prove – (as I believe you did), then, as you research, you'll
> always find yourself with something to write about in your report, and a
> statement that you can constantly modify to suit what you find. ...

The Riverside teacher did not require the students write a report in the 2002 TCP
project; however, Amanda's interest in the process of writing history is evident in the
opening sentence. His point about documenting material is useful, but Arnold seems to
have missed the chance to teach his mentee about writing history. Amanda however, is

equally responsible for the derailment of the relationship. She appears to expect specific direction from her mentor and may have specific expectations of Arnold, yet never directly asks Arnold for advice or clarification about next steps.

Similarly, Arnold does not directly ask Amanda what assistance she expects. This telementoring match may have stayed on track had Arnold said to Amanda directly, "You have some good thesis statements. What do you want to focus your paper on?" However, instead of focusing on her thesis statements, Arnold appears to ramble sympathetically. Unfortunately, unlike Sandra and her mentees, Arnold only begins to comment on Amanda's thesis statement and the writing process when the clock is about to run out on this telementoring match.

It is worth noting that when he signed up as a volunteer, Arnold expressed in the pre-telementoring survey, his interest in history methodology; but in the Knowledge Forum® note above he seems to get sidetracked by large discussion questions about time. This distraction may have served as a barrier to building a rapport with his mentees. The wordy response from Arnold thus seems to have become another source Amanda must decompose, and there is no indication in the data that her teacher or any other adult has helped her in this task.

It sometimes appears that for student, the task of writing a report is easy when plenty of material is available provided of course, that they know how to sift through all the information and construct a coherent argument. The all too familiar complaints of "I don't know where to start" or "I can't write anything because there is nothing on my topic!" may echo in the ears of educators at this point. In the Knowledge Forum® record below, a continuation of the earlier dialogue between Arnold and Amanda, Arnold begins to help Amanda deal with the challenge of writing history:

> Arnold: In your case, it is perfectly valid to write in a report that a) you
> could not find what you were looking for, for such and such a reason;
> and / or b) that what you found did not say what you thought it would,
> and the evidence was inconclusive. It is also valid, especially when it
> comes to making connections between law and social morality, to admit

that the connections are difficult to understand and sometimes confusing
– because they are. I think this is why I love reading and researching
law and society, and thinking about morality, because it is so complex
and yet so incredibly important....

Keeping in mind that students' experiences with History have long been based on the "absolutes" found in the textbooks (Granatstein, 1998), there may exist a temptation to avoid the inconclusive evidence encountered in one's inquiry. Students may continue seeking definite answers rather than ask "Why is there no information on my topic?" and "What evidence might explain why nothing has been written or kept?" If perhaps, rather than give the familiar response, "there is information... maybe you haven't looked hard enough", the teacher reinforces Arnold's advice to Amanda, and encourages students to present possible answers to why certain stories have not been written, the students will be more likely to write the unwritten stories. Simply providing samples of a variety of reports based on different kinds of evidence may suffice to meet this goal. Introducing conflicting stories in class may also challenge students to ask questions that drive their historical investigations into new territory.

The above correspondence, typical of the instruction in many history classrooms, illustrates the Stage 2 thinking identified by Shemilt (2000). At this level the student sees the historian's picture of the past as being reassembled from evidence. However, for mentees like Amanda, the challenge was to write history when evidence was missing. Arnold attempted to teach his mentees that the absence of evidence in itself can say something. There is no way of knowing whether the students have learned this lesson; certainly there is no evidence of a shared understanding in the data. Only time will tell if the students have internalized his voice and are able to apply it for themselves in other contexts.

6.2.3. The Absence of Role Modelling

Establishing clear project goals and providing mentors with a description of the community and classroom activities are only small steps in building successful

telementoring relationships. In curriculum-based telementoring projects such as TCP, mentors are told that they are not to act as on-line sources that merely provide answers. Students, however, have difficulty with mentors who seem to counter their questions with more questions, as the following exchange from the generated records illustrates:

> Darrin: We also need to figure out a way to link the entertainment aspects to the CPR...any ideas would be appreciated.

> Arnold: Darrin, I'm not sure what you mean. Are you interested in how the CPR entertained its guests on long trips?

> Amanda: No, that's not exactly what we need...We need to find someway to link information about the CPR to the development of the entertainment industry in early Riverside. We have found a lot of information about the Boivin Hotel, (a historical landmark) but not much else.

> Arnold: Ok. Well, do you know what sort of passengers the CPR is bringing in? Are they people heading to Riverside, or just going through? What is their occupation, social class, gender, etc? How long do they want to stay in Riverside (at the B. hotel for instance)? Business or pleasure, etc.

Suggesting his mentees consider these questions as they reflect on the broader theme of the CPR and entertainment may have helped the dialogue develop. The absence of a note following the one above leaves us to wonder if the mentees understood the direction Arnold was providing. They may easily have regarded his questions as fact-based questions. Building on their comments, Arnold may have asked his mentees to briefly summarize the information they learned about the hotel. Using this information, the dialogue may have followed a Socratic questioning in which mentees were slowly brought to an understanding of social and class issues Arnold hints at in his questions. Connecting the information the mentees found about the Boivin Hotel to the series of questions Arnold poses in the note was an important step in sustaining the dialogue. The teacher may have played a role in helping students make these connections. The teacher's role in helping students determine the validity, reliability and relevance of resources is discussed in Chapter 7.

Similarly, in his dialogue with Amanda, noted in Section 6.2.2, both mentor and mentee overlook an opportunity for historical reasoning. Arnold introduces the analogy of the Internet and change; however, he fails to use it as a way to encourage Amanda's historical reasoning. Perhaps, before remarking on the "liquor problem" Arnold may have asked Amanda why, as she noted, "there were people who strongly disliked the idea [liquor], and wanted to oppose it", or pressed her to explore why the once high class hotel is now known as "downtown Riverside scum". Carrying through the analogy of the Internet may have provided a familiar point for Amanda to reflect on social change and helped Amanda to see the historical methods Arnold had to offer. This way Arnold may have illustrated historical reasoning for Amanda. If she understood the analogy, Amanda may have commented on this herself. Of course, Amanda may also have directly asked Arnold to elaborate on the connection between the Internet and the liquor problem, an analogy that may not be readily transparent to students. Employing Socratic questioning may have helped Amanda reflect on the information she gathered before reflecting on the larger themes of class, race and gender issues.

In a project such as TCP, this process of questioning illustrates the way a historian thinks. In the previous chapter, I examined the direct questioning Sandra Caller used served to challenge Kimi to reflect on whether or not Riel was a hero. Here, Arnold models the line of questioning that might be used by historians developing research on entertainment in early Riverside. Amanda's remark, "No, that's not exactly what we need..." again illustrates the participants' inability to clearly convey their expectations. The teacher may have provided some assistance in helping mentees word their messages to their mentor. Though Arnold's questions presented at the end of the above note illustrate an attempt to demonstrate historical reasoning, miscommunication between mentor and mentee again impedes the dialogue. Much of the reasoning and ability to make connections is left to the responsibility of the mentee, with no direct guidance from the mentor or teacher. The absence of subsequent notes in which the mentees answer Arnold's questions, or he offers clarification, reveals the missed opportunity to ensure mentees understand the historian's work.

For those who have worked with youth, and in particular with teenagers, the challenge of making connections is apparent. In this respect, Sandra's explicit questioning combined with analogies, appears to have been more successful in guiding the mentees on their journey. Simply acknowledging and encouraging student interests will not by themselves bring them to a better understanding of what it means to "do history." Instead, as illustrated in the case in Chapter 5, the roles adults play in such on-line relationships must include task management, decomposing and role modelling on the part of the telementor.

6.3. Working Together to Share Accountability

This chapter has provided examples of how, with the necessary assistance from teachers, on-line mentoring relationships may help students develop a more sophisticated understanding of the historian's role, and in turn provide a positive experience for all involved. When the passengers pulled into the last station at the end of the year, one teacher acknowledged in the post-project interview "that he had one student he knew who got through social studies this year because ...she got just the right combination of things and really got interested in a local history thing". That right combination is found in the answer to the question I posed at the beginning of this chapter: Who's conducting this train? The answer is simple – we all are. All participants on the journey share in the responsibility of bringing students to a deeper understanding of history. Students like Amanda must clearly express what it is they want from their mentors and teachers as they learn to sift through and rigorously interpret vast amounts of information, in order to write defensible stories of their own. Perhaps had the teacher supported the telementoring relationship by providing students with more direction in the construction of their messages, and greater assistance in working with primary and secondary sources, Amanda's telementoring relationship may have stayed on track. A forum for teachers and mentors to correspond may facilitate the open dialogue between teachers and mentors needed to support both mentors and students in the telementoring relationship. More is said about this shared space in Chapter 7.

The teacher may also lend a hand where the mentor has failed to decompose larger research tasks, or left advice largely implicit. A clearer example of this role is given in the next chapter.

Students must take initiative and ownership of their learning. However, as the correspondence between Arnold and his mentees illustrates, there is still a necessity for the mentor to provide a substantial amount of guidance in the research process. Helping students to complete this task also means mentors must be transparent in their thinking and not hesitate to ask either the students or the teachers for clarification of their expectations and the direction of the project.

