TEACHER PROFESSIONAL DEVELOPMENT AND COMMUNITIES OF PRACTICE

by

JANINE RENEE MARIE HIRTZ

B.Ed., Okanagan University College, 2004

B.A., The University of British Columbia, 1997

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ABSTRACT

The larger research project seeks to examine the role of technology and factors that influence its overall use and efficacy in supporting a community of teachers engaged in professional development. This thesis examines factors that appear to influence teacher participation in the online community of practice engaging in an overarching research project conducted by Dr. Balcaen and a team from UBC O Faculty of Education and funded by the Southern Alberta Professional Development Consortium (SAPDC). The two groups are acting in partnership for supporting and sustaining communities of practice in social studies in southern Alberta. SAPDC is allowing teachers release time to engage in the project while TC^2 is providing professional development for the participant teachers to become proficient at embedding TC^2 critical thinking tools into their classroom practices. Various technologies are used during this study as part of the design of providing professional development for the participants including supporting an online community presence. The guiding question for this thesis is: In a blended approach of face-to-face and online supported professional development for embedding critical thinking into the new social studies curriculum, what significant factors appear to influence teacher participation in the online community of practice during the first year of the project?

Overall results during the first year of this project show that various technologies used during the project are valuable and effective in nurturing this community of practice by enabling and promoting collaboration, communication, and the completion and delivery of products to be used in teaching the new curriculum. I also examine negative factors that appear to prevent some teachers' technology use and online participation and collaboration during this project. Findings show that there are several significant factors that influence participation in the online community and while some participants are reluctant to engage or enter the online environment, others have emerged as leaders and play a significant role in building and sustaining the community of practice. These results provide critical information about implementing and integrating an online component and using technology to sustain communities of practice engaged in this form of teacher professional development.

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LIST OF ACRONYMS AND ABBREVIATIONS

TC^2: Critical Thinking Consortium

SAPDC: Southern Alberta Professional Development Consortium

CoP: Community of Practice

PD: Professional Development

CSI: Collaborative Social Studies Inquiry (Name of group voted on by members)

CT: Critical Thinking

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To my husband, Eric

I dedicate this thesis to my wonderful husband, Eric. His belief in me and the importance of my work has never wavered. I could never have done this without his support and understanding as I spent so many hours away from home and in front of my computer.

CHAPTER ONE: INTRODUCTION

This research examines the participation in an online community of practice of thirty-nine classroom teachers engaged in a professional development project in southern Alberta. The research is conducted in collaboration with The Critical Thinking Consortium (TC^2) by a group of researchers (including faculty members and a graduate student from the University of British Columbia (UBC) Okanagan) and facilitated by principal investigator Dr. Philip Balcaen from UBC Okanagan's Faculty of Education. The project is funded by the Southern Alberta Professional Development Consortium's (SAPDC) *Partners Network Plan* through a grant from Alberta Education. The participating teachers are engaged in a two year professional development project for embedding critical thinking into the new Social Studies curriculum and this thesis is written at the completion of the first year of the study. Facilitators use a blended approach of technology supported professional development in an effort to meet the goals of SAPDC. The purpose of this thesis is to examine factors that appear to influence teachers' use of various learning and information technologies that are used to provide professional development (PD) and build an online community of practice (CoP) during the first year of the project. There is an assumption that a better understanding of teacher participation in the CoP, may provide insight into the conditions that are most likely to contribute to effective PD using this method of delivery.

This chapter is organized into the following six sections:

- background of the problem
- the research problem
- rationale and justification for the study
- purpose of the study
- research question
- literature review and organization of the thesis.

Background of the Problem

One of the problems facing school districts is the challenge of providing effective ongoing professional development (PD) for teachers across diverse regions in a cost effective and sustainable way. Alberta Education views their teachers as lifelong learners and looks to provide opportunities to equip teachers with the knowledge and tools they need to help students reach their full potential (A Guide to Comprehensive Professional Development Planning, 2005). To meet this objective Alberta Education and their partners created a guide to professional development planning for the intention of supporting schools and regions in the development of comprehensive PD initiatives. The belief is that enhanced student learning begins with essential collaboration among education partners for the delivery of effective PD, which leads to improved professional practice. Professional development projects under this initiative require a plan complete with steps and strategies toward reaching a specific goal. Formative and summative evaluations are required during implementation and final reports should include judgments of program success and recommendations for future PD planning. Because PD is viewed as essential to school improvement and enhanced student learning, this jurisdictional body believes that PD must be well planned and effective, and to be effective it must be supported and sustained. The District 6 School Zone Professional Development Consortia believes that technology may be able to assist in meeting this condition by bridging the gaps of time and distance for meeting PD objectives through an online presence where teachers can have access to resources, PD opportunities and collaborate with their peers and experts.

Whether or not teachers would participate in this online environment to collaborate and engage in PD activities is difficult to predict. There are many factors that must be considered.

The Research Problem

The problem that is addressed in this thesis is that of examining factors that influence teacher participation in the online community of practice (CoP). The literature finds that

access has typically been a major contributing factor regarding participation in online CoPs, but because this school zone is equipped with a sophisticated technology infrastructure, this factor is not expected to play a major contributing role when considering negative influences in online participation. Another contributing factor that may be either positive or negative is teacher attitudes and in this study teacher attitudes will be addressed from many aspects including attitudes toward collaboration and technology. This model of PD is new to nearly all these teachers who have no prior experience with the blended approach, and little or no experience with online forums. The study reveals a variety of factors that appear to either inhibit or contribute to participation in the CoP.

Rationale and Justification for the Study

The assumption that teachers will actively participate simply because an online CoP exists for supporting collaboration during PD, is not reasonable. In reality, many factors related to context and individual teacher attitudes have either a negative or positive impact on participation. As this blended approach to providing PD is relatively new for teachers, and there is little conclusive research in this area, analyzing the factors that appear to influence their participation will be helpful in understanding the complexities of implementing such an approach for PD opportunities.

Justifications for this research have been derived from a review of the literature by Lai and others citing a clear need for further research into the use of online CoPs in PD and its effects on teaching and learning. Schlager and others recommend that research should be conducted to investigate how a systemic education CoP could be developed in order to build the capacity of, and provide incentive for, teachers to participate in a variety of teacher PD and self-motivated professional activities via the Internet. Thus there is a need for understanding why teachers will or will not choose to participate in the online CoP.

The Partners Network is a plan by SAPDC to sustain CoPs in Alberta (Zone 6) to assist this group of local teachers with implementation of the new social studies program. During the study, groups of urban and rural teachers participate in face-to-face and online networks of PD and collaborative inquiry.

The Critical Thinking Consortium (TC^2) is assisting SAPDC with their plan by providing PD for implementing the new social studies curriculum. The primary purpose of the research is to organize and provide PD support that would sustain three communities of practicing teachers from September 2006 to August 2008. The efficacy of various aspects of the project, particularly the role of learning technologies is examined.

Practicing teachers from three districts in Medicine Hat, Lethbridge and Brooks were selected to participate in this study. Teacher selection was on a volunteer basis and includes teachers from Kindergarten to grade twelve from both urban and rural settings and two Hutterite Colony schools. By working with other teachers with similar interests or from similar grade levels, the teachers may be able to learn from each other thus contributing to the knowledge building and creating products that they would not have been able to create working independently. These products include resources, lesson plans, units and other materials. In addition to these products, and the opportunity to leave a legacy for others, the primary benefit of participation in this project is the opportunity to become part of a community of practice: a group of people with a common interest who collaborate over a period of time to share ideas, find solutions, and build innovations. Collaboration in the online CoP is the means by which these teachers from different schools and regional areas may be successful in completing their products and meeting PD objectives.

Purpose of the Study

The purpose of the research is to examine the role of technology in helping to nurture the community toward becoming an effective and productive (CoP). This focus emerges from four specific questions that guide the overarching research project during year one and create a framework for investigation and analysis. The four questions are:

1. What conceptions of critical thinking underpin participants understanding of what it means to teach thinking in social studies?
2. What attitudes and understandings participants have about/of the new program of study?

3. What views do participants have about the role of collaboration during educational change and what impact has the approach taken had on their practices?
4. What role, if any, does the use of various educational technologies play during professional development?

Teachers need to use technology to actively participate in many of the PD sessions and the online CoP therefore it is important to understand factors that either inhibit or enhance active participation. The definition of the CoP is important because it is believed that certain conditions must exist if the CoP is to be successful in its professional development goals.

For the purpose of this thesis, the group of participant teachers will be referred to as a community of practice or CoP. I chose this term based on the following definitions of a CoP. I begin with a refined definition of the original by Wenger (2002) who first introduced the concept of a Community of Practice (CoP).

> A community of practice is not just a Web site, a database, or a collection of best practices. It is a group of people who interact, learn together, build relationships, and in the process develop a sense of belonging and mutual commitment. Having others who share your overall view of the domain and yet bring their individual perspectives on any given problem creates a social learning system that goes beyond the sum of its parts.

I also examine the community for evidence of having the characteristics of a CoP including:

- practice as the unifying feature of the community;
- relationships that are grounded in information exchange and knowledge creation;
- membership ranging from novices to old-timers;
- and shared learning, which may also occur effectively at the boundaries/peripheries of the community (Lai, Pratt, Anderson, & Stigter, 2006, p. 10).

This body of literature also states that “online CoPs are focused on practice and creation and sharing of knowledge in a more informal way” (p 32). Thus for the purposes of this thesis I incorporate the above as the definition of a CoP.

Professional development must also be defined because for the purposes of this study PD is not the typical one shot workshop and communities of practice are viewed as central to effective teacher PD. Supporting this definition requires a,

> shift in emphasis from formal training to learning in practice, [from] communities of practice that go beyond traditional 'one-shot' and 'face-to-face' models of event based [or] expert-novice forms of professional development [to] communities of practice that allow teachers to act as co-producers of knowledge, which requires greater personal responsibility for professional growth (Lai et al, 2006, p. 22).

The extensive literature review by Lai et al regarding online communities of practice and teacher professional development concludes that CoPs are only infrequently used for teacher professional development and thus it is to this body of knowledge that I will contribute.

Professional development in this context also encompasses that knowledge is socially constructed and not delivered by so called experts who may not even be engaged in authentic practice. Although these professional development communities of practice often require implementation from administration, the delivery and knowledge building must be shared from within the community and not the usual top down method. In a small scale study researchers find that teachers believe, "PD programs should be developed together by both [academician] and expert teacher" (Baran & Cagiltay, 2006, p. 1). This sentiment is echoed in a report by Gabriel (2004) who reports that in general there is some dissatisfaction from professional development programs. The problems of professional development are many including that they have a tendency to be administered through top-down decision making promoting the idea that teachers need to be "fixed". This results in a lack of ownership of the professional development process and its results. Gabriel also reports a lack of variety in the delivery methods of professional development, inaccessibility of professional development opportunities, little or no support in transferring professional development ideas to the classroom, standardized approaches to professional development that disregard the varied needs and experiences of teachers, lack of systematic evaluation of professional development, and little or no acknowledgement of the learning characteristics of teachers among professional development planners (Gabriel, 2004, pp. 2-4). This technology enabled, social constructivist model allows teachers to be contributors to the knowledge

building and to put theory into practice in a collaborative environment where they can reflect and receive feedback. Thus for the purpose of this thesis, professional development is defined as the process wherein teachers contribute to their own knowledge building and sharing and reflection with the content with respect to their own practice.

Wenger (1998) says that some communities benefit from using communications technology. Similarly others say that "used as a communication tool, technology offers opportunities for extending learning beyond the boundaries of the classroom, province, and country, and this in turn promotes the development of a rich tapestry of formal and informal learning communities" (Kowch & Shwier, 1998). Communities of practice are valuable for sharing expertise in solving problems and creating products and as such there is value in supporting them. One study says that communities of practice are informally bound together for the intent of pursuing goals, shared expertise and work (Daniel, Shwier, & McCalla, 2003).

For this CoP to be effective and successful, members need to experience some shift in their thinking about professional development which is normally delivered in a face-to-face environment with expert led sessions. The teachers must recognize that while they have access to various expertise, they are ultimately constructing the knowledge by contributing and participating in the community. As such, they must take some personal responsibility for participating and contributing to the knowledge building.

In this blended model of face-to-face PD enhanced with technology, moderators provide strong leadership and promote the importance and value of the project these teachers are taking on. Over time, facilitators continued to mentor, but allow the group to evolve, taking ownership and responsibility of their own PD, both in the face-to-face session and in the online environment.

Research Question

As the purpose of the research seeks to answer these guiding questions, this thesis addresses only a portion of question 4. The guiding question for this thesis is: In a blended

approach of technology supported professional development for embedding critical thinking into the new social studies curriculum, what significant factors appear to influence teacher participation in the online community of practice during the first year of the project?

Literature Review and Organization of the Thesis

The literature review in Chapter Two provides findings from past studies and guides the assumptions of this project. Two broad philosophical positions emerge from this review. One is that current traditional forms of teacher PD are not effective for enhancing student learning or teacher satisfaction and the second position is that teacher CoPs engaged in PD programs may benefit from having online capabilities that make it easier to collaborate and construct knowledge. The literature review also provides findings for conditions that must exist to create online CoPs that are capable of providing valuable opportunities for PD and active participation for knowledge creation and collaboration for the participating teachers. Conversely, findings also highlight negative conditions where CoPs are not effective.

Chapter Three discusses the design of the inquiry and outlines the methodology and instruments used in gathering and analyzing data for reporting on the findings of this research. The limitations of the study include the inability (because of anonymity) to match low activity participants with direct results and insight through their individual questionnaire and / or interview. Another limitation is the small sample size. My own researcher bias may also be a limitation in that I have a strong belief that using technology to support CoPs engaged in lifelong professional development will prove to be efficient one day when we learn how to do it properly and when more teachers are proficient in using technology and the World Wide Web. The most significant limitation may be that neither the questions in the questionnaires nor in the interviews specifically asked participants about the factors that influenced their participation or group participation in the online community. Such questions may be asked at the end of the second year of the study. These limitations are discussed in greater detail in Chapter Three. Chapter Four discusses findings and presents the data as evidence of the factors that appear to influence teacher participation in the online CoP. Chapter Five makes conclusions and recommendations for further research based on the

findings herein.

CHAPTER TWO: LITERATURE REVIEW

Introduction and Background

One of the research questions from the over arching project asks what role, if any, does the use of various technologies play during the professional development of this group of teacher participants. This thesis examines only a portion of this guiding question by examining factors that appear to influence teacher participation in the online community of practice in the research project conducted by the Critical Thinking Consortium (TC^2) and the Southern Alberta Professional Development Consortium (SAPDC). The two groups are acting in partnership for supporting and sustaining communities of practice (CoPs) in social studies in southern Alberta. SAPDC is allowing teachers release time to engage in the project while TC^2 is providing the professional development (PD) for the participant teachers to become proficient at embedding TC^2 critical thinking tools into their classroom practices for meeting the new social studies curriculum learning outcomes. Various technologies are used during this study as part of the design of providing PD for the participants including supporting an online community presence. The guiding question for this thesis is: In a blended approach of technology supported professional development for embedding critical thinking into the new social studies curriculum, what significant factors appear to influence teacher participation in the online community of practice during the first year of the project?

The Southern Alberta Professional Development Consortium is interested in using Alberta's highly developed and accessible technological infrastructure as an effective means of delivering PD to its teachers. Thus the literature review focuses on three areas of online PD. Part one examines literature about communities of practice (CoPs) and specifically online or blended approach of face-to-face and virtual community building to this regard. Where possible, literature regarding teacher communities of practice is used. Part two focuses on teacher PD and collaboration including online PD and part three focuses on factors that affect technology use for the purposes of participating in online communities and for providing PD.

As this study is designed to use a blended approach of face-to-face and technology for PD, it is important to understand and accommodate for positive and negative factors influencing the building of an effective online community of practice. Many studies have been done that examine the characteristics of online communities of practice and these guide the examination and conclusions about this group of participants and any significant factors that may be present or missing with regards to their active participation or lack thereof. The literature review helps to define effective online communities of practice and the influential factors affecting how these can be supported with technology.

Literature that characterizes online collaboration and professional development is explored as well as the influential factors found to affect online participation in professional development (PD) and learning communities of practice (CoP). This literature informs researchers and guides the project design. This examination of teacher PD provides insights into conditions that may enhance teacher PD. Therefore for the purpose of this thesis PD is considered as the process wherein teachers contribute to their own PD through active participation, knowledge building and sharing and reflection with the content with respect to their own practice, and it is our assumption that technology may enhance and support such an approach.

Part three examines the factors that may inhibit or promote online participation in communities and wherever possible specifically for the purposes of professional development and continued collaboration within learning communities of practice.

In summary, this chapter examines literature regarding building and sustaining online learning communities and communities of practice for the purpose of defining and examining if such conditions exist in this study and what influential factors exist that either promote or prevent individual community members or groups of members from participating in the online community environment. This review also outlines the process for locating sources, and the criteria used in selecting sources. Conclusions are drawn from this review and conflicting or less clear findings are examined.

The Review Process

In reviewing the literature I gain an understanding of what is known about online CoPs, teacher PD and factors that influence participation, both in online CoPs and in teacher PD. I also gain an understanding of the characteristics of CoPs, effective PD and factors that prevent or promote participation. From the larger review the following questions are used to guide the literature review in this thesis:

1. What does the literature tell us about online communities of practice?

2. What does the literature tell us about supporting teacher professional development with technology and/or communities of practice?

3. What are some of the factors that may significantly impact and influence the participation level of individuals and groups of individuals in the online environment?

Upon establishing the guiding review questions the next stage consisted of searching library and internet databases including Google Scholar, ERIC, Academic Search Premier, PsycINFO, numerous electronic journals, relevant books, literature reviews (e.g. Lai et al, 2006) and relevant reports from school districts. Given that access to the World Wide Web using high speed internet only rapidly developed starting in the year 2000, articles published on or after this date are used whenever possible when gaining insight into internet and technology issues. Any studies regarding technology for community or learning conducted prior to 1995 are excluded since it is felt that factors from this era are no longer as relevant and will be the exception rather than the norm for this group of participants.

Generic literature regarding online communities, professional development, communities of practice and learning communities assisted in clarifying the concept of an online professional development community of practice. The main focus is to identify the characteristics of these communities and examine how they are created and sustained over time. I also explore the negative aspects in order to be informed about what might go wrong

and how I might be proactive in avoiding some of the issues that interfere with a productive and effective online community of practice.

Similarly to a literature review done by Lai et al for the New Zealand Ministry of Education in 2006, I found that there are few articles relating directly to practicing teachers. Many articles focus on pre-service teachers or mentorship programs and PD articles regarding teachers generally examine the more traditional methods of PD such as workshops or formal programs. Fewer yet look at sustainable practicing teacher communities. While a blended approach of face-to-face enhanced with technology is thought to be an ideal environment for learning by some, much of the literature regarding online communities is about distance education where there is little of no face-to-face contact. The literature that supports a blended approach generally reflects a business or commercial perspective that focuses on training and productivity within organizations using online environments.

Defining Communities of Practice (CoPs) and an Overview of Research on the Role of Information Technologies to Support CoPs

In 1991 Etienne Wenger and Jean Lave coined the phrase community of practice (CoP) and in the following years a vast amount of literature has been published that explores and supports the purpose and effectiveness of CoPs. Over time the phrase has been modified and redefined by researchers so that it is now commonly associated with knowledge management and learning. Wenger also states that communities of practice are mostly self-sufficient, but that they can benefit from some resources, such as outside experts, and communications technology (Wenger, 1998) . Thus over the last decade, many studies have extended their look at CoPs to focus on the benefits of information technology for these communities. It is this body of literature that is examined in this part of the review. Research articles list a variety of characteristics as being essential for building, maintaining and sustaining a CoP. A comprehensive overview of the literature reviewed for this thesis leads to the following characteristics and themes that emerged for this review.

Design of CoP: Constructivist Theory and Social Constructivism

CoP enthusiasts generally subscribe to constructivist and social constructivism learning theory (Vrasidas & Zembylas, 2004; Hewitt, 2005; Kimble, Hildreth, & Wright, 2001) and this social learning theory emphasis helps in understanding CoPs (Couros & Kesten, 2003). As social aspects play a critical role in CoPs, researchers also examine how social capital is "used to understand trust, shared understanding, reciprocal relationships, social network structures, common norms and cooperation, and the roles these entities play in various aspects of temporal communities" (Daniel et al, 2003, p. 1). These researchers also state that "social capital is crucial for creating successful virtual learning environments" (p.2/16).

Shared Interests

In a study that examines CoPs with shared interests, researchers explore the use of technology for communication (Bradshaw, Powell, & Terrell, 2005) and conclude that the characteristics of common interest and joint enterprise (Wenger, 1998; Hewitt, 2005) and sharing mutual interests and goals (Lock, 2006) are essential factors for online community environments. Further studies that examine the collaborative nature of communities of practice and their benefits for PD programs (Glazer, Hannafin, & Song, 2005; Moonen & Voogt, 1998) also emphasize the importance of sharing a common goal or problem and identify various roles that are essential to these online communities particularly for the purposes of PD.

Shared Resources

One of the benefits of an online CoP is increased ability and flexibility to share, reuse, or modify workplace resources, and lesson plans (Schlager, 2003). In addition to these valuable shared resources (Daniel et al, 2003) members also benefit when sharing what worked and what did not as part of the collaboration and discussions (Sherer, Shea, & Kristensen, 2003; Wenger, 1998).

Negotiation

Early research by Wenger and others in the private sector notes the importance of negotiation in CoPs (Chandler, 2001). In a study of the democratic process of designing two online CoPs researchers note the importance of negotiating rules, expectations, and norms to community building (Sorensen & O Murchu, 2004; Wenger, 1998) and in addition to shared and negotiated norms (Chalmers & Keown, 2006) one study that examines two online teacher PD communities, STAR-online and TLO emphasizes the added importance of a sense of responsibility as a factor to CoP success (Vrasidas & Zembylas, 2004).

Social Interaction, Connections and Active Participation

There are several types of participation in CoPs and researchers generally agree that "participation is central to the evolution of a community and that it is essential to the creation of the relationships that help to build trust" (Kimble et al, 2001, p. 231; Hewitt, 2005). Researchers discuss various member forms of participation including legitimate peripheral participation (Wenger, 1998; Glazer et al, 2005) which may consist of a member simply reading posts and accessing community resources. Some research shows that this is part of an introductory phase in stage one of becoming a new community member.

In order to emphasize the importance of social presence (Hewitt, 2005) these online CoPs need to be designed in such a way as to promote social interaction (Sorensen & O Murchu, 2004; Barab, MaKinster, & Scheckler, in press). Such social interaction may not be related to the PD content or knowledge building but it is important for community building and for trust to develop. Social activities and discussions require a place to flourish, and in a CoP of practicing teachers, members may benefit by having a space to discuss everyday pressures, demands and priorities (Forrester, Motteram, & Bangxiang, 2006). In getting to know each other through shared interests, problems and even a shared language, community members build trust and relationships which are vital if they are to interact with one another online (Lock, 2006; Moonen & Voogt, 1998). Many will even feel accountability to each other and this is a motivating factor for participation in CoPs (Henderson, 2007). Being a member of a CoP requires commitment (Moonen & Voogt, 1998) and such commitment

manifests itself in an online environment through posting and responding to discussion messages, thereby creating a social presence within the community (Klecka, Clift, & Cheng, 2005). A vibrant CoP contains valued discussions that are lively and an active passionate core group that keeps the conversations going (Chalmers & Keown, 2006).

While much of the literature agrees with Wenger that there is legitimate passive or peripheral participation, one study disagrees and concludes that membership requires active participation, not just reading posts, but also responding and contributing (Bradshaw et al, 2005). Similarly Schlager (2003) warns that CoP leaders must watch for disconnected threads or simply a lack of interaction or where larger communities break into multiple small communities as they see these conditions as a negative impact on the larger CoP. Often lack of participation, reciprocity or delays in responses or feedback will decrease member motivation and even devalue the process and objectives of the CoP (Henderson, 2007). This study also found that social interaction is the strongest indicator of ongoing participation in the CoP.

