

**Asking the Big Questions:
Elementary Educators Developing their
Professional Practice through Inquiry**

**by
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Abstract

Using a variety of qualitative methods, this participatory action research study investigated how a group of elementary school educators experienced and perceived an independent, inquiry-based approach to professional development. It includes a discussion of how the participants described the similarities and differences between and inquiry-based professional development process and the more traditional in-service workshop model of professional development. The teachers reported feeling motivated to engage in this form of inquiry-based learning. Each of the educator participants in this study felt the self-directed and problem-based nature of their learning, which is in line with the tenants of adult learning, or andragogy (Kidd, 1959; Knowles, 1980) were important factors in this engagement. The participants reported that despite the challenges that they identified, such as time pressure, accountability, and administrative support, inquiry-based professional development lead to positive changes in their teaching. Recommendations for implementation of inquiry-based professional development are also discussed.

Keywords: professional development; educator inquiry; elementary teaching; adult education; inquiry-based learning; participatory action research

Dedication

This work is dedicated to the educators who participated in this study alongside me.
Your dedication and your insights made this research possible.

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Chapter 1. Rationale

I first became interested in inquiry-based learning as a form of teacher professional development in 2015 when I was asked to take on the dual role of Vice Principal and Grade 6 teacher at Mountain View Elementary School (all names are pseudonyms). The then recently revised elementary school curriculum in British Columbia was largely inquiry-based; that is, it focused on a style of teaching whereby students are asked to actively seek answers to questions they develop (British Columbia Ministry of Education, 2012). In my dual roles as teacher and Vice Principal I realized I needed to gain a better understanding of inquiry-based teaching and learning to support both the Grade 6 students in my classroom and the teachers of Mountain View Elementary as they attempted to implement inquiry-based teaching in their classrooms. In 1904, Dewey wrote *The Relation of Theory to Practice in the Education of Teachers* in which he argued that in order for teachers to truly be successful, they must learn as they intend to teach. To me, this meant that in order to successfully teach an inquiry-based curriculum, I (and other teachers) would have to gain personal insight into inquiry-based learning and do so in a way that would closely align with how we were expected to teach inquiry practices in our classrooms. Where teachers often look to gain new insights or understandings about their teaching practice is to the professional development programs and workshops that are offered to them.

1.1. Statement of the Problem

Educator professional development (pro-d) can be defined as "...all types of learning undertaken by teachers beyond the point of their initial training" (Craft, 2000, p. 9). Throughout my years of teaching in elementary and secondary schools in British Columbia, professional development followed a familiar formula: "expert" educators were invited to present lectures or workshops based on district or school goals, and teachers signed up to attend those that most closely aligned with their pedagogical interests. Lieberman and Miller (2014) state that this form of professional development, often known by the term "in-service" (Kragler, Martin & Sylvester, 2014), continues to be the predominant form of professional development in many schools and school districts, as it has been throughout the later half of the 20th century. Lieberman and Miller (2014) report

that this style of “top down” teacher instruction is based on the idea that teachers require direct instruction in skills and strategies to improve their practice.

However, the assumption that teachers’ practice will improve through in-service workshop instruction of the type described above is at odds with research findings about andragogy, or the “...art and science of helping adults learn” (Corley, 2011, p. 1). Knowles (1980) believed that adult learning is most successful when it is self-directed, internally driven, problem-centered, and specific to the learner’s context (pp. 53 – 54). Similarly, Bransford (2000) argues that learning happens most effectively in environments where “...learners construct their own meaning, beginning with the beliefs, understandings and cultural practices that they bring to the classroom” (p. 136). Knowles (2005) argued that freedom of choice and personal autonomy is critical for adult learners. According to Knowles (2005), “The biggest problems arise when adult learners want to have more independence in their learning but are denied that opportunity” (p. 189).

Importantly, the in-service workshop model commonly used in education does not meet the criteria of context-based and problem-centered learning that is driven by the needs and desires of learners themselves. As documented by Kragler, Martin and Sylvester (2014), “...research has shown that in-service workshops did not produce instructional changes in teachers, and that many teachers considered these in-service workshops to be a waste of time” (p. 487). Moreover, according to Bransford (2000), educator professional development that consists of “required lectures or workshops that are not tailored to teachers’ needs” will “fall short” of being learner-centered, and thus, fall short of being effective environments for learning (p. 193). Given such conclusions, it is important that research explores alternative models of professional development that can better meet the learning needs of teachers.

A variety of professional development models have been developed since Knowles’s work in adult learning gained popularity. Many of these models reflect research findings that suggest adult learning is most successful when it is contextually relevant to the learner (Knowles, 1980; Bransford, 2000), directed toward solving problems the learner is motivated to solve (Brockett & Hiemstra; Kidd, 1959; 1991; Knowles, 2005) and provides learners with some freedom of choice in their learning

process (Bertanees, 2009; Bransford, 2000; Cochran-Smith and Lytle, 2009; Kidd, 1959).

One such model, proposed by Cochran-Smith and Lytle (2009), is practitioner inquiry. As defined by Cochran-Smith and Lytle, practitioner inquiry is a "...sequence of steps or a method employed in the process of training experienced teachers to solve classroom or school problems" (p. 120). They proposed that communities of teachers follow an "inquiry cycle", a recursive series of steps that involves beginning with a problem or question, consulting the available data that is relevant to that question, taking action based on their findings, and analyzing the results of those actions (Cochran-Smith & Lytle, 2009). Given that this process involves educators, individually or in groups, participating in self-directed research concerning their own practices, and acting on knowledge that they generate for themselves, Cochran-Smith and Lytle's (2009) model of reflective practice, what they have described as an "inquiry-stance" (p. 126), is clearly consistent with findings on effective methods for supporting adult learning.

Cochran-Smith and Lytle (2009) are not alone in calling for teacher professional development through practitioner research. Adelson, Casa, and Truxaw (2011) argued that teachers should base their classroom practices on research they conduct themselves through inquiry. Wells (2012) argued that, in times of increased scrutiny on teacher quality and professional standards, increased attention should be focused on the effectiveness of "teachers as researchers" as a potential pathway for professional learning (p. 106). Further, Campbell et al. (2016), in their pan-Canadian review of professional development practices, wrote that while the most effective practices are "...combining evidence, inquiry, and professional judgment to inform professional learning", they see a need for further "...research, dialogue and action" to address the persisting challenges, issues and inequalities related to professional learning in Canada (p. 15). Given the limited effectiveness of traditional in-service models of teacher professional development, and calls for teacher professional development through self-directed, inquiry-based practices, we need more research in this area.

1.2. Research Aims

The purpose of this study was to examine how educators in a public, elementary school in British Columbia experienced an independent, inquiry-based approach to generating new learning about their practice. Questions central to this study included:

1. How did participants experience and perceive the process of engaging in an inquiry-based approach to professional learning?
2. How did participants describe the similarities and differences between an inquiry-based professional development process and the more traditional in-service workshop model of professional development?