For a diverse mentor pool, obtaining knowledge of local history may require additional support from the teacher or other mentors. As with parenting, the adults must work together to best support the young individual. In telementoring relationships this may be aided by open correspondence between all participants – open correspondence that will ensure all participants arrive at the destination of deeper understanding. The next chapter presents a detailed discussion of the roles a teacher may play in supporting successful telementoring matches. Some issues relating to the sustainability of the mentor pool are also highlighted.

CHAPTER 7.

POTENTIAL ROLES FOR TEACHERS IN TELEMENTORING PROJECTS

In the previous chapters, I examined experiences arising from two matches in a curriculum-based telementoring project conducted in Social Studies classrooms. The analysis revealed several respects in which mentors and students may have benefited from support in developing on-line mentoring relationships. In this chapter, I discuss particular ways in which Sandra and Arnold's mentoring experiences, and their mentees' understanding of what historians do, may have been more effectively supported by classroom teachers. The discussion of these supports is organized under three headings: teachers' roles in providing resources; teachers' roles in decomposing the task of research and helping students communicate effectively; and the responsibility adults share in serving as role-models. A brief discussion of the limitations of this study is followed by a look at how teachers' experiences with telementoring projects may be extended to other curriculum areas, how the experiences may fit with their increasing use of technology, and may provide opportunity for them to exercise their professionalism in a broader sphere.

If we adopt the African proverb and the whole village works together to raise the child, then teacher and mentor must share the responsibility of journeying with the student to a deeper understanding of history. The process of doing history, like the process of writing a research report, can be a daunting one, unless broken down into manageable tasks. These tasks may be categorized as the research, the data analysis, the writing and the editing stages. At each stage, students may use the skills of critical thinking and cognitive levels of Bloom's Taxonomy already employed in so many classrooms.

Nonetheless, each of the steps can pose several challenges of their own and can be even more difficult for individuals who are still mastering the skills required of critical thinkers. Students require assistance and direction in the process of doing history, and adults must provide this guidance.

7.1. Potential Roles for Teachers in Providing Resources for Research

Beginning with the role of the on-line librarian, the teacher and mentor should share the task of helping students find resources. Serving first as an on-line librarian, mentors help students wade safely through what may be an overwhelming volume and variety of sources. As Sandra Caller illustrated, this may mean recommending websites and books as starting points for discussion. The same would apply when sources are scant and students have difficulty locating them.

This said it should not be the sole responsibility of the mentor to develop students' information seeking skills. Schools must share this responsibility. It should be noted that apart from introductory messages, the teachers involved in TCP had little or no direct contact with the telementors during the project. The match between Sandra and her mentees may have been made more successful, and more students may have progressed further in Shemilt's stages of understanding historian's work, with support from the classroom teacher.

The classroom teacher's support for the on-line mentor in this respect may be three-fold: First, if aware of the resources shared in the electronic space, teachers could share these resources with all members of the class. Teachers may also provide structured opportunities for students to visit local libraries, archives and historic sites. For instance, to assist the students with finding the books their mentor suggested, Carl, the teacher at Metro South High School, may have organized a trip to the local library. Teachers may also prearrange with community libraries to serve as resource consultants. Finally, a link within the database that provides access to all resources

submitted may encourage students to explore these resources and contribute to the ongoing dialogue.

When a mentor is not familiar with the local resources available to the students, as was the case of Arnold Pleasant and his mentees, the teacher may need to play the role of resource-provider. In this role, the teacher may choose to share the resources with the mentor in an electronic space shared only by mentors and teachers. Such a space, perhaps entitled "Resources for Everyone" may help mentors like Arnold, who had difficulty fulfilling the jumpstart function of providing mentees with the resources they expected.

The sharing of common resources, as in the "seminar" approach employed by Sandra, may well provide a common reference point from which all participants begin the journey to a deeper understanding of history. Familiarity with the same sources may allow participants to discuss their understanding of previous stories, and build new stories together. This seminar approach would parallel the dialogue in which historians engage. If he had been able, Arnold may have done a little research of his own to learn more about the local history that interested his mentees, and been able to provide the "interesting facts" his mentees sought. Meeting the jumpstart function of providing historical information, may help mentees see what their mentor has to offer. Then, once a rapport is established, mentor and mentee could work towards a deeper understanding of history. In addition, if Amanda's teacher had helped her to clearly express to Arnold the assistance she desired, this may have prevented the derailing of this relationship. After conversing with the student, the teacher may also correspond with the mentor to clarify the student's research goals. Making individual expectations transparent can help reduce the conflict between students' and mentors' expectations of the relationship, which can be substantial (Asgari & O'Neill, 2004).

Based on my own experience with students conducting research, I offer another suggestion. Changes in software design would enable the compilation of a list of resources automatically. If software being used in such on-line projects could

automatically generate compiled lists of resources posted in the forum, this would eliminate the tedious step of having to enter all resources under a separate link. Initial lists of resources and banks of materials accessible to teachers may be generated from the resources used in early stages of TCP. The availability of a print-friendly list would then make it easy for teachers to post the list of resources in the class and provide students with a copy to take to the library or archives. The list of resources may also serve as a basis for teacher's lessons on assessing the validity, reliability and relevance of sources. Over time, all participants in the project may work together to build a list of resources that serves both as a common starting point for discussion, and a source for further instruction on how to work with primary and secondary sources.

7.1.1. The Teacher's Potential Role in Decomposing the Task of Research

As noted in the case of Sandra and her mentees, simply providing resources is not enough to ensure that students learn about historians' work. For this reason, even Kimi, the student who appeared to have made the greatest gains in Shemilt's stages of historical thinking, required assistance from Sandra when working with the resources she encountered. Analysis of the case narratives highlights potential roles for teachers to play when helping students decompose the task of research. In particular, I discuss ways in which teachers may help students understand the relevance of the sources to the history they may write.

Despite their absence of contact in the shared electronic space, post-project interviews revealed that Sandra and Carl shared similar ideas about the assessment of students' needs. Both mentor and teacher regarded the telementoring experience more as an opportunity for students to learn about historians' work than to gain an on-line information resource. Still, though Sandra appeared to be comfortable with her role as telementor, and appeared to function entirely on her own, in the post-project interview she did express a desire for more consultation with the teacher:

I think it may have been useful to have the teacher correspond with me prior to ... maybe on the same level before the site was set up where it wasn't readable to the kids, and just for him to say to me "well look this is where they're at, this is basically what I want but, you know, if you feel comfortable with it, I'm going to hand it over to you, and I won't butt back in".

Sandra's felt need for greater consultation may in part be explained by the newness of such projects to teachers. Carl may have opted to lurk rather than participate because he did not fully understand what role he should play in the project. It may also have been the case that Carl did not feel it was necessary for him to do anything to support the telementoring relationship. To help teachers with this problem, it is important to define the role of the teacher in telementoring projects, so that the teacher can participate in meaningful ways that support the on-line mentoring relationships.

Sandra's creative approach to dialoguing with her mentees and her ability to decompose research tasks and role model in ways appropriate to the setting appear to have been instrumental to the success of her telementoring experience. The success of this telementoring relationship may have also been helped by parallel guidance Sandra's mentees received from their teacher in class. The words of the teacher in his year-end interview highlight ways in which classroom activities may help support activities in the virtual community:

> Carl: We have done some work with looking at bias and different points
> of view this year....going back to the Thomas Scott affair, if I'd just given
> them one account and just kept on going with it they would have thought
> either Thomas Scott was a very bad man or he was just someone who
> was killed by angry Métis and I could have just taken one path and just
> led them down it and they would have totally believed whatever account
> I had given them. You try to have them open their eyes and say okay is
> this source accountable, is this source coming from a respectable
> place?...for some of the kids any way because they don't understand how
> to ask the right questions, to say okay is this source valid, has this source
> got any merits to it, does this source have any flaws?

In the same way that Carl worked to open his students' eyes to differing accounts about Thomas Scott, Sandra asked Kimi the questions needed to help her assess the validity, reliability and relevance of sources before Kimi decided whether Riel was a hero or a traitor. In this respect both mentor and teacher encouraged the mentees to think critically about the sources they consulted.

However, the post-project interview also revealed awareness on the part of both teacher and mentor, for students to succumb to a "copy and paste" approach when doing research rather than assess sources critically and work with them in a constructive, deeply interpretive way. In the interview, Carl identified a concern for how students handle the "infoglut" (McKenzie, 2004). His remarks in a pre-project interview reflect teacher experience and comfort with the subject matter, as potential roadblocks in curriculum-related telementoring relationships:

> Carl: The biggest challenge is going to be for them not to just copy information from a book or internet or ... and just use that as their own, and that's something that we as educators try to avoid but you just kind of fall into that trap because we do teach about facts, that come out of our text books, and we ask the kids to remember these facts, so when we assign questions basically we reinforce that behaviour. So to break that mindset is going to be totally difficult and to have students think and write about their thoughts and not somebody else's thoughts is going to be a big challenge, at least for my kids.