Researchers agree that part of creating the right environment for this social interaction and active participation requires leadership, and skilled facilitators who are able to moderate and inspire the members to participate (Lai et al, 2006, p. 83).

Roles

CoP roles may be formal or informal and may be played out by an individual or a group of individuals. Roles include inspirational leaders, day-to-day leaders, collectors and organizers of information, interpersonal leadership, institutional leadership and cutting edge leadership (Wenger, 1998). These roles continue to be important to the success of the online CoP (Chandler, 2001) but new ones have been added including the role of mentor. In a study of a public sector CoP, researchers conclude that the role of facilitator may be the most important role in the online community (Tremblay, 2004; Bradshaw et al, 2005). Similarly studies find that the presence of facilitators or mentors is essential to the success of the CoPs they analyzed (Triggs & John, 2004). In this study of a CoP that includes researchers and teachers, they also conclude that members often shared and exchanged roles. Although such

CoPs view themselves as builders of knowledge, studies find that these CoPs may benefit when facilitated by outside experts who are able to participate at timely intervals and move the group along when appropriate (Chalmers & Keown, 2006).

Technology Supporting CoP

CoPs can benefit from communication technologies (Wenger, 1998) as these environments provide opportunities for valuable teacher networking, social interaction (which is important for PD) and reflection on authentic practice; and "the internet provides a cost-effective platform for the delivery of professional development using communities of practice" (Chalmers & Keown, 2006). Using the technology and software platforms allows participants to collaborate across many schools and districts (Hartnell-Young, 2006). Participants say that technology facilitated deeper discussion (Dexter, Seashore, & Anderson, 2002) and the asynchronous nature of online discussion seems to promote greater in-depth reflection prior to making ideas and thoughts public (Hewitt, 2005). Another study finds that using technology supported CoPs provides support for new teachers and provides a medium for collaboration and reflection (Klecka et al, 2005) thereby reducing isolation.

In a blended approach to PD, participants said the technology supported environment allowed for timely communication between face-to-face meetings (Klecka et al, 2005) and another study finds that such blended approaches may be a little more successful when online networking stemmed from initial face-to-face encounters (Thorpe & Roberts-Young, 2001).

Research also cautions that when using technology to support CoPs engaged in PD, simply having it to provide ongoing opportunities for dialogue and collaboration and knowledge building "does not translate into high quality learning or sustainable communities" (Schlager, 2003, p. 207).

Defining Professional Development and an Overview of Information Technologies Used in Nurturing the Professional Development of the CoP

This part of the review of literature will focus on literature that examines how teacher PD can be enhanced including using technology. I examine literature that focuses on

knowledge building since it more closely resembles the definition of PD for this thesis. Many studies that look at enhancing face-to-face professional development with an online component examine how this works for organizations and business models. These models are more useful for training employees and managers to behave in a specific way as opposed to encouraging them contribute to knowledge building. When engaged in PD as members in a CoP, a necessary component is that the participants reflect, share ideas, try them out in their practice, get feedback, modify the delivery of content and share this knowledge building with the larger community. The CoP learns together and builds a foundation of knowledge. While they draw on some expertise, they too contribute as knowledge builders. Practicing teachers have years of experience that provides for a variety of perspectives that are beneficial to the entire group engaged in the PD process. In the social constructivism model, "Knowledge is constructed in 'communities of practice' through social interaction" (Lave & Wenger, 1991; Vygotsky, 1978).

Teachers Need to be Involved in Knowledge Building

Current PD programs imply that teachers need "fixing", are top down and there is little support for moving practice into the classroom. Teachers need to be a part of PD and take some ownership for its development. Effective PD must be grounded in their own practice and viewed as career long (Baran & Cagiltay, 2006; Schlager, 2003), and some studies also find that participation in CoPs is integral to effective and sustainable PD (Schlager, 2003). In one study of teacher PD, teachers were building knowledge from personal experience, and using technology for collaboration and communication, and were encouraged to watch videotaped lessons of their own teaching. These teachers, "felt they had a sense of control, ownership and agency, and they felt able, even eager, to take risks" (Triggs & John, 2004, p. 431). If teachers are to collaborate with one another in a CoP, they must believe that they can in fact learn from one another (Moonen & Voogt, 1998).

Content

The content and context of teacher PD must be negotiated with teachers as learners "so that their expectations and needs are met; relevant to their immediate context, in their

professional lives" and it must be experiential (Bradshaw et al, 2005, p. 3). This emphasizes the need for teachers to be actively involved in their own professional development, where PD topics are relevant (Stevenson, 2004-2005) or have a perception of relevance (Kanaya, Light, & Culp, 2005) and meet real needs and uses (Salpeter, 2003) with easy access to useful new material and content (Baran & Cagiltay, 2006; Chalmers & Keown, 2006).

PD Must be Valued

A study done in Turkey reflects a commonly held perception of traditional PD programs in that too often PD is delivered from top down with little support for moving practice into the classroom and with the added notion that teachers need "fixing" (Baran & Cagiltay, 2006). In order for teachers to value professional development, many studies conclude that current in-service one stop workshops must be replaced and reflect an attitude of lifelong learning including socially constructed knowledge that values teacher experience (Chalmers & Keown, 2006; Vrasidas & Zembylas, 2004).

> Developing and sustaining online learning communities to facilitate teacher professional development calls for three important changes. First, there must be a reform of current perceptions of teacher professional development. Second, envisioning new images of professional development using online communities requires ongoing opportunities for professional growth and development based on the needs of teachers within a community of learners. Third, communities may include individuals from the local school region and/or from around the world, who share mutual interests and goals (Lock, 2006, p. 664).

School districts, administrators and researchers agree that many current teacher PD programs are not as effective as they could be, nor are they satisfying for teachers. The National Staff Development Council's Professional Development Standards stress "the importance of features such as organizing teacher-learners into learning communities, providing sustained blocks of time for training and follow-up support, and aligning teachers' knowledge of content, instructional strategies, and assessment practices" (Kanaya et al, 2005, p. 313). Much of the literature recognizes the potential for technology to provide the environment for these necessary elements. While technology may provide some tools for improved methods of PD, teachers still need to have a sense of purpose to participate in the PD and in any supporting communities (Klecka et al, 2005).

Another way to send a message that PD is valued is through support and legitimization of the groups engaged in PD by their administrations, support which manifests itself by way of time and money. Time and money for teachers includes release time to really engage in the ongoing PD and funds to take part (Tremblay, 2004). Providing moderators and facilitators for ongoing PD in CoPs also lends value to PD programs (Anderson & Kanuka, On Line Forums: New Platforms for Professional Development and Group Collaboration, 1997). While it is critical that such PD efforts are supported and valued by administrative bodies, it is just as crucial that the teachers are in fact only supported with top down initiatives and not strangled by them (Hartnell-Young, 2006).

Communication and Collaboration

Teachers from several studies agree that online CoPs designed to support PD initiatives (Glazer et al, 2005) facilitate and encourage collaboration and reflection (Forrester et al, 2006). The literature also finds that teachers agree that using technology makes the collaboration with each other (Dexter et al, 2002) and with outside experts easier (Charischak, 2000). Technology supported CoPs help teachers to make connections that may not otherwise be possible with other interested teachers and with outside experts who have content knowledge (Sherer et al, 2003).

> In relation to the 'community-centered perspective' elearning arguably has the potential to facilitate the development of 'communities of practice' for teachers in China as evidenced by the burgeoning deliberation between teachers who continued to communicate on the virtual learning environment (VLE). This ongoing and unimpeded interaction several months after the formal piloting of materials, while unexpected, illustrates teachers' desire for purposeful professional dialogue (Forrester et al, 2006, p. 209).

Chalmers & Keown's (2006) participants enjoyed and found that guided reflection and discussions are valuable and essential to participating. They really enjoyed other teachers' perspectives and referred to them as knowledgeable, showing a respect of the individuals in the community. Such discussions provoked their own reflection and sometimes reconsideration of philosophies and perspectives regarding their own practice. Teachers also enjoyed having access to resources.

Conversely, this study found participants perceived online PD and collaboration to be effective but less satisfying than face-to-face and researchers ask if we should be comparing methods. (Anderson & Kanuka, On Line Forums: New Platforms for Professional Development and Group Collaboration, 1997). This does caution researchers to consider what may be bad about CoPs for teachers engaged in this method of PD. Currently, much of the research and literature examines how it seems as though this form of PD may be filling voids. One example is how technology allows for just in time, and anytime communication reducing the isolation of teachers (Lock, 2006; Moonen & Voogt, 1998). Other research cautions however that if online or blended approaches are going to replace some PD, we need to examine the potential downside. One study that looks at the tensions of having an online community without local support for practice finds that this environment may not be beneficial for local practice and community building and may even further isolate teachers (Schlager, 2003).

In their extensive literature review of online CoPs for the New Zealand Ministry of Education, authors cite literature that finds that the most successful online CoPs are those built from a preexisting CoP and move online to support the existing CoP (Lai et al, 2006, p. 65).

Provide Activities

If participants are expected to participate in the online environment, there must be opportunities for participation and the tools needed to work on them (Vrasidas & Zembylas, 2004). Such activities, when relevant and purposeful invite active participation which serves many purposes, including learning to use the technology, social engagement, collaboration, reflection and knowledge building.

Elements of Technology for PD

Almost all the literature recognizes the need for purpose as a vital condition to developing a CoP. In addition to a central purpose, there is also a need for there to be purposeful use of the technology. Social PD is: “Involving ‘the renegotiation and

reconstruction of the rules and norms of what it means to be a teacher' [and that] teachers need to be the central contributors to this and that the process needs to take place not in isolation but through social interaction". Thus this thesis will "argue that a website managing discussion forums and social support can achieve these aims in a community of practice" (Chalmers & Keown, 2006, p. 7). The online environment may provide easy access to finding out new ideas, discussing, understanding, contributing, trying and reflecting (all of which can be facilitated through CoPs) social activity, personal practice and time. (Chalmers & Keown, 2006). With greater access to the web, there is increased "potential for technology to serve as a vehicle to provide support and additional professional development opportunities" (Klecka et al, 2005, p. 413) which may also reduce teacher feelings of isolation.

In a study that examines online learning, Olgren (2000) finds that the focus needs to be on the learning and not the technology. Other researchers discuss the characteristics of the technology that may support this condition. A good technology choice for online PD

> alters the learning environment; provides new structures and media for reflecting, communicating, and acting; facilitates modeling and visualization; allows for construction and discovery of knowledge; expands access to information, networks, people, and ideas; increases the flexibility of time and places for learning; and provides significant resources (National Staff Development Council, 2001, p. 7; Lock, 2006, p. 669).

Much of the literature that examines the online CoP approach to PD concludes that a blended approach may be more desirable (Henderson, 2007). Participants in one study however, commented that the cooperative model was too time consuming. They said that groups were ineffective never getting to the discussion stage, task responsibilities and contributions were uneven; the varying paces were challenging and they even complained of too much accountability as it's difficult to blend in when in an online environment (Meyers, Davis, & Botti, 2002)

Overview of Factors that Influence the Efficacy of Technologies Used to Build CoPs and for PD

There are many factors that can influence the efficacy of technologies used to develop and sustain CoPs. Some factors may significantly impact participation levels by individuals or group members. Some factors are of such crucial significance that their positive impacts can remove barriers to participation and conversely, negative factors may even cause the CoP to become ineffective and die.

Attitude

Teacher attitudes toward both this model of PD and toward the use of technology to provide PD and collaborative opportunities is crucial. It is however one of the factors that can be altered with careful and thoughtful implementation and facilitation. "The norms of collaborating using remote communication mechanisms also help to spread interest in technology use" (Dexter et al, 2002, p. 5). Attitudes and behavior are important in collaborative PD (Hartnell-Young, 2006) as teachers must not work in isolation, but must share knowledge and be able to see themselves as learners taking responsibility for their own PD.

While some members may have an initial fear of computers which is often a barrier to participation (Baran & Cagiltay, 2006), one study warns that some participants who are unmotivated for whatever reasons, may actually undermine the CoP (Schwen & Hara, 2003). Thus research finds that degree of teacher confidence in using technology to communicate is a critical factor in their subsequent participation (Thorpe & Roberts-Young, 2001).

Prior Experience and Technology Skills Overall

Teachers in China who engaged in PD online without basic computer or technology skills found it quite difficult at first, but persisted because in this study the PD was valued greatly by the administrators, the teachers themselves and the greater public. (Forrester et al, 2006). In another study, researchers felt that the initial progress may have been slowed down

because teachers with little or no technology experience felt overwhelmed when introduced to a variety of applications (Thorpe & Roberts-Young, 2001).

Prior experience is seen as a significant contributing factor as to personal computer (PC) use in professional life and if a participant has not experienced much use and carries on without intervention, they are not likely to use the technologies required to participate in an online community (Albion, 2001). Findings are similar in a Turkish study where participants conclude that online PD would work for "younger" or "proficient" technology and computer users but not "old" teachers with a lack of computer experience. The learning curve is too steep and the benefits do not outweigh time and energy required to get online, and so they are not motivated to do it (Baran & Cagiltay, 2006). Thus it seems obvious from the literature that prior communication experiences in a virtual environment are important for the development of a successful online CoP (Ardichvilli, Page, & Wentling, 2002).

Access

Nearly all literature reported that access continues to be one of the most important factors that affects online participation. A study in 1999 supported earlier studies that find access is a significant factor in teacher technology use for any purpose (Jaber & Moore, 1999). Other factors which affect access include whether or not access is convenient or current including outdated browsers, or technology or participants forgetting how to access or what their passwords are (Klecka et al, 2005). Even when participants have all the required technology, not all necessarily have access to high speed connectivity, so this makes online access difficult and time consuming (Forrester et al, 2006). Much of the literature that focuses on teacher CoPs find additional access issues in that there are obstacles of usability due to security issues of allowing access to specific websites within their schools (Hartnell-Young, 2006). Thus there is balance to be maintained between ensuring the safety of students online and allowing teachers access to sites that are required for online PD opportunities, collaboration and community building.

Convenience and Time

One of the main benefits of using an online environment for CoP is the ability for members to transcend time and distance (Klecka et al, 2005; Bradshaw et al, 2005) and the ability to deliver PD anytime, anywhere (Vrasidas & Zembylas, 2004). The flexibility and convenience of engaging in online PD through CoPs (Forrester et al, 2006) also provides a time and space to engage (Wenger, 1998) which can connect teachers who work in isolation due to geography or because of a lack of opportunities in their local teaching environments (Baran & Cagiltay, 2006), thereby decreasing isolation (Moonen & Voogt, 1998).

Conversely, just as transcending time and place can be a positive influence that promotes teacher participation in the online CoP, bad timing for activities (Chalmers & Keown, 2006) can cause people to quit all together. It takes time and commitment to engage online and for some teachers it is difficult to find or schedule time for their own learning goals (Forrester et al, 2006) as there are too many priorities competing for teacher time to focus on PD (Charischak, 2000). Unless participants make time, creating routines of regular participation, they may not have the time it takes (Klecka et al, 2005). Participants in one study report that it is important to stay involved with the group, ask lots of questions and be prepared to spend lots of time – routinely, 3 times per week. They also feel attitude is important and advise that one must be prepared to love it (Meyers et al, 2002). Having enough time proves to be an ongoing issue in many studies (Hartnell-Young, 2006) and participants will find that time is a barrier unless they are prepared to allocate the time it takes to actively engage in CoP forms of ongoing PD (Lock, 2006).

Facilitation

Facilitation occurs at many levels and for the purpose of this study, I look at facilitation of the PD goals in the online environment and facilitation for using the technology required to do so. Facilitators generally have a decreasing presence in a successful CoP as leaders emerge from within the community, however their contributions are highly valued and necessary during the implementation stages and in order to help ensure

the likelihood of an effective CoP. Facilitators act as mentors, moderators, and experts; roles that are eventually transferred to community members.

Research finds that facilitators and moderators play an important role particularly in the developmental stages of the CoP (Vrasidas & Zembylas, 2004) and that the ratio of facilitator to participants may also be an important factor (Chalmers & Keown, 2006). Research that examines teacher CoPs also finds that some CoPs benefit through the presence and participation of academics, expert teachers and readily available technical assistance "in the school" (Baran & Cagiltay, 2006). Modelling behaviour and mentor presence is also an important consideration as researchers find that when facilitators comment & contribute – value is added (Bradshaw et al, 2005; Vrasidas & Zembylas, 2004; Glazer et al, 2005).

Mentors provide timely opportunities for interaction, through group meetings and arranged activities using scaffolding techniques (Couros & Kesten, 2003) and reflection (Bradshaw et al, 2005) and provide opportunities for collaborative interaction (Sorensen & O Murchu, 2004; Glazer et al, 2005) One study finds that responses and comments by facilitators are very beneficial and stimulating, engaging participants and enabling deeper and broader thinking (Forrester et al, 2006). The same study finds that some participants would have preferred more contribution from e-tutors. Most of these studies find that good facilitators and moderators are important to motivation and feedback (Henderson, 2007) and should be skilled with good moderating practices (Hewitt, 2005).

Facilitation often calls for teams of experts (Klecka et al, 2005) including technology experts (Dexter et al, 2002) because a community facilitated with outside experts, support staff and tech support increases its efficacy (Hartnell-Young, 2006; Moonen & Voogt, 1998). Another study finds that pairing inexperienced with experienced information technology (IT) users improves motivation to use the technologies in the CoP (Thorpe & Roberts-Young, 2001).

Social Connections and Trust

Trust is perhaps the most important condition that must exist if the CoP is to flourish. It is listed lower in the list of factors here deliberately because we know that trust does not happen first but rather is cultivated and established over time as the CoP is engaged in the project. Because trust is so important, this is part of why the blended model is seen as more effective because by bringing the groups together periodically in face-to-face sessions, they are more likely to connect with each other, and form relationships that help to build the necessary trust factor for online engagement.

The online CoP can provide support and connections for isolated teachers (Chalmers & Keown, 2006) and provide a place for sharing by having strategies that promote interaction (Vrasidas & Zembylas, 2004). Because much online dialogue is asynchronous discussion, and may increase feelings of isolation, researchers find that it is wise to compliment the discussions with chats and telephone calls (Bradshaw et al, 2005). As the community evolves and members feel support from their peers (often through reciprocity) (Henderson, 2007) the trust and relationships that develop contribute to the feeling of a safe environment (Lock, 2006). Trust is one of the most significant factors and is discussed in most findings involving the examination of factors that enhance participation in CoPs (Hewitt, 2005; Daniel et al, 2003; Moonen & Voogt, 1998). In one study, trust and safety meant that project administrators were not allowed to enter the site (Klecka et al, 2005). In this environment participants feel safe to discuss and share without fear of revealing weakness or insecurity to supervisors or administrators. They are also free to engage in discussions of a more personal and social nature and not just the PD content.

The social activity is crucial to establish relationships of trust and motivation for participation. Such conditions are important for feedback, reciprocity and critiquing of discussions and works. When there is a lack of trust or activity in member areas of interest, the teachers will become frustrated (Bradshaw et al, 2005) and adding to the potential of dying conversations is teacher reluctance to critique the practice of another teacher (Barab et al, in press; Schlager, 2003).

Software Design

Impact of the technology and software can be an issue that directly affects online participation as do learning styles, past experience and expectations (Bradshaw et al, 2005), therefore an important condition of successful technology implementation for a CoP is the actual technology that is used must support the needs of the CoP. Thus a feature rich, reliable and robust product, with flexibility should be considered. The technology must also be relatively easy to use and access. There must be time periods built in to provide members with orientation to the technology, access to online resources and tutorials for ongoing review when needed by individual members. Some members will require one on one tutoring to successfully use the technology tools. Facilitation for using these tools and time and purpose to practice during the implementation stages is vital for members to gain confidence and experience using the technology with relative ease.

Members in a CoP will possess various levels of confidence and experience using technology thus the choices are vital, so that the learning curve is not too steep for the inexperienced members. The software should be user friendly (Bradshaw et al, 2005) and be accompanied with quality tutorial software (Chalmers & Keown, 2006). The technology must be a reliable, scalable software and have a good pedagogical design (Lock, 2006). In addition it should be flexible and participant driven (Barab et al, in press). One study finds that WebCT is too structured to support a CoP (Schlager, 2003). Because funding is always an issue, the technology and software must be cost effective, and have new offerings all the time (Sherer et al, 2003).

Technology Support

It is important to focus on the technology choice as being able to use the technology is crucial if the online CoP is to have any chance at a successfully supported online PD experience for teachers. One success story that examines six case studies highlights the support factor as being crucial for teachers using technology (Dexter et al, 2002). The schools in this study have administrative support for using the technology, excellent infrastructure, on hand support people and a spirit of helping each other. The community

existed face-to-face as well. When there is this level of support, the technology becomes accessible to all, even those who are afraid of technology (Sorensen & O Murchu, 2004).

Several studies examine factors where online PD has not been successful. In her review of the literature, Lock identifies some of the common themes regarding unsuccessful CoPs. These factors are: technology choice, learner readiness, the school culture and the quality of the professional development community (Lock, 2006, p. 671). Another barrier is technical issues that interfere or even prevent technology use such as firewalls in the K to 12 environments (Barab et al, in press).

Summary

The literature review provides vital information that informs a deeper understanding of CoPs and how to best support them. The review also highlights factors that will influence teacher participation in the online CoP. These findings inform strategies for building a CoP and methods of delivering PD to minimize obstacles that may decrease online activity and the subsequent CoP effectiveness. Because there is a limited amount of literature that specifically addresses teacher PD using a blended model of face-to-face enhanced with online collaboration and discussion, I am looking at this as an opportunity to learn from this study and to contribute to the literature.

CHAPTER THREE:

METHODS, DESIGN OF THE STUDY AND LIMITATIONS

This chapter covers the methods used for collecting, analyzing and interpreting data during the research period. It will also examine the methods for the selection of literature in chapter II. The design of the study including participant and researcher roles and profiles are provided in addition to data collection timelines. The final part of this chapter discusses the limitations of the methods.

Triangulation Mixed Method

As this research is part of a larger study, it is exploratory in nature and discovers and examines factors that appear to influence teacher participation in the online community during the first year of the research project. While quantitative statistical data provide results, interpretation of the qualitative semi-structured interviews and questionnaire comments provides the insight into the how and why of the results. Field notes and observations provide context. In examining the use and effectiveness of online presence for supporting the community of practice (CoP) during the participants' professional development (PD) and inquiry, I seek to flush out the most significant factors that influence participation and eventually discuss implications for future research of this nature. As technology use is integral to participating in the online community, particular attention is paid to participant use, attitudes and beliefs regarding the use of technology to facilitate and support community and professional development. To meet this end data is collected using the QUAN-QUAL mixed methods design also known as the triangulation mixed methods design (Gay, Mill, & Airasian, 2006, p. 491). Quantitative and qualitative data are collected concurrently throughout the study and are equally weighted. This combined method allows for a deeper understanding of the role of the online community and the technology that is used to support it more fully than would be possible just using either method on its own.

The literature reviewed suggests that the purpose of integrating qualitative and quantitative methods is "to build on the synergy and strength that exists between quantitative

and qualitative research methods in order to understand a phenomenon more fully than is possible using either quantitative or qualitative methods alone" (Gay et al, 2006, p. 490). While there are some factors that I suspect to be influential factors in online participation, qualitative data provides insight to the activity reports available through the statistics that are available in quantitative reports.

Data on activity levels and participants' perceptions of the usefulness and the problems of using technology for the purpose of online collaboration, communication, community building and for providing professional development for using critical thinking strategies during this first phase of the study will be collected using several methods. Data is collected through questionnaires, interviews, observations, field notes, WebCT activity reports and data mining of online discussions and collaboration. By examining the content of the discussion data in concert with the interviews, questionnaires and field notes, I am able to identify positive and negative aspects of participation, as well as conditions that enhance and inhibit participation. This data provides insight into changing attitudes and participation with the technology required to participate online at the beginning, throughout the study, and at the close of the first year of the research period. The Ethics Approval is found in Appendix A.