Chapter 2. Literature Review

In what follows, I review the research in each of four areas: participatory action research, adult education, inquiry-based learning, and professional development. For each topic discussed in my review following Alber (2011), I document the area's historical roots, review seminal research in the area, and identify key concepts associated with it, including a discussion of current research and theoretical perspectives. I also include some discussion of key debates in each area.

2.1. Action Research

In 1934, Kurt Lewin coined the term *action research* to describe a research project that involved, "...ordinary people participating in collective research on 'private troubles' that they have in common" (Mills, 2014, p. 9). The seminal work that introduced action research to the education community was a 1953 publication titled *Action Research to Improve School Practice*, in which the author, Stephen Corey, contended that "...educational change will not take place unless practitioners are involved in developing curriculum and instructional practices, drawing on the experiential knowledge they gain through inquiry" (Efron & Ravid, 2013 p. 6). Later, in 1975, Lawrence Stenhouse, who advocated for "practitioner research", rejected the manner in which curriculum materials were developed by experts and delivered to teachers, and claimed that teachers themselves should be involved the examination of educational practices (Efron & Ravid, 2013, pg. 6).

Mills (2014) identified several of the theoretical approaches to action research: *critical action research*, *practical action research*, and *participatory action research* (pp.10 -21). While Mills believed that there are many differences between these approaches, he contended that each maintained the core components of action research; identifying an area of focus, collecting data, analyzing data, and developing an action plan (2014, p. 22). The present study is most closely aligned with both *participatory action research* and *practical action research*.

According to Kindon, Pain, and Kesby (2007), participatory action research “involves researchers and participants working together to examine a problematic situation or action to change it for the better”. In the words of Mills (2014),

Practical action research places more emphasis on the “how to”. It assumes, to some degree, that individual teachers or teams of teachers are autonomous and can determine the nature of their investigation to be undertaken (p. 11).

In the present study, individual teachers, or teacher teams, independently investigated the “how to” of educator professional development. They committed to engaging in a structured investigation of inquiry-based professional development and reflected on their impressions of the effectiveness of this method of developing their professional practice. This study finds alignment with *participatory action research* in that participatory action research aims to “Involve participants and researchers in collaborative processes for generating research” and “Is context based and addresses real-life problems” (Kindon, Pain & Kesby, 2007, p. 14).

Practical and participatory forms of action research have emerged as an important methodology in educational research due to the perceived disconnect between the published research of academia and the day-to-day work of teachers (Bransford, Brown and Cocking, 1999; Cochran-Smith & Lytle, 1993; Mills; 2014; Nolen & Putten, 2007). Cochran-Smith and Lytle (1992) argued that “teacher research” is the “...critical dimension for school change” because knowledge about teaching “...that is embedded in the daily work of the teacher” cannot be derived from the work of university researchers alone (p. 25).

Despite the growth in popularity of action research in the last half century, action research is not without its detractors. Harrison (2011) wrote a recent critique of participatory action research that questioned the validity of the participation of non-researchers in conducting proper research, asserting that “...formally trained scientists need to maintain some decision-making authority over research design in order to ensure that the results can stand up to the inevitable political scrutiny and that all of the efforts of data collection are not squandered” (p. 708). Harrison was not the first to question the validity of research that is conducted by non-academics. One of the authors most critical of action research is also one of its greatest proponents. In *Action Research: Unfulfilled Promises and Unmet Challenges*, Greenwood (2002) levied

several criticisms against action researchers indicating that they tend to (1) view themselves as morally superior and set apart from “conventional researchers” (p. 135); (2) be content in developing “local knowledge” that may not have value beyond local contexts; and (3) be seen as generally poor writers, whose publications are often met with “...hostile criticism” by conventional researchers (p. 133).

In responding to Greenwood, Gustovson (2003) admitted that while sometimes the work of action researchers is “sloppy”, it is also often adequate enough reporting for its audience, as the localized nature of action research projects means that interest is often “limited” outside of the action research community (p. 93). Eikeland (2003) wrote a response to Greenwood and Gustovson that is sympathetic to Greenwood’s position, but states that such criticisms are more appropriately levied against “first wave” action research (p. 268). He noted that after the 1970’s, the action research community had become a “separate sphere” from conventional research that was welcoming of, but not necessarily concerned with, such external criticisms. In Eikeland’s view, action research is now so insular that it “...measures any activity against its own inner standards and criteria” (p. 269). Because action research is such a unique methodology, often addressing local issues with the participation of non-conventional researchers, Eikeland (2003) believes that comparisons with conventional research do not really apply.

Greenwood’s criticism of action research was a call to action for improvement of a method that he referred to as “...the social science approach that is most likely to produce something that could legitimately be called rigorous research” (2002, p. 133). It would be beyond the scope of this study for me to suggest if and how action research could more closely align with what Greenwood would refer to as rigorous research; however, I have come to find that action research is a powerful tool for understanding and bringing about change within local contexts. I do believe that because every action research study is unique to those local contexts, the findings of action research projects are less able to be generalized to contexts apart from those in which an action research project takes place.

2.2. Adult Education

In his 1973 influential work, *The Adult Learner*, Malcolm Knowles wrote that, while people associate the concept of ‘teachers’ with those who educate the young, “the

great teachers of ancient times – Confucius... Jesus... Aristotle, Socrates, Plato...were teachers of adults, not of children” (Knowles, 2005, p. 35). Knowles was not the first modern academic to write about how adults learn, but he was certainly one of the most prominent, and as such he is credited with being the “father of andragogy” (Peterson & Ray, 2013, p. 82). Knowles, Holten, and Swanson (2005) defined andragogy as “The art and science of helping adults learn” (p. 293). The theory of andragogy posits that adults learn best when the learning is self-directed, relevant to the daily occupation and context of the adult learner, problem-centered and motivated by internal factors (Knowles, Holten & Swanson, 2005, pp. 294 - 295).

Before the work of Knowles, and inspired by the writing of John Dewey, John Lindeman wrote *The Meaning of Adult Education* in 1926 (Knowles, 1980, p. 29). Lindeman believed that adults need to learn according to their own needs - solving their own problems, that adult learners thrive in highly collaborative environments, and that this learning is best when it is voluntary (Peterson & Ray, 2013, p. 81). Knowles (1980) traced the development of adult learning theory from Lindeman’s seminal work, through the creation of the *Journal of Adult Education* in 1929, to the development of adult education faculties at American teacher’s colleges and universities, to the writings of Maslow in the 1960s and 1970s (Knowles, 1980). Knowles (1980) credited contributions from scholars in the disciplines of developmental psychology, sociology, philosophy, and adult education, especially the work of Canadian adult educator, J.R. Kidd, with the formation of the ongoing development of the theory of andragogy, or the study of how adults learn (pp. 43 – 46).