Here the teacher taking on the responsibility to teach students to assess the relevance, validity and reliability of sources is essential. In light of the teaching loads teachers are sometimes given, it is always possible that educators may be responsible for subject materials with which they are not comfortable. Over the course of my teaching career, I have found that many teachers in such a situation fall back on teaching strictly from the textbook, taking a Stage 1 approach to History. Carl acknowledges that in asking students to remember facts from textbooks, teachers reinforce Stage 1 thinking. Carl identifies this problem, but offers no solution. Tim, however, a teacher involved in the 2003 implementation of TCP, offered one suggestion in a year-end interview. His idea

was to provide clearly labelled areas within the forum for all participants to discuss methodological questions:

> Tim: [in Knowledge Forum] You want some kind of a common...maybe you've got some headings instead of 'Common Discussion' maybe say 'Discussion for Everyone'. You know, you've got a thread that's clearly titled that people say "Are you having trouble interpreting a document? What about the significance question? Any questions about agency?....If they know that term.

A fringe benefit of Tim's suggestion of methodologically-themed views is that it may also help to spur the sharing of information between research views which continues be minimal (O'Neill et al., 2003). More important, Tim's suggestion may provide for students a way to express and clarify questions about the project as defined in the milestones.

Combining lessons on validity, reliability and relevance with hands-on work with primary and secondary sources in the classroom may provide students the added practice required to work with evidence and traces encountered on their journey to a deeper understanding of doing history. Such in-class activities may complement and support the on-line relationship, enabling students to make more sense of the advice their mentors offer them. Tim provides more details:

> Tim: You could have a teacher page that says here are some possible things you may want to [do in your class]... And for both teachers and students, you could have...an exemplary interpretation of a document, making inferences to there, and ... an exemplar making connections to context, and [another example] where they're sort of there, but have missed a few things....

Taking this idea a bit further, one can imagine a note posted by the teacher entitled *Finding Information in Photographs.* Students often take an interest in historical photographs, but without instruction have difficulty using them in their own work as anything more than illustrations. To help them understand how photographs can be "read" as sources of evidence, a teacher could post a photograph from the textbook in Knowledge Forum, and together with the mentor, compose a brief list of questions that

may help her students begin to analyze it. In class, the teacher would direct students to this note, and perhaps use it in a class discussion that addresses how a student may use such documents for historical traces. This accomplishes two purposes. First, students could return to the example should they need guidance when analyzing photographs for their own research; but further, the mentor and teacher working together where students can see them provides a model of the kind of collaboration they themselves might pursue with their mentors.

In a view entitled "Resources for Everyone", students may also be encouraged to post primary sources, comment on their interpretations, and seek comments from others involved in the project. In this way participants may more closely achieve the ideal of mentoring in the open (O'Neill & Scardamalia, 2000). Better understanding of the overall purpose of completing such work may help more students see their time and efforts as worthwhile, in the way that Kimi did. It may be necessary to acknowledge and alleviate feelings of anxiety and frustration which may inevitably arise in such open-ended research projects. Students may also be encouraged to share their feelings with their mentors and teachers so that they may work through the challenging materials. This may be achieved through a view entitled "Comments for All". If this Knowledge Forum® view existed and was regularly used, teachers may not need to commit the time necessary to keep up with students' work in all the views. Establishment of such a shared electronic space, however, must acknowledge the necessity for trust. Hence a separate space that students could not view, entitled "Teacher-Mentor Lounge", may facilitate teacher-mentor dialogue.

7.1.2. Teachers' Roles in Helping Students Communicate Effectively with Mentors

Arnold's match, it seems, needed a different kind of attention from the teacher. The main source of Arnold's trouble, it seems, was that he and his mentees each misunderstood what the other wanted and what they had to offer; but Arnold did not seem to be aware of the full extent of his troubles.

Had the students been clearer in expressing their needs, and had Arnold been more transparent about his advice, the relationship may have progressed further. The disjunction and confusion was quite obvious in the Knowledge Forum postings, and presented the teacher with an opportunity to support both the mentor and mentees in the match. Unfortunately, the teacher missed the chance the help his students in constructing and interpreting their posts, and seeing the value of what Arnold had to offer.

Research (Harris, 1996) indicates that mentors often take their cues from students in these relationships. O'Neill (1998) further contends that mentees in telementoring relationships are often in positions of greater control than mentees in typical face-to-face mentoring relationships. Why then did Arnold's mentees not reach their destination? One possible answer may be found in the limited ability on the part of the mentees to express their needs, therefore making it more challenging for the mentor to address those needs. Arnold noted the shortcomings of student's writing with some frustration:

> Arnold: ...educated adult writers know how to write an e-mail. They can make it very expressive and they know what they want to say. But young people don't know how to be expressive with prose the way adults do, and it's just really hard to read. I don't really know where they're at.

Determining where the students are at may be very time consuming via an asynchronous exchange, but quick for a teacher in the classroom. Hence, to leave such an assessment solely to the telementor may not help the relationship.

For this reason it becomes increasingly important that teachers and mentors work together in the digital village. Past research has stressed the need for facilitation in telementoring relationships (Bennett, 1997; Harris et al. 1996) and research indicates teachers are especially important facilitators (Miller, 2002). The case narratives presented here show a need for the teacher to assist students with writing so that they clearly convey what it is they want of their mentors. Furthermore, it reinforces a need for all participants to have a shared understanding of the project goals. Here, Arnold

needed to understand the teacher's emphasis on local history that the students would have been conscious of when writing their papers.

7.1.3. Working out Shared Responsibilities in the Teacher-Mentor Relationship

With relationships like that of Arnold and his mentees, the work of the teacher can play an important role in conducting this journey in "doing history". The teacher, who is more familiar with the students, can offer directions to keep this relationship on the right track.

In some ways, sharing responsibility for educational outcomes may be equated to team-teaching often employed in schools. Here instead, the teacher helps the mentor by decomposing the larger project and providing an understanding of the project expectations as outlined in the classroom. In return, mentors share their expertise not only with mentees, but also with educators teaching outside their native disciplines. When it is clearly understood how each adult proposes to support the student, then we can be sure that both mentor and teacher are guiding the students on the same track. In this way, students can begin to see how the guidance their mentor has to offer connects to work they do in school. With support from teacher and mentor, students may begin to see how the work of school transcends the walls of the classroom: learning becomes an authentic experience of working in the discipline.

The case narratives presented in the proceeding chapters appear to illustrate the importance of correspondence between teacher and mentor in supporting the telementoring relationship. Lest we think that teacher – mentor communication would be helpful to teachers and students alone, I note that correspondence between mentor and teacher was requested by all but one mentor in the post-project interviews for this study. A shared electronic space that is visible to students may also serve to model for students proper ways in which to dialogue about history. The inclusion of such a shared

space for the adults again stems from a suggestion by Tim, a teacher whose voice is heard in a 2003 post-interview:

> O'Neill: In each of the schools the students had varying senses of what primary sources are and why using them was a central part of the project. In some of the cases kids did very limited work with primary sources; it was basically what they found on the web. And there might have been too much of a distinction drawn between primary and secondary sources. What do you think we should do to develop this idea?
>
> Tim: We did a lot making inferences...but we didn't do a lot of looking at the difference between points of view, the difference between primary and secondary sources....There was definitely an idea [with my students] that if you are closer to the time [your account is] more true.

Shared understanding about project goals and the process of reaching these goals does not always come easily. If there was shared understanding for the TCP 2002 participants, it came from the project framework the research team had established. Given the right forum, mentors and teacher could build upon this framework to develop a greater shared understanding in at least three ways. First, the use of common resources and the seminar approach may help participants generate dialogue. Second, mentors and teachers may role model for students the sort of dialogue that takes place between historians. Finally, mentors and teachers could together offer guidance for students in working with primary and secondary source materials.

7.2. Limitations of the Design Implementation and the Study

As with any piece of research, there are limitations to this study that deserve note. These arise chiefly from the implementation of Tracking Canada's Past that was studied, the representativeness of the participants, the nature of the data collection, and the type of analysis undertaken in Chapters 5 and 6.

The first important limitation of the study discussed here was the tight timeline under which the 2002 implementation of Tracking Canada's Past took place. As noted earlier, the total time for implementation was just six weeks – half as long as originally planned. This certainly placed a major constraint on the students and their mentors as they attempted to develop working relationships. The tight timeline also meant that the milestone assignments could not be strictly adhered to. This would have impacted the development of the mentoring relationships in an indirect way, since the milestones were formulated in part to help the telementoring relationships stay on track.

All this said, however, it may be argued that these limitations in the implementation provided a more realistic and rigorous environment in which to test the design of TCP. Many lengthy curriculum projects suffer from similar problems – especially those involving computing technology.

With respect to the representativeness of the research participants, I note that the teachers involved in this study were quite seasoned. The teacher from Riverside had over 20 years of experience in service, and the Metro South teacher, while relatively junior, was well beyond the time in his career when teachers typically suffer from burnout. At a time when there are increasing retirements in Education, and more new teachers entering the profession, it is necessary to explore the particular needs that will surface for new teachers in telementoring projects. Unfortunately this study cannot provide much insight on that score.

The mentors discussed in the case narratives for this study fit the profile of volunteers sought by the research team. Most were graduate students in history departments. A mentor pool with more diverse qualifications, such as would arguably be needed to support Tracking Canada's Past on a larger scale, would no doubt have different needs for support. This study is mute on that subject.