Questionnaires

A baseline questionnaire and slightly revised end of year one questionnaire are used during the reporting period of this study. The purpose of the baseline questionnaire is to establish participant attitudes regarding technology for this professional development project. The questions seek to discover participants' current computer proficiency levels and attitudes toward technology for PD, communication and overall. I was unable to pilot the questionnaire because of time constraints. The questions include Likert scale questions and space for comments. Participant questionnaire data is processed and analyzed using SPSS, specially designed computer-assisted qualitative data analysis software. As qualitative data was also desired, there are comment fields available following most Likert scale questions. See Appendix B1 and B2 for baseline and end of year one questionnaires.

Interviews

Interview questions are open-ended in order to allow for participant expectations and apprehensions to be recorded. Interviewers follow interview protocol and are trained to conduct interviews including clarifying any confusion and probing by asking for clarification and elaboration where necessary. All interviewees are volunteers. Interviews are recorded and transcribed, and the data analyzed using a specially designed software product known as NVivo. NVivo is used to facilitate the analysis and management of the study's qualitative interview data and comments on the questionnaires. See baseline and year end interview questions in Appendix C1 and C2. Interviews were approximately 30 – 45 minutes in duration.

Field Notes and Direct Observation

Field notes for this thesis were provided by the writer / researcher. Notes are taken during face-to-face encounters with the participants and also during telephone calls, email correspondence and during virtual PD sessions. The field notes include direct observations that provide context and insight into the circumstances and environment during specific times throughout the research period.

Quantitative WebCT Activity Reports

WebCT activity reports provide data that establish various levels of activity by participants. Patterns are examined and analyzed to provide evidence of the use of this technology during the research project. Although WebCT is designed as a course management software for higher education, it does have many features that are desirable for the community site, including a means for communication, resource repository, collaboration and community building. Researchers of a study that used their own website for promoting online teacher collaboration, communication and professional development criticized WebCT saying that it "may not be the most appropriate for informal, highly contextualized learning in an education community of practice" (Schlager, 2003, p. 213). A sample WebCT activity report may be found in Appendix D.

Researcher Role

In addition to being one of the researchers in this project, I also play a facilitator role. I provide PD to the participant teachers regarding the use of various technologies including WebCT, Live Classroom, Video Conferencing, Asynchronous Discussion Forums, Chat and Skype. I also provide ongoing online support, email support, and support through discussions and telephone calls for assistance with any of these technologies, technical issues and any general concerns regarding using technology in the online community environment.

On line Discussion Data

Online discussion data is processed and the content analyzed using a content Analysis approach known as the Community of Learning model (Anderson, Rourke, Garrison, & Archer, 2001). The content is analyzed for three core components, including: cognitive presence, teaching presence and social presence. The cognitive presence is a four stage process where there is evidence of triggering, exploration, integration and resolution. The teaching presence is evidenced by the formulation and posing of ideas and questions and answering same. Evidence of a social presence comes in the form of expressions of emotion, affirmation messages and relationships. The online chat and discussion data are also mined for any specific commentary regarding the online PD and technology to support the community. This data provides evidence of an emerging CoP and use of technology in the online environment for active collaboration toward meeting deadlines and creating deliverables and knowledge building and sharing.

Chapter Two

The literature review is divided into three parts. Part one looks at building online communities and in particular learning communities. The purpose is to define effective online CoPs and how these can be supported with technology. Part two examines literature that explores professional development models that use online collaboration, communication and any other technologies to support the CoP. Part three examines factors that influence the use of technologies overall by participants.

I analyze and compare definitions of learning communities, online virtual communities and communities of practice in order to develop a clear understanding of how the CoP in this study is to be defined. My research of the literature starts with Wenger, a researcher regarded for his seminal work in CoPs. Wenger is referred to in almost every article that discusses communities. Because our participants are practicing teachers engaged in PD, I analyzed as many articles as I could find (after 2000) that examine online teacher PD. From this review I accomplish two goals; one is to define a community of practice (and in this case teachers) as different than other types of communities and the second goal is to examine how these communities use technology in their collaborative efforts and for professional development. Part three of the literature review is an examination of literature that focuses on factors that influence the efficacy of the technologies used to build and sustain CoPs and the factors that influence their use overall for these purposes by the participants in the studies.

Schedule for Data Gathering

Table 3.1: Schedule for Data Gathering October 2006 – June 2007

October	collect baseline questionnaires and interviews letters of consent from participants observations and field notes during face-to-face PD
October-June	collect WebCT data including activity reports and discussion data
November	observations and field notes during face-to-face PD
December	observations and data from video conference online feedback re: video conf.
January	observations and field notes during face-to-face PD
February	observations and data from video conference
March	data from online live chat session
April	observations, field notes and data from live webcast session
June	collect exit questionnaires and interviews

Design of the Inquiry

During the first sessions, participants are introduced to the researchers and the research project. The participant teachers sign Letter of Consent Forms (see Appendix E) and are advised that their confidentiality will be protected in all records. During the first meetings in each of the three locations, participants also complete two baseline questionnaires. One asked about their experience with critical thinking teaching strategies, while the other seeks to learn more about their familiarity with the new curriculum, and attitudes and expectations regarding collaboration and various learning technologies. Several interviews are also conducted with volunteers.

The baseline questionnaire completed by all participants is used to assess their level of technological literacy, expertise and attitudes. The questionnaires and interviews are used to guide the implementation schedule and in-service for the technologies that are to be employed to help nurture the online community in its professional development and collaborative inquiry.

Establishing Roles in the CoP

Technologies are introduced to participants in hands-on workshop environments where they are also introduced to me as the trainer, facilitator and main point of contact for support regarding any technical issues and concerns. The main goal of these initial sessions is to establish the conditions for developing the online CoP. There are various roles that are crucial for the development of a successful online community. The most detailed discussion about roles in CoPs perhaps can be found in Fontaine (2001), who, after in-depth interviews with almost 100 community members, leaders, and knowledge management professionals in 18 firms, concludes that if roles are not established in the early part of the development of the CoPs they may often flounder and fail. The literature review by Lai outlines Fontaine's 11 roles in a CoP, grouped under four categories including: leadership roles (leaders and sponsors), knowledge domain roles (subject matter experts, core team members, community members), intermediary roles (facilitators, content coordinators, journalists), and support roles (mentors, admin/event coordinators, technologists)" (Lai et al, 2006, p 55).

Being aware of the importance of these roles in the developing community, discrete steps are taken to ensure that these roles are filled by moderators initially and eventually the participating teachers evolve to fill the roles as the community develops and matures.

In the early stages, experts and moderators facilitate all processes to nurture and guide the development of the online community by providing structure, activities and encouragement. Wenger (1998) says that the mere existence of such a facilitator sends a message to the community that their work and initiatives are valued. In this leadership role, these moderators and facilitators must encourage and support the CoP and be aware of what is going on in the online environment. As time goes on, the presence of these persons decreases and researchers expect the group to monitors itself with increasing frequency as stakeholders in their collaboration and success in creating their products and deliverables. The subject matter facilitators for the professional development also provide guidance, encouragement, critical thinking (CT) modeling and valuable resources which bring in the element of expertise. A short time into the project, core members of the community emerge from the smaller groups within the community. They find themselves encouraging, supporting and organizing the construction of knowledge building and sharing. Of course, facilitators in support roles continue to monitor the group with some regularity to see where they can provide timely and effective mentoring or assistance with either sociability or usability factors with respect to critical thinking and curriculum issues, and with using the technologies.

In addition to the face-to-face sessions and inter-school visitations, technologies, including video conferencing, web-based forums, e-mail, telephone calls and chat rooms are used to support the community at large and the smaller communities that have emerged.

Collecting Data

Because initial meetings are in three separate locations with the smaller cohorts, grouped by location; we are able to take time to review the questionnaires with participants and ensure that they are able to complete the documents. These initial meetings and training with the technology provide much data for researcher field notes and observations regarding

attitudes, aptitude, expectations and context regarding technology accessibility, competence and some of the already emerging issues.

The group met face-to-face a few times initially, and then slowly more of the meetings are scheduled in a virtual environment such as chat rooms, or video conference calls. Throughout and in between the scheduled meetings, the groups engage with the subject matter and each other virtually through WebCT and other technologies. As all activity on WebCT is recorded, this provides for rich data (i.e.: discussions and email) in additional to statistical results of general activity.

Establishing Trust

Participants are guaranteed anonymity and steps are taken to ensure a safe online environment. No administrators have access to the online environment and will only receive interim and year end reports that protect the identity of the participants. Technologies are used to enable communication and dialogue for supporting and sustaining the entire CoP and the smaller communities that evolved within this community. Communities of practice, with the help of a facilitator work on establishing community norms and guidelines for professional and respectful communication and online discussions. Communications are monitored frequently and where possible.

A study that looks at nine basic principles that characterize successful sustainable online communities finds that there are basic principles of etiquette and "Communities need to establish ground rules and conduct for communication processes" (Kim, 2000). In another article that compares two case studies, results show that online communities of practice must be encouraged initially and periodically with face-to-face meetings to establish relationships and trust (Kimbell, 2001). Therefore researchers deliberately combined face-to-face opportunities with the online community development to facilitate the required principles of trust and community. In building this community for online success, participants are encouraged to establish personal relationships not only with each other, but with all mentors and facilitators. This is done in order to gain their confidence and trust and to reassure them that there is support available for all collaborative online efforts and with the use of any and

all technologies that will be employed to this end. Through observation, field notes and an examination of the baseline questionnaires there are clues that emerge indicating that some participants may require extra support in using the technology. At the next face-to-face in-servicing on November 22, a portion of the session is reserved for content PD and part 2 of the day is dedicated to the technology. Tips are included for participants on how to create a successful online CoP, like making it a routine to check regularly for new discussions postings, resources or announcements. While the goal for part 2 of the day is to spend time using the technology and help participants gain new skills and insights into the use of technology, time is also spent discussing issues or reservations people may have in using the technology thus far and the group addresses some of the concerns. Small success stories are shared with the group as evidence that the technology is already proving to be beneficial for some groups. It is hoped that these small successes will encourage reluctant individuals and groups to persevere and increase their efforts and commitment to have a presence in the online environment. This is an important time to have the group bond in their collaborative purpose and efforts as it is the first gathering of the entire group. Time is also allowed for reflective questions so participants can think about what they expect from the technology in supporting their efforts. Some individuals and groups need to negotiate and come to terms with the fact that they need to exert extra efforts in this area to enjoy some of the benefits other groups are experiencing through using technology for collaboration.

Participants

Participant profiles (see Appendix F) are completed in the first sessions and results show that there are 38 practicing educators teaching in grades K through 12. Two of the participants teach in single room Hutterite Colony schools which are part of the public school system in Alberta, while others teach in elementary and high schools from both rural and urban areas. Of the 38 participants, 24 are female and 14 are male. All the participants are volunteers who applied to participate following Critical Thinking Project Information Meetings in three different locations in Alberta schools (zone 6). The goal was to recruit five to fifteen urban and rural practicing teachers anchored in Brooks, Medicine Hat and Lethbridge to participate in this study. Although the group is small, they are a diverse group

with diverse teaching assignments and years of experience. This diversity provides for enhanced perspectives regarding teaching philosophies, strategies and attitudes regarding PD and collaboration.

The Critical Thinking Consortium is assisting this project by providing PD support, both face-to-face and online to sustain the community of practice that will use Critical Thinking tools according to TC^2's definition of intellectual tools used in critical thinking and critical thinking challenges, from October 25th, 2006 to August 2008. At the end of year one the participant groups presented a completed project that implements resources, lessons, units, and / or critical challenges that are to be used during the implementation of the new Social Studies Curriculum.

The teachers are granted some paid leave time during this process so they can attend in-servicing during the initial sessions which are face-to-face and for some later sessions that allowed groups to come together at critical times of their projects. The face-to-face sessions are used to introduce critical thinking as a teaching strategy and help participants become familiar with the intellectual tools that will be used during this process. This is also an opportunity to work with the technology and become familiar with important access and login skills that are required to participate in the online community forums, access resources and communicate for the duration of the research project. The sessions play another very important role in that participants are starting to build a sense of community so the participants can get to know each other and make connections, develop relationships and establish trust so that their communication online will be more effective and productive (Henderson, 2007).

This context appears to present ideal conditions for a successful PD experience. The teachers are self selected, they are aware of the 2 year commitment and the technology component to support the CoP and they are given release time. This method of using a face-to-face delivery of PD enhanced with online support and opportunities for collaboration seems ideal.

Technology

In an online article about tips for engaging practicing teachers in using online technology, Salpeter (2003) says "Vary the tools for online professional development. Asynchronous tools such as threaded discussions, e-mail forums, and Web archives are easy for most learners to use and offer the scheduling flexibility busy educators need for 'anytime anywhere' learning. On the other hand, synchronous exchanges-including online chat, instant messaging, videoconferencing, and collaborative workspaces-work well for certain group assignments". In consideration of the importance of varying tools for the online community, criteria that meets with participant, researcher and facilitator needs are used to select "WebCT" to support this community. Four technology solutions were compared and evaluated based on a list of criteria that took a broad set of perspectives into account. Using the EduTools Summative Decision Tool provided a systematic method for selecting the technology for this study (http://www.edutools.info/static.jsp?pj=8&page=HOME). The web based tool provides a process wherein the user selects products to compare, decides on desirable or required features, then applies weights and assigns scores. It is through this process that WebCT is selected as the online technology for supporting the CoP.

The technology infrastructure of the Alberta School zone allows for the use of many technologies available for communicating including high speed Internet; Web based learning content management such as WebCT, social software communication tools and video conferencing. The ability to use these technologies may increase the group's effectiveness and community perspective because it allows for meeting anytime outside of the face-to-face events and outside of scheduled technology sessions such as video conferences.

From the participant perspective, it is vital that the technology be user friendly, accessible, and reliable. Researchers require that the technology have a comprehensive database for providing access to informative data for analysis of the evolving online community and the quality of the discussion and collaboration. Costs, implementation, infrastructure and support are all important considerations in selecting technology. The features and tools available with various technology solutions are also taken into account including, synchronous and asynchronous communication, file sharing and the ability to

group individuals who may require a restricted or private online working space or just quick access to their individual group members.

WebCT is a communications and learning management software that is easily accessible and affordable because of UBC affiliations with this research project and it offers a host of features allowing participants a great range of options and opportunities for collaboration.

Methods of Analysis for Chapter 4

The analyses of data to determine what significant factors appear to influence teacher participation in the online CoP throughout the first year of the study closely examines teacher participation in the online CoP, including evidence of the presence of elements of building a CoP and engaging in online PD. Data is also examined that provides insight into any technological factors or attitudes that may enhance participation or that may be seen as barriers to participation. The baseline questionnaire and interview responses are compared to the exit questionnaire and exit interview responses. Online discussion content in addition to WebCT activity reports, field notes and observations throughout the year are examined for opinions and attitudes that directly or indirectly implicate a variety of factors as being significant when it comes to teacher participation in the online CoP during this PD project. Field notes and observations provide context for the results and findings, while interviews and questionnaires provide valuable insight. Given that the online community interaction does not allow for researcher and facilitator interpretation of body language, facial expressions and such, data is mined from email, online discussions, and online and telephone solicited feedback (some anonymous) and input regarding PD activities, agendas and overall direction. Data is examined to see if the significant influential factors affecting participation in the online community appear to be the same as those from other studies.

Limitations

One limitation is the inability (because of anonymity) to match low activity participants with direct results and insight through their individual questionnaire and / or

interview. It is assumed that low activity participants likely have a significant factors inhibiting their use of the technology or that they do not feel that they need to actively participate online; and conversely those with high and frequent activity patterns are presumably influenced by factors that promote their participation in the online environment, including motivation to use the available tools for collaborating and to meet their PD goals. There are some field notes and observation data that provide insight into some of these specific users.

Another restriction is the small sample size. While it is representative of the larger teacher population, there can only be a limited amount of topics available for inquiry and personalities for collaboration. Therefore, not surprisingly some participants do not use the technology because they simply are not motivated as they are not interested in the inquiry topic or do not share the same goals as their colleagues. Because all these participants are aware of the technology component and volunteered for the study, findings may only be applicable for volunteers to a blended or online PD program who are willing and motivated to use technology and who adhere to social constructivist learning theory. One would expect that resistance to using technology and collaborating may be greater if this is the only method PD offered or if teachers feel obligated to participate.

Another limitation may be my own researcher bias in that I have a strong belief that using technology to support CoPs engaged in lifelong PD will prove to be efficient one day when we learn to do it properly and when more teachers are proficient and competent in using technology and the World Wide Web. I attempt to compensate for this by keeping a very low profile and only responding to direct questions and concerns regarding technology use for collaboration and online participation. I do feel however that a stronger and closer proximity to the participants would increase the successful and effective use of technology to support the PD efforts and the online CoP. This sentiment is supported by the literature and by at least some of the participants in this study as is seen by the data analysis in Chapter four.

Perhaps the most significant limitation is that neither the questions in the questionnaire nor in the interviews asked participants about specific factors that influenced their participation or group participation in the online community or the efficacy of such a model of working through a supported CoP to meet their PD needs. Several of the participants did however comment on such factors in comment fields or in their responses during the open ended interview questions. It is important to ask these questions at the close of the study. Such questions cannot always be addressed directly when only part way through a study period as there may be assumptions made by researchers or participants that could undermine the integrity of the entire study overall based on whether or not actions are taken based on responses to such questioning.

Chapter four presents the analyses of the data and reports the findings.

CHAPTER FOUR: DISCUSSION OF THE FINDINGS

This chapter provides reports from the data analysis and discusses the findings obtained from the baseline and end of year one questionnaires, interviews, researcher field notes, observations, mined data from WebCT, facilitator notes, surveys and telephone calls from September 2006 to June 2007. Participant names are not used in order to protect their identity and group names have been altered to ensure confidentiality.

The analysis focuses on three aspects of participation. The first part discusses evidence of participation in the online CoP including: shared interests, shared resources, negotiation, social interaction, and roles. Part two looks at evidence of online participation for PD including: teacher participation in the knowledge building and sharing, contributing to relevant content and resource repository, a feeling that the PD is valued, collaboration and active engagement in online activities. The last part examines factors that may directly impact participation or the ability and desire to participate including: teacher attitudes regarding collaboration, PD and technology, prior experience with technology and collaboration, access to technology, impacts of time, social connections, trust, role of facilitators and mentors and that of technical support.

Upon analysing the elements of this CoP and the online PD, analysis is conducted to see what conditions impact participation, be they elements of CoP, PD or technology.

The baseline questionnaire and interview responses are compared to the exit questionnaire and exit interview responses. Online discussion content in addition to WebCT activity reports, field notes and observations throughout the year are examined for opinions and attitudes that directly or indirectly implicate a variety of factors as being significant when it comes to teacher participation in the online CoP during this professional development project. Field notes and observations provide context for the results and findings, while interviews and questionnaires provide valuable insight. Given that the online community interaction does not allow for researcher and facilitator interpretation of body language, facial expressions and such, data is mined from email, online discussions, telephone calls, solicited feedback (some anonymous) and feedback regarding professional

development activities, agendas and overall direction. Data is examined for direct evidence of significant influential factors affecting participation in the online community.

Technology plays an important role in supporting this community of practice in many ways. WebCT tools, Email, and Video Conferencing are instrumental in providing a means for this community to connect both as a large group and in their smaller groups for working on specific projects and engaging in PD activities. Valuable resources are placed on WebCT initially by facilitators with the hope that eventually the community members will add to the collection as they build their own resources. Facilitators use the online environment to build a sense of community by encouraging participation, mentoring, and helping/allowing the group to foster its own identity.

Questionnaires

Implementing the New Social Studies Program

The following results are extracted from the report, processed and analyzed by Brown and Frigon, 2007 (see Appendix G). The baseline questionnaire asked participants to indicate the top five sources contributing to their ability to implement the new [Social Studies] program. Looking at what was ranked number 1, 23.1% of participants identified program of studies documents as their first choice. Equal percentages of participants (15.4%) identified the following sources as their first choice: online guide to implementation, in-service through the district, and PD consortia in-service. Participants were also provided the opportunity to list other sources that were not identified by the questionnaire. Consistently, participants cited resources ranging from their own, to teacher resources, to publisher resources.

Using an open-ended question, participants were asked to identify their greatest obstacles to implementing the new curriculum. Due to the similarity of responses, a content analysis was conducted on the responses. Approximately 34% of participants indicated that time was the largest obstacle, while close to 22% reported resources as a major obstacle. With respect to time, participants indicated the issue was a lack of time to prepare and

become familiar with the information. Around the resources, participants were concerned with finding appropriate resources to engage their students. These two issues were also related to the third issue of understanding which was identified by close to 16% of the sample. Understanding involved concerns about understanding what exactly critical thinking was and the volume of material that needed to be understood. Other obstacles that were identified were: access to resources, collaboration on the topic, and support.

In the year end questionnaire completed by 23 of the participants, they were asked to identify top resources for helping them to implement the new social studies curriculum. Table 4.1 provides an item analysis indicating how many participants chose each response option for the individual factors.

Table 4.1: Item Analysis of the Significance of Factors in Implementing the New Social Studies Curriculum

	Most Significant		2		3		4		Least Significant	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Program of studies documents	9	39.1%	5	21.7%	8	34.8%	1	4.3%	0	.0%
Online guide to Implementation	6	28.6%	8	38.1%	5	23.8%	1	4.8%	1	4.8%
In-services through your district	4	18.2%	7	31.8%	5	22.7%	2	9.1%	4	18.2%
PD consortia in-service	15	65.2%	7	30.4%	0	.0%	1	4.3%	0	.0%
Albert education in-service	2	10.5%	4	21.1%	2	10.5%	4	21.1%	7	36.8%
Professional collaboration	15	65.2%	4	17.4%	1	4.3%	1	4.3%	2	8.7%
University/college course work	2	11.1%	1	5.6%	1	5.6%	3	16.7%	11	61.1%
Independent study	6	30.0%	8	40.0%	3	15.0%	2	10.0%	1	5.0%
Other	7	87.5%	1	12.5%	0	.0%	0	.0%	0	.0%

N = 23

Participants who indicated *other* factors described such things as: working by myself, SAPDC, textbooks, and communities of learners. When asked to provide specific examples that stood out, all the participants that responded alluded to professional collaboration with teachers of the same grade level.

Regarding obstacles to implementing the new social studies curriculum, participants indicated the difficulty in simply "wrapping my brain around the concept of critical thinking," and "fully understanding how to implement the critical thinking philosophy into my classroom." Finally, one participant reported that it would be challenging to develop "assessment techniques to come up with an actual grade."

Collaboration

In terms of collaborating with colleagues, 36% of participants reported collaborating *almost daily* (15%) or *once or twice a week* (21%), whereas close to 40% collaborated less frequently, including *a few times a month* (24%) or *several times a year* (15%). Many participants commented that lack of time was a factor impacting their ability to collaborate. Other participants indicated factors such as isolation, or having little in common with other teachers who taught different grades. One participant who reported collaborating *almost daily*, indicated that his/her timetable was designed for collaboration. "Our timetable allows for 1 team teaching, 1 team meeting, 1 admin meeting and 1 tech meeting per week. We also meet informally daily." Close to 80% of participants reported they thought collaboration to be very beneficial, while close to 18% rated it as *somewhat beneficial*. Only one participant rated collaboration as *very unbeneficial*. Participants were also given the opportunity to identify obstacles to collaboration, and similar to the comments discussed above, approximately 78% of participants reported time as being the main obstacle. The second most cited obstacle related to isolation (38%). In terms of isolation some comments revolved around distance between colleagues and those of similar interests.