Kidd (1959) wrote, “Of all the factors pertaining to success in learning, the most critical are those of motivation – how a person deeply engages himself in the learning transaction. Subject matter, environmental factors, methods, and techniques are also important, but they must be seen in the light of the key word engagement” (p 131). Engagement, Kidd believed, was paramount to effective learning for adults. But how does one achieve engagement? According to Kidd, one achieves engagement by embedding learning into “man’s everyday preoccupations” (Kidd, 1959, p.138). For Kidd, unless the learning that adults engage with is concerned with something they care about deeply, something they actively engage with each day, “...it may neither take hold nor move forward” (Kidd, 1959, p. 138). Active engagement in the learning process by “doing” is a key feature of the current study. Other key features of andragogy embedded

in this study are self-direction, contextually relevant and problem-centered learning, volunteerism, and internally motivated inquiry.

The concept of “self-direction” as a critical driver of successful adult learning was discussed frequently in the research on adult learning in 1980s and 1990s (Garrison, 1997; Knowles, Holten & Swanson, 2005). In a 1997 paper on the topic of adult learning, Garrison (1997) stated that “Self-directed learning may well be the most prominent and well researched topic in the field of adult education” (p. 19). Garrison defined self-directed learning as “self-management” and “self-monitoring” of learning tasks (Garrison, 1997, p. 21). In Garrison’s model of self-directed learning, adults begin with the motivation or desire to engage with a learning task, take on the responsibility of managing that task, which, when managed appropriately, can lead to worthwhile educational outcomes (Garrison, 1997, p. 31). Brockett and Hiemstra (1991) have also written of the power of self-directed learning:

In our view, self-direction in learning refers to two distinct but related dimensions. The first of these dimensions is a process in which a learner assumes primary responsibility for planning, implementing and evaluating the learning process....The second dimension, which we refer to as *learner self-direction*, centers on a learner’s desire or preference for assuming responsibility for learning (Brockett & Hiemstra, 1991, p. 24).

As described above, self-directed learning occurs when the motivation to learn is coupled with the responsibility for the active engagement in learning activities. Self-direction is so central to adult learning that Brockett and Hiemstra later stated, “Self-direction holds virtually unlimited potential as a strategy for enhancing the success of adult learners” (1991, p. 204).

Given the centrality of self-direction to adult learning, it seems reasonable to suggest that the in-service model of teacher professional development is letting teachers down. Why is it that we ask teachers to develop professional learning in highly controlled, passive environments? Knowles (1980) acknowledged, “...a learner who is experienced with the subject matter and has strong learning skills will likely be frustrated in highly controlled learning situations” (Knowles, 2005, p. 186). Are teachers not highly experienced learners? It seems that current models of professional development may be doing these teachers a disservice.

There have been some critiques of andragogy. Sheared, Sissel, and Ebrary (2001), for example, have written that by positing a singular approach to learning, andragogy ignores the diversity of learning styles and needs among adult learners. Others such as Welton (1995) did not see a need to separate the study of adult learning from 'pedagogy' in general. I agree with Sheared, Sissel, and Ebrary that there cannot be a singular approach to teaching and learning that works best for all adult learners; however, I disagree that andragogy demands a singular approach for the adult learner. I have come to believe that adults learn best when that learning is self-directed and relevant to the context of the learner because when learning is self-directed, the learner is free to choose the learning approach that works best for them as individuals. Andragogy therefore does not subvert the needs of individuals. Instead, by definition it allows for individual differences in approach. I believe that this is a powerful and effective approach to adult learning.

The literature in adult education suggests that there are alternatives to the in-service model of professional development that have the potential to engage educators deeply with professional development. We should be looking to professional development models that are self-directed, experiential, highly motivating, problem centered, and contextually relevant for educators in British Columbia.

2.3. Inquiry-Based Learning

Educators in this study followed an inquiry-based approach to their learning. This approach, discussed in detail in the following chapter, is also the approach that their students were expected to use in their classrooms (BC Ministry of Education, 2012; BC Ministry of Education, 2013). Because inquiry-based learning is the method by which the participants in this study approached their investigations, a review of the literature of IBL was an important part of the development of this research project.

Inquiry-based learning can be defined in the following way:

Inquiry is an approach to learning whereby students find and use a variety of sources of information and ideas to increase their understanding of a problem, topic or issue of importance. It requires more than simply answering questions or getting a right answer. It espouses investigation, exploration, search, quest, research, pursuit and study. (Kuhlthau, Caspari & Maniotes, 2007, p. 2).

Inquiry as pedagogy has a long history that can be traced back to the work of John Dewey (Scott & Friesen, 2013). Notice the overlap between the above definition of inquiry based learning and Dewey's (1910) thoughts on curiosity and knowledge construction.

Curiosity rises above the organic and the social planes and becomes intellectual in the degree in which it is transformed into interest in problems provoked by the observation of things and the accumulation of material. When the question is not discharged by being asked of another, when the child continues to entertain it in his own mind and to be alert for whatever will help answer it, curiosity has become a positive intellectual force (p. 9).

Later, in the mid 20th century, active learning techniques gained popularity with constructivists, who believed "Students should construct knowledge for themselves" (Mayer, 2004, p. 14). In 1958 Schwab wrote *The Teaching of Science as Inquiry*, in which he argued that a classroom should function like a laboratory, a place for exploration, investigation, and experimentation. In Schwab's laboratory, "The manual which tells the student what to expect is replaced by more permissive and open materials. Problems are posed to which the student does not already know the right solution" (Schwab, 1958, p. 337). Schwab's (1958) inquiry asked students to set goals for their learning and to develop strategies to meet those goals. He called for teachers to set up situations in which, "...the student is to find and formulate a problem as well as plan procedures and carry them out" (Schwab, 1958, p. 337).

Friesen and Scott (2013) wrote that IBL was a mid-century reaction against the "factory model" approach to curriculum in which "The goal of schooling is to get these facts and procedures into the student's head" and the role of teachers is to "know these facts and procedures and their job is to transmit them to students" (p. 7). A variety of labels have been given to this style of learning, including but not limited to *discovery learning, problem-based learning, open classroom, student-centred learning, place-based learning, guided inquiry, and inquiry-based learning* (Clark, Kirschner, & Sweller, 2006; Friesen & Scott, 2013; Stone, 1996). Inquiry-based learning practices have been studied throughout the latter half of the 20th century and early 21st century, leading some educators to a "...shift away from teaching a discipline as body of knowledge toward the assumption that knowledge can be best or only be learned through experience" (Clark, Kirschner, & Sweller, 2006, p. 84).

Despite its growth in popularity, student learning based on experience, self-direction, and problem solving has had its share of detractors. Some have pointed to findings that demonstrate that inquiry-based learning has no empirical validity. Clark, Kirschner, and Sweller (2006), for example, argued that what we now know about human cognition makes it evident that inquiry-based learning places too high a demand on the working memory of young students. “The onus should surely be on those who support inquiry-based instruction to explain how such a procedure circumvents the well-known limits of working memory when dealing with novel information” (Clark, Kirschner, & Sweller, 2006, p. 77). Similarly, Stone (1996) and Mayer (2004) have argued that constructivism cannot be empirically tested, and that schools should favour pedagogy that can be demonstrably effective.