With respect to data collection, I note that the teacher interviews used in my analysis were not conducted with the questions of this study in mind. Had I initially set out to

explore the roles that teachers play in supporting telementoring relationships, I would have formulated different questions than those used by the research team, and discussed the potential roles I posit here with the participating teachers.

Finally, as I noted in earlier chapters, this study is by its nature highly speculative. Due to the nature of the data I can only argue that teachers adopting different roles *might* have aided the development of the mentoring relationships and improved the learning outcomes. In light of the timeframe for my own thesis work, these ideas regarding the roles of teachers in telementoring projects could not be tested in the field; but I hope that one day soon they will be.

Taking these limitations into account, I return to some of the questions raised in Chapter 3 and consider the possible implications of this research.

7.3. Final Words

Behind every dream, every vision, there is a story. The story behind telementoring begins with the desire to connect people to authentic experiences, to the world of humanity (McKibbens, 1992; McKenzie, 2003). The ability to transcend the physical confines of the classroom has made the idea of a global classroom a reality, at least on a limited scale and in a limited fashion. The gap between the promise and reality of technology use by teachers is also diminishing. Just as telementoring introduces students to fresh thinking throughout the research process, it brings new ideas to teachers. The teacher from Riverside noted the idea of exploring new and innovative ways to teach History was what first excited him about telementoring. Here I conclude with a brief discussion of some of the professional development that may be needed if more teachers are to adopt telementoring.

In Chapter 3, I quoted three questions that Cuban (1986) suggests we ask about educational technology: "What is the nature of the innovation? How is it being introduced? Who are the users and how is the innovation being used?" Let us consider

the first two of these questions. What is the nature of the innovation? How was it introduced?

Unlike educational technologies before it, computers have been introduced into classrooms with a different attitude as to how they will change the way we work and teach. Issues of scalability and preparatory work associated with earlier educational technologies pale in comparison with those associated with computers. Regarded largely as forms of entertainment, television and movies are all too often used as a break from the routine of lectures, group work and Socratic lessons. The networked computer, however, is regarded as much more of a multi-purpose tool, for carrying out all sorts of research, and increasingly, for bringing people together. Where teachers have adequate technical expertise, adequate classroom access to computers, and a pedagogical philosophy that supports project-based learning, most of them have students use computers frequently during class (Becker & Ravitz, 2001). With this flexibility though come cost and new challenges. Implementing a telementoring project requires far more from teachers than preparing a list of questions, as they might when preparing to view an educational video. Given these high demands, how willingly will teachers adopt approaches like telementoring? Two answers are possible.

Collaboration with others can be a difficult task for teachers. My teaching career has shown me that within the school, most teachers have little time to meet with colleagues, especially for the extended periods of time necessary for long-term planning. Yet collaboration can facilitate better performance through sharing expertise (Johnson, 1990) and stimulating reflection about practices (McGee, 1997). Afforded the time and opportunity, teachers may opt to analyze telementoring dialogues from different projects in order to learn more about how to develop and support successful telementoring matches.

Collaboration with adults outside the school is also difficult. Inflexible teacher hours, a lack of resources and the absence of meeting places can hinder collaboration. The Internet, however, provides teachers with a means to communicate with peers both

within and outside the school. With time, issues of availability and accessibility continue to be addressed (Glennan & Melmed, 2000; Becker, 2000). As administrators increasingly encourage staff to adopt instructional technologies (Polonoli, 2001; Wilson, 1999) more teachers are learning to collaborate, and as a result self-efficacy, confidence, teacher's computer skills and pedagogical beliefs and practices are changing for the better (Becker, 2000; George & Camarata, 1996; Ertmer, 2001). Changing pedagogical beliefs, nonetheless, takes time. Teachers' willingness to adopt approaches like telementoring will only be revealed in time. However, if teachers and researchers can analyze curriculum-based telementoring matches more closely to illuminate the pedagogical benefits of telementoring, teachers may be more willing to adopt and explore the potentials of educational technologies.

My outlook is hopeful. The arrival of younger teachers in the profession will mean a change in the confidence, level of computer skills and pedagogical beliefs and practices regarding the role of technology in education. As teachers' comfort with technology increases, and they experience more positive uses of technology in their classrooms, they will be able to see themselves employing educational technologies in a greater variety of ways. More important, professional development funding may be spent not only on developing educators' computer skills but also, on developing pedagogical ways for employing educational technologies.

Professional development opportunities will be needed to ensure the computer does not go the way of other educational technologies before it, and teacher training programs can provide some direction and support as well. More will be said about this shortly. This is necessary because at bottom, telementoring demands a good deal more from teachers than mere technical competence. It calls upon teachers to exercise their professionalism in a broader world. To help the telementoring relationships function well, teachers must work effectively with their students, yes; but they must also make their work understandable to other knowledgeable adults who are not trained as educators. In answering Cuban's third question (Who are the users of the innovation?)

with respect to telementoring, we must include not only the teachers and students, but the volunteer mentors as well.

Building on educators' present familiarity with communication technologies like e-mail (Becker, 2000), using listserves for sharing ideas about the use of educational technologies in the classroom, may help save computers from the fate of early educational technologies. If the fate of computers in classrooms is to be positive, the same critical thinking we require of our students should be applied to our pedagogical beliefs and practices. Learning, for teachers, comes from practice. Teachers are often unaware of what they need to know until confronted with an instructional or curricular dilemma (McGee, 1997). Here again, encouraging teachers and mentors to analyze previous telementoring matches may help move beyond identifying what went wrong in particular matches. While a scripted role for adults in telementoring projects is not realistic, nor is it pedagogically sound I hope that those interested in researching the roles of adults in telementoring projects may use analysis of telementoring projects to develop a bank of strategies adults may use when building successful telementoring matches.

Further study of teachers' roles in telementoring projects will undoubtedly reveal more about potential adult roles in such projects, but also highlight potential areas for professional growth and reform. Broader geographical partnerships may also be built between schools across the country and the world. Then, as we share in the responsibility of educating future generations, as we share our stories and understanding of our world, more citizens of the digital village may reap the rewards of educational technologies.

I have suggested that in supporting curriculum-based telementoring projects teachers may adopt a blending of traditional approaches with new ways of teaching. The question awaits us: how do we move from familiar models of teaching to create new modes that will help us explore environs for learning that the Internet makes accessible? The answer is simple (but not easy): by experiencing for ourselves that which we desire for

our students. In essence a "training the trainer" model is needed in which those teachers more experienced with educational technologies share their concerns, ideas and experiences with those new to educational technologies (Eisenman, 1999). The relative newness of educational technologies involving computers and the Internet, in some ways has made even veteran teachers first year teachers once again. In this sense, many teachers need a transition from being a student of teaching to a teacher of students. Learning to use the educational technologies, however, means that for many teachers there is less time for planning, reflection and dialogue about teaching and learning (Eisenman, 1999). There is still a tremendous need for support while educators put into practice what they have learned. Both electronic and face-to-face space may be required to facilitate this collaboration. Exploring how experience is transformed into expertise, Cleminson and Bradford (1996) identify three types of learning: trial by error, "sitting by Nellie" (observing an experienced person), and guided learning. The latter, they suggest, is the most effective mentoring for all participants, regardless of age. We may deduce therefore, that teachers too may benefit from mentoring as they learn more about educational technologies. The establishment of a list server as well as the development of mentoring teams could serve as a vehicle by which educators may focus on key issues, and respond to questions and dilemmas raised by telementoring initiatives.

Due to the relative newness of telementoring and studies focusing on the potential roles teachers may play in such projects, training for the role of trainer of trainers must occur on the job. However, as more teachers adopt educational technologies and introduce humanities-based telementoring projects in their classrooms, ideas of the roles teachers play will undoubtedly develop. When this time comes, a telementoring guidebook for teachers, to parallel ones available for mentors, could be useful. The guide may document different teacher roles, feature sample teacher-student, teacher-mentor, and teacher-teacher scenarios, and provide suggestions for dealing with some challenges presented by educational technologies.

Encouraging teachers to explore new models of teaching involves adopting a more student-centred approach in the classroom. However, such an approach requires a change in individual attitudes. I said the answer was simple, not easy. Nonetheless, it is possible. We need only look at the power of the tools of technology when applied to informal groups formed on the Internet. The result of listserves, newsgroups and virtual neighbourhoods is incredible. The collective knowledge base grows deeper and wider as more individuals participate (Serim, 1996). Just as the mentees' understanding develops as they work with more experienced adults, I suggest that teachers may learn from one another, sharing their own experiences about telementoring projects. "Technology requires the rich learning environments envisioned by reformers just as reform demands the power of technology to put people at the centre of their own learning" (Serim, 1996). With focused questions, people may suggest approaches, try them out, and refine a solution to apply in future telementoring projects. In this respect, teachers may mentor one another, sharing experiences and expertise.