In the year end questionnaire where participants ranked collaboration activities on the scale from 1 (*almost daily*) to 4 (*several times a year*), 7 (36.8%) participants reported collaborating *once or twice a week*, while 7 participants also reported *several times a year*. The mean rating was 2.68. In the previous questionnaire participants reported an average of 2.52. A Wilcoxon Sign Ranks Test was conducted to see if there was a significant difference in collaborating with colleagues between the two time periods. Data between the two questionnaires could only be linked for 8 participants. The test did not yield any significant difference, $z = -.962$, $p = .336$. Based on these results it does not appear that there is any difference in the frequency in which participants collaborate with colleagues. Participants reported collaborating with other teachers in the same grade level, CSI partners, and Ventura group. Participants were also asked to provide examples. Some participants focused on the benefits of collaboration. Participants described getting together with colleagues to share ideas, provide/receive feedback, discuss frustrations, and positive outcomes. Others

described using specific tools to collaborate, such as e-mail, WebCT, and video conferencing. Conversely, others reported preferring face-to-face meetings. A couple of participants reported being isolated but that the CSI program helped to fulfill their collaboration needs. Finally, one participant reported that it was difficult to collaborate because individuals were just not interested in the process.

On the scale from 1 (*very beneficial*) to 5 (*very unbeneficial*), 22 (95.7%) participants reported that collaboration was *very beneficial*. The mean rating was 1.17; whereas, in the previous questionnaire the mean rating was 1.29. A Wilcoxon Sign Ranks Test was conducted to see if there was a significant difference in collaborating with colleagues between the two time periods.

For this analysis data was paired for 14 participants. The test did not yield any significant difference, $z = -.447$, $p = .655$. Based on these results it does not appear that there is any difference in participants' perceptions of the benefits of collaboration. When asked to comment, many participants referred to how collaboration lightens the workload, and work can be completed in less time. One participant also stated that there is less burn out. Another participant added, "so many different perspectives, teaching styles, ideas, [and] great resources."

Overall, the comments were very positive, and participants indicated the CSI program was very helpful and one participant wrote, "I would like to have this project continue for next year as the collaboration is invaluable." It should also be mentioned that one participant raised a caveat that although collaboration is beneficial "personalities and interests need to fit together."

Participants provided specific comments regarding what encourages them to seek collaboration with colleagues. A number of participants referred to their own desire to become better teachers. For example, one participant wrote "I have an honest desire to be a better educator with each passing year," while another participant desired collaboration for "self improvement and better teaching strategies for my students." Other participants were more specific about the end product. For example, one stated that collaboration "results in

superior assignment and challenges." For other participants it is all about the process. One participant appreciates the opportunity "to hear feedback about things I am trying to do in my classroom. To find encouragement from my peers to keep me going," while another participant liked "people taking time to really hear what you are saying." Finally, one participant wrote that collaboration provided a "chance to reflect on success or failure."

When it came to describing the greatest obstacle to collaborating, almost all participants said time was the biggest issue. Some participants also mentioned funding and opportunities were issues. The other major issue was people's lack of interest and differing interests.

Technology Proficiency

Participants were asked to rate their computer technology proficiency. Eighty-five percent indicated proficiency, with close to 9% percent reporting *highly proficient* and close to 77% reporting *somewhat proficient*. Close to 12% said they were *unsure*, while only 1 participant said he/she was *somewhat unproficient*. With respect to their likeability of computers and educational technology Table 4.2 provides the item analysis for each question. In terms of using a computer or the internet the majority of participants indicated enjoyment. However, with respect to liking online discussion forums approximately 65% indicated they were *unsure*. As for online collaboration, close to 60% reported they were *unsure*. No participants strongly disagreed.

Table 4.2: Degree of Enjoyment With Working With Computers/Educational Technology: Item Analysis

	Strongly Agree		Agree		Unsure		Disagree	
Count		Row %	Count	Row %	Count	Row %	Count	Row %
15. I like using computers	19	55.9%	13	38.2%	1	2.9%	1	2.9%
16. I like using the internet	19	55.9%	12	35.3%	2	5.9%	1	2.9%
17. I like using email for communication	20	58.8%	11	32.4%	2	5.9%	1	2.9%
18. I like online discussion forums	2	5.9%	8	23.5%	22	64.7%	2	5.9%
19. I like online collaboration	2	5.9%	12	35.3%	20	58.8%	0	.0%

Note. N = 34.

Regarding technology proficiency, on a scale from 1 (*highly proficient*) to 5 (*little or no proficiency*), 14 (60.9%) participants reported being *somewhat proficient* with technology. The mean rating was 1.96; whereas, in the previous questionnaire the mean rating was 2.09. A Wilcoxon Sign Ranks Test was conducted to see if there was a significant difference in technology proficiency between the two time periods. For this analysis data was paired for 14 participants. The test did not yield any significant difference, $z = -.333$, $p = .739$. Based on these results it does not appear that there is any difference in participants' reported level of technology proficiency. Additional comments indicated that participants were using and comfortable with basic technology (e.g., email).

Participants also commented that they saw technology to be very beneficial. Only a couple of participants said they were afraid of it. Participants were also asked to provide examples of how their proficiency has changed over the past year. Most participants simply stated that they are more familiar with specific technologies (e.g., Skype, WebCT, email, video conferencing, and chat rooms). Some indicated that they have begun using more of the communication and collaboration tools. A few participants also indicated that they are more comfortable with technology, while others report that they have learned they prefer to meet with people face-to-face.

Participants were asked to rate statements that they like using specific technologies on a scale from 1 (*strongly agree*) to 5 (*strongly disagree*). Table 4.3 provides the mean and standard deviation rating for each statement. Table 4.4 provides an item analysis detailing the frequency with which participants chose each item option for the statements.

Table 4. 3: Participant Ratings of Specific Technologies

	Mean	Standard Deviation
I like using computers	1.43	.90
I like using the internet	1.48	.90
I like using email for communication	1.43	.59
I like online discussion forums	2.65	1.40
I like online collaboration	2.35	1.23

Participants responded using a scale from 1 (strongly agree) to 5 (strongly disagree)
N = 23

Table 4. 4: Item analysis of Participant Ratings of Specific Technologies

	Strongly Agree		Agree		Unsure		Disagree		Strongly Disagree	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
I like using computers	16	69.6%	6	26.1%	0	.0%	0	.0%	1	4.3%
I like using the internet	15	65.2%	7	30.4%	0	.0%	0	.0%	1	4.3%
I like using email for communication	14	60.9%	8	34.8%	1	4.3%	0	.0%	0	.0%
I like online discussion forums	6	26.1%	6	26.1%	4	17.4%	4	17.4%	3	13.0%
I like online collaboration	7	30.4%	6	26.1%	7	30.4%	1	4.3%	2	8.7%

N = 23

Overall, participants appear to like computers, the internet, and e-mail in particular; whereas, they don't appear to like online discussion and collaboration as much.

Participants were asked to rate the significance of each collaboration tool on a scale from 1 (*most significant*) to 5 (*least significant*). Table 4.5 provides the mean and standard deviation ratings for each tool. Table 4.6 provides an item analysis detailing the frequency with which participants chose each item option for rating to the tools.

Table 4.5: The Significance of Technology Tools in Collaboration

	Mean	Standard Deviation
WebCT email	2.74	1.48
WebCT discussion tools	3.09	1.35
On line resources provided by WebCT (i.e.: curriculum docs and CT tools)	2.65	1.27
WebCT chat rooms	3.77	1.07
Video Conferencing	2.91	1.08
Live Classroom	3.30	1.13
Skypecast	3.79	1.13
Other	1.00	.00

Participants responded on a scale from 1 (most significant) to 5 (least significant)
N = 23

Table 4. 6: Item analysis of The Significance of Technology Tools in Collaboration

	Most Significant		2		3		4		Least Significant	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
WebCT email	6	26.1%	6	26.1%	3	13.0%	4	17.4%	4	17.4%
WebCT discussion tools	4	17.4%	4	17.4%	4	17.4%	8	34.8%	3	13.0%
On line resources provided by WebCT (i.e.: docs and CT tools)	5	21.7%	6	26.1%	6	26.1%	4	17.4%	2	8.7%
WebCT chat rooms	0	.0%	3	13.6%	6	27.3%	6	27.3%	7	31.8%
Video Conferencing	2	8.7%	6	26.1%	9	39.1%	4	17.4%	2	8.7%
Live Classroom	1	5.0%	3	15.0%	9	45.0%	3	15.0%	4	20.0%
Skypecast	1	5.3%	0	.0%	8	42.1%	3	15.8%	7	36.8%
Other	3	100.0%	0	.0%	0	.0%	0	.0%	0	.0%

N = 23

Surprisingly, participants did not seem to rate any of the tools as playing an overly significant contribution to collaboration. When asked to comment on the most effective uses of technology during the CSI project, participants overall reported e-mail as being the most effective tool. Some participants reported that for conversations Skype and chat rooms were effective, and e-mail was great for sharing documents. There were a couple of participants who indicated they had not participated, while others stated they preferred face-to-face meetings.

When asked to comment on the least effective or most problematic uses of technology during project CSI, many participants stated that Skype was the least effective, but they also stated that they could not get it working. As for video conferencing, a number of participants said it did not work in their district. Another participant said that a common web tool was needed for video conferencing. There was one reference to live classroom not working because not enough people were interested in it. Finally, there were a couple of comments by people having difficulties getting WebCT to work.

When asked to comment on possible future uses of such technologies, only a few participants responded to this question. Some participants indicated they needed more practice and instruction. As one participant said, “I think we need to access this and practice the various tools to really know whether they're that useful as collaborative tools. I appreciate them but don't feel comfortable or competent in utilizing them effectively.” Another participant said that there needs to be something to encourage people to continue participating in the use of the technologies because over the course of the year, interest

seemed to taper off. Finally, one participant expressed a little frustration with technology, stating that “technology needs to be workable to be beneficial.”

When asked to offer any other thoughts regarding social studies, collaboration and use of information technologies, participants were able to provide general comments. Only a few participants provided responses. On participant wrote, “The sooner we can collaborate with each other in real time on line - hearing each other, showing each other things from the comfort of our own homes at times we set up with those we are collaborating - after school the better.” One participant felt he/she would be more inclined to participate if times were scheduled. “One thing that would help me is having prearranged times to check in - perhaps 1/2 hour 2 evenings/wk like an appointment.”

Referring to technology one participant stated “I need more in-service. I need to practice regularly.” Finally, one participant shared his/her overall perspective on the use of technology in collaboration, “Even though I dislike it (my age, my lack of confidence) I do believe it is a powerful tool for discussion and sharing information.”

Interviews

In the reports also created by Brown and Frigon, baseline interview data and year end interview data are processed and analyzed.

The following information is gathered from the analysis of 7 individual interviews at the beginning of the project. The interviews were conducted from October 23 to 25, 2006, which used the Supporting and Sustaining Communities of Practice in Social Studies (SAPDC) interview protocol. The data was analyzed by two individuals who had not taken part in the interview process. Furthermore, the analysts were not involved in transcribing the interviews from audio files. Text files of the transcriptions were analyzed using NVivo 7.0 (QSR International, 2006).

Collaboration

References to collaboration were separated into five key themes: barriers, concerns, feelings about collaboration, benefits, and opportunities to engage in collaboration. With respect to barriers to collaboration, most participants indicated that time and availability were the main barriers. For instance, participants discussed being isolated from other teachers. In some cases, this isolation was due to being the only teacher of a group of students responsible for teaching multiple subjects, or being the only teacher of a subject, but responsible for multiple grades. This was often cited by teachers teaching in small schools or in a colony. Other participants also indicated that even when they met with other teachers teaching the same subject, they may be teaching different grades. As a result, they found it difficult to adapt and apply strategies to meet the needs and abilities of their own students. Participants also indicated the unwillingness of others to collaborate as a major barrier. This was the case for teachers in different schools as well as teachers within the same school. Finally, one participant highlighted that in large schools there are enough teachers to warrant the establishment of subject specific departments. Unfortunately, the participant argued that such departments tend to be self-focused and fail to seek outside collaboration limiting the department's exposure to new ideas external to the department.

Participants expressed a number of concerns about collaboration; however, these concerns were directed specifically at the process of collaboration rather than its potential outcomes. For instance, participants expressed the importance of collaborating with people from different schools and departments to gain exposure to new ideas, rather than circulating old ideas. Another participant expressed that collaboration is one thing, but implementation is another. Without effective implementations, which itself requires collaboration, the initial collaborative initiative is lost. Finally, participants expressed concerns that were previously discussed as barriers above. That is, participants were concerned about the time required for collaboration, or simply having contact with colleagues with whom to collaborate.

Participants generally presented positive feelings towards collaboration and felt it had many benefits. Citing the old adage "two head is better than one," one participant valued the

idea of bouncing ideas off other people and also felt that collaboration could lighten the work load. Interestingly, a different participant made the distinction that collaboration does not simply mean work share and should not be considered as a means of reducing workload. This perspective was shared by others, for example, "It doesn't mean you don't do your own thing, it just means you get other ideas." Importantly, some participants felt that collaboration would be good when done with a professional, "somebody who's done that several times."

Consistently, many participants indicated that collaboration allowed people to strengthen their positions, but not by simply adopting other people's opinions. For instance, one participant said "[collaboration] helps you to broaden your understanding and so collaborating with colleagues just makes it that much stronger. You may not always agree with what your colleagues say but at least it will make you think about what you really trying to do." Another participant also argued that a benefit to collaboration is that is spreads and soon everyone is willing to share their work and ideas.

In terms of opportunities to collaborate, some participants were able to cite specific facilitators such as school principals, workshops, conferences, or development consortiums (e.g., TC^2) that encouraged collaborations and provided opportunities to network. Other participants identified the opportunities for collaboration as stemming from common goals and experiences. For instance, one participant, described collaboration resulting from a desire to develop common rubrics within a school. Another participant described the willingness and encouragement to collaborate from colleagues with mutual experiences of isolation. Finally, others cited that a collaborative environment/situation simply developed from a cause he or she was unaware of.

End of year interviews were conducted with volunteer participants. Participants were asked to describe their experiences in engaging in collaboration with colleagues. Many participants discussed meeting face-to-face with colleagues. It was reported that when they lived in close proximity to one another group members met frequently for short periods of time. However, when there was greater distance between group members, full-day meetings

were scheduled, but less frequently. One participant mentioned collaborating over the telephone. A number of participants discussed efforts to chat online; unfortunately, they commented that the approach was not successful. The meetings that were described ranged in structure. For instance, some groups were more structured where the group "unpacked all those big ideas into step by step everyday lesson plans, strategies, critical thinking, and mini-challenges." Other groups had each person take a section, develop it, and bring it back to the group. Finally, other meetings involved group members bringing unstructured ideas to the table in order to share them with the group. In addition to understanding the new curriculum, a couple of participants mentioned that the groups were important in helping them deal with the "huge paradigm shifts happening [and the] huge changes in people - in thinking, in accepting, in ideas, just understanding on new levels and seeing what people were doing."

While describing their collaborative experiences, participants identified several benefits to the process. One commonly cited benefit entailed the immense time and effort collaboration saved. Comments included a "ton of work was accomplished in this project that would never have been gotten done by me just as a classroom teacher, you know given one prep a day," and it "would be exhausting to try and develop this on your own and it would be insurmountable, the amount of work that was done was phenomenal." While yet another participant commented that "there is such an overload of information and materials, and that to have the time to sort out what's good and useful [takes] an incredible amount of time and when we can share with each other, it just reduces that time." In addition to the time and work collaboration saved participants, they also commented on a wide range of other benefits. For example, two participants mentioned that their group meetings were invaluable in helping them come to terms and understand the changes and shifts in their own paradigms and understanding the "whole pedagogy of critical thinking."

Furthermore, participants mentioned the clarity and understanding they received by sharing ideas and information with the group. For instance, one participant mentioned an idea he/she had brought to the table which may have been too abstract for his/her students yet through the help of the group was able to develop it into a unique and usable project for the students. Moreover, a couple of participants mentioned that collaboration helped keep them

on track because the group set goals and deadlines, which stopped the group from going on tangents and encouraged members to have work completed for each meeting. Overall, the benefits of collaborating mentioned by the participants included, time and energy saving, clarification, understanding, support, and encouragement. Furthermore, the majority of the participants feel that it would have been impossible to implement the new social studies curriculum without collaboration.

Participants also identified a number of problems or difficulties that they encountered while collaborating. One participant described the difficulties he/she encountered within his/her group, "We were not on the same wavelength." The participant mentioned items such as people in the group being colleagues and that he/she felt like an outsider. In addition, there was no group leader and the group would often go off on tangents limiting the opportunities for everyone to be heard. Furthermore, not everyone was interested in the projects that were being collaborated on and did not give feedback on others' ideas. Another problematic issue related to collaboration was time. A couple of participants mentioned that it was hard to arrange times for people to meet. "As teachers, we don't have enough time for learning." One participant mentioned trying to use WebCT to ease the distance gap; however, a member in his/her group was very uncomfortable using a computer and the attempt was scrapped for face-to-face meeting and telephone conversations. In conclusion, the main criticisms of collaboration are group cohesiveness, time, and inability to use technology.

Technology

Discussions regarding technology highlight a number of issues. Some participants spoke of technology in terms of adapting to one's environment. For instance, one individual stated a willingness to use technology if there was immediate access to it. Another participant spoke of having to restrict the use of technology due to the rules of the colony in which he/she taught. Finally, one participant indicated that his/her school did not place emphasis on the use of technology. In fact, the school was just beginning to use computer based report cards and still did not keep computerized records of attendance. As a result of

administration's reluctance to incorporate technology, he/she did not feel compelled to learn and/or use technology.

In terms of technology, participants expressed several concerns and negative aspects. First, many participants stated a need to be shown how to use the various technologies. One participant indicated frustration at having to read manuals. Another participant stated that although his/her school had new technologies [smart board] it was not being used because teachers had not been properly trained on how to use it. Finally, many participants expressed concerns regarding the amount of time required to process the vast amounts of information they now have access to (e.g., internet resources, emails, discussion groups, etc.). Related to this issue one participant stated a fear of technology. When asked to elaborate on the reason for this fear, the participant stated, "How overwhelming it all is and there's so much, there's just so much to be able to whittle it down to something manageable and that I feel like I can handle and that I can understand and use. I'm often just overwhelmed by the sheer volume of techie things and information." It should also be mentioned that other participants, while feeling comfortable themselves with technology, acknowledged that they were aware of colleagues who experienced fear.

In terms of the benefits of technology, participants reported several. First, participants commented on its ability to obtain students' attention. Second, participants stated that technology has improved their access to information resources. Mostly through the internet, participants reported the ease of accessing vast amounts of relevant information on their topic. For instance, one participant said "Certainly the availability of resources on the internet has changed the struggle that teacher had at one time to find materials." Third, participants saw value in its ability to link people together across distances. The importance of this aspect was stressed not only for teachers, but also administrators and students. Overall, many participants expressed an interest and desire to learn and keep learning to use technology. Although, many added that at times it is difficult, they felt that with effort and persistence they would be able to use it.

In terms of technology's role in collaboration, a couple of participants simply stated that it enables more communication among people involved. However, one participant voiced his/her concern in using technology in such a capacity, "Video conferencing isn't a great big mystery, it's a tool that will create better efficiency, but for what I've been trying to do I would rather sit face-to-face with people I don't get enough opportunity to do that."

Finally, a few participants commented on the impact they believed technology to have on their teaching. Aside from comments about being able to make better presentations or the vast amounts of e-mail and information that needed to be sorted through, some discussed its more global impact on teaching. One participant compared the current state of teaching to that from previous years, stating that now everything is impacted from the classroom curriculum, to giving out report cards. Another participant commented on how technology has aided in overcoming the isolation of his/her students, school, and community because they can access and interact with people outside the community. Finally, one participant commented on his/her community's strict rules against the inclusion of technology. However, the participants went on to state that the newly built school had "a room set up for computers if at any time the colonies do allow computers in."

In the year end interviews, interviewees were specifically asked to discuss their use of technology. The participants mentioned using a variety of different types of technology: live classroom, Skype, chat rooms, video conferencing, WebCT, the project website, and downloadable resources. Participants felt that the technology training needed to be set to the individual level of the participants. For example, "There are people there who don't really need more than a few words about here is the address, click here, here is your prompt and away you go and there are people that it was very, very new." Comments seemed to highlight that technology training was an important factor because it was hard to use when so many people were at different usage levels.

For example, when one person in a group was not capable of using the technology, the group could not use it without alienating that person, thus limiting their use of available technology. Participants made references to several issues and problems that arose from

using the technology that was available to them. Some participants specifically mentioned problems with the information sessions. For example, one participant said that "several computers were not working" during one session and in another they could not hear or see the instructor. Two participants mentioned that they are interested in learning the new technology, but were struggling to learn it and would benefit more from one-on-one instruction, while another participant commented on his/her lack of time to adequately learn the technology. Although all the participants saw the benefits of using technology, people were at different levels of experience/comfort, which lead to problems when working together. For example, one participant mentioned that one of his/her group members was technologically challenged, and thus, the whole group could not use email or WebCT because they could not communicate with that one member. As a result, they were limited to face-to-face meetings or using the telephone.

Three participants referenced problems with chat lines commenting that they were too slow and not time efficient, "It is very frustrating because we could do in five minutes with a video cam what took us forty minutes [with a chat room]." Furthermore, participants mentioned that many of the available technologies (i.e., online chat, WebCT, video conferencing) did not work either from home or in their district. Another common complaint regarding technology was the lack of participation from their group members who failed to respond to emails or WebCT postings. One participant mentioned that he/she was not willing to buy the headphones and webcam necessary to participate in video conferencing. For a few participants there was simply just a preference to meet face-to-face, "I would rather do it face-to-face. Videoconferencing just doesn't appeal to me. If I am going to meet with someone and talk to them and it is convenient for me and them, I would just rather meet the person." Overall, participants' criticisms of technology included lack of knowledge, lack of participation from group members, faulty equipment and programs, and just a personal like for face-to-face meetings. On a positive note, most of the participants saw the eventual benefits to the technology and had a desire to learn them.

On the topic of technology, participants highlighted a number of benefits resulting from the incorporation of technology. One of the most common references was to the time

technology saved. One participant commented that "one of the hardest things we face as teachers is not enough time to do everything we need to do and when we share with each other what we've done, we can save each other so much more time," and thus, viewed technology as a time saving device. A couple of participants commented on being able to work from home. "My vision of it being wonderful and time saving is that we can get together from our homes, after hours at our convenience. In conjunction to working at home was the convenience of not having to travel." For example, "We can still get together, see each other, hear each other, and exchange ideas and information and stuff without having to spend the time for travel." Furthermore, specific types of technology were described as being great time savers, such as teleconferencing and videoconferencing. One participant felt that his/her recent in-service training had contributed to his/her confidence in talking about technology and increased his/her desire to use technology.

Two other participants discussed that the available technology had helped them feel less isolated and allowed them to get feedback on their ideas. Overall, the benefits of technology as identified by the participants were that it saves time, makes them feel less isolated, and leaves them with the feeling that they can master it. As one participant stated, "There has been some obstacles [and] struggl[es] with technology, [but] it is worth pursuing."

Facilitator Notes, Field Notes & Observations

Following are summaries of observations and field notes for October 23, 2006 to October 25, 2006 during onsite in-service in each of 3 locations.

<u>Medicine Hat</u>

On day 1 in Medicine Hat, when asked to place themselves on a line regarding confidence with online technology use, of the 8 participants ranging from Kindergarten to high school teachers, 2 place themselves at the bottom while 5 place themselves in the middle and l participant left early. In a brief conversation with the participant prior to his/her departure, he indicated that he did not use technology, was a "slow adopter" and would

require encouragement to learn to use the technology. It is unfortunate that someone with so little confidence or prior experience is not able to be present for the hands on training and orientation session.

The technology session takes place in a computer lab. There are difficulties logging on initially as our requests for multiple generic logon access had not been completed. WebCT works very well and soon I am hearing the praises of excitement about using this product. The Chat rooms are a hit and later Participant 1 reveals that this was his first experience in a chat room which he had always believed was a dangerous and bad place to be. He is not the only one who has never been in a chat room before. Participants practice their new skills by posting their project ideas in the discussion forum. They are mostly high school teachers and 1 Kindergarten teacher. The participants comment on how great it would be if their school districts used a tool like WebCT for communication and dissemination of resources and information.