Despite these mounting concerns, schools have largely ignored the availability of a number of teaching methodologies that seem capable of producing the kind of achievement outcomes demanded by the public. They are experimentally validated, field tested, and known to produce significant improvements in learning. Instead, the schools have continued to employ a wide variety of untested and unproven practices, which are said to be “innovative” (Stone, 1996, p. 2).

Mayer lamented constructivism’s “complexity”, and argued that “...as no predictions can be derived from it, then it is not a scientific theory” (Mayer, 2004, p. 18). Mayer made the argument that educational theory should take from “...the sharp and productive world of theory-based psychology” in order to improve the “fuzzy and unproductive” educational reform efforts based in constructivism (Mayer, 2004, p. 18). This line of argumentation seems to be the basis of much of the criticism of IBL; as scientific research advances, the unverifiable constructivist approach to pedagogy is no longer appropriate for instruction.

Despite the criticism, IBL has become increasingly popular in schools around the world (Friesen & Scott, 2013). In Canada, inquiry-based learning has become a part of the curriculum design and pedagogy promoted by ministries of education in Ontario, Alberta, Manitoba, and British Columbia (BC Ministry of Education, 2013; BCTLA, 2011; Scott, 2013; Ontario Ministry of Education, 2011). The British Columbia Teacher’s Federation declared in 2011 that, “No longer can it be assumed that the teacher is the expert as students actively construct their own personal understandings of information. This kind of learning is best accomplished within a model of inquiry” (BC Teacher

Librarians' Association, 2011, p. 5). The same year in Ontario, the Ministry of Education concluded that, "...students are more likely to develop as engaged, self-directed learners in inquiry-based classrooms" (Ontario Ministry of Education, 2011, p. 1). Thus, based on the work of Dewey in the early 20th century, and Schwab in the mid-century, learning constructed through experience, self-direction, curiosity, and problem solving has become a part of the fabric of the educational landscape in early 21st century Canadian schools.

2.4. Professional Development

A search of books and journal articles in the Education Source Database with the keywords "professional development + teacher" returns a list of 23,301 sources. There is an abundance of literature on the subject of educator professional development. In this section I address the history and development of educator professional development, including key concepts and terminology, the conflicts and debates found in the current research, and how these items are discussed and enacted in schools in Canada and British Columbia. I have attempted to limit the scope of this review of available literature to issues that are contextually relevant to this study, that is educator professional development in North America, and the policies and procedures thereof in K-12 public education.

To begin, it is difficult to find a definition of educator professional development that can apply to all contexts. In the United States, the definition of professional development (pro-d) tends to change with shifts in educational policy and funding (Long, 2014). In this way, pro-d has tended to be defined by the goals of the most recent policy proposal, or "...tied to the immediate goals of educational reform and change" rather than, "...long term improvement or knowledge of practice" (Long, 2014, p. 37). In Canada, as there is no federal department of education, there is also no single Canadian definition of educator pro-d. In fact, while there are many commonalities found within the scope and shape of professional development in Canada, there are also many differences in design and implementation of professional development programs across the country (Campbell et al, 2016). The Teacher Regulation Branch of British Columbia (2012) has defined professional development in the following way:

Educators develop and refine personal philosophies of education, teaching and learning that are informed by theory and practice. Educators identify their professional needs and work to meet those needs individually and collaboratively (p. 3).

While the above definition of pro-d was the definition most familiar to the participants in this study, professional development in education has a long history of shifting definitions and purposes.

2.4.1. A History of Research on Educator Professional Development

The In-Service and Staff Development Eras

The development of formalized systems for the ongoing professional development of teachers beyond their experiences in preservice education is a relatively new phenomenon (Morant, 1981). Lambert (1989) traced the beginnings of ongoing professional development to the increasing interest in adult learning in the 1960s. “We realized then that teachers had not necessarily given the best years of their lives to preservice. There was hope for a lifetime of learning on the job” (Lambert, 1989, p. 78). This era, the first era of professional development, is known in the literature as the “in-service era” (Kragler, Martin, Sylvester, 2014; Lambert, 1989). In-service is characterized by the term “sit and get”, a term which implies that teachers are passive receivers of information (Bertanees, Parr, Timperley, 2009, p. 228). In-service activities are commonly associated with, “...one-shot inspirational speakers or an occasional conference in subject matter” (Lambert, 1989, p. 78).

Based on their research, Kragler, Martin and Sylvester (2014) concluded that “The impact of in-service workshops on teacher’s instruction was limited” (p. 486). Bertanees, Parr and Timperley (2009) wrote that the “...top down delivery approach involving the transmission of the wisdom of administrators” failed to have meaning for teachers (p. 228). Scholars have also noted that in-service workshops failed to produce instructional changes, and that many teachers considered them to be a “waste of time” (Kragler, Martin & Sylvester, 2014, p. 487). Lambert (1989) noted that as in-service failed to address the “cognitive complexity” of the adult learner, it was bound to give way to other systems that did (p. 78). This new system is known as staff development.

Staff development initiatives, which emerged in the 1970s as a reaction to the “top down” approach of in-service, were based in the idea that teachers should have a voice in deciding which professional development programs best suited their goals (Kragler, Martin & Sylvester, 2014; Lambert, 1989). As Lambert (1989) recounts:

So in-service gave way to staff development. As excellent teachers, we sought this challenge. We became experts in skills we could teach to our colleagues. We became the new breed of trainers, of staff developers...By the late '70s we were defining staff development as learning about a new skill and transferring that skill to the classroom (p. 78).

Despite her initial excitement, Lambert (1989) has admitted that staff developers “lacked an articulated knowledge base” and the era ultimately reflected “misconceptions about adult learning” (pp. 78-79). Teachers became “coaches” directly instructing others in skills, which is not the self-directed learning that represents best practices for adult learners (Lambert, 1989; Knowles, 1980).

In their 1996 review of the literature on staff development, Gusky and Peterson wrote that advocates for school reform believed that teachers would enthusiastically take up the challenge of leading professional development opportunities, but found instead that many teachers viewed the work as an imposition on their already busy schedules. (Gusky & Peterson, 1996, p. 12). Gusky and Peterson (1996) believed the lack of teacher initiative for leading staff development sessions forced many administrators to determine what programs would be offered without teacher input, thus reverting back to “top down” structures of in-service professional development. Lambert (1989) recalled, “If we could just tell the teachers more and longer, we believed, they’d finally learn the new skills. We didn’t question the ‘telling’” (p. 80). In the findings of some authors, “top down” delivery of staff development workshops often failed to lead to instructional changes (Kragler, Martin & Sylvester, 2014; Lambert, 1989). Bertanees, Parr and Timperley (2009) shared one teacher’s reflection, “Staff development is often mandatory in nature...a demeaning, mind-numbing experience” (p. 228). Eventually, the terms *in-service workshops* and *staff development* began to be used synonymously in the professional development literature.(Kragler, Martin & Sylvester, 2014, p. 490). While staff development was intended to give teachers a greater say in what and how they were expected to learn, it often failed to do so (Gusky & Peterson, 1996; Kragler, Martin & Sylvester, 2014; Lambert, 1989). By the late 1980s, the inability of staff development

to engage teachers and to produce instructional changes led to calls for new systems of educator professional development.