Professional development needs to be an ongoing, integral part of teaching, rather than a sideline activity, since educators develop new approaches based on student performance. Provided with a vast base of experience, from the many classes working in similar directions, reflections on the approaches chosen may yield a rich source for insights into the effectiveness and challenges of telementoring. Face-to-face interaction, however, is still valuable and therefore opportunities where teachers dialogue (Darling-Hammond, 2005) about telementoring projects are important. A new instructional vision needs new strategies for staff development. This may require new ways of thinking about how the time of teachers is used in classrooms and a recognition that time not directly spent with students can have a positive bearing on student success. Whether through face-to-face interaction or online dialogue, there may be much to learn from inviting other educators to problem-solve challenges and discuss the benefits of telementoring matches. In addition, opportunities for teachers to serve as telementors may help them make connections between theory and practice, and allow them to engage in the kind of analytic and diagnostic practices that schools of education hope to

encourage in new teachers (Hewitt et al., 2002). Afforded the opportunities to reflect on and diagnose personal practices and philosophies could allow teachers to focus more intently on both the particular needs of individual learners and the connections between educational theory and educational practice.

As teachers, we stand at a crossroad. Like the artists and writers in the early part of the 1920s who crossed the ocean to spend time with other artists and thinkers, we can choose to explore the ways in which technology can bring people together. Teaching is a profession in transition. Teachers continue to face curriculum reforms, new instructional practices, infusion of new standards, site-based goals, the integration of technology and collaboration with people and organizations outside of school (McGee, 1997). How quickly can change proceed? Perhaps change hinges on the role of the individual and the interplay of those dynamics upon the systems in which we operate. Ultimately, within the parameters of policies, provincial standards and traditions, that are continually undergoing analysis, reinterpretation and rediscovery, it is still the individual—the teacher—who determines practice. It is the community of educators that regulate rather than the policy makers and critics. We will need time using educational technologies to discover what works, or what changes are needed to make things function more closely to what our human needs require. As more teachers become facilitators of learning who engage with students, parents and community members, as well as their peers, to create enriching, real-world learning experiences for students, educational technologies will play an increasingly central role in the classroom.

APPENDICES

APPENDIX A.

PRE-TELEMENTORING SURVEY FOR MENTORS

Today's Date: _____

Your Name (first and last): _____

1. Demographics

Your full name: _____

Your sex: M ☐   F ☐   Your age: ____

Name of your employer (company, university, etc.): _____

Your occupation: _____

Number of years you have been in this occupation: ____

Your education:

☐   High school diploma
☐   Some post-secondary education
☐   Bachelors degree (B.A., B.Sc.)
☐   Masters or professional degree
     (including M.B.A., law degree, teaching certification, nursing degree, etc.)
☐   Ph.D. or M.D.
     Your current status in the labour force:
     ☐   Employed part-time
     ☐   Employed full-time
     ☐   Unemployed but searching for work
     ☐   Retired
Your approximate household income:
     ☐   Less than $20,000
     ☐ $20,000 to $39,999
     ☐ $40,000 to $59,999
     ☐ $69,999 to $79,999
     ☐   Over $80,000

Do you have a religious affiliation?   Y ☐   N ☐

Do you attend church at least once each week?   Y ☐   N ☐

2. Your motivations to mentor

In the past, we have found that adults have a variety of reasons for volunteering as telementors. Please examine the list below, and check **all** the reasons that apply to you:

☐ Doing outreach for my employer
(making the public more aware of what we do)

☐ Cultivating interest in my field
(making the public more aware of what I do personally)

☐ Encouraging students to pursue challenging studies in my field

☐ Learning more about teaching

☐ Learning more about myself

☐ Increasing the representation of women and minorities in my field

☐ Giving something back to my field

☐ Giving something back to society

☐ Realizing the potential of the Internet to change how society works

☐ Other reason (Explain) _____

3. Ideas about Intelligence

The next question has been designed to investigate ideas about intelligence. There are no right or wrong answers. We are interested in your ideas.

Using the scale below, indicate the extent to which you agree or disagree with each of the following statements.

	Disagree				Agree	
You have a certain amount of intelligence, and you can't really do much to change it.	1	2	3	4	5	6
Your intelligence is something that you can't change very much.	1	2	3	4	5	6
To be honest, you can't really change how intelligent you are.	1	2	3	4	5	6
You can learn new things, but you can't really change your basic intelligence.	1	2	3	4	5	6

4. Desired Mentoring Activities

The following question is about the types of mentoring activities that you would most like to undertake in the future. Please rate each of the types of advice, guidance or help below, according to your own desire to offer it.

What you would like to do	Not At all						A Lot
Help students come up with an idea or question to investigate	1	2	3	4	5	6	7
Ask students questions to help them think about their research	1	2	3	4	5	6	7

What you would like to do	Not At all						A Lot
Answer questions students have about specific people, events or ideas in history	1	2	3	4	5	6	7
Give students background information on their topics	1	2	3	4	5	6	7
Give students locations on the Internet where they can find resources to answer their questions	1	2	3	4	5	6	7
Help students to understand material they read about their topics	1	2	3	4	5	6	7
Suggest challenging things for students to do that could improve their work	1	2	3	4	5	6	7
Review students' work as they go along and help them keep on track	1	2	3	4	5	6	7
Give students the names and addresses of other people to contact about their research	1	2	3	4	5	6	7
Help students to meet project deadlines	1	2	3	4	5	6	7
Suggest specific strategies that will help students get their work done	1	2	3	4	5	6	7
Suggest books or other sources that students should become familiar with	1	2	3	4	5	6	7
Help students to understand the everyday practice of historical preservation or research	1	2	3	4	5	6	7

5. Satisfaction with Life

Below are five statements about your satisfaction with life, with which you may agree or disagree. Using the 7-point scale, indicate your agreement or disagreement with each statement.

	Disagree						Agree
In most ways my life is close to my ideal	1	2	3	4	5	6	7
The conditions of my life are excellent	1	2	3	4	5	6	7
I am satisfied with my life	1	2	3	4	5	6	7
So far I have gotten the important things I want in life	1	2	3	4	5	6	7
If I could live my life over, I would change almost nothing	1	2	3	4	5	6	7

6.   Interest in future generations

The following question focuses on your interest in future generations. Using the 4-point scale given, indicate your agreement or disagreement with each of the statements.

	Disagree			Agree
I try to pass along the knowledge I have gained through my experiences	1	2	3	4
I do not feel that other people need me	1	2	3	4
I think I would like the work of a teacher	1	2	3	4
I feel as though I have made a difference to many people	1	2	3	4
I do not volunteer to work for a charity	1	2	3	4
I have made and created things that have had an impact on other people	1	2	3	4
I try to be creative in most things that I do	1	2	3	4
I think that I will be remembered for a long time after I die	1	2	3	4
I believe that society cannot be responsible for providing food and shelter for all homeless people	1	2	3	4
Others would say that I have made unique contributions to society	1	2	3	4
If I were unable to have children of my own, I would like to adopt children	1	2	3	4
I have important skills that I try to teach others	1	2	3	4
I feel that I have done nothing that will survive after I die	1	2	3	4
In general, my actions do not have a positive effect on others	1	2	3	4
I feel as though I have done nothing of worth to contribute to others	1	2	3	4
I have made many commitments to many different kinds of people, groups, and activities in my life	1	2	3	4
Other people say that I am a very productive person	1	2	3	4
I have a responsibility to improve the neighborhood in which I live	1	2	3	4
People come to me for advice	1	2	3	4
I feel as though my contributions will exist after I die	1	2	3	4

7.   Recent Experiences

Below is a list of specific behaviors or acts. Over the past two months, it is likely that you may have performed some of these behaviors. It is also likely that you have not performed many of them as well during this time.

Please consider each behavior to determine whether or not you have performed the behavior during the past two months. If you have performed the behavior, please try to determine how many times you have performed it during the past two months.

For each behavior, provide one of the following ratings:
- Write a "0" in the blank before the behavior if you have not performed the behavior during the past two months.
- Write a "1" in the blank if you have performed the behavior one time during the past two months.
- Write a "2" in the blank if you have performed the behavior more than once during the past two months.

_____1. Taught somebody a skill.

_____2. Served as a role model for a young person.

_____3. Won an award or contest.

_____4. Went to see a movie or play.

_____5. Gave money to a charity.

_____6. Did volunteer work for a charity.

_____7. Listened to a person tell me his or her personal problems.

_____8. Purchased a new car or major appliance (e.g., dishwasher, television set).

_____9. Taught Sunday School or provided similar religious instruction.

_____10. Taught somebody about right and wrong, good and bad.

_____11. Told somebody about my own childhood.

_____12. Read a story to a child.

_____13. Babysat for somebody else's children.

_____14. Participated in an athletic sport.

_____15. Gave clothing or personal belongings to a not-for-profit organization (such as "Goodwill," "Salvation Army," etc.).

_____16. Was elected or promoted to a leadership position.

_____17. Made a decision that influenced many people.

_____18. Ate dinner at a restaurant.

_____19. Produced a piece of art or craft (such as pottery, quilt, woodwork, painting, etc).

_____20. Produced a plan for an organization or group outside my own family.

_____21. Visited a non-relative in a hospital or nursing home.

_____22. Read a novel.

_____23. Made something for somebody and then gave it to them.

_____24. Drew upon my past experiences to help a person adjust to a situation.

_____25. Picked up garbage or trash off the street or some other area that is not my property.

_____26. Gave a stranger directions on how to get somewhere.

_____27. Attended a community or neighborhood meeting.

_____28. Wrote a poem or story.

_____29. Took in a pet.

_____30. Did something that other people considered to be unique and important.

_____31. Attended a meeting or activity at a church (not including conventional worship service such as Mass, Sunday morning service, etc.).