At our debriefing, Facilitator 1 felt that she needed to do things differently for next time as she became aware of tensions existing between a couple of individuals and a couple of the groups. Facilitator 2 echoed that he had become aware of the tensions also.

Lethbridge

On day 2 in Lethbridge, a much larger group consisting of 14 participants is in attendance. There are 2 colony teachers, 1 high school teacher and the rest teach in grades 1-7. This group consists of members with a broad range of technology skills, fears and attitudes. As with the first location, the district IT people had not ensured that we would have access for the entire group, which was a very big problem since people had to share computers and take turns, making for a very disconnected orientation session that seems to benefit only the 3 or 4 participants who are already confident with computer use, the internet and technology. There is another problem here as well because being in an elementary school computer lab meant that much of the content and pop ups are blocked so we are unable to orient the participants to particular features of the educational technologies that will be used during the project.

From this moment, I anticipate that there may be differences in participation levels because of the fragmented and difficult orientation experience with this group under these less than ideal conditions.

Brooks

I make time to meet with the technician when we arrive in Brooks on day 3 to ensure that everyone will be able to logon to computers and that pop ups and other sites will not be blocked, thereby ensuring maximum effectiveness for the technology orientation session. There are 6 participants in this session and the technology works well and none of the participants seem afraid of the technology and they all enjoy the chat rooms and ability to collaborate online. One of the participants leaves the session multiple times to deal with classroom situations.

Overall, the initial individual site visits are good for the groups to get to know each other and begin discussions about projects and how we will use the technology. I have asked for input and the groups and facilitators decide that WebCT will be used for communication using email for individual and group communication, the calendar will be used to organize and set dates and schedules and online discussion forums will be used to facilitate ongoing conversations and collaboration. I also created an area for online resources and materials relevant to the professional development goals and provided online tutorials as a review for using specific technology tools.

CSI Group Meeting #1

On November 22, 2006 the entire group comes together for the first time in Brooks. This session features a professional development day with Roland Case, and 2 facilitators who each play a role in facilitating the professional development goals of the day. In addition to the more formal PD regarding CT, the agenda is set up to allow groups to form and begin their collaborative inquiry. In the afternoon we moved to the high school to have a computer session with WebCT wherein I review the technology tools, and photos are taken of participants which will be placed in the image database to help with participant identities

in the CoP. The computer lab is packed and participants are frequently sidetracked as they try to help each other and facilitator voices are difficult to hear over the hum of the computers and ongoing chatter of the participants. Participants familiar with the technology get on with their own agendas using this time to post discussion messages and access online resources. Those experiencing difficulty or fear using the computers find it challenging and feel that they will forget everything once they attempt to do this on their own, using their own computers. As the technology facilitator, I offer to spend one-on-one time with them either online or over the telephone, but as the days and weeks go by, very few contact me for any individual assistance. There are a few participants from very active online groups who do contact me to participate in their online sessions and discussions so that I can assist with their technology needs and access. These participants are usually separated by geography, so the need to use technology to collaborate is greater if they are to meet their goals.

Video Conference Session #1

On December 4, 2006 the group comes together for a video conference. The goals for the video conference are three fold in that this is an opportunity to provide an orientation to using this technology, 3 of the groups have this opportunity to share their projects and receive feedback, and lastly PD is provided for introducing a model of productive peer critique which is important to collaborative efforts of the participating teachers in this project. There are some difficulties with a few of the connection sites and eventually one group from Brooks is unable to participate. In preparation for their presentations, groups are asked to post their presentation materials to WebCT several days prior to this day so participants can come prepared. One of the groups is never able to perform this task and I post their materials for them. The format for feedback allows each satellite site time to discuss within their smaller group setting before bringing critiques to the bigger group. While a complete transcript of the anonymous comments regarding the video conference can be found in Appendix H, here are some highlights by participants who conclude that video conferencing is: time effective, cost effective, very worthwhile and overwhelming.

CSI Meeting #2

The January 18, 2007 meeting time is designated as time for the groups to come together face-to-face to collaborate and work on their respective projects. They are required to complete action plans with individuals in each group taking responsibility for completing and presenting an activity they have attempted with their students. Within the smaller groups they were requested to have a part of their larger project completed.

Video Conference Session #2

The video conference on February 13, 2007 connects participants from Lethbridge, Brooks, Medicine Hat, Fort McLeod, Kelowna, and the presenter in Ontario. Thus 6 sites in all are in attendance for this conference. The presenter is alone at the site in Ontario and the 5 satellite sites each have from 2 to 7 participants. The PD topic is assessment and methods of assessment and assessment of learning verses assessment for learning. The presenter discusses the benefits of using critical thinking tools to scaffold learning and dissuades teachers from simplifying tasks claiming that this method disengages students.

The video conference is poorly attended with only 14 participants participating. However for the group that are in attendance, the technology works well overall, and the participants are quite comfortable and seem to be contributing. The conversation from the video conference is later continued through WebCT discussions. Participants post 18 messages regarding the discussion of assessment and one of the facilitators posts a portfolio assessment resource in response to the discussion. Three participants express their disappointment that they were unable to attend however they had reviewed the PowerPoint presentation which is posted on WebCT and are able to participate in the online discourse regarding this topic. In this ensuing discussion, teachers reflect on and critique current practices and authentic assessment strategies. Message 234 reads, “I thoroughly enjoyed the video conference. Thank you to Presenter 1 for his thoughtful presentation and thank you to all of the other participants for their insightful contributions to our dialogue”. The author goes on to reflect on his own practice and challenges of assessment, but is confident that

meaningful progress is being made. Others respond and the dialogue continues through to March 6, 2007.

Although, the session itself was poorly attended, it is encouraging to know that additional participants benefitted from the event through the archived online digital resources and continued dialogue regarding this important issue.

Live CSI Group Chat session #1

On March 6, 2007 the entire group is invited to participate in live chat sessions. There is a flurry of activity in all the chat rooms in the hours prior to the scheduled chat. Chat room 1 has several people entering however, all leave without collaborating as they appear to have decided to go to the general chat area which unfortunately is not a recorded conversation room; therefore there is no data from this session. The group in chat room 2 however has a very productive 30 minute chat session that gets the ball rolling on their project and in the end they schedule a face-to-face time where they will travel to meet in person to continue collaborating. There are a few issues with the chat room where people would be dropping in and it seems a bit of an interruption. There is also an issue where a person would be present in the room, but not participating which is confusing for other participants. The group in chat room 3 has a 90 minute session with 2-3 members participating and the dialogue ranges from issues with how to use the technology to sharing ideas for projects, including feedback and critique. This session includes comments from members that their efforts to collaborate both online and in person are being affected by uncommitted members and by some members' fear and inexperience with using the available technology. They decide to communicate via email to set up a face-to-face time with the entire group. They are frustrated by the lack of encouragement and participation by their own group members. They are pleased that outside group members often comment on their discussions and dialogue. The group in chat room 4 has a 90 minute dialogue as well. This group gets right to business and sets a follow up a chat date, a face-to-face date and talk about the year-end meeting and project. They express concerns about the lack of accountability from various groups and expressed concerns that they are putting more work

into their project than others might be. They agree that chat rooms are great for quick idea sharing, information exchange and setting meetings and agendas however, they feel that their face-to-face time is more productive and conducive to sharing practice and reflecting on same.

General comments by a majority of the participants both online and in follow up telephone calls regarding this collaborative medium is that chat is only effective when a small number of members are involved and it helps if people are efficient typists. WebCT 4.1 chat features are not sufficient for this task as there are only 4 chat rooms that can be recorded simultaneously. A site that allows for more chat rooms would be more effective so that conversations can remain specific. Members should also be discouraged from frequent entering and exiting of several rooms throughout session times as this causes confusion and disorientation.

Live CSI Group Audio Conference Session #1

In response to a frustration with the online chat technology for discussion and a growing and urgent need for groups to be able to meet and collaborate as the project deadline was approaching, facilitators decide to provide an orientation to Skype and Live Classroom tools. On Thursday, April 19, 2007 Skype cast and Live Classroom are introduced to participants. These tools allow participants to meet online using audio (and in some cases, video) technology. This should reduce the anxiety of typing and allows for live conversation and dialogue. Prior to the session participants were asked to ensure that they have the equipment and that their computers are properly configured to ensure their ability to participate. Although this information is sent to them more than a week before the scheduled session time, only a few test their equipment or request assistance prior to the session. One participant calls for technological and access support at the exact time that the session is scheduled to begin. She requires assistance with all aspects including where the login page is located and what her user ID and password might be. The orientation includes a brief introduction to the technology itself and how to use various features of live classroom, including whiteboard, text chat, application sharing, archiving sessions and the audio

component. The Skype orientation is sabotaged because participants left the live classroom software running and so the audio feedback is unbearable. It is decided that in future only one technology will be introduced at a time. Although there are glitches and technological challenges, the session is deemed a success in that all participants stay on line until the end of the scheduled session time and 2 of the groups request their own live meeting rooms for further collaboration.

The following parts of the findings include data mined from WebCT as evidence of participation in the online CoP, in the PD opportunities and with respect to factors that appear to influence participation including technology factors.

CoP

This part discusses evidence of participation in the online CoP including: shared interests, shared resources, negotiation, social interaction, and roles. All participants were provided with access and encouraged to participate in the online environment. Several discussion topics emerge as the project moves forward. Some of these are for the entire group while most of the smaller groups request their own space for discussion. It is important to note that the entire site and all discussion forums are public, so access is available to the entire group, moderators, facilitators and experts. Seven smaller groups were formed and of these only 3 appear to use the online discussion area with any regularity. There are 10 generic topics wherein many members posted at least once.

Shared Interests

While most groups or groups of individuals are bonded by a common interest or focus of development for the Social Studies curriculum, at least one participant, Participant 11 specifically states in her interview that she never identified with her group and that one of the reasons for this is that she was not interested in the direction or topic of their project. This may be a limitation of this study in that when there are so few participants it is likely that some will not find people with common goals or similar interests.

Shared Resources

Online resources are added to WebCT and activity reports show that 42 resource pages containing materials for downloading were accessed 340 times at an average of 20 minutes per hit. Participants also share resources with each other through discussions and email. There are several examples of teachers sharing resources with each other; some provide relevant web addresses and links, while other participants attach their own documents that they have created. In message 269, Participant 11 attaches resource documents to her posting to share with the community as they are relevant to the curriculum.

Negotiation

Participant 2 says that negotiation was key and at times it seemed that members would ignore feedback and they had to work through this and it became important that members be able to put aside differences and ego to move forward. Early on in the project several of the evolving focus groups begin negotiation processes. In the online discussion message 396 by Participant 2 reads "...it's been CRAZY busy on my end, but I thought that we should start to post some project ideas here so that we don't have any over-lap. … Looking forward to hearing from you". In this message she is suggesting a strategy that should help move the group forward. In another group, Participant 4 suggests that to be more effective and focused, their group would need to negotiate and implement the scheduling of regular activities.

Social Connections

Social connections are vital in a CoP. Participant 2 says that this opportunity to communicate is so important because it gives teachers a chance to talk about what they love best, teaching and their students. Message 207 from Participant 8 in response to a message supporting the challenges and frustrations teachers often face is an example of such a social connection:

"It was good to read your message. I feel the same way.....Participant 7 and I just chatted on the chat line. Interesting experience. I love going to the Critical thinking days. I

leave so inspired and then the real world hits. Lesson plans, staff meetings, PLCs, Interim Reports, marking, parent teacher interviews, marking, cleaning house, IPPs, laundry..... Where do I find the time to work on the Critical Thinking project? Working with Participant 7 and Participant 9 is awesome".

Roles in the Community

While facilitators, moderators and experts play an important role in starting conversations and scheduling activities, eventually participants begin to fill some of the roles necessary for the sustainability of the CoP. One of these roles is that of a greeter or welcome person. This person thanks new contributors for their participation and encourages them to continue posting and responding. One participant quickly took on this role. One such example of her efforts to welcome and encourage new contributors to the conversations is message 181 "Thank you for your posting....it's nice to see others on the message board! Have a great Friday!" She also acts as catalyst for encouragement and perseverance and in a reply to a posting where the teacher expresses some frustration, message 191 says: You are welcome!! I think that it is important to remember that this cannot come all at once. We want it so badly.....but...this is a lesson for all of us in baby steps, like learning to walk again. Have a great day with your students!! In another posting she has noticed that the participant has not posted for some time and she comments: "Good to see you back on the discussion board!"

She also takes on a leadership role for her smaller group, organizing meeting times and agendas and encouraging them to use the technology tools for communication. In message 71 she says, "Can you check if you can access the chat rooms and let me know via this discussion board or e-mail?" This leadership role is very important within these smaller CoPs as is evident when one teacher in the Grenada group says in the interview that they never really had a leader so the group did not gel and sort of fell apart. In some groups, support from their own group members is missing but they often receive support from other groups.

One of the goals of establishing a CoP is specifically to allow for a space where ongoing collaboration, reflection and professional development opportunities can continue between formal PD sessions.

Professional Development

There is direct evidence of participants attending face-to-face and online PD sessions such as video conferencing, chat room sessions, and live classroom during this project, however in this part I seek to examine evidence of online participation for PD. I discuss evidence of teacher participation in the knowledge building and sharing and contributing to relevant content and resources, a feeling that the PD is valued, and collaboration to build knowledge and skills for teaching the new social studies curriculum using the new tools of critical thinking. Active and ongoing engagement in these online activities supports the definition of PD as an ongoing process of development and not as the one time isolated event.

Participation in Knowledge Building and Sharing

To analyze knowledge building and sharing, online discussion data was mined and the content analyzed using a content analysis approach known as the Community of Learning model (Anderson et al, 2001). This content is analyzed for three core components, including: cognitive presence, teaching presence and social presence. The cognitive presence is a four stage process evidenced by triggering, exploration, integration and resolution. The teaching presence is evidenced by the formulation and posing of ideas and questions and answering same. Evidence of a social presence comes in the form of expressions of emotion, affirmation messages and relationships.

In message 166, Participant 4 posts information about text and online resources, then he posts a link to a website that he is currently working on as a resource and says, “Check the pages out and please post any comments. Fire away, I won't be offended. My goal is to make these pages as usable for students as possible”. While this is one example of cognitive

presence, there are many through the entire project. The following is an examination of another discussion thread and will examine evidence of each stage of the content analysis.

The conversation is triggered by Participant 3 and she attaches documents that she hopes to use to teach her students how to use the CT tools. In message 141, she says: "The attached documents are my preliminary attempts to create tools for use in my classroom. I decided to create characters which represent each tool". She goes on to explain how she would present and use them then adds that she "would like comments, questions and suggestions before the 18th if possible. Thanks so much!" The first response is from one of the facilitators, and offers a clear teaching presence as she posts ideas, asks questions and provides some answers and synthesis. Facilitator 1 says "These are fantastic! For younger kids these will really help them to begin to understand thinking and to be easily reminded if they forget along the way…I am struggling to make a connection with Wondering Walter. How will you be explaining this one to them?...A slightly altered version for older students would be helpful too…" She opens and closes with affirmations which are an important core component of the community learning model. In closing, she says "Thanks for submitting such wonderful work!" Next another participant provides encouragement by congratulating Participant 3 on her achievement and ideas at work and then shares her own version of a similar approach saying, "I have found it increasingly effective to pare down the vocabulary to an understandable level". Next Participant 11 comments, "Wow… never thought of rephrasing the vocabulary…I have added this to my notes, thanks". The last message in the thread is from Participant 3, where she thanks everyone for their feedback and advises that she is reconfiguring according to some of the suggestions.

Several individuals and groups find that the feedback from within the group is vital to building a better product. The Ventura group acknowledges that at times this is difficult as teachers who are accustomed to working in isolation and being experts had to set aside their differences to accommodate new information, and ideas and to put these into practice.

This type of discourse and knowledge building is seen as very relevant and as Participant 2 expressed: "This is the most valuable PD because teachers collaborated and

their practice changed as they were able to put the theory into practice in their classrooms". This sentiment is not expressed by everyone and Participant 4 feels that some of the PD goals are too abstract or generic and he prefers a specific focus that could be immediately and easily integrated into classroom activities.

All of the participants that use the online environment look forward to replies to their postings. Participant 2 said: "It's validating to get responses to discussion postings". The literature also has similar findings in that participants feel validated when they receive responses to postings and conversely they may feel unmotivated and discouraged when there are no responses. There are mixed reviews about what level of participation is recommended from outside experts and facilitators.

Collaboration

Online collaboration is reported as effective for some groups and individuals. The Ventura group enjoys the blended approach to collaboration and these participants contributed regularly saying that they never would have been able to accomplish so much as individuals. They also attribute their productivity to the time and resources that are allocated to the project versus the more traditional short term format of individual professional development. In one discussion posting message Participant 2 says, "Thank you thank you!!! This is exactly the type of collaboration I was looking for when I joined this project. BRAVO!!"

Not every group experienced such effective online collaboration and in one of the Grenada groups, Participant 11 reports that teachers from the same school in this group met and collaborated regularly while other group participants seemed to be left out and felt isolated. Similarly, another participant, Participant 6 reports that their group collaboration is more difficult because 1 member does not feel confident using technology so they do a lot of back and forth one to one telephone calls and wait for opportunities for face-to-face sessions rather than using the online environment.

Engagement in Online Activities

When specifically analyzing the use of the online technologies for collaboration and activities, several participants recognize and respect their peers' feelings regarding the use of technology. As found in much of the literature, teachers who are not used to technology or participating in online environments often gave up or refused to put in the effort required, stating that it is just easier to rely on face-to-face and other methods because they are available. Participant 2 however said that it would be important to persist and keep posting and reminding each other to use this environment.

Even when participants made the effort to post in discussions, it is evident that they need to know that someone supports their contributions. As one study states, the ways that participants know they are being supported and their contributions valued is through the responses that their posting receives (Klecka et al, 2005). When posting and discussion threads are left to die with no replies, the participants who posted the initial message are often discouraged from posting again.

In message 197, Participant 12 says: "Hi Participant 2 and Participant 3, Thanks for your feedback. I will copy the project into Word and it will open for you I hope. It doesn't matter whether you're in our group or not, I 'm happy for feedback from anyone. I'm glad you looked at the project". Another participant, Participant 11 also felt that WebCT discussion replies provide the most encouragement she receives and she really enjoys this technology. In both these instances, these participants are receiving this valuable encouragement and feedback from external group members. During the March 6th chat session another participant who also feels isolated from her group said, "I rarely get response[s] from people in our group when I post to our discussion folder. I get response[s] from the Ventura group". One of the Ventura group members states in her interview that not responding to discussion postings showed a lack of commitment which was also apparent by low face-to-face turnout at group events and not just in the online environment. This is an important point and illustrates the commitment factor as an indicator not only of online participation but participation overall for the PD project objectives and processes.

A review by Chalmers and Keown, finds that teachers are dissatisfied with PD that is often disconnected from their practice and "presented" by outside experts and feel that it is not effective. In this format, teachers "are often seen as passive receptors and not considered as sources of knowledge in their own right" (Chalmers & Keown, 2006). In keeping with this finding, our teacher participants are at the centre of the knowledge building in this project. At least one of the participants in this study however feels differently. Participant 11 feels that the experts need greater and increased presence in the community and to show leadership and to respond to postings particularly when they see that no one else is responding.

Factors

The last part of the discussion of findings examines and synthesizes factors that may directly impact participation or the ability and desire to participate including: teacher attitudes regarding collaboration, PD and technology, prior experience with technology and collaboration, access to technology, impacts of time, social connections, trust, role of facilitators and mentors and technical support.

Teacher Attitudes

Regarding attitudes, the literature finds that there must be a commitment to the learning process by the community members (Garber, 2004). More important than many factors and as was alluded to by Participant 2 is a lack of commitment by some of the project members as represented through their absence of presence both in the sessions and in the virtual environment. Participant 4 also says that lack of commitment with respect to learning to use the technology inhibited better use. One clear example of this is when one of the members of Ventura admitted that she would not purchase a microphone and headset to participate online with her group, even though these items are not expensive. If she had asked, these may have been available through other resources or project funding.

Such attitudes may not be a lack of commitment for the process, but offers evidence that not all teachers are ready for online CoP models of PD, nor do they want to be (Lock,

2006). Participant 5 and several participants expressed a specific preference to meeting face-to-face and do not feel that technology is worth the effort. In Participant 5's case, this is an interesting comment during the interview because although she specifically says that she did not use or enjoy the online discussions, she has very high log on activity in WebCT and reading activity levels. She is in the top percentile of WebCT activity with 610 visits, reading over 200 discussion postings, but only posting one original message and responding only 4 times. Wenger would claim that her legitimate peripheral participation (LPP) is legitimate and valuable and may even be one of the steps necessary to becoming a fully participating and engaged online community member. Another of her team members Participant 2 loves being part of an online community but adds that because not everyone would participate, effectiveness may be decreased. In this Ventura group, although they regularly contribute online, whenever possible they meet face-to-face.

Another factor, according to some of the literature is the general culture of teachers that there is an acceptable lack of collaboration, often due to teacher isolation, time or opportunity. This issue is often perceived as a factor regarding teacher PD and implementation of a variety of initiatives (Glazer et al, 2005).

In another study that looks at theological education and using technology to enhance (at times replace) traditional methods of teaching, researchers ask us to consider a very important question which can also be applied to PD. The question is: What are the tradeoffs and are we doing something better than we could do it without this approach? What is the vision that chooses this model? (Delemarter, 2006).

Even though Participant 6's group is held back by 1 non-computer user she still maintains a vision of how "wonderful and timesaving collaboration could be once people became experienced and comfortable using it [technology]. Working from home; effectively, not driving great distances".

Prior Experience

Participant 6's comments lead us to another important factor, that of prior experience. "Prior experience with computers is likely to be a significant contributor to students' approach to the use of computers in their university study and, without intervention, may continue to affect their use of computers in professional life" (Albion, 2001, p. 342). The literature continues to find that teacher technology use beyond email remains very low, thus it stands to reason that this lack of familiarity and lack of value of the benefits of technology will continue to be a contributing factor that negatively impacts online participation. Participant 6 comments that the group has 1 member who lacks confidence in using computers, so the entire group used WebCT much less than they would have liked. In another part of the March 6th chat, Participant 3 comments, "I'd love to support the people in our group who are reluctant to access the technology and in a discussion posting she says: "Regarding collaboration, I would like to hear the thoughts of other groups who are spread apart like our group seems to be. A few of us access the technical side to aid in communication and collaboration, but others prefer a different way. Because of this the physical distance is certainly making it difficult to collaborate on an ongoing basis. Collaboration is the key to success in the project." Thus some obvious frustration that not all group members are committed to using or learning to use the available tools to enable online discussion, collaboration and ultimately complete their PD objectives. Participant 4 also believes that "as teachers become more familiar with the technology that it would be more useful" and that their "group experienced obstacles because members were unfamiliar and they would have benefitted greatly as this would have bridged their great distances as a group".

One study finds that environments with established norms of collaborating using remote communication methods, increase interest in technology (Dexter et al, 2002). Although most of the CSI participants appear to be interested in the potential of using technology for this project, some are unable or unwilling to overcome the obstacles that would allow them to actively participate online. While Participant 6 prefers the online method and tools such as WebCT and Live Classroom so she could work from home she also

acknowledges that she has taken online courses in the past, so has vital prior experience. Participant 11 confesses that she has not used some of the other technologies such as Skype or Live Classroom because she needs to gain more familiarity and confidence with using these to be effective.

The baseline questionnaire finds that 65% of participants were unsure about online discussion forums and 60% were unsure about online collaboration. Clearly this group of novice online technology users may have benefitted by having greater access to immediate and onsite technology support and more frequent opportunities to engage in scheduled online activities.