The Modern Era

Throughout the 1980s and 1990s a movement grew that encouraged professional learning that "...respected teachers as active learners" who wanted job embedded, contextually relevant and collaborative professional development (Bean & Dagen, 2014, pp. 58-59). This sounded much more like the type of learning that Knowles and his peers spoke of decades earlier. In 1987, Schön wrote *Educating the Reflective Practitioner*, and in it he argued for teachers to engage in reflective action: learning about their practice by reflecting on actions that they took in their own classrooms. In 1989, Lambert called for professional development practices that were cyclical, reflective and collaborative (p. 80). Lambert argued that teachers should have a choice in how they approached professional development, and that these choices could be derived from questions that they had about their own work (1989, p. 80). Around the same time, Cochran-Smith and Lytle (1993) began arguing against top-down professional development practices, taking the view that teachers are best positioned to construct knowledge that is relevant to their practices. Their seminal work, *Inside/Outside: Teacher Research and Knowledge* presented a powerful argument for teacher research via inquiry.

Teachers are among those who have the authority to know – that is, to construct 'capital K' knowledge about teacher, learning and schooling. And what is worth knowing about teaching includes what teachers, who are researchers in their own classrooms, can know through their own systematic Inquiry (Cochran-Smith & Lytle, 1993, p. 1).

Kragler, Martin, and Sylvester referred to this, the modern era, as the Professional Development Era (2014, p. 492). They wrote that adult learning theory, action research, social cognitive theory, and constructivist theory have all informed the modern era of professional development (Kragler, Martin, & Sylvester, 2014, p. 492). Desimone and Stuckey (2014) suggested that the key characteristics of this era in professional development could be identified as job embedded (relating directly to what teachers are doing in their classrooms), process oriented (ongoing over months or years), and collaborative at all levels of the education system (2014, pp. 58-59).

2.4.2. Research Versus Practice: Conflict in Educator Professional Development

Despite the progress of research in the field of educator professional development, not all teachers in North America engage in professional development that is in line with the tenets of andragogy (Campbell et al, 2016, Kragler, Martin, & Sylvester, 2014; Webster-Wright, 2009). A 2009 meta-analysis of eighty-one studies in educator professional learning reported that while the academic literature discussed issues such as reflection, collaboration and context:

The majority of this professional development literature...in this scan, both research and practice based, has a focus on programs and content rather than on learning experiences. (Webster-Wright, 2009, p. 712).

Similarly, Kragler, Martin and Sylvester's 2014 study of professional development practices in the United States found that the modern era might not be so modern:

Often, at this time, educational policy (federal, state and local) does not consider the individual differences of schools and the needs of the teachers and their students. In addition, the training model of staff development is what many of the mandated policies suggest (p. 499).

In North America, there seems to be a disconnection between research and practice when it comes to educator professional development. This can be seen in Campbell et al.'s 2016 review of Canadian professional development policy and practices. The authors identified many examples within Canada of effective professional development practices that were active, job embedded, and included ongoing learning practices informed by evidence and engaged leadership (Campbell et al., 2016). Nevertheless, they found that the most common forms of professional-development in Canadian schools are "teacher-led workshops" and undefined "collaborative professional development opportunities" (p. 9). Despite research promoting more modern practices, in-service workshop professional development remains popular in American and Canadian schools alike.

In British Columbia, the British Columbia Teacher's Federation (BCTF) promotes inquiry-based professional development for its members. In April of 2008, the BCTF released a memo entitled *Teacher Inquiry in the BCTF: A focus for supporting teachers' professional development*, which called for increased funding and initiatives to promote teacher inquiry within British Columbia (BCTF, 2008). The BC administrators'

association (BCPVPA) also promotes inquiry for professional learning. In their publication *Spirals of Inquiry* by Halbert and Kaser (2013), the BCPVPA details a cycle of inquiry for educators which asks the learner to begin with a question (or focus), gather information, take action and reflect (pp. 1 - 6). Clearly, the professional associations for educators in British Columbia support inquiry-based professional development. Campbell et al., (2016) found that between 2011 and 2016, "...school districts embarked upon a total of 30 inquiry-based projects seeking to enhance...improved teacher practices within areas such as differentiation, inquiry-based learning, place-conscious learning, assessment and the renewed British Columbia curriculum" (p. 8). In 2016, there were over 41,000 teachers in British Columbia (BCTF, 2016). Compared to this number, 30 inquiry-based professional development opportunities seem inadequate. Research on educator professional development in the modern era has rejected "top down" models of professional development in favour of models that promote engaging teachers in active, problem based and contextually appropriate means of constructing professional knowledge (Campbell et al., 2016; Cochran-Smith and Lytle, 1993; Desimone and Stuckey, 2014; Jacobs & Yendol-Hoppey, 2014; Kragler, Martin & Sylvester, 2014; Lambert, 1989). Such practices would align with the concept of andragogy, which posits that adults learn best when that learning is active and self-directed (Brockett & Hiemstra, 1991; Garrison, 1997; Knowles, Holten & Swanson, 2005). However, in practice, the "top down" models, similar to those found in the in-service and staff development eras, are, according to literature on the topic still widely practiced in North American schools and school districts (Campbell et al, 2016, Kragler, Martin, & Sylvester, 2014; Webster-Wright, 2009). The current literature on adult learning, inquiry and professional development demonstrate a need for further investigation into the effectiveness of self-directed and inquiry-based professional development.

In the present study, using a variety of qualitative methods and a participatory, action-research approach (Kemmis, McTaggart & Nixon, 2014), I sought to understand how a group of educators, myself included, experienced and perceived an independent, inquiry-based approach for generating new learning about their practice. The specific research questions, included:

1. How did participants experience and perceive the process of engaging in an inquiry-based approach to professional learning?

-
2. How did participants describe the similarities and differences between an inquiry-based professional development process and the more traditional in-service workshop model of professional development?

Chapter 3. Methodology

3.1. Participatory Action Research

Given the focus of this study on determining participants' experiences and perceptions of conducting inquiry, qualitative methods were used. Qualitative methods are appropriate when one's goal is to produce descriptive data about people's words and their observable behaviours (Freebody, 2011) and when one's focus is on understanding the process and meaning of an event (Sharan, 2011). This study employed a participatory, action-research based methodology (Kemmis, McTaggart & Nixon, 2014). Kidd and Kral (2005) defined participatory action research in these terms: "Put colloquially, you get people affected by a problem together, figure out what is going on as a group, and then do something about it" (p. 187). In this study, the participants and I were each affected by in-service workshop professional development practices that we felt had neglected to help us to meet our professional goals and failed to prepare us to teach in inquiry-based classrooms. We engaged in this research in order to investigate an alternative approach to in-service professional development practices.