_____32. Offered physical help to a friend or acquaintance (e.g., helped them move, fix a car, etc.).

_____33. Had an argument with a friend or family member.

_____34. Contributed time or money to a political or social cause.

_____35. Planted or tended a garden, tree, flower, or other plant.

_____36. Wrote a letter to a newspaper, magazine, Congressman, etc. about a social issue.

_____37. Cooked a meal for friends (nonfamily members).

_____38. Donated blood.

_____39. Took prescription medicine.

_____40. Sewed or mended a garment or other object.

_____41. Restored or rehabbed a house, part of a house, a piece of furniture, etc.

_____42. Assembled or repaired a child's toy.

_____43. Voted for a political candidate or some other elected position.

_____44. Invented something.

_____45. Provided first aid or other medical attention.

_____46. Attended a party.

_____47. Took an afternoon nap.

_____48. Participated in or attended a benefit or fund-raiser.

_____49. Learned a new skill (e.g., computer language, musical instrument, welding, etc.).

_____50. Became a parent (had a child, adopted a child, or became a foster parent).

Do you have any remarks on the survey, or any of the questions in it? We would like to hear them.

APPENDIX B.

TRACKING CANADA'S PAST FINAL SURVEY

Today' Date:_____

Your Name(first and last) _____

Your School:_____

WebKF View You Worked In:_____

Purpose of this Survey

- This survey is meant to tell your teacher and the researchers at Simon Fraser University what your class got out of the CPR project, what parts of it worked best, and why.

- This not a test, but every survey will be read and analyzed carefully.

- Your teacher will be told how your class answers the questions *on average*, but your individual answers will be strictly confidential.

- We ask for you name at the top because we would like to be able to compare your answers at the beginning and the end of the project.

Your Mentor

Your mentor's name:_____

The place (university, company, etc.) where your mentor works or studies:

_____

☐ I didn't have a mentor for my project

If you DIDN'T have a mentor for your project, please give your best guess as to why:

☐ A mentor wasn't available who specialized in what my project was about

☐ I didn't want a mentor
☐ Other (explain) _____

(If you weren't assigned a mentor for you project, skip ahead to Question 2)

1. Mentor's helpfulness

In the list below, rate in importance the things you think your mentor tried to do for you during your last project. Check the "no" box to show things your mentor didn't try to do.

Mentor's Action	No	Not Helpful						Very Helpful
Helped me come up with a project question/idea to investigate	☐	1	2	3	4	5	6	7
Asked me questions to help me think about my research	☐	1	2	3	4	5	6	7
Answered questions I had about specific people, events or ideas in history	☐	1	2	3	4	5	6	7
Gave me background information on my topic	☐	1	2	3	4	5	6	7
Gave me locations on the Internet where I can find resources to answer my questions	☐	1	2	3	4	5	6	7
Helped me to understand material I read about my topic	☐	1	2	3	4	5	6	7
Suggested challenging things for me to do that could improve my research	☐	1	2	3	4	5	6	7
Reviewed my work as I went along and helped me keep on track	☐	1	2	3	4	5	6	7
Gave me the names and addresses of other people to contact about my project	☐	1	2	3	4	5	6	7
Helped me to meet project deadlines	☐	1	2	3	4	5	6	7
Suggested specific strategies that would help me get my work done	☐	1	2	3	4	5	6	7
Suggested books or other sources that I should read	☐	1	2	3	4	5	6	7
Help me to understand what historians do each day	☐	1	2	3	4	5	6	7
Other (describe)		1	2	3	4	5	6	7
Other (describe)		1	2	3	4	5	6	7
Other (describe)		1	2	3	4	5	6	7

2. What would your mentor ideally have done?

In the list below, rate in importance the things you think your mentor would ideally have done during your last project. Check the "don't care" box to indicate things you don't care about.

What you would have liked your mentor to do	Don't Care	A Little						A Lot
Help me come up with a project question / idea to investigate	☐	1	2	3	4	5	6	7
Ask me questions to help me think about my research	☐	1	2	3	4	5	6	7
Answer questions I had about specific people, events or ideas in history	☐	1	2	3	4	5	6	7
Give me background information on my topic	☐	1	2	3	4	5	6	7
Give me locations on the Internet where I could find resources to answer my questions	☐	1	2	3	4	5	6	7
Help me to understand material I read about my topic	☐	1	2	3	4	5	6	7
Suggest challenging things for me to do that could improve my research	☐	1	2	3	4	5	6	7
Review my work as I went along and helped me keep on track	☐	1	2	3	4	5	6	7
Give me the names and addresses of other people to contact about my project	☐	1	2	3	4	5	6	7
Help me to meet project deadlines	☐	1	2	3	4	5	6	7
Suggest specific strategies that would help me get my work done	☐	1	2	3	4	5	6	7
Suggest books or other sources that I should read	☐	1	2	3	4	5	6	7
Help me to understand what historians do each day	☐	1	2	3	4	5	6	7
Other (describe)		1	2	3	4	5	6	7
Other (describe)		1	2	3	4	5	6	7
Other (describe)		1	2	3	4	5	6	7

3.   Your relationship with your mentor

For each of the statements below, circle a number to show how strongly you agree or disagree with it.

Statement	Disagree Strongly					Agree Strongly	
My mentor was friendly to me	1	2	3	4	5	6	7
My mentor seemed to have carefully read the notes I posted	1	2	3	4	5	6	7
My mentor showed respect for me	1	2	3	4	5	6	7
I trust my mentor	1	2	3	4	5	6	7
I respect my mentor	1	2	3	4	5	6	7

4.   Overall success of mentoring

Circle a number to show your strength of agreement or disagreement with each statement below.

Statement	Disagree Strongly					Agree Strongly	
Having my mentor looking at my work on the project was helpful	1	2	3	4	5	6	7
Overall, the mentoring was a success for me	1	2	3	4	5	6	7

If the mentoring was a NOT a success, check the reasons that you think best explain why:

- ☐   My mentor never answered me (not even ONE response)
- ☐   My mentor was too busy to help me very much
- ☐   My mentor responded too slowly to be helpful
- ☐   My mentor tried to help, but didn't understand what I needed
- ☐   My mentor tried to help, but didn't know much about my topic
- ☐   I didn't keep in touch with my mentor because I didn't really need or want help
- ☐   I didn't start communicating with my mentor early enough
- ☐   My mentor and I didn't get along

Why do you think you didn't get along? _____

_____

- ☐   Other problem (explain) _____

_____

5. Home Internet Use

	Yes	No
Did you have Internet access at home during this project?	☐	☐

(If yes) Approximately how much of your Knowledge Forum posting/reading did you do at home? **(Circle one)**

All of it	¾	½	¼	None of it

6. Overall Impression of Knowledge Forum

	Disagree Strongly						Agree Strongly
Doing my work in Knowledge Forum, where other students could see it and I could see their work was helpful to me	1	2	3	4	5	6	7

☐   Do you have comments on Knowledge Forum?

_____

_____

7. Final Report

Circle a number to show your strength of agreement or disagreement with each statement below.

	Disagree Strongly						Agree Strongl
This report was different from others I have done in the past	1	2	3	4	5	6	7
Writing the final report was difficult for me	1	2	3	4	5	6	7

☐   Do you have comments on the final report, the guidelines, etc.? _____

_____

Roughly how many hours did you put into actually *writing your report*? **(Circle the closest option)**

Ten or more	seven	five	three	One or less

8. Ideas about History

The next set of question is designed to help us understand how you think about History and historians. There are no wrong answers. We are interested in your ideas.

Q: Below are several stories about the building of the Canadian Pacific Railway. Each was written by a different historian at a different time. Read each story carefully, and think about how they differ from each other. Along the way, summarize what each story says about who benefited from the railway and in what way.

Story A: 1905

The building of a transcontinental railway to connect the seaboard of British Columbia with Canada within then years of British Columbia entering confederation is detailed in Article II, Order in Council respecting the Province of British Columbia Statutes of Canada 1982, p. lxxxviii. The plan was introduced in parliament in 1872 by Canada's first Prime Minister, Sir John A. Macdonald. However, the start of the construction was delayed when the government was accused of taking a bribe to give the construction job to a specific company. Due to this scandal, Macdonald's conservative government was defeated in the next election. When the new government, under Alexander Mackenzie, proposed to build the railway line more slowly than the previous government promised, British Columbia protested, and sent a delegation to England to prevent any further delay. Lord Carnarvon, the colonial secretary of England, acted as arbitrator between Canada and British Columbia. According to the terms he negotiated, the Canadian government agreed to construct a wagon road and telegraph line along the route of the projected railway immediately, and by the year 1890 to complete the railway itself from the Pacific to Lake Superior. Before they could complete their plans, however, Sir John A. Macdonald and his Conservative party came back to power. Prime Minister Macdonald entrusted the work to a group of businessmen under the name of the Canadian Pacific Railway Company. Construction began at both ends, meeting in the Rockies, where the last spike was driven by Lord Strathcona in 1885: five years earlier than the projected completion date. The importance to the Dominion of completing the railway was very great. Without a transcontinental railway, the union of the East and West could never have been permanent.