In early literature reviews regarding online communities of professional development, one of the main obstacles has always been access or more specifically a lack of access. There are relatively few reports of access problems for this project. One participant, Participant 11 said that she "couldn't access from home so didn't get enough time to use and experiment with the technology". There was also an issue with video conferencing in one location which presented a problem for the members in this region. During the early stages of the project, some schools had to make technical changes to accommodate the use of WebCT and necessary popup windows to allow access to features of the technology that participant teachers needed to use. A 2001 study, finds that although access has increased, teacher skill and efficacy with technology has not increased in the same ratios. Thus while access was always seen as a determining factor, it does not appear to be a determining factor in this study. One of the greater obstacles for teachers is the release time to learn and engage in online PD (Ezarik, 2001).

Time

During this project, the time factor is interesting because there are reports from all perspectives. Participant 11 says teleconferencing is a valuable way to collaborate and engage especially for overcoming time and travel distance and several other participants had the same sentiments regarding online discussions and video conferencing. At the other end of the spectrum are participants with less technological experience who say that focusing on

learning the technology is too time consuming and is taking away from the time required to collaborate and complete projects. Participant 6 acknowledges that "time is a factor" and because she is on a 1 year sabbatical she has the time; but normally "practicing teachers don't have enough time to really dive into this kind of PD".

Trust

Trust is another factor affecting online participation and the literature points to it as a required condition of an effective online community. The Grenada group seems to lack the respect and trust necessary for building cohesiveness. There is one conversation in a chat room regarding accountability and some groups feel that they are working much harder than others, and some individuals also feel that the workload is not always fairly distributed. In a chat room on March 6th one contributor, Participant 10 comments: "A suggestion for next year would be accountability among the groups! If a group is putting in a great deal of extra time and producing some amazing critical thinking tools/projects, can they be given even more time to meet?" While there is sometimes mistrust among smaller group members, but this comments alludes to a mistrust of the actual work being done in other groups who may be getting the same release time. When groups are unable to see participation in the online environment they may perceive that these "invisible" groups are not working.

The teachers had been assured that no administrators have access to the online environment and none of them has questioned this condition nor have they raised any concerns to this effect, therefore it is assumed that they feel secure in this regard.

Facilitation and Mentor Roles

An important factor for the online participation is the roles of members within the CoP. The leadership role seems to be important, especially when it is missing like in the Grenada group. Participant 11 commented that part of the problem of productivity and real collaboration is the lack of direction as no leader has emerged from their group. She also commented that she would have liked an increased presence and contribution from experts.

Conclusions

The findings suggest that factors affecting teacher participation in the online community vary greatly and are not likely to be consistent for teachers in all environments. In this setting there are three distinct group type configurations that have emerged regarding participating in the online community during the first year of the PD project.

One group type used the online CoP regularly as they negotiated and collaborated. While they also met face-to-face from time to time, they were committed to using the technology between these meetings to continue their collaborative efforts. This group established trust within the smaller cohort and showed a level of commitment to the process and a sense of efficacy and accomplishment toward meeting the PD objectives. The group has established routines where they regularly go online, post messages and respond to other member postings. There are no reports of problems with technology and members appear committed to the PD project and to completing their product. They have no complaints regarding workload from within their own group however, they appear concerned that other groups are not as productive and are not sharing or building knowledge in the online community environment. This group has the required characteristics of leadership, negotiation, commitment, active participation, trust, shared interests, and social connectivity.

A second group type consists of members that used the online CoP but were discouraged because not all members of the group would participate online. These members were continuously discouraged when they would post discussion messages that were left to die, with no replies from their own members. The groups of this type did not function online as groups however some individual members within the groups persisted and continued to participate online as they were encouraged by responses from other groups. These individuals seem motivated to engage in the process and to learn to use the technologies and benefit from the knowledge building and sharing occurring online. Therefore, these individuals were committed, despite encountering obstacles beyond their control that did not allow them to participate as fully as they may have liked. Some of these participants even shared their vision of how beneficial such technology supported PD models ‘could be’ when

more of their colleagues learned to become comfortable using the tools. A few of them felt that the PD objectives could have been better realized with greater on-line input and participation by experts and facilitators.

The third type of group did not participate in the online CoP and preferred to meet face-to-face. This group configuration has members that participate only sporadically but overall did not appear to be active in the CoP. Observations and field notes may provide some insight in that these groups appeared to have the ability and preference to meet face-to-face stating that these sessions are more productive and simply the preferred method of collaboration.

Overall, the factors that most often affected online participation are prior experience in online CoPs and with technology, attitudes about collaboration and using technology for PD and commitment. For participants without prior experience in online CoPs or lacking technological competence, the learning curve may have proved to be too steep. These participants would have required more hands on, on-site support to gain confidence in this area. Although several of these novice users did overcome this obstacle they were extremely motivated in other areas such as decreasing isolation and a sense of immediate need for the products and resources. As the literature indicates, attitudes about collaboration and administration of professional development are deeply ingrained for many seasoned teachers and there seems no reason to change how they have been attending to their professional development as it had been working for them for years. It is also true that some participant commitment levels wavered and they became unfocused.

In conclusion, the findings of this thesis reflect earlier finding in many regards. As in findings by Kanaya (2005) the project timeline may be too long and participants begin to lose interest and focus. As in Bradshaw (2005) some of the participants lose interest because there is no immediate need in their professional lives. Some of the participants in CSI may have suffered the effects of the impact that breaking the larger group into smaller groups has had in prior studies (Schlager, 2003). Lastly and of most interest to me as found in the study

by Albion (2001), teachers who are not competent in using technology will never likely use these tools for professional development unless there is some form of intervention.

A formative program evaluation has suggested that teachers participating in low-intensity trainings (those stretching over more than approximately three months time) have difficulty maintaining a focus on or commitment to either the overall goals of the program or their own personal goals for developing new curricular materials. In contrast, teachers participating in intensive trainings formed more coherent, if short-lived, communities of practice with their colleagues and were able to maintain a clear focus on the broad goals of the program and their own goals for their participation in the program" (Kanaya et al, 2005, pp. 325-326). This assessment must be considered and in fact while many of the participants have highlighted the effectiveness of this project's approach to PD, some of the participants have experienced the decreased focus and commitment levels to the project within their groups. Thus it would appear that there are a multitude of factors that influence ongoing participation in the project and in the online CoP, and is this decreased focus and commitment level due to a loss of interest, or some other factors?

Chapter Five makes recommendations regarding the findings in Chapter Four and also makes suggestions for future research in this field.

CHAPTER FIVE: DISCUSSION AND RECOMMENDATIONS FOR FURTHER RESEARCH

Providing effective methods for teacher professional development is a problem. There is an abundance of literature that finds that current more traditional models of teacher PD, which generally include expert led one day workshops, is unsatisfying and does not change teacher practice. Teachers want to have an opportunity for PD opportunities that respect and encourage their past experience. This thesis examines a blended approach to teacher PD in an environment where participating teachers are provided with technologies to support and provide a means for ongoing collaboration, transcending time and distance. Many of the usual determinants have been accounted for as these teachers have been given release time, administrative support and have also been provided with facilitators for the duration of the research project.

One of the problems as presented in Chapter One of this thesis is the challenge of providing effective ongoing PD for teachers from diverse regions in a cost effective and sustainable way. The district 6 school zone professional development consortia in Alberta believe that technology may be able to help meet this need and bridge the gaps of time and distance for meeting PD objectives.

The literature review provides a vision for creating successful online CoPs and the obstacles that can make some CoPs unproductive and unsustainable. This examination also provides valuable information about developing a CoP and the characteristics that must emerge so that the CoP will be a safe environment for participating teachers to contribute, collaborate, reflect and learn. The review also provides a new vision of teacher PD and the factors that are known to impact teacher participation in PD opportunities and particularly in online environments. This thesis contributes to this knowledge base and these findings have implications for future teacher PD projects that intend to use technology as a tool for communication and collaboration.

As school administrators continue to seek sustainable and effective methods of PD for teachers, ignoring or dismissing the impact technology will have in PD programs in the years to come is no longer an option. Using technology for online PD "alters the learning environment, provides new structures and media for reflecting, communicating, and acting, facilitates modeling and visualization, allows for construction and discovery of knowledge, expands access to information, networks, people, and ideas, increases the flexibility of time and places for learning and provides significant resources" (E-Learning for educators: Implementing the standards for staff development, 2001). I believe that administrators and school districts will attempt to use technology with increasing frequency for delivering PD to its teachers and therefore it is crucial that such methods be carefully and thoughtfully implemented to ensure optimal conditions exist so that teachers can benefit from this form of PD.

Recommendations

To increase the likelihood that teachers will participate in this model of blended PD, more attention must be paid to regularly scheduling activities that require collaboration from the larger group as part of the process for PD particularly in these early years when many teachers will lack the technological literacy and competence to use these tools with confidence. Also, when groups branch off into smaller cohorts their activity or lack of activity continues to impact the larger community therefore consideration must be given to the impact of such conditions. Groups that use the online space regularly may not be convinced that other less visibly active groups remain engaged or productive and some even view this lack of participation as intentional non-sharing. This decreases trust levels which are essential to the success of the online CoP. Because some groups prefer to meet in person, their activity is not observable and therefore may appear to be non-participatory. In order to compensate for groups branching off, facilitators may require that groups post a summary of their activities at regular intervals or that the larger groups attend virtual meetings in which each group provides an overview of their progress and the direction of their work. This sharing may help to ensure that all members feel that their work is valued, enhance the

community building and also provide a level of accountability that is visible to all community members.

By assigning group tasks such as reporting individual group activity, groups with less technical ability may choose to assign a member to be responsible for the technological aspects of their contributions. This person's role may also include informing their own members of the progress occurring in the online environment. Some of the groups are not able to use the technology effectively because individual members are unwilling to use this medium while, others are unwilling to make the required efforts and requests for assistance that would help them become proficient in this regard. Thus by encouraging groups to stay in touch with the online community even at a minimal level; over time additional individual members may become motivated to participate out of interest, curiosity or a desire to explore the online resources. The literature and the findings of this study suggest that having facilitators on location may help in overcoming these obstacles for these participants who require one on one support.

An interesting factor that influences participation and one that may prove the most difficult to accommodate for, is teacher attitudes and perceptions of the usefulness of this method for collaboration and process of contributing to a knowledge base. Teachers must be convinced that this form of PD versus the traditional one shot expert led workshop may be beneficial and that they can be more productive when collaborating with a cohort of practicing professionals committed to furthering their knowledge and changing their practice. One of the difficulties for teachers in adopting this philosophy is that many would then need to commit to the hours it may take them to become proficient at using the technology and to routinely participate in online communities of practice. Do the benefits outweigh the costs for teachers? This is an individual position based on each teacher's professional context at a specific point in time.

At the end of year one, a core group of participant teachers expressed that this format of PD was very beneficial and allowed them to accomplish so much more than they would have with the more traditional form of PD with no time built in for collaboration or creating

resources with their colleagues. We can learn much from this core group and we can also learn from those who felt that more could have been accomplished if they could have simply always met face-to-face. Some participant teachers who had worked in isolation in the past found this form of PD very beneficial as it helped them make connections with valuable resources and collaboration opportunities that they would not have had, given their location or isolated teaching environments. These members were motivated to overcome any obstacles as they had a need and valued the potential of this form of PD.

The literature states that most successful CoPs are those built from preexisting CoPs that move online to support continued collaborative efforts. This suggests that administrators may want to lay some groundwork; promote the organization of teacher CoPs around common interests or goals and then move to online environments to supplement efforts of inquiry and collaboration. Most certainly, administrators should be encouraged to support such environments for PD and as teachers gain experience and confidence in such spaces, they may be motivated to actively participate. Such environments can then be further studied to investigate whether or not they provide effective and satisfying professional development opportunities for teachers.

Future Research

Findings from this study are important because they emphasize the fact that this model of blended professional development, which appears to be part of a new and upcoming trend, requires more study. Some questions arise from the findings of this study. Would a group of teachers with prior experience in online environments participate more actively? Researchers will also want to investigate the outcome of a study such as this one and ask: Is the professional development effective? Did teachers change their practice and integrate critical thinking into the curriculum? Is participation in a community of practice an effective and satisfying way for teachers to engage in professional development?

As I examine the future of this type of PD, I recognize that involvement in a CoP affords teachers a PD experience that is quite different from the more traditional expert-novice, event-based form of professional learning (Webb, Jones, Barker, & van Schaik,

2004), which has not been shown to improve student learning in any substantial way (Hawley & Valli, 1999). Will this blended approach of technology supported PD improve student learning?

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Appendix A Research Ethics Approval Forms

The University of British Columbia
Office of Research Services
Behavioural Research Ethics Board
Suite 102, 6190 Agronomy Road, Vancouver, B.C. V6T 1Z3

CERTIFICATE OF APPROVAL- MINIMAL RISK RENEWAL

PRINCIPAL INVESTIGATOR:	DEPARTMENT:	UBC BREB NUMBER:
Philip Balcaen	UBC/UBCO Education, Faculty of	H06-90829

INSTITUTION(S) WHERE RESEARCH WILL BE CARRIED OUT:

Institution	Site
UBC	Okanagan

Other locations where the research will be conducted:
N/A

CO-INVESTIGATOR(S):
Robert Whiteley
Wendy L. Klassen

SPONSORING AGENCIES:
N/A

PROJECT TITLE:
Supporting and sustaining communities of practice in social studies

EXPIRY DATE OF THIS APPROVAL: October 22, 2008

APPROVAL DATE: October 22, 2007

The Annual Renewal for Study have been reviewed and the procedures were found to be acceptable on ethical grounds for research involving human subjects.

Approval is issued on behalf of the Behavioural Research Ethics Board

Appendix B1 Baseline Questionnaire

Site (please circle) : Brooks Medicine Hat Lethbridge Code # _____

Supporting Communities of Practice

Participant Questionnaire #1

The purpose of this questionnaire is to explore your perceptions of the new social studies program of study and the role of professional development, including various learning technologies, in assisting you in implementing this program.

Part A: *Attitudes towards the new social studies program of study.*

1. How familiar are you with the new social studies program of study?

①	②	③	④	⑤
Very familiar	Somewhat familiar	Unsure	Not very familiar	Not at all familiar

Comment:

_____

_____

_____

2. In your view, how desirable are the changes in the new social studies program of study?

①	②	③	④	⑤
Highly desirable	Somewhat desirable	Unsure	Somewhat undesirable	Highly undesirable

Comment:

_____

_____

_____

3. How confident are you in your ability to implement the program of study into your classroom?

①	②	③	④	⑤
Very confident	Somewhat confident	Unsure	Somewhat unconfident	Very un confident

Comment:

_____

_____

_____

4. Please indicate the top five sources. (1 = most helpful, 5 = least helpful) with respect to how they have contributed to your ability to implement the new Alberta social studies curriculum.

____program of studies

____Online Guide to Implementation

____in-services through your district

____PD consortia in-services

____Alberta Education in-services

____professional collaboration

____university/college course work

____independent study

____other (Please explain: _____)

5. Describe your greatest obstacle(s) to implementing of the new curriculum.

_____

_____

_____

Part B: P*erceptions of critical thinking*

6. How confident are you in your ability to implement critical thinking as a method of teaching the new social studies program of study?

①	②	③	④	⑤
Highly confident	Somewhat confident	Unsure	Not very confident	Little or no confidence

7. Please describe/define critical thinking as you understand it: i.e. What is critical thinking?

_____

_____

_____

8. Describe a recent critical thinking activity in social studies that you arranged for your students.

_____

_____

_____

9. Currently in your teaching, how often do you engage your students in thinking critically?

①	②	③	④	⑤
virtually every lesson	a few lessons a week	a few lessons a month	a few lessons a semester	a few lessons a year

Other _____

Part C: *Views about professional collaboration.*

10. How regularly do you collaborate with your colleagues to discuss or plan for teaching?

①	②	③	④	⑤
almost daily	once or twice a week	a few times monthly	several times a year	other _____

With whom? _____

Comment: _____

_____

11. In your experience, how beneficial is collaboration among teachers?

①	②	③	④	⑤
very beneficial	somewhat beneficial	unsure	somewhat unbeneficial	very unbeneficial

12. What encourages you to participate in professional collaboration with other educators?

Please comment:

_____

_____

_____

13. What your greatest obstacle(s) to participating in professional collaboration?

Please comment:

_____

_____

Part D: *The role of Instructional Technology (IT) -supported professional development opportunities*

14. How would you describe your computer technology proficiency?

①	②	③	④	⑤
Highly proficient	Somewhat Proficient	Unsure	Somewhat unproficient	Highly unproficiency

Comment: _____

_____

_____

Please indicate the extent to which you agree or disagree with the following statements

	①	②	③	④	⑤
15. I like using computers	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
16. I like using the internet	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
17. I like using email for communication	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
18. I like online discussion forums	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
19. I like online collaboration	Strongly agree	Agree	Unsure	Disagree	Strongly disagree

Please offer any thought you have about social studies, teacher collaboration and the use of information technologies

_____

_____

_____

Thank you very much for your participation

Appendix B2 Year One End of Year Questionnaire

Site (please circle): Brooks Medicine Hat Lethbridge Code # _____

Supporting Communities of Practice

Participant Questionnaire #2

The purpose of this questionnaire is to explore your perceptions of the new social studies program of study and of the role of professional development, including various learning technologies, in assisting you in implementing this program.

Part A: *Attitudes towards the new social studies program of study.*

1. How familiar are you with the new social studies program of study?

①	②	③	④	⑤
Completely familiar	Somewhat familiar	Unsure	Somewhat unfamiliar	Completely unfamiliar

Comment on any changes during CSI:

_____

_____

_____

_____

_____

_____

2. In your view, how desirable are the changes in the new social studies program of study?

①	②	③	④	⑤
Highly desirable	Somewhat desirable	Unsure	Somewhat undesirable	Highly undesirable

Comment on any changes during CSI (examples):

_____

_____

_____

_____

3. How confident are you in your ability to implement the new program of study into your classroom?

①	②	③	④	⑤
Very confident	Somewhat confident	Unsure	Somewhat unconfident	Very unconfident

Comment on any changes during CSI (examples):

_____

_____

_____

_____

_____

4. Please indicate how significantly each of the following has contributed to your ability to implement the new social studies curriculum. (① =Most Significant, ⑤ =least significant)

a. Program of studies documents

① ② ③ ④ ⑤

b. Online Guide to Implementation

① ② ③ ④ ⑤

c. In-services through your district

① ② ③ ④ ⑤

d. PD consortia in-service

① ② ③ ④ ⑤

e. Alberta Education in-service

① ② ③ ④ ⑤

f. Professional collaboration

① ② ③ ④ ⑤

g. University/college course work

① ② ③ ④ ⑤

h. Independent study

① ② ③ ④ ⑤

i. Other (Please name and explain)

① ② ③ ④ ⑤

_____

_____

_____

_____

_____

Comment on any examples that stand out:

_____

_____

_____

_____

5. Describe your greatest obstacle(s) to implementing the new curriculum.

_____

_____

_____

_____

_____

Part B: *Perceptions of critical thinking*

6. How confident are you in your ability to implement critical thinking as a method of teaching the new social studies program of study?

① ② ③ ④ ⑤

Very confident Somewhat confident Unsure Somewhat confident Very unconfident

7. Please describe/define your current understanding of critical thinking i.e. What is critical thinking?

_____

_____

_____

_____

_____

8. Describe a recent critical thinking activity in social studies that you arranged for your students.

_____

_____

_____

_____

_____

9. Currently, how often do you engage your students in thinking critically activities?

① ② ③ ④ ⑤

virtually every lesson a few lessons a week a few lessons a month a few lessons a semester a few lessons a year

other _____

Please describe an outstanding example:

_____

_____

_____

_____

Part C: *Views about professional collaboration.*

10. How regularly do you collaborate with your colleagues to discuss or plan for teaching?

① ② ③ ④ ⑤

almost daily once or twice a week a few times a monthly several times a year other _____

With whom? _____

Comment on examples of this within CSI :

_____

_____

_____

_____

_____

_____

_____

11. In your experience, how beneficial is collaboration among teachers?

① ② ③ ④ ⑤

very beneficial somewhat beneficial unsure somewhat unbeneficial very unbeneficial

Comment on examples of this within CSI :

_____

_____

_____

_____

_____

_____

12. What encourages you to participate in professional collaboration with other educators?

Please comment:

_____

_____

_____

_____

_____

_____

13. Describe your greatest obstacle(s) to participating effectively in professional collaboration?

Please comment:

_____

_____

_____

Part D: *The role of Instructional Technology (IT) -supported professional development opportunities*

14. How would you describe your computer technology proficiency?

①	②	③	④	⑤
Highly proficient	Somewhat Proficient	Unsure	Not very proficient	Little or no proficiency

Comment:

_____

_____

_____

Please comment and provide examples of how this has changed (if there was any change) over the past year during CSI:

_____

_____

_____

_____

_____

Please indicate the extent to which you agree or disagree with the following statements

	①	②	③	④	⑤
15. I like using computers	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
16. I like using the internet	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
17. I like using email for communication	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
18. I like online discussion forums	Strongly agree	Agree	Unsure	Disagree	Strongly disagree
19. I like online collaboration	Strongly agree	Agree	Unsure	Disagree	Strongly disagree

Please offer any other thoughts you have about social studies, teacher collaboration and the use of information technologies:

_____

_____

_____

_____

_____

_____

20. Please indicate how significantly each of the following have contributed to your ability to collaborate with others in the project. (① =Most Significant, ⑤ =least significant)

a. WebCT email

① ② ③ ④ ⑤

b. WebCT discussion tools

① ② ③ ④ ⑤

c. On line resources provided in WebCT (i.e.: curriculum docs and CT tools)

① ② ③ ④ ⑤

d. WebCT Chat Rooms

① ② ③ ④ ⑤

e. Video Conferencing

① ② ③ ④ ⑤

f. Live Classroom

① ② ③ ④ ⑤

g. Skypecast

① ② ③ ④ ⑤

h. Other (Please name and explain)

① ② ③ ④ ⑤

_____

_____

_____

_____

_____

Please comment on the most effective uses of technology during CSI and provide examples where possible:

Please comment on the least effective or most problematic uses of technology during CSI and provide examples where possible:

Please comment on possible future uses of such technologies:

Thank you very much for your participation

Appendix C1 Interview Questions (Baseline)

Supporting and Sustaining Communities of Practice in Social Studies (SAPDC)

Interview Protocol

(Before turning on the tape recorder) Thank you for agreeing to participate in the study and for joining me in this conversation. First, I would like to remind you that you may terminate this interview at any time without fear of criticism or reprisal in any form. The interview will be audio taped to make sure that I do not miss any of what you have to say. Is this acceptable to you? (If not, terminate the interview.) In addition, I would like to remind you that I will send you a transcript of the interview within two months, for your correction, addition, or deletion of any comments you make today. The audio-tape and the transcript will be maintained by the research team, including a research assistant, and only team members will have access to them. The tape and the transcript will be stored securely and destroyed after five years.

The information provided during such interviews is intended to broaden and possibly deepen our understanding about the information provided through the questionnaires.

Is there anything that you would like to ask about before we begin the interview?

Questions

1. Describe what you know about the new Alberta Social Studies curriculum, at the grade level you teach or overall.

2. What changes have been made to the curriculum as compared to the old version? Do you see these as constructive changes? Explain.

3. Describe critical thinking as you understand it today.

4. In your opinion, what place does critical thinking have in the Social Studies curriculum? Explain.

5. As a teacher, what do you see as your role in engaging students in critical thinking? Explain.

6. In your opinion, is professional collaboration an effective aid to implementing new programs? Explain.

7. To what extent have you engaged in professional collaboration throughout your career? Explain.

8. What impact has collaboration with others had on your practice, if any? Explain.

9. To what extent have you used technology throughout your career? Explain.

10. What impact has technology had on your practice, if any? Explain.

11. To what extent do you see technology playing a role in your work with others? Explain.

Appendix C2 Interview Questions (Year One End)

Supporting and Sustaining Communities of Practice in Social Studies (SAPDC)

Interview Protocol

(Before turning on the tape recorder) Thank you for agreeing to participate in the study and for joining me in this conversation. First, I would like to remind you that you may terminate this interview at any time without fear of criticism or reprisal in any form. The interview will be audio taped to make sure that I do not miss any of what you have to say. Is this acceptable to you? (If not, terminate the interview.) In addition, I would like to remind you that I will send you a transcript of the interview within two months, for your correction, addition, or deletion of any comments you make today. The audio-tape and the transcript will be maintained by the research team, including a research assistant, and only team members will have access to them. The tape and the transcript will be stored securely and destroyed after five years.
The information provided during such interviews is intended to broaden and possibly deepen our understanding about the information provided through the questionnaires.
Is there anything that you would like to ask about before we begin the interview?