Participatory action research (PAR) is an umbrella term that covers a wide variety of action research approaches in which the researcher and participants work collaboratively to explore a problematic situation (Kindon, Pain & Kesby, 2007). Wells (2012) stated that action research is a cyclic or spiral process that alternates between action and critical reflection which, as a research methodology, teachers can use as a means of constructing and elaborating on their professional knowledge.

Participatory action research was the best methodological approach to answer the questions of this study because the participants and I wanted to work collaboratively to conduct research into practices that were relevant to, and embedded within, our daily work. This form of research has emerged as an important methodology in educational settings due to the perceived disconnect between the published research of academia and the day-to-day work of teachers (Bransford, Brown & Cocking, 1999; Cochran-Smith & Lytle, 1993; Mills; 2014; Nolen & Putten, 2007). Following a review of two decades of research on schools and teaching, Mills (2014) found that the disconnect between academia and the work of teachers stemmed from the perception that, "Either the

problems being investigated by researchers are not the problems teachers really have, or the school or classrooms in which the research was conducted are vastly different from their own school environments” (2014, p. 15). With a PAR methodology, research and practice are intrinsically linked (Kemmis, McTaggart & Nixon, 2014). A participatory action research approach provided the opportunity for the participants in this study to evaluate the professional development practices “...that beset them in their day-to-day lives” (Fisher & Sax, 2001, p. 71).

PAR also gives educators the opportunity to develop a better understanding of the issues that affect classrooms and schools based on knowledge that they construct for themselves (Kindon, Pain & Kesby, 2007). Kemmis, McTaggart and Nixon (2014) argued that participatory action research is “at its best” when it involves the investigation of actual practices, “...not practices in the abstract. It involves learning about the real, material, concrete particular practices of particular people in particular places” (p. 19). This study enabled educators working in their school to construct knowledge for the purpose of addressing issues directly related to their professional development. Through a participatory action research based methodology that incorporated analysis of participants’ journals and structured interviews, we attempted to answer the central question of whether or not the participants perceived teacher inquiry to be a useful method for developing professional knowledge.

3.2. Procedures

3.2.1. Obtaining Ethics Approval

The university’s Office of Ethics Research provided consent to carry out this study on January 7th of 2016. Consent to conduct this study was also sought and provided by the school district’s Director of Instruction, the principal of Mountain View Elementary (pseudonym) and from the educators who participated in this study (see Appendix A)

3.2.2. Teacher Release Time

This study enabled the teacher participants to be released from their classrooms for a maximum of six hours. The Metro West school district provides release time to

educators within the district who are interested in conducting collaborative research. This funding for classroom release time is referred to as an Innovation Grant within the school district (citation withheld to protect the anonymity of the participants). Obtaining such funding is an informal process whereby an educator or team of educators request classroom release time in the form of an Innovation Grant from the Director of Instruction of the West Metro School District. Prior to the investigation period, I personally requested release time for the participants to conduct this study, which was approved with the understanding that I would share the findings with the school district.

3.2.3. Recruiting the Participants

I used purposeful sampling to identify participants for this study. Patton (2001) reports that purposeful sampling is suitable "...when one is studying people, programs, organizations, or communities where the population of interest can be fairly readily determined" (p. 238). The population of interest in this study could be readily determined because the intention of this study was to determine the perceptions of elementary level public school educators in British Columbia of the effectiveness of inquiry-based professional development. Thus, the type of participant required for this study was easy to identify: British Columbian elementary level public educators.

The criteria I developed for identifying participants for this study are described below. First, participants needed to be teachers working in the British Columbia K-12 public education system. The Metro West Innovation Grant used to fund this study required the funding be directed toward teachers within the Metro West school district (pseudonym), with the understanding that teams should work closely together to investigate a topics of joint interest (citation withheld to protect the anonymity of the participants). Second, I sought teachers and administrators of any age or level of experience, as long as they had participated in a form of in-service workshop professional development in the past. Third, given that I received school district money to support the research, participants had to be employed in the West Metro School District. Fourth, it was important that participants had some familiarity with the Mountain View Cycle of Inquiry, as this was the specific approach to inquiry that this study utilized. Fifth, I wanted teachers to be able to easily communicate and collaborate, if they chose, throughout the research and investigation period. For this, they needed to work in close proximity to one another. Last, it was my intention to work 'in the field' as both

researcher and participant. Because of this, I needed to be close to the participants and their work. These criteria led me to recruit teachers at Mountain View Elementary School in the West Metro school district, where I worked as a vice principal and classroom teacher.

Participant educators were recruited from volunteers at Mountain View Elementary School via an email sent to the school district email addresses of all teaching and administrative staff at Mountain View Elementary School. The email informed the staff that I was conducting a study that investigated how educators perceived an inquiry-based approach to professional development (see Appendix B) District email addresses for teachers and administrators were publicly available on the school's website. At the time of data collection, Mountain View Elementary had nineteen teachers on staff and two full-time administrators, the principal and vice principal. All educators on staff met the criteria established above. Four of the individuals who received the email invitation to participate in the study responded that that they were interested in learning more. This included the school principal and three teachers on staff.

3.2.4. Initial Meeting

In January of 2016, I held an information meeting with the three teachers and the school principal who had responded to the initial recruitment email. In this meeting I read through all the documentation related to the study, including the Participant Inquiry Journal and the Mountain View Cycle of Inquiry. I also read through the Participant Consent Form, which invited the educators to participate in a research study examining an inquiry-based approach to professional development that would actively engage them in research by conducting a cycle of inquiry (see Appendix C) At the end of the meeting, all those present committed to investigating inquiry-based professional development by planning an inquiry cycle, actively engaging in the cycle, and by keeping a record of their observations and reflections of their experiences during the process. Participants also committed to summative reflection in the form of a follow-up interview. Details of these commitments are found below.

3.2.5. Participants

Including myself, five participants initially agreed to participate in the study. Of the group, two were enrolling teachers, one was the school's teacher-librarian, one was the school's principal, and I was the school vice principal and one of two Grade 6 teachers. I describe each participant further below.

At the time of this study, the school's principal, Beth, had more than thirty years of experience as a public-school educator and more than fifteen years of experience as a principal. She had been working as principal of Mountain View Elementary School for three years. Beth had a bachelor's and master's degree in education. In addition to being a principal, she had been a primary classroom teacher, learning support teacher and vice principal. Rachel was a full-time grade 6 teacher at Mountain View. She had spent the entirety of her ten-year career at Mountain View, always teaching at the intermediate level. She had a bachelor's degree in education. Christine had less than five years of experience as a teacher. She was a part-time teacher within the West Metro school district. Christine taught kindergarten one day a week at Mountain View Elementary. She also taught Grade 1 in another school within the district, two days per week. Christine had a bachelor's and a master's degree in education. Kim was the full-time teacher-librarian at Mountain View Elementary school. She had 15 years of experience as a teacher librarian in both the West Metro school district and at a school in Ontario. Kim had a bachelor's degree in education. I had worked as a teacher for ten years. In those ten years, I had been a Grade 4/5 teacher, a secondary English teacher, and a learning support teacher. At the time of this study, I was the vice principal and one of two Grade 6 teachers at Mountain View Elementary. I had a bachelor's degree in education and a post-baccalaureate diploma in special education.