Who benefited? _____

In what way? _____

Story B: 1937

The construction of a transcontinental railway through Canada as part of a highway to the Orient gave Canadians confidence in their own country, and brought investment, industries, and population which have enabled Canadians to realize and develop their own now apparently unlimited resources. There is no question now of investment opportunities in Canada, provided the credit of the country in not endangered by tinkering with state socialism or continued extravagance in government expenditure. By its untiring enterprise, and paying its own way, the Canadian Pacific is in the forefront of Canadian development. Through careful spending,

efficiency in operation, and conservative financing, it has enabled Canada to enjoy lower freight rates on export products than in any other country. The railway's organization is recognized in the world of transportation as second to none – efficient, honest and based on sound business principles. Its directorate is recruited from the leaders of Canadian industry and commerce. Its statesman-like and forceful chairman and president is a Canadian of Canadians, whom many consider Canada's outstanding citizen, and whose reputation as head of the world's greatest transportation system is justly intentional.

Who benefited? _____

In what way? _____

Story C: 1970

The American railway men coveted the North West. "I have an awful swallow for land," said the General Cass of the U.S.-based Northern Pacific Railroad. In 1869 – during the Red River uprising – the Governor of Vermont, John Gregory Smith (who was also the president of the Northern Pacific Railroad), decided to build his rail line so close to the Canadian border that it would ruin any plans for an all-Canadian railway. In a conversation with Charles Brydges, a leading Canadian railway man, he explained the U.S. government's willingness to take advantage of the uprising, and help pay for the line in order to get possession of the North West for the United States. On one side of the mountains, the American railway would siphon off the products of the rich prairie farmlands; on the other side it would drain the British Columbia mining settlements. "Drain" was actually the word a U.S. Senate committee had used. In Minnesota, newspaper editorials claimed that it was "the irresistible doctrine of nature" for that state to take over the entire Red River Valley, north of the Canadian border.

In the Canada of 1871, "nationalism" was a strange, new word. Patriotism was derivative, ethnic groups were deeply divided, culture was regional, the provinces were savagely competitive, and the idea of unity was fleeting. Thousands of Canadians had already been lured south by the availability of land and a more diverse economy. The six scattered Canadian provinces had yet to unite in a great national endeavour, or to glimpse anything remotely resembling a Canadian dream; but both were taking shape. The endeavour would be the building of the Pacific railway, and the dream would be the filling up of the empty spaces and the dawn of a new Canada.

Who benefited? _____

In what way? _____

Story D: 1971

The agreement between Canada and British Columbia, which led eventually to the construction of the Canadian Pacific railway, resulted largely from the greed of eastern Canada. This greed was especially significant in Toronto and Upper Canada's attitude, toward the increased trade between the United States and the settlements which had grown up in the Hudson Bay drainage basin and in the Pacific coast drainage basin. In the Pacific Coast district (now British Columbia)

the discovery of gold mines caused rapid immigration and development, which frightened businessmen in eastern Canada. These hastened the agreement with British Columbia to build the railway. The terms of the contract were designed to develop the trade of the northwest and of British Columbia, and to divert that trade from the United States to eastern Canada. This diversion of traffic to eastern Canada by the Canadian Pacific and other roads has been accomplished successfully, but to some extent at the expense of Western Canada. In effect, western Canada has paid for the development of Canadian nationality.

Who benefited?

_____

In what way?

_____

Story E: 1991

The most obvious and immediate result of the lines' completion was Vancouver's rise to economic success. The influence of the Canadian Pacific railway was visible everywhere in the city. A visitor of 1889 noted how, in Vancouver, it is the greatest thing to be connected with real estate or the railway station. It assures you your position in society, since these are the two excitements of life. Everything in Vancouver was CPR at this time. By 1891 the CPR accounted for upwards of one-quarter of city revenue, and employed between five and six hundred workers as officials, trainmen, or labourers out of a total Vancouver work force of about five thousand. Vancouver's role as a service centre was already taking shape: about three-quarters of employed men and women were working in trade, clerical, or domestic work, the professions or transportation.

Who benefited? _____

In what way? _____

Q: Which story do you think is the most believable one (A, B, C...)? _____
Q: What about the story makes it the most believable one?

Q: Which two stories do you think are the most similar? _____ and _____
Q: What about these two stories makes them the most similar?

Q: Why do you think new history books continue to be written about people and events that were written about before (for example, the stories given above)?

Q: Check **at least one** and no more than three reasons why you think the historians about might have come up with different stories:

- ☐ The historians don't really know what happened, because they weren't there to see it.
- ☐ Some of the historians did not properly weigh the evidence about what happened.
- ☐ The historians know what really happened, but each one has a personal bias when they tell the story.
- ☐ Some of the historians learned the wrong story in school.
- ☐ Historians who wrote their stories later saw events more clearly, because they knew more about how things turned out.
- ☐ Because the evidence does not cover everything that happened, there are holes in the story that each historian fills in differently.
- ☐ The historians looked at different evidence of what happened, or paid attention to different witnesses, so they came up with different ideas.
- ☐ Different stories can be equally true, if they capture different dimensions of the past.

Q: In a few words, please explain the choices you made above:

9.   Causes

The next three questions ask you think about causes in history. *There are no wrong answers. We are interested in your ideas.*

Use the boxes around the outside of the page to make the box in the middle happen, by drawing arrows from one box to another. An arrow from one box to another means, "the first box helps to explain the second box".

You can use as many or as few errors as you need. You do not need to use every box if you do not think it belongs. Just make what you think is the best explanation for the result in the middle box.

Building the CPR was so expensive its directors began immediately looking for every possible way of making money.

"kodaking" because an increasingly popular hobby

William Van Horne introduced a policy of "capitalizing the scenery".

By 1900, tourism had made canada familiar to travellers from all over the world

Between 1886 and 1920 tourism revenues were relatively small, compared to immigratioin and local passenger revenues.

Through CPR advertising, Canada was "sold" to the rest of the world

"Among the Selkirk Glaciers" by William Spotswood Green was the first published story by a CPR tourist about the mountain wilderness off the main line

Use the boxes around the outside of the page to make the box in the middle happen, by drawing arrows from one box to another. An arrow from one box to another means, "the first box helps to explain the second box".

You can use as many or as few arrows as you need. You do not need to use every box if you do not think it belongs. Just make what you think is the best explanation for the result in the middle box.

The railway was built through the ancient hunting grounds of the Blackfoot and Cree natives

As the buffalo were driven off and killed, the native hunters began to starve

From 1885 to 1914, farmers from Europe spread out across the Canadian prairies

The native tribes of the prairies were forced to abandon their hunting culture

The limited availability of alcohol in the west made the railway workers very efficient. The CPR was finished ahead of schedule

Although the government fed the natives for a while, they eventually settled them on reserves

Canada made alcohol illegal in the west because it was feared that it would make the native people violent

Please **describe** this explanation in words as well:

Use the boxes around the outside of the page to make the box in the middle happen, by drawing arrows from one box to another. An arrow from one box to another means, "the first box helps to explain the second box".

You can use as many or as few arrows as you need. You do not need to use every box if you do not think it belongs. Just make what you think is the best explanation for the result in the middle box.

Rail was so superior to most other means of transportation that people came to rely on it very strongly

Western Canada had very low population in the late 1800s, so the CPR didn't have much business at first

The government invested a huge amount of money in the CPR, which it needed to get back somehow.

As part of the "national policy" canada begins charging high tarrifs (taxes) on foreign goods

The government needed to make sure that the CPR got enough business to stay alive

Manufacturing flourished in Eastern Canada, but not in the West.

Goods shipped a long way from the East to the West cost more

Please **describe** this explanation in words as well:

10. Should we use your answers?

Sometimes people aren't at their best when they are asked to fill out surveys. They may be sick, or bored, or find it hard to concentrate for some other reason.

If you filled out part or all of this survey randomly, check the box below and we will ignore your answers (you must still hand it in).

☐   Don't use my answers

Comments on the Survey

Do you have anything to say about this survey, or any suggestions about how it could be improved? Please write them below.

APPENDIX C.

MENTOR POST-PROJECT INTERVIEW GUIDE

- I'd like to thank you for taking part in our project, and working with our students. I'd also like to thank you for taking the time to talk with me. A lot of people are very interested in your experience and what we can learn from it.
- Part of this research involves trying to determine whether, and how orchestrating telementoring relationships on a volunteer basis will be able to assist education reform efforts in the long run. So what I need from you is your honest view of your own experience.
- Do you mind if I record our conversation on tape? **(start tape if yes)**
- Do you have any questions for me before we begin?

Q: First, I'd like to ask you a very open-ended question. What do you have to say about your experience of telementoring?

Expectations

Q: Was your experience as a telementor much like what you thought it would be?

Q: What did you expect or hope it would be like?

Q: What was different from your expectation?

Q: Is there something you think you should have known that would have better prepared you for the experience?