Questions

1. What changes have been made to the SS curriculum as compared to the old version? Do you see these as constructive changes? Indicate any insights that may have occurred during your work with Project CSI.

2. Outline your current understanding of critical thinking—provide examples where you can.

3. In your opinion, what place does critical thinking have in the Social Studies curriculum? (Examples)

4. How does engaging students in critical thinking fit with your role as a teacher? Explain.

5. Outline the collaborative aspects of your work within CSI.

6. What role—if any—has collaboration with other CSI members played in your ability to implement the new SS programs? Explain.

7. To what extent have you used technology during the CSI-related work? Explain/Examples

8. What impact has this use of various technologies had on your work with others, if any? Explain.

9. To what extent do you see technology playing a role in your work with others in the future? Explain.

10. What recommendation would you make to others using technology to support collaborative curriculum work?

11. What else about your work in CSI do you think is worth discussing/including--?

Appendix D WebCT Activity Report September 2006 – December 2006

Personal Information	Access Information			Articles	
User ID	First Access	Last Access	Hits	Read	Posted
c10189747	October 24, 2006 4:34pm	December 4, 2007 2:11pm	440	73	4
c10189653	October 25, 2006 1:18pm	December 3, 2007 8:06pm	595	227	5
c10189752	October 23, 2006 3:53pm	December 11, 2007 9:46am	1645	391	38
c10192479	November 20, 2006 2:18pm	December 7, 2007 1:21pm	204	57	0
c10189654	October 22, 2006 6:58am	November 22, 2006 1:13pm	110	36	0
c10092752	October 23, 2006 3:54pm	November 27, 2007 3:37pm	607	257	14
c10189739	October 23, 2006 3:53pm	December 11, 2007 6:12am	1282	348	45
c10262159	December 11, 2007 8:22am	December 11, 2007 1:36pm	18	5	0
c10190045	October 23, 2006 3:54pm	March 6, 2007 2:53pm	154	48	2
c10239982	September 24, 2007 12:40pm	September 24, 2007 1:06pm	34	17	0
c10189727	October 24, 2006 4:13pm	November 28, 2007 11:15am	116	48	3
c10208523	February 27, 2007 2:03pm	December 10, 2007 3:29pm	273	69	0
c10189729	October 24, 2006 4:11pm	October 4, 2007 8:07am	127	50	2
c10240333	September 24, 2007 12:38pm	December 11, 2007 9:25am	74	12	0
c10190159	October 24, 2006 4:40pm	November 22, 2007 6:00pm	327	72	8
c10189730	October 24, 2006 4:34pm	November 22, 2007 7:19pm	1076	334	8
c10189740	October 23, 2006 3:54pm	November 27, 2007 6:53pm	207	43	6
c10189731	October 24, 2006 4:36pm	December 8, 2007 6:53am	1220	290	20
c10239641	September 19, 2007 8:18am	September 19, 2007 8:21am	6	3	0
c10189732	October 24, 2006 4:38pm	June 3, 2007 9:25pm	225	46	3
c10189748	October 24, 2006 4:38pm	April 4, 2007 7:55am	121	60	1
c10193285	November 20, 2006 2:04pm	November 27, 2007 7:12am	555	237	13
c10189733	October 24, 2006 4:37pm	October 2, 2007 10:01pm	511	311	5
c10240347	September 24, 2007 12:39pm	September 24, 2007 1:24pm	61	23	0
s88087051	November 2, 2006 8:39am	November 29, 2007 1:57pm	678	394	12
c10193284	November 21, 2006 1:18pm	December 8, 2007 12:13pm	1921	300	114
c10189746	October 23, 2006 3:52pm	December 10, 2007 8:49am	657	310	15
c10240346	September 24, 2007 12:37pm	December 11, 2007 1:36pm	62	33	0
c10189741	October 23, 2006 3:52pm	December 10, 2007 8:30pm	733	310	6
c10189734	October 24, 2006 4:33pm	December 10, 2007 9:01pm	922	350	24
c10262162	---	---	0	0	0
c10193258	November 22, 2006 12:29pm	April 5, 2007 4:17pm	168	58	2
c10190043	October 23, 2006 3:54pm	October 23, 2006 4:53pm	28	18	1
c10192481	November 16, 2006 12:14pm	December 6, 2007 10:23am	1476	316	3
c10239984	September 24, 2007 12:40pm	September 24, 2007 1:04pm	19	6	0
c10189722	October 25, 2006 1:18pm	September 4, 2007 10:20pm	686	193	3
c10189736	October 24, 2006 4:38pm	June 24, 2007 5:20pm	108	30	0
c10239983	September 24, 2007 12:40pm	September 24, 2007 1:04pm	35	13	0
c10189723	October 25, 2006 1:18pm	September 12, 2007 11:26am	141	29	1
c10190046	October 23, 2006 4:09pm	October 23, 2006 4:54pm	28	19	1
c10189737	October 24, 2006 4:11pm	November 27, 2007 8:00am	541	220	6
c10189738	October 24, 2006 4:33pm	December 4, 2007 2:32pm	357	167	4
c10189725	October 23, 2006 4:06pm	June 5, 2007 10:32am	94	24	1
c10189751	October 25, 2006 11:01am	May 1, 2007 6:44am	280	51	3

Appendix E Letter of Consent Form

Supporting and Sustaining Communities of Practice in Social Studies

Consent Form

I, _____, have read the **summary sheet** for the research project "Supporting and Sustaining Communities of Practice" funded by the Southern Alberta Professional Development Consortium (SAPDC) and conducted by UBC Okanagan in conjunction with *TC*^{2} (The Critical Thinking Consortium). I understand what the research project entails and I have been provided with an opportunity to ask questions about the project. I understand that I will be asked questions as part of the research.

- I understand that by signing this document I am consenting to my involvement in this research project. I understand that a portion of this project constitutes research for a graduate thesis. I understand that my involvement is voluntary and I *may or may not* choose to attend and participate in questionnaires, interviews or conversations at dates or times agreeable to the researcher and myself. I may withdraw from the study at any time by informing the researcher and all data, including recordings, will either be destroyed or returned to me.

- I understand that the interview and/or conversations will be tape recorded and transcribed. Transcriptions will be provided to me [electronically or paper copy depending on my preference] prior to use by the researcher so that accuracy of data may be determined. I may ask for the tape recorder to be shut off at any time during the interview for "off the record" comments, that I can decline to answer any question without explanation, and that the interview may take approximately one hour.

- I understand that the report, which develops from the questionnaires, interviews and research will be shared with educational actors provincially, nationally and internationally. This sharing is to assist other educational actors [e.g. policy makers, school district personnel, government bureaucrats, professional development coordinators] to assist them when they are developing educational programming and planning professional development activities.

- I understand that questionnaires, interview transcriptions, notes and data will be kept secure and available only to the researcher for a period of seven years and then the data will be destroyed. Data collected will only be used for this specific project. I understand that the researcher will ensure the confidentiality of my responses in all research reporting.

- I understand that the researcher may make copies of the findings and the report available to school districts in southern Alberta and other school districts in the provinces of Alberta and British Columbia, that the researcher will be presenting the report to scholarly audiences in Canada and internationally and that I may request a copy or executive summary of the completed project.

- I understand that I may withdraw from this research project at any time up to the point of data analysis, without any consequences or repercussions, by contacting the researcher. All recordings and transcriptions will be destroyed or returned to the participant upon withdrawal from the study.

- I understand I will receive copies of this *Consent Form* and of the *Summary Sheet* and that if I have any concerns about my treatment or rights as a research subject, I may contact the Chair of the Research Ethics Board through the Office of Research Services at 250.807.8150.

Inquires can be directed to:
Dr. Phil Balcaen, Faculty of Education, UBC Okanagan 250.807.8530 or philip.balcaen@ubc.ca

_____

[signature of participant] [date] [email address]

_____

Phil Balcaen, Ph.D. [date]

Appendix F Participant Profile

Supporting and Sustaining Communities of Practice in Social Studies (SAPDC)

Participant Profile

1. Name:_____

   Email: _____

   Address: _____

   Phone: _____

   Gender: Male: _____ Female: _____

   Date of Birth: _____

2. School: _____

   Address: _____

   Phone: _____

3. School Division: _____

   Phone:_____

4. Teaching history: (e.g. 1992-95 grade 4 homeroom; 1995-96 Jr. High phys. ed. and health; etc.)

_____

_____

_____

_____

_____

5. What is your present teaching assignment? _____

_____

6. Please answer the following questions regarding technology.
    a. Do you have convenient access to a computer at school? _____

        at home? _____
    b. Regarding the above access, is it high speed? school _____ at home _____
    c. Are you comfortable using email technology? _____
    d. Do you have access to a videoconferencing suite? _____
    e. Are you familiar with the program First Class Client? _____

7. Please answer the following questions regarding the new Alberta social studies curriculum and critical thinking.
    a. Prior to this school year, have you taught using the new Alberta social studies curriculum? _____ Which grade(s)? _____
    b. At present or in the past, to what extent has critical thinking been incorporated into your social studies class(es)?

        to a great extent ____ ____ ____ ____ ____ ____ little or not at all

Appendix G Brown & Frigon Report

Quantitative Data Analysis Results for the Supporting Communities of Practice Participant Questionnaire #2

Prepared by Jonathan Brown and Aarin Frigon

A total of 23 participants completed the second questionnaire. Of this sample, 3, 8, and 6 participants were from Brooks, Lethbridge, and Medicine Hat respectively. The residence of six participants could not be identified due to missing identification numbers.

How familiar are you with the new social studies program of study?
On the scale from 1 (*completely familiar*) to 5 (c*ompletely unfamiliar*), 13 (30.2%) participants rated themselves as *somewhat familiar* with the new social studies program. The mean rating for this question was 1.70. In the first questionnaire the mean rating was 2.15. A Wilcoxon Signed Ranks test was conducted to see if there was a significant difference in familiarity between the two questionnaires. It must be noted, however, that data for the two questionnaires could only be matched for 14 participants. The test did not yield a significant difference, $z = -1.27$, $p = .206$. Therefore, it does not statistically appear as though participants were more familiar at the time of the second questionnaire. Looking at the participants' open ended responses, most participants indicated that CSI had helped them to become more familiar with the new program. Many participants stated that they had used the new curriculum to "build or use challenges and critical thinking," or were making the effort to relate their teaching exercises to meet "curriculum expectations." Only one participant stated that CSI had not helped because he/she had became familiar with the new program through other professional development (i.e., SAPDC) activities.

In your view, how desirable are the changes in the new social studies program of study?
On the scale from 1 (h*ighly desirable*) to 5 (h*ighly undesirable*), 18 (41.8%) participants rated the changes as either *somewhat desirable* or *highly desirable*. The mean rating was 1.81. In the first questionnaire the mean rating was 1.52. A Wilcoxon Signed Ranks test was conducted to see if there was a significant difference in desirability between the two questionnaires. For this analysis paired data was only available for 12 participants. The test did not yield a significant difference, $z = -1.73$, $p = .084$. Therefore, it does not statistically appear as though participants found the changes to be more desirable at the time of the second questionnaire. A review of responses to the open ended questions indicated that most participants felt the changes were positive. However, many participants questioned the redundancy of the material. As one participant said, "it's as if the grade levels didn't communicate." Participants reported that they felt the material in the higher grades was too similar to that in the lower grades. Finally, participants also questioned if the material would be too difficult for students in the lower grades, such as grade three.

How confident are you in your ability to implement the new program of study into your classroom?
On the scale from 1 (*very confident*) to 5 (*very unconfident*), 11 (47.8%) participants rated their confidence as *very confident.* The mean rating was 1.70. In the first questionnaire the mean rating was 1.76. A Wilcoxon Sign Ranks Test was conducted to see if there was a significant difference in confidence to implement the program between the two time periods. A total of 12 data pairs were available for this analysis. The test did not yield any significant difference, $z =$

0.00, $p = 1.00$. Therefore, it does not statistically appear as though there were any changes in participants' confidence to implement the new program. In the open ended responses, participants indicated that their confidence had increased due to the CSI program because it provided them with strategies to implement the curriculum. Some participants commented specifically on the benefits of working in groups and receiving feedback and comments. For instance, one participant stated, "project CSI has helped me so much. Getting feedback and ideas has pushed me to be a better teacher."

Please indicate how significantly each of the following has contributed to your ability to implement the new social studies curriculum. (1 = *Most Significant,* 5 = *Least Significant*)

Table 1. The Significance of Factors in Implementing the New Social Studies Curriculum.

	Mean	Standard Deviation
Program of studies documents	2.04	.98
Online guide to Implementation	2.19	1.08
In-services through your district	2.95	1.86
PD consortia in-service	1.43	.73
Albert education in-service	3.53	1.47
Professional collaboration	1.74	1.29
University/college course work	4.11	1.41
Independent study	2.20	1.15
Other	1.13	.35

Participants responded using a scale from 1 (most significant) to 5 (least significant)
N = 23

Table 1 provides the mean ratings, and standard deviations, of factors relevant to implementing the new curriculum. Table 2 provides an item analysis indicating how many participants chose each response option for the individual factors.

Table 2. Item Analysis of The Significance of Factors in Implementing the New Social Studies Curriculum.

	Most Significant		2		3		4		Least Significant	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
Program of studies documents	9	39.1%	5	21.7%	8	34.8%	1	4.3%	0	.0%
Online guide to Implementation	6	28.6%	8	38.1%	5	23.8%	1	4.8%	1	4.8%
In-services through your district	4	18.2%	7	31.8%	5	22.7%	2	9.1%	4	18.2%
PD consortia in-service	15	65.2%	7	30.4%	0	.0%	1	4.3%	0	.0%
Albert education in-service	2	10.5%	4	21.1%	2	10.5%	4	21.1%	7	36.8%
Professional collaboration	15	65.2%	4	17.4%	1	4.3%	1	4.3%	2	8.7%
University/college course work	2	11.1%	1	5.6%	1	5.6%	3	16.7%	11	61.1%
Independent study	6	30.0%	8	40.0%	3	15.0%	2	10.0%	1	5.0%
Other	7	87.5%	1	12.5%	0	.0%	0	.0%	0	.0%

N = 23

Participants who indicated *other* factors described such things as: working by myself, SAPDC, textbooks, and communities of learners. When asked to provide specific examples that stood out, all the participants that responded alluded to professional collaboration with teachers of the same grade level.

Describe your greatest obstacle(s) to implementing the new curriculum.
When participants were asked to report what would be the biggest obstacle to implementing the new curriculum, most cited time. As one participant said, "time to locate resources or create them. The text resources currently available are not as useable as initially seemed apparent." Other references to time related to the large amount of material covered in the new curriculum. For instance, one participant said a big obstacle would be "deciding on and planning how to cover curriculum," while another said, "time to implement the curriculum and establishing a balance between critical challenge activities and the context into which events covered should fall." One participant also commented on the difficulty of implementing the material in his/her multiple grade situation, "the fact that the grades are cycled and I may not cover the same curriculum again or 3 years. I'm thinking of changing how it is done." Other participants indicated the difficulty in simply "wrapping my brain around the concept of critical thinking," and "fully understanding how to implement the critical thinking philosophy into my classroom." Finally, one participant reported that it would be challenging to develop "assessment techniques to come up with actual grade."

How confident are you in your ability to implement critical thinking as a method of teaching the new social studies program of study?
On the scale from 1 (*very confident*) to 5 (*very unconfident*), 18 (56.3%) participants rated their confidence to implement critical thinking as *somewhat confident*. The mean rating was 2.10. In the prior questionnaire participants reported a mean confidence of 2.16. A Wilcoxon Sign Ranks Test was conducted to see if there was a significant difference in confidence to implement critical thinking between the two time periods. A total of 12 data pairs were available for this analysis. The test did not yield any significant difference, $z = -.632$, $p = .527$. Therefore, it does not statistically appear as though there were any changes in participants' confidence to implement critical thinking.

Please describe/define your current understanding of critical thinking i.e. what is critical thinking?
When asked to define what critical thinking is, participants provided very uniform answers. One participant wrote that critical thinking requires students to "apply their prior background knowledge to make judgements based on a certain set of criteria." Other participants used more specific terms such as habit of mind and processing skills, but the responses remained similar.

Describe a recent critical thinking activity in social studies that you arranged for your students.
Participants were also asked to describe a specific critical thinking activity that they have used. A couple of participants described having students develop criteria for what constitutes a hero or an outlaw. Using the criteria students had to debate whether or not a specific historical individual was a hero or an outlaw. A number of participants also described having students evaluate the four major political Acts and how they affected the three major cultural groups in Canada (i.e., French, British, Natives). Overall, the activities involved interpreting how different people live and are affected by political and environmental events.

Currently, how often do you engage your students in thinking critically activities?
On the scale from 1 (*virtually every lesson*) to 5 (a *few lessons a year*), 8 (42.1% of the participants who answered the question) participants reported that they engaged students in critical thinking *a few lessons a week*. The mean rating was 2.79; whereas, the mean rating in the first questionnaire was 3.13. A Wilcoxon Sign Ranks Test was conducted to see if there was a significant difference in the frequency of engaging students in critical thinking activities between the two time periods. Only 10 data pairs were available for this analysis. The test did not yield any significant difference, $z = -1.121$, $p = .262$. Therefore, it does not statistically appear as though participants are engaging students in more critical thinking exercises. Participants were asked to provide specific outstanding examples. Of the participants who responded most made reference to having students create or evaluate something according to criteria that they established. For example, creating a new physical education game, according to criteria of what makes a good game. One participant described an assignment that integrated math, social studies, and language arts.

How regularly do you collaborate with your colleagues to discuss or plan for teaching?
On the scale from 1 (*almost daily*) to 4 (*several times a year*), 7 (36.8%) participants reported collaborating *once or twice a week*, while 7 participants also reported *several times a year*. The mean rating was 2.68. In the previous questionnaire participants reported an average of 2.52. A Wilcoxon Sign Ranks Test was conducted to see if there was a significant difference in collaborating with colleagues between the two time periods. Data between the two questionnaires could only be linked for 8 participants. The test did not yield any significant difference, $z = -.962$, $p = .336$. Based on these results it does not appear that there is any difference in the frequency in which participants collaborate with colleagues. Participants reported collaborating with other teachers in the same grade level, CSI partners, and 7 for 7 group. Participants were also asked to provide examples. Some participants focused on the benefits of collaboration. Participants described getting together with colleagues to share ideas, provide/receive feedback, discuss frustrations, and positive outcomes. Others described using specific tools to collaborate, such as e-mail, WebCT, and video conferencing. Conversely, others reported preferring face-to-face meetings. A couple of participants reported being isolated but that the CSI program helped to fulfill their collaboration needs. Finally, one participant reported that it was difficult to collaborate because individuals were just not interested in the process.

In your experience how beneficial is collaboration among teachers?
On the scale from 1 (*very beneficial*) to 5 (*very unbeneficial*), 22 (95.7%) participants reported that collaboration was *very beneficial*. The mean rating was 1.17; whereas, in the previous questionnaire the mean rating was 1.29. A Wilcoxon Sign Ranks Test was conducted to see if there was a significant difference in collaborating with colleagues between the two time periods. For this analysis data was paired for 14 participants. The test did not yield any significant difference, $z = -.447$, $p = .655$. Based on these results it does not appear that there is any difference in participants' perceptions of the benefits of collaboration. When asked to comment, many participants referred to how collaboration lightens the workload, and work can be completed in less time. One participant also stated that there is less burn out. Another participant added, "so many different perspectives, teaching styles, ideas, [and] great resources." Overall, the comments were very positive, and participants indicated the CSI program was very

helpful and one participant wrote, “I would like to have this project continue for next year as the collaboration is invaluable.” It should also be mentioned that one participant raised a caveat that although collaboration is beneficial “personalities and interests need to fit together.”

What encourages you to participate in professional collaboration with other educators?
Participants provided specific comments regarding what encourages them to seek collaboration with colleagues. A number of participants referred to their own desire to become better teachers. For example, one participant wrote “I have an honest desire to be a better educator with each passing year,” while another participant desired collaboration for “self improvement and better teaching strategies for my students.” Other participants were more specific about the end product. For example, one stated that collaboration “results in superior assignment and challenges.” For other participants it is all about the process. One participant appreciates the opportunity “to hear feedback about things I am trying to do in my classroom. To find encouragement from my peers to keep me going,” while another participant liked “people taking time to really hear what you are saying.” Finally, one participant wrote that collaboration provided a “chance to reflect on success or failure.”

Describe your greatest obstacle(s) to participating effectively in professional collaboration?
When it came to describing the greatest obstacle to collaborating, almost all participants said time was the biggest issue. Some participants also mentioned funding and opportunities were issues. The other major issue was people’s lack of interest and differing interests.

How would you describe your computer technology proficiency?
On a scale from 1 (*highly proficient*) to 5 (*little or no proficiency*), 14 (60.9%) participants reported being *somewhat proficient* with technology. The mean rating was 1.96; whereas, in the previous questionnaire the mean rating was 2.09. A Wilcoxon Sign Ranks Test was conducted to see if there was a significant difference in technology proficiency between the two time periods. For this analysis data was paired for 14 participants. The test did not yield any significant difference, $z = -.333$, $p = .739$. Based on these results it does not appear that there is any difference in participants’ reported level of technology proficiency. Additional comments indicated that participants where using and comfortable with basic technology (e.g., email). Participants also commented that they saw technology to be very beneficial. Only a couple of participants said they were afraid of it. Participants were also asked to provide examples of how their proficiency has changed over the past year. Most participants simply stated that they are more familiar with specific technologies (e.g., skype, WebCT, email, video conferencing, and chat rooms). Some indicated that they have begun using more of the communication and collaboration tools. A few participants also indicated that they are more comfortable with technology, while others report that they have learned they prefer to meet with people face-to-face.

Please indicate the extent to which you agree or disagree with the following statements.

Table 3. Participant Ratings of Specific Technologies

	Mean	Standard Deviation
I like using computers	1.43	.90
I like using the internet	1.48	.90
I like using email for communication	1.43	.59
I like online discussion forums	2.65	1.40
I like online collaboration	2.35	1.23

Participants responded using a scale from 1 (strongly agree) to 5 (strongly disagree)
N = 23

Participants were asked to rate statements that they like using specific technologies on a scale from 1 (*strongly agree*) to 5 (*strongly disagree*). Table 3 provides the mean and standard deviation rating for each statement. Table 4 provides an item analysis detailing the frequency with which participants chose each item option for the statements.

Table 4. Item Analysis of Participant Ratings of Specific Technologies

	Strongly Agree		Agree		Unsure		Disagree		Strongly Disagree	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
I like using computers	16	69.6%	6	26.1%	0	.0%	0	.0%	1	4.3%
I like using the internet	15	65.2%	7	30.4%	0	.0%	0	.0%	1	4.3%
I like using email for communication	14	60.9%	8	34.8%	1	4.3%	0	.0%	0	.0%
I like online discussion forums	6	26.1%	6	26.1%	4	17.4%	4	17.4%	3	13.0%
I like online collaboration	7	30.4%	6	26.1%	7	30.4%	1	4.3%	2	8.7%

N = 23

Overall, participants appear to like computers, the internet, and e-mail in particular; whereas, they don't appear to like online discussion and collaboration as much.