Beth withdrew from the study before beginning her inquiry cycle due to personal issues that limited her availability. This left the study with four participants: Christine, Kim, Rachel and myself.

3.3. The Mountain View Cycle of Inquiry

The participants conducted their research into inquiry-based professional development using a cycle of inquiry referred to as the Mountain View Cycle of Inquiry.

There are a variety of inquiry cycle models available, but in order to honour the work of the educators at Mountain View Elementary School, and to best reflect the style of inquiry that was implemented in Mountain View classrooms, I felt it most appropriate for participants in this study to work with the cycle of inquiry that was developed collectively by the staff at Mountain View Elementary School. In a series of staff meetings that took place throughout the 2013/2014 school year, the staff at Mountain View created a document titled “Mountain View Cycle of Inquiry”. There are seven stages in the Mountain View Cycle of Inquiry:

Stage One: What are we going to learn? *What is your Big Question?*

Stage Two: Where are we going?

Stage Three: Where are we now?

Stage Four: Where is the information?

Stage Five: What are the Patterns?

Stage Six: What does this mean to me?

Stage Seven: What action(s) could I take?

At stage one, participants were asked to develop a “big question” to focus their inquiry. At stage two, participants were asked how they intended to demonstrate their learning. At stage three, participants were asked to reflect on what they already knew about the topics they had chosen to investigate. At stage four, participants were asked to conduct research into their topic. At stage five, participants were asked to sort the pertinent information garnered from their research. At stage six, participants were asked to reflect on their learning. At stage seven, participants were asked to take or plan action based on what they had learned. This was the cycle of inquiry which Mountain View staff and students were most familiar with, and the one that was most likely to be used in Mountain View classrooms. As such, it was an appropriate choice for the inquiry conducted by Mountain View teachers. The document “Mountain View Cycle of Inquiry” is considered public material, and is considered to be in the public domain. It is available and accessible to the public via the Mountain View Elementary School website. Copyright, trademark or patent laws do not protect this document. This material belongs to no person, and no person claims authorship. It is intended for public use.

From the end of January to the beginning of May 2016, participants engaged in a cycle of inquiry with the intention of facilitating their professional development. Participants were asked to begin their inquiry-based professional development by thinking of an inquiry question, a “big question”, meant to focus their inquiry cycles. This was the first stage of the Mountain View Cycle of Inquiry model. “Big questions” were not prescribed, rather participants chose the focus for their inquiry based on an aspect of their work in education they felt was important for them to understand more deeply or develop further. Following the development of their own “big questions”, participants were asked to follow the process outlined in the Mountain View Cycle of Inquiry.

The funding made available through the Innovation Grant allowed participants to be released from their teaching assignments for up to six hours to work on their inquiries. The innovation grant required that teacher release time be taken in one full day or in two half days throughout the research and investigation period. Within these requirements, the educators selected the dates and times they wished to be released from their teaching duties. Participants were also free to engage in their cycle of inquiry at any time of their choosing outside of the classroom release time.

While this cycle of inquiry provided a structure for the participant’s research, there was also some flexibility. Though the participants were asked to work within the provided structure, the participants themselves determined the actions that they took at each stage of the cycle. This independent investigation into their selected topics might have included attending conferences, reading books, journals or websites, watching films, speaking with or observing other educators, or experimenting in their classrooms, with their students, for example.

It is important here to clearly define some terms. *Action research* was the methodology used to conduct this study. *Inquiry* was the style of professional development being studied. While the terms *action research* and *inquiry* have been sometimes used interchangeably in educational research (Efron & Ravid, 2013), I have maintained this clear distinction between how these terms are applied throughout this study.

3.4. Data Sources

The data for this study included the journals kept by each of the participants, referred to as the Participant Inquiry Journal, as well as transcripts of the follow up reflective interviews. Each is described in detail below. I collected four participant inquiry journals and conducted three interviews. While I did keep an inquiry journal, I did not interview myself.

3.4.1. Participant Inquiry Journals

Participants were asked to keep a record of their inquiry investigations on a document I provided to them. This document was referred to as the Participant Inquiry Journal (see Appendix D) The purpose of the document was for participants to keep a record of their actions at each stage in their inquiry cycles. Keeping a record of ongoing observations and reflections is a key component of the action research cycle (Harvey, 2013). This journal enabled the participants, including myself, to keep an ongoing record of their research, their learning, their observations and any changes or possible future changes to their practice. It also provided space to allow the participants to reflect on the inquiry process and its potential as a professional development model. Keeping a journal allowed the participant researchers to “steer the process” of their learning as a journal “...directs your evidence gathering, and your learning” (Kemmis, McTaggart & Nixon, 2014, p. 175). Kemmis, McTaggart and Nixon (2014) wrote that keeping a journal is an essential aspect of any participatory action research project as it acts as a type of evidence, a “window” into the experiences of the participant researcher (p. 177). A journal also aids researchers’ “reflective practice”, which is a key element of any action research project (Schratz & Schwarz 2012, p. 86). Collecting evidence of the participants’ reflections at each stage of the inquiry cycles was an important component of my data gathering.

This document was very simple and included just one blank page for each of the seven stages of the Mountain View Cycle of Inquiry with a header that indicated the name and number of the stage, and a section allocated at the bottom of each page/stage for reflection. Participants were welcome to include additional pages, documents or artifacts of their choosing in the journaling process. I collected Participant Inquiry Journals from Christine, Rachel, and Kim, as well as my own journal. Christine,

Rachel and Kim each independently decided to keep a digital version of the journal, which they emailed to me following their cycles of inquiry. I used the paper copy. I did not collect a journal from Beth, as she withdrew from the study before beginning her inquiry cycle. Each participant used the journal to comment on the actions they took at each stage of the Mountain View Cycle of Inquiry. Participants also included reflections on their learning, actions or observations at each stage and, at times, the next steps they would be taking based on these reflections. No participant chose to include any items beyond notes and reflections at each stage of their inquiry cycles. The journals provided me with a source of data regarding the participants' experiences and perceptions the process of engaging in an inquiry-based approach to professional development.

3.4.2. Final Interview

After the participants completed their cycles of inquiry, we met one-on-one for a follow up interview so that participants could reflect further on their experiences. The interview was the last opportunity for participants to share their reflections, as it marked the conclusion of the data-gathering phase of this study. I chose to conduct structured interviews, which are defined by Merriam (2009) as interviews in which "questions and the order in which they are asked are determined ahead of time" (p. 90). Participants were made aware of the interview questions at the initial meeting that took place in February of 2016. Interview questions were also available to participants in their copies of the Participant Consent Form. The interviews provided insight into the participants' perception of inquiry as an effective or ineffective method of professional development. They also provided an opportunity for the participants to voice comparisons between the inquiry-based approach to professional development and the more traditional workshop in-service methods of educator professional development they were used to.

Interviews were scheduled with each participant after roughly three months of research, in May of 2016, upon completion of one cycle of inquiry. Completion of the cycle of inquiry for the purposes of this study was identified by the completion of six hours of classroom release time, and/or completion of the written portion of stage seven (page 9) of the "Participant Inquiry Journal," titled "What action(s) could I take?" Interview questions included:

1. Describe your process of engaging in a cycle of inquiry.

2. What was your topic or “big question” and what were your reasons for selecting it?
3. What was the experience like for you?
4. Was there anything about the process that surprised you?
5. If you gained any insight or new learning, can you describe it and how you may or may not choose to act on it?
6. Was engaging in a cycle of inquiry an effective means for you to engage in learning ways to improve your practice? If so, why? If not, why not?
7. From your past experiences, how would you describe your feelings about educator professional development?
8. Describe what you see as the similarities and differences between an inquiry-based model for developing new learning about your professional practice and the in-service model of professional development.
9. How do you feel about the role that inquiry may or may not play as a method for educator professional development?

The interviews took place one-on-one with each participant and myself at Mountain View in May of 2016. I recorded the interviews on my laptop, and later transcribed the interviews into a Word document.

3.5. Context

To provide some sense of the contexts within which the educators in the study were working I have included some basic demographic information on both the district and the school below.

3.5.1. The School District

West Metro School District (a pseudonym) is located on the west coast of British Columbia. The most recent demographic data available on this region comes from the Statistics Canada Census Profile of 2011. During this period, it was a growing district, with a total population of 42,694 inhabitants (Statistics Canada, 2011). Of those inhabitants, roughly 18% were between the ages of five and nineteen, or school aged (Statistics Canada, 2011). The most recent data indicate that this was a largely English-

speaking population, as 66% English speakers make up the majority of language users. Other large language groups included Persian, Mandarin and Chinese, not otherwise specified (Statistics Canada, 2011).

While the classrooms were rich in cultural diversity, there was considerable homogeneity in the income and education levels of the residents of West Metro. The most recent Statistics Canada data suggests that nearly 80% of adults over 25 had completed some form of post-secondary education, compared with 59.6% of respondents at the national level (Statistics Canada, 2011). West Metro residents were also near the top of the list in employment and total household income, with the most common occupations falling in the areas of business, finance, and senior management (Statistics Canada, 2011). These families, for the most part, would be considered to have a high socio-economic status when compared with the average Canadian.

3.5.2. The School

The school in which this study took place is referred to here as Mountain View Elementary School, or simply Mountain View. One metric by which we might get to know an elementary school in British Columbia is the Foundational Skills Assessment, or FSA. The FSA is an annual assessment of all British Columbian 4th and 7th grade students in the areas of reading comprehension, writing and numeracy (B.C. Ministry of Education, 2015a). For the 2014/2015 school year, Mountain View students in grades 4 and 7 outperformed the provincial average in every category. The B.C. Ministry of Education (2015a) states that in B.C., the total percentage of students who rated “Meeting” or “Exceeding” the standards for reading was 67% (p. 1) for grade four and 63% (p. 5) for grade seven students. The same year, Mountain View students scored 83% in grade four and 96% in grade 7 for students “Meeting” or “Exceeding” in reading (B.C. Ministry of Education, 2015b, pp. 1-5). Similar differences in scores were found in the writing and numeracy results, with Mountain View students having outperformed the provincial average by 15 – 20% in these subject areas (B.C. Ministry of Education, 2015b).

The BC Ministry of Education also administers satisfaction surveys annually in order to gather opinions from students, parents and school staff on school achievement, human and social development, and safety (B.C. Ministry of Education, 2015c). In the eyes of the teaching staff, according to the latest responses from 2013/2014, Mountain

View was a safe place to work and learn with 100% positive responses (B.C. Ministry of Education, 2015c, p. 26). Pertinent to this study, every staff member who responded to the satisfaction survey in 2013/2014 felt that Mountain View was a school that supports ongoing improvement to instruction (B.C. Ministry of Education, 2015c, p. 27). Teachers also unanimously reported Mountain View to have a 'welcoming' and 'positive' climate (B.C. Ministry of Education, 2015c, p. 27). Teachers at Mountain View were generally satisfied. However, important to this study on inquiry and professional development, there was one area where teachers did not respond entirely positively. While 100% of teachers reported that professional development is ongoing, only 62% of teachers reported that they "...have opportunities for input in school decision-making" (B.C. Ministry of Education, 2015c, p. 28). Teachers, despite being happy with the quality of instruction, had at times felt left out of the decision-making process at Mountain View Elementary.

According to two BC Ministry of Education sponsored studies, the Foundational Skills Assessment and the school satisfaction survey, Mountain View was a school with high academic achievement and high teacher satisfaction. However, there was room for growth in terms of teacher input in impacting school change.

3.6. Analysis

Thematic analysis was the method of data analysis that I employed for this study. Thematic analysis was the best method of data analysis for this study because it is suited for the type of social/behavioural qualitative research that attempts to answer the question, "What do X people think about Y?" (Guest et al., 2102, p. 7). Because this study attempted to answer the question of what teachers thought about inquiry as a form of professional development, I used thematic analysis to analyze the interview transcripts and the participants' inquiry journals in order to get a sense of their perceptions of the effectiveness of this form of professional development.

The first step in the process of thematic analysis I employed was to immerse myself in the data (Green et. al., 2007; Guest, et. al., 2012; Rigur & Sigurvinsdotter, 2015). This immersion in the data included listening multiple times to the participant interviews, transcribing them into Microsoft Word documents, and re-reading them at least five times over the period of four weeks. Concurrently, I read through each of the

Participant Inquiry Journals, at least five times apiece, familiarizing myself with the intricacies of the participants' observations and reflections. I began this process in May of 2016. During this process, I was not searching to confirm a hypothesis, but instead I was searching within the data for keywords, trends or themes from which a theory may be developed (Guest, et. al, 2012; Rigur & Sigurvinsdottir, 2015). While immersed in the data, I attempted to determine if sentences or sentence fragments contained ideas that were relevant to this study. These ideas, when given a name or label, are referred to as codes (Guest et. al., 2012). Stated simply, codes are, "descriptive labels that are applied to segments of the transcript" (Green et. al., 2007, p. 6). While reading printed hard copies of the collected data, I attempted to identify key words or phrases that represented an idea or thought expressed by the participant. I gave these ideas labels, and these labels became my codes. At first this was a mental exercise. Near the end of the immersion stage, I began writing down these codes in a separate notebook as I read. By the time I had finished this process I had 16 codes. These codes are listed below. At this time I had been immersed in the data for roughly four weeks.

I then began to physically code the data by hand in a notebook. I began with Rachel's interview. As I read through the interview transcript, I wrote down sentences or sentence fragments that represented the thoughts and ideas expressed by Rachel that were relevant to the central questions of this study. I began to connect these sentences to codes. Each time I came across a sentence, or fragment