Salient Story

Q: Is there one part of your experience that stands out in your mind that you could tell me a story about? For instance, something you found funny or frustrating or especially satisfying?

Role Issues

Q: Were you asked by either the students or teacher to do things or answer questions that you thought were unreasonable? _____

Q: Can you give me an example?

Question-steering Issues

Q: What did you think of the students' ideas and the work they were doing? _____

Relationships

Q: How would you describe the relationship(s) you developed with the students?

Q: How would you describe the relationship(s) you developed with the teacher(s)?

Q: Would you have liked these relationships with teachers and students to be different? If so, what would you have liked them to be like?

Fit with Work Context

Q: Did you do all of your telementoring from your place of work, or some at home?

Q: Did telementoring influence your work life? How?

Q: Did you ever discuss what you were doing with any of your co-workers?

Q: Did you feel that others at work supported what you were doing?

Desire to Repeat and Expand

Q: Did this experience teach you anything new about yourself or your job?

Q: Do you think you would like to try telementoring again?

Q: Do you think there would be any opposition to this in your workplace?

Q: Are there any kind of recognition or incentives do you think would be necessary or helpful in getting telementoring to be accepted in your workplace?

Advice to Coordinators

Q: What do you think could have been done to make this a more rewarding experience for you?

Wrap-up

I've run out of questions. Is there anything else you'd like to say before we end?

APPENDIX D.

STUDENT POST-TELEMENTORING FOCUS GROUP GUIDE

Introduction

Before we start, I want to make it clear that I am not out to prove that Knowledge Forum or telementoring are the best things since sliced bread. One of the reasons I'm talking to you is that I want to know what you see as imperfect about them, and try to figure out how they could be improved.

I wanted to talk to you in particular because judging from your survey, you seemed to have had (a comparatively good, a really bad, a pretty average) time with telementoring, and I want to try to figure out why that was, and understand that experience from your perspective.

Salient Story

Q: Can each of you describe your experience on the project (with your research, your mentor, or something else), in the form of a story? (ONE AT A TIME, please)

Probes:

- Just tell me what happened from beginning to end. Touch on each of the major events, and what you were thinking or feeling along the way.
- Why do you think your mentor/peer/teacher did/said that?
- What were you trying to accomplish at that point?

Unfulfilled Hopes (for unsuccessful cases)

Q: In what ways was your mentor not helpful, that you were hoping for?

Q: Did you think that your mentor was holding back on you at any point?

Probes:

- What makes you think that?

Mentor's Helpfulness (for all cases)

Q: In what ways was your mentor helpful to you (if any)?

Q: Which of those did you find most valuable?

Q: Do you think the position you took is different from what it would have been without your mentor?

Q: In what ways?

Q: How did you try to let your mentor know what help you needed?

Q: What was the single best piece of advice your mentor gave you?

Progress of the Investigation

Q: How did your understanding of the your research theme change over the course of the project?

Q: Was your mentor involved in that change? How?

Working in KF/Collaborative Work

Q: What did you think of working in Knowledge Forum, where you could see everyone else's work, and they could see yours?

Probes:

- How did you feel about others seeing your work?
- How did you feel about others seeing your conversations with your mentor, your teacher, and your peers in the other schools?

Observations of Others' Work

Q: Did you read very much of what other students working on your theme wrote in KF?

Probes:

- Why?
- Did you learn anything from reading others' notes?
- What do you think you learned?

Q: Did you read very much of what students wrote who were researching *other* themes, unrelated to yours?

Probes:

- Why?
- Did you learn anything from reading others' notes?
- What do you think you learned?

Mentor's feedback on Research Milestones

Q: Did you post all your milestones for your mentor and teacher to read?

(if yes) Did you get comments back?

What were they like?

Did you make changes to your work on the basis of those comments?

(if yes) Can you say more about that?

(if no) Why not?

APPENDIX E.

SUMMARY OF SUGGESTED CHANGES

Suggested Design Changes and Roles for Teachers in OnLine Mentoring Projects

The following design changes have been implemented in subsequent TCP projects.		
Suggested Design Changes for Implementation	**Role of the Teacher and/or Benefit to Teachers**	**Perceived Benefits for Students**
Explicit due dates for Milestone assignments	Teachers may need to review due dates and clarify for students the expectations of the milestone assignments	Provides a clearer understanding of what is expected for milestone assignments and the overall project. **Contribution to sustaining mentor pool**: Mentors will have a better understanding of teacher's expectations Avoiding advice that may conflict with expectations of the other members of the triad may reduce the potential for derailment of the relationship.
Establishment of a forum for Teacher-Mentor Correspondence	Communication is foundational in telementoring projects. Teachers may wish to maintain correspondence with mentors regarding to share that adults in such on-line relationships are working towards the same objectives. This shared space also facilitates a community of discourse amongst mentors who may support one another in their experiences.	When adults present the same message to students, there is less chance of confusion regarding project expectations. Students may also be more likely to understand the connection between the on-line project and classroom tasks. **Contribution to sustaining mentor pool**: Likelihood of experiencing success in the relationship is increased when one understands the other participants' perspectives. More positive experiences may lead to continued involvement in telementoring relationships.

The following design changes have been implemented in subsequent TCP projects.		
Suggested Design Changes for Implementation	**Role of the Teacher and/or Benefit to Teachers**	**Perceived Benefits for Students**
Establish a list of resources	Avoiding disjunction and confusion, especially those created by the vast nature of the World Wide Web, and preventing the project from becoming an excuse to resign to prescribed curricular goals or Stage 2 teaching methods require strong ties between on-line and in-class activities Teachers may need to research and provide a list of websites for students to use as they begin their research for the project. Teachers may also want to navigate and review some websites as a whole class activity. Teachers may need to post links or brief summaries for mentors who are less familiar with the local sources and stories	Making the vast nature of the World Wide Web may help alleviate the sometimes daunting task of researching and managing resources. For less motivated students this task is even more important **Contribution to sustaining mentor pool:** Being able to meet mentees' expectations of receiving background information and Internet sites may help keep the relationship on the right track and thus provide positive experiences that contribute to the sustainability of the mentor pool.
Provide guidelines for teachers. This may take the form of mini-lessons to lead up to milestones	For teachers who are less comfortable with the subject matter and/or the technology, small	Students will have a clearer understanding of the subject matter and project expectations when the teacher is better able to assist in these areas. **Contribution to sustaining mentor pool:** Providing questions and resources that challenge one's own mentees as well as others in the classroom may help meet mentors' desire to answer academic questions.
Post clear guidelines of project goals for all participants to review	Teachers may need to make explicit the expectation of the project and the connections to the curriculum. This may assist mentors who are less familiar with curriculum standards and the classroom practices	Students may encouraged more to work on Milestone assignments when they better understand the project goals. **Contribution to sustaining mentor pool:** Being able to meet mentees' expectations may be better met if all participants in the triad share an understanding of what is expected in the project. Having individual expectations met may then lead to positive experiences that contribute to the sustainability of the mentor pool.

The following design changes have been implemented in subsequent TCP projects.		
Suggested Design Changes for Implementation	**Role of the Teacher and/or Benefit to Teachers**	**Perceived Benefits for Students**
Set clear and specific roles and expectations for individuals and groups	Teachers may need to post and review in class, the roles of each participant.	Clarity of roles helps guide, supervise, and support on-line communication that will ultimately ensure the project's goals are met In addition, to being provided with a clearer understanding of what their own roles are in such on-line projects, having a sense of other participants' roles, may help students determine who to approach for specific assistance. **Contribution to sustaining mentor pool:** Understanding one's role and the roles of others has a bearing on individual expectations, the satisfaction of those expectations and finally the desire to continue in such relationships.
Provide examplars and instruction for Effective Communication	Preparing students to be pro-active with their mentors may entail providing guidance on how to effectively communicate their needs Teachers may need to conduct in-class sessions on writing effective messages. Teaching may need to monitor students who are struggling to see if one-to-one assistance is required for constructing messages For the on-line mentors this means recognizing which students are having difficulty expressing their needs and assisting them in the process of decomposing their problems. Here correspondence between teacher and mentor may be instrumental for those mentors who may have had little prior interaction with students of this age.	In addition to developing effective communication skills, students may receive better assistance throughout the course of the on-line project. **Contribution to sustaining mentor pool:** Understanding students' desires and expectations has a bearing on the satisfaction of those expectations and finally the desire to continue in such relationships.

The following design changes have been implemented in subsequent TCP projects.		
Suggested Design Changes for Implementation	**Role of the Teacher and/or Benefit to Teachers**	**Perceived Benefits for Students**
Evaluation rubric, with expectations and directives to help students attain Stage 4 thinking may be posted	Teachers may need to design and provide detailed evaluation rubrics for students. Posting these rubrics will allow mentors to see and possibly share in the evaluation process.	Evaluation rubrics may contribute to a clearer understanding of the project goals. In addition, the rubric may reduce confusion regarding how the project fits with classroom expectations. **Contribution to sustaining mentor pool:** Knowing teachers' expectations as well as the criteria on which students will be evaluated, may allow mentors to better understand how personal expectations and desires compare to the expectations and desires of the others, potentially reducing conflict and thus providing for potentially more successful experiences.

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