Please indicate how significantly each of the following have contributed to your ability to collaborate with others in the project. (1 = most significant, 5 = least significant)

Table 5. The Signficance of Technology Tools In Collaboration

	Mean	Standard Deviation
WebCT email	2.74	1.48
WebCT discussion tools	3.09	1.35
On line resources provided by WebCT (i.e.: curriculum docs and CT tools)	2.65	1.27
WebCT chat rooms	3.77	1.07
Video Conferencing	2.91	1.08
Live Classroom	3.30	1.13
Skypecast	3.79	1.13
Other	1.00	.00

Participants responded on a scale from 1 (most significant) to 5 (least significant)
N = 23

Participants were asked to rate the significance of each collaboration tool on a scale from 1 (*most significant*) to 5 (*least significant*). Table 5 provides the mean and standard deviation ratings for each tool. Table 6 provides an item analysis detailing the frequency with which participants chose each item option for rating to the tools.

Table 6. Item Analysis of The Signficance of Technology Tools In Collaboration

	Most Significant		2		3		4		Least Significant	
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %
WebCT email	6	26.1%	6	26.1%	3	13.0%	4	17.4%	4	17.4%
WebCT discussion tools	4	17.4%	4	17.4%	4	17.4%	8	34.8%	3	13.0%
On line resources provided by WebCT (i.e.: curricu docs and CT tools)	5	21.7%	6	26.1%	6	26.1%	4	17.4%	2	8.7%
WebCT chat rooms	0	.0%	3	13.6%	6	27.3%	6	27.3%	7	31.8%
Video Conferencing	2	8.7%	6	26.1%	9	39.1%	4	17.4%	2	8.7%
Live Classroom	1	5.0%	3	15.0%	9	45.0%	3	15.0%	4	20.0%
Skypecast	1	5.3%	0	.0%	8	42.1%	3	15.8%	7	36.8%
Other	3	100.0%	0	.0%	0	.0%	0	.0%	0	.0%

N = 23

Surprisingly, participants did not seem to rate any of the tools as playing an overly significant contribution to collaboration.

Please comment on the most effective uses of technology during the CSI and provide examples where possible.

Overall, participants reported e-mail as being the most effective tool. Some participants reported that for conversations Skype and chatrooms were effective, and e-mail was great for sharing documents. There were a couple of participants who indicated they had not participated, while others stated they preferred face-to-face meetings.

Please comment on the least effective or most problematic uses of technology during CSI and provide examples where possible.

Many participants stated that Skype was the least effective, but they also stated that they could not get it working. As for video conferencing, a number of participants said it did not work in their district. Another participant said that a common webtool was needed for video conferencing. There was one reference to live classroom not working because not enough people were interested in it. Finally, there were a couple of comments by people having difficulties getting WebCT to work.

Please comment on possible future uses of such technologies.

Only a few participants responded to this question. Some participants indicated they needed more practice and instruction. As one participant said, “I think we need to access this and practice the various tools to really know whether they're that useful as collaborative tools. I appreciate them but don't feel comfortable or competent in utilizing them effectively.” Another participant said that there needs to be something to encourage people to continue participating in the use of the technologies, because over the course of the year, interest seemed to taper off. Finally, one participant expressed a little frustration with technology, stating that “technology need[s] to be workable to be beneficial.”

Please offer any other thoughts you have about social studies, teacher collaboration and the use of information technologies.

Participants were able to provide general comments. Only a few participants provided responses. On participant wrote “the sooner we can collaborate with each other in real time on line - hearing each other, showing each other things from the comfort of our own homes at times

we set up with those we are collaborating - after school the better." One participant felt he/she would be more inclined to participate if times were scheduled, "one thing that would help me is having prearranged times to check in - perhaps 1/2 hour 2 evenings/wk line an appointment." Referring to technology one participant stated "I need more in service. I need to practice regularly." Finally, one participant shared his/her overall perspective on the use of technology in collaboration, "even though I dislike it (my age, may lack of confidence) I do believe it is a powerful tool for discussion and sharing information."

Appendix H Anonymous Video Conference Feedback Discussion Thread

Compiled Messages:

Message no. 105
Posted by Anonymous on Monday, December 4, 2006 7:02pm
Subject: telegram
A little overwhelmed

Message no. 106
Posted by Anonymous on Monday, December 4, 2006 7:35pm
Subject: more than 3 words...
Although the teleconference was a bit shaky at first, I thought is was very worthwhile. I
quite enjoyed the two projects and everyone's feedback.

Message no. 107
Posted by Anonymous on Monday, December 4, 2006 7:41pm
Subject: VC
Very cost effective.
Excellent practice learning about what a good CC looks like!

Message no. 108
Posted by Anonymous on Monday, December 4, 2006 7:45pm
Subject: video conferencing
worthwhile adventure using the technology we have, saved travel time and the
presentations were terrific. Good job to the presenters.

Message no. 109
Posted by Anonymous on Tuesday, December 5, 2006 7:26am
Subject: few more words
not sure where to begin

Message no. 110
Posted by Anonymous on Tuesday, December 5, 2006 7:34am
Subject: more than three words....as usual !!
I thought that last night's video conference was a fantastic opportunity to see technology
in action. So often as teachers we are given the hardware to use in our classrooms but
lack the realk life experiences / training / ideas to use those tools. Using the VC tools
allowed me to see how this might work for me in the future.

Although shaky at first, most definately on my "try again" list.

Thanks for the opportunity to collaborate with other enthusiastic teachers!

Message no. 111
Posted by Anonymous on Tuesday, December 5, 2006 8:41am
Subject: experienced VC perspective
As far as video conferences go - this was great and exceeded my expectations from past

experience as far as what I expected on our first try with all the sites, people and
inexperience with video conferencing. We really missed the group from Brooks however
and we must ensure that they can be present for subsequent conferencing. I particularly enjoyed the presentations and peer feedback, I feel so fortunate to be
working with such an enthusiastic and dedicated group of people!

Message no. 112
Posted by Anonymous on Tuesday, December 5, 2006 9:43am
Subject: VC Last Evening
Appreciate not travelling, yet connecting. Thanks to the groups for presenting. Good for
you. Your students are so fortunate to have you as their teachers. VC trial #2 should be
better.

Message no. 114
Posted by Anonymous on Tuesday, December 5, 2006 12:07pm
Subject: VC (learning, experience, onward!!)
So there you have it, my three cents. We learned that we collaborate well, experienced
little glitches that we'll tweak to perfection, and onward into the great unknown. I had fun
and realized there is great potential in all that we're doing. Looking forward to more!

Message no. 116
Posted by Anonymous on Tuesday, December 5, 2006 1:52pm
Subject: Vid Conf
Interaction like that will be important to the success of our projects!

Message no. 117
Posted by Anonymous on Tuesday, December 5, 2006 3:13pm
Subject: Telegram
Potentially - Very Useful

Message no. 118
Posted by Anonymous on Tuesday, December 5, 2006 8:50pm
Subject: Impressed
Very appreciative of the presenters who bravely opened their inner workings to the group.
However, for critique purposes it would have been more productive to have had the
materials available for perusal beforehand. I was impressed by the thought behind and
quality of both projects presented.

Appendix I Participant Year One Year End Transcript Sample

Tape Number: 6

I: Interviewer
P: Participant
[background noise]
(lost)

I: Well, the first question…. Hi (laugh) What grade do you teach?

P: Grade one, two, three, to nine (?)

I: Oh, is that all? Multi-age. Umm, can you talk about the new science, so, the new Social Studies curriculum? What do you think of it? Do you think it's had some constructive changes?

P: Yeah, I was uhh working at it enough to be in on the ummm, the institutes or whatever they called them up in Edmonton when they were, just getting, actually it was before it was actually finished.

I: Oh, yeah

P: And I was involved in some input into before it was actually completed. And I was, I am really impressed with a bunch of the changes and the mark perspective (?) including inquiry. You know getting down to umm uhh changing the way that we are presenting Social Studies curriculum in classes and what not.

I: Hmm-hmmm

P: I just really think that they made some really good positive changes.

I: So both content wise and in the process? The implementation?

P: Ummm, it, my big thing is the implementation.

I: Hmmm-hmm, hmm-hmmm

P: Yeah, the way that is taught rather than what is taught because to me teaching them how to learn and what not is way more important than what the actual content

I: mmm-hmm

P: Is applied.

I: mm-hmm so you are quite comfortable with it. You like the new one.

P: Yeah

I: Yeah

P: Yeah, I think they made some very good changes. I'm sure there will be more changes as we learn more and

I: Yeah

P: That's a large project

I: Maybe you would have to say that since you helped make it. (laugh)

P: Well, not completely.

I: No, I know. Then the next three are on Critical Thinking. Now I don't know, where you interviewed at the beginning?

P: mmm-hmm

I: Okay, so as you, you might not have changed much on this, outline your current understanding of Critical Thinking.

P: Umm, I know tons more about it. It is not just to do with umm my involvement with this project,

I: Hmmm-hmmm

P: I've been taking, I took a, a Master's level course with Dr. Paul online. Uhhh Critical Thinking (pause) umm, no, Critical Thinking, I can't remember the

I: Hmmmm is that the last name Paul?

P: Dr. Paul, yeah. I talked to Roland about it and if he thought it would confuse me (laugh)

I: (lost)

P: Or if it would be valuable and he encouraged me to take it and said it would be valuable.

I: Hmmmm

P: There is a different, difference in the models, but I uhh my understanding of Critical Thinking has just hugely grown

I: Hmm-hmm. Good for you.

P: That together with working on the project.

I: The two together. Can you come up with a definition then or can, are you going two ways? So if I was to ask you what is Critical Thinking, what would you say?

P: Umm, uh, I am lacking sleep today.

I: Oh, yeah

P: My brain is slow.

I: But has

P: Just let me think a minute (pause) ummm, thinking, thinking deeply,

I: Hmmm

P: Umm and ummm I, the term rigorous and working with something you know puzzling, umm I think of uh persistence and wrestling with ideas and asking questions. And, and, uhh, really delving into things and looking at things from multiple perspectives

I: Hmmm-hmmmm

P: And from umm, umm, and knowing how to use my mind or a student's mind, knowing how to use their mind to solve problems and umm to differentiate between good information and

I: Hmmm

P: Useful stuff in a given situation. Ummm, being able to ummm investigate and come up with answers and being able to justify the answers using evidence and criteria. You know criteria for judging and uhhh

I: Hmmmm

P: I have so much

I: Yeah

P: Of lots, uh of lots of connection with Critical Thinking, lots of words, lots of phrases.

I: It is quite valuable especially compared to a path this definition, it is very valuable. Ummm, in your opinion, what place (whisper – lost) poorly worded, let's leave this out. What place does Critical Thinking have in the Social Studies curriculum?

P: I think that Critical Thinking needs to be the core of all of our learning not just Social Studies in any, in anything. It should be the, kind of the way it's done. The way we learn.

I: Hmmmm, right

P: The way we study. I think it needs, it's essential.

I: (lost)

P: Otherwise without it, ummm all we are going back to is memorize, regurgitate, forget.

I: Hmmm-hmm. Yeah

P: And that's

I: It just (lost) when you said that.

P: Yes, very very poor learning.

I: Hmmm-hmmm

P: So for quality learning it needs to be Critical Thinking.

I: Hmmm-hmm. Can you give me an example from your Social Studies class how you have used it in your curriculum?

P: Ummmm because I am on sabbatical

I: Oh right (lost)

P: A little different, I have done some classes with my grandchildren

I: Oh

P: And assignments. Ummmm

I: Grandchildren are handy.

P: (laugh) and they are also multi-level.

I: Ohhh, yeah

P: (laugh) Let's see.

I: I

P: I uhh let's see. I am trying to think of a different one than the one I wrote down

I: Oh

P: I wrote down one about relevance. Teaching them to distinguish when something is relevant and when it's not.

I: Oh, yeah

P: And that was (pause)

I: Fantastic

P: And that went really well. I am just trying to think of a different one cuz I wrote that one down. Uhhh (pause) oh, I have done so many of them. Just drawing a blank.

I: Relevance works well.

P: Well the relevant one ummm I started out by having list of sentence clues. And uhh we played a game, I made up a game, called name my topic. So I asked them, I organized them, first I asked them have you ever heard of the word relevant? And none of them had. And I said okay after today you will know what relevant means. And so I said we are going to play called uhh name my topic. We read all the sentences together. And I said okay I am going to organize these, I am going to put the not relevant sentences here and the little bit relevant sentences here

I: Hmm-hmmm

P: And the very relevant sentences here and the ones in the very relevant are really going to be good evidence about what my topic is.

I: Mmmm

P: See if you can figure out what my topic is. And uh they very quickly

I: Ohhhh

P: I made it very easy so that they could get it

I: Hmm-hmmm

P: Right away. And I wasn't even done sorting and you know the readers had it.

I: Oh yeah

P: And I had to have them be patient so that the non-reader could

I: Oh I see.

P: Had a chance to. But as soon as I read the sentences for him, he knew right away. And so then immediately they said, I want to try it, I want to try it. So then I let them do it.

I: Hmmm-hmmm

P: And I said choose another topic

I: Hmmm-hmm

P: And you rearrange the sentences and we will guess what your topic is.

I: Yeah

P: And they each had a chance to do that. And then I gave them new sentences that were curriculum based that were to do with the science curriculum that I was teaching.

I: Oh

P: And uhhh and then, they did the same thing. And uhhh it was the same exact activity umm but it was about curriculum now instead of and they did it for each other and guessed each other's topic

I: Ohhhh

P: And

I: Hmmm

P: Quite enjoyed doing that. And by the end, they, they knew what relevance meant

I: mmm-hmmmm. Mmm-hmmm

P: They knew how to sort out what was relevant was, we just traded topic all the time.

I: Hmmm-hmmm hmmm-hmmm.

P: And then they would pick out the sentences. And we talked about well how do you know that one is relevant? What is it that makes that relevant?

I: Hmmm-hmmm

P: And then they would pick out. The little non-reader grade one he said uhh his answer was all them have the word bird in.

I: Ohh, yeah

P: So he was finding common words.

I: Coming up with his own

P: Yes, and then another child would come up with another reason for how they were grouping them and why they found, why they put that one there.

I: Hmmm-hmmm

P: So it was interesting to see the reasons that they gave

I: Yeah,

P: It should their thinking

I: Hmm-hmmm

P: When they explained why they put that one. And I pointed out one uh that was, that was in umm that was in the little bit relevant and I asked them so what made you put that one here? And then they he read it and he went oh wait a minute and then he picked it up and he waved it and he said it goes there. And I said well, why are you moving it? And he said, and he gave me a very good explanation

I: Ohhh

P: About why he was moving it. He just hadn't read it carefully so he found just by reading he self-corrected.

I: Hmmm-hmmm. Hmmm. Yeah. That's, I certainly like that topic. Ummm now if you were to describe your role as a teacher, I guess when you first started, how many years have you taught?

P: Not as many as you would think (laugh)

I: Not many?

P: (laugh)

I: I haven't taught many either.

P: Uhhh, eleven

I: Okay so eleven years ago when you went into teaching you know what were your goals as a teacher?

P: Um, mostly to have kids have a good understanding of the basics. And love reading.

I: Hmmm-hmmmm

P: That was

I: Okay. A good understanding and love reading.

P: A good understanding of math and language, those basic things

I: Hmmm-hmmmm

P: Those were my big concerns. Those were my basic concerns.

I: Hmmmm. So how does Critical Thinking fit in there, into those roles, into that role that you saw yourself in?

P: Umm back then I didn't have any idea about Critical Thinking and never, I had heard the term and didn't have any idea. It wasn't in any of, I don't remember it being in any of the teaching or anything.

I: I guess I could, should say what is your role now? Has it changed?

P: Oh yeah.

I: Okay what is your role now?

P: To me now, Critical Thinking umm is the most important thing, I want life long learners.

I: Hmmm

P: To come out of my classroom. I want to work on, having, being part of the process of the school system having children come out of the school system being life long learners.

I: Hmmm-hmmm

P: That they feel confident and capable of being able to learn of whatever it is that they want to learn.

I: Hmm-hmmm; that fits nicely. Uhh, next questions are on collaboration. Can you, there are two of them, so I will just do one at the time. Outline the collaborative aspects of your work within this project.

P: Ummm, well, we got together in groups on set days and we got together on the telephone, we tried chat which wasn't all that great.

I: Hmmm-hmmm

P: And I miss the uhhh

I: Oh

P: Live classroom.

I: Oh yes

P: Had a death in the family and so I missed that night. But because I am doing, I have been involved a lot through U of C through my online courses so I already know that they are wonderful.

I: Hey

P: But that's my preferred method

I: Yeah

P: Of you know as much as possible I can be right at home and still do my work.

I: Hmm-hmmm so you missed this particular one

P: Yeah, that one.

I: But you are aware of it.

P: Yeah,

I: And uhh okay so you did all you could. Did you use the WebCT?

P: Yeah, but we had one member of our group who uhhh lacks confidence in using computer so uhh to be able to have involved in CT, web, whatever it was.

I: Yeah

P: Didn't work very well for us because of that.

I: Because of that. Because you wanted to collaborate

P: Yeah

I: Now, Well good good.

P: But it worked better for us when we got together. Any time we tried to communicate with her through that it didn't

I: Oh

P: She didn't get it. Email wasn't very successful either. Mostly telephone and face-to-face.

I: So uhh telephone, was that like a conference call?

P: Oh, no.

I: Three way? Or

P: Oh, no

I: Just back and forth. I see. (laugh)

P: Yeah. No, the uhhh hard way.

I: So then it says, so that was your extent. What impact has this use of various technologies had on your work with others? Well, in one way it had that frustration.

P: Hmm-hmmm

I: Umm, but what else would you add to that?

P: Could you read it one more time?

I: Yeah. I should have two bits of this. What impact has this use of various technologies had on your work with others, if any?

P: Ummmm. I guess it definitely ummm gave me some opinions on what I like and what I don't like.

I: Hmmm-hmmm

P: Where as before I didn't really know.

I: In regards to technology.

P: Yeah,

I: Yeah, yeah. And to what extent do you see technology playing a role with others in the future?

P: As umm I really think as we become more proficient in its use and as it is more refined. My vision of it being wonderful and time saving is that we can get together from our homes, after hours at our convenience.

I: Hmmm-hmmm

P: So that uhhh we don't have to go anywhere. We don't have the driving time. We don't have the ummm you know that we can still get together, see each other, hear each other and exchange ideas and information and stuff without having to spend the time and what not for travel.

I: So is that, so as long as it is used well, efficiently, it works. It doesn't have to be face-to-face with you.

P: No

I: You are willing to work with this.

P: Like, like with my Masters stuff when it's ummm and even I understand with live classroom can you see each other? Like I do

I: mmm-hm. Mm-hmmm.

P: I do, I can, I chat with my daughter. It is like being there. I can make faces with my granddaughter and (laugh) you know.

I: I just went through it yesterday morning with my i-cam yeah.

P: Even sort of tickle her and her mom helps me out at that end (laugh)

I: (laugh) well that works! That collaborative.

P: Yeah so I, to me that's where I look forward to it being. It where we can see each other, hear each other in real time. And ummm from the comforts of our home without having to be, taking travel time and time away from our, anyway. I think that will. The video-conferencing, that was really good I found it worked. You know I learned tons from that too but I still have to travel.

I: Oh, you did.

P: So that's why, that's why I look forward to doing it from home. With my camera right there, my computer.

I: Yeah, yeah.

P: And I'll be able

I: yeah, you've got

P: I hope that I hope that that's in the near future

I: Hmmmm

P: Because I think it will save a lot.

I: Yeah, I never use that.

P: And it was also mentioned in, when we had a group sharing a little while ago that ummm

I: Right

P: Ummm when we, when we work together, we and share with each other, we save each other so much time. One of the hardest things we face I'm sure not just teachers, but as teacher's, it is not enough time to do everything we need to do. And when we share with each other what we've done, we can save each other so much more time. We don't have to have everybody do the same thing.

I: Hmmm-hmmm.

P: You know, there is such an overload of information and materials and everything available. That to have the time to sort out what's good and useful and uhhh and it's just an incredible amount of time that it takes and when we can share with each other, it just reduces that time.

I: Hmmmm. So you've got the collaboration element and the technology together.

P: Oh, yeah.

I: Haven't you, saying that?

P: Yeah, for sure.

I: Now, you hinted that the chat was difficult, what do you think was the problem there?

P: Oh, way too slow.

I: Ohhh

P: Way too slow.

I: Hmmmm-hmmmm

P: It's not time efficient, it is very frustrating because we could do in five minutes with a video cam what took us forty minutes you know and when you know that the time is not being well spent, it is very frustrating.

I: Yeah, yeah. That's because you know what you are doing. All right because you are used to technology, you have used it a fair bit. Obviously not mine

P: Actually that was my first time

I: Oh, was it?

P: On a chat line.

I: Oh, was it? First and last?

P: Yeah, first and last. I wasn't interested because there are better things available (laugh)

I: (laugh) well, that's good for us to know. So, finally then, just sort of think about your experience as a whole so far. And where you are heading next year with the project. What else about your work in CSI do you think is worth discussing, including?

P: Ummm I haven't heard any mention of uhh maybe I misunderstood that umm I thought that at the beginning everyone choose a personal goal, a project. A personal project and a group project.

I: Hmmmm

P: And I haven't heard a word about the personal project ever since then.

I: Hmmmm

P: So I am wondering did I misunderstand or does everyone has personal projects and if they do have personal projects is there not some kind of sharing going on with the personal projects?

I: Hmmm. Where did they go?

P: Yeah

I: Were they incorporated?

P: Or was there ever such thing? I don't know.

I: Hmmmm

P: Maybe I misunderstood.

I: Hmmm. That's a great question. Anything else?

P: Ummm do you want to read it one more time?

I: Yeah, what else, you are kind of open on any comments, what else about your work in this project do you think is worth discussing, including?

P: Ummmm, the fact that because I am on sabbatical, it was much easier for me because

I: Oh really

P: I had so much more time available and I know that if I had been teaching, I would have only accomplished a very, very tiny amount compared to what I was able to do because I wasn't teaching.

I: So even though you didn't have a classroom to be trying these things out on, but you had children? Hmmm-hmmm

P: Time is just, we don't as teachers, we don't have enough time for learning.

I: That's right.

P: We're not given enough time to learn.

I: Hmmm

P: And to actually make changes

I: Hmmm-hmmm

P: You know I mean, I have been working for six, five-six years trying to implement learning and trying to implement changes in my teaching really quite drastic changes

I: Huh

P: From being really teacher centred to being really tasked centred and ummm being and incorporating differentiation, incorporating like having integrating, integrating levels as well as disciplines and, and even though I knew in my head what I wanted it to be like. I didn't have the time to teach and make those changes.

I: Hmm-hmmm

P: Now, while I am on sabbatical, I am making those changes. So when I go back, I will actually be able to do it.

I: Hmm. You're doing, making a lot of changes, you are taking courses, you're taking on

P: Yeah, we need time to learn and time to make changes. I don't know if that what it's like for all teachers.

I: Yeah

P: But from what I hear it is pretty common.

I: Yeah

P: I am from around, from a rural district, we don't get prep time.

I: Hmmm-hmmm. None a'tall.

P: None

I: Yeah

P: They offered me I think it was ummm half an hour once every other week or something. And I told them forget it, I would just rather be n the classroom. I mean that's not enough. I wouldn't be able to, I wouldn't sit down and catch my breath in half an hour

I: Hmmm-hmmm

P: And be able to even think of where to start so never mind. I'll just teach.

I: Hmmm-hmmm

P: I will do it after school.

I: Yeah so time. So the personal project and the time element. The fact that you are on sabbatical really made a difference?

P: Huge

I: Yeah

P: I know that if I had been teaching I wouldn't have accomplished even the smallest portion of what I accomplished.

I: Yeah, yeah

P: Because I have been trying

I: Yeah

P: For six years I have been trying

I: Hmm-hmmm. Yeah, the sabbatical came at the right time for you, for us.

P: Hmmm-hmmm.

I: Anything else.

P: No

I: Well, thank you very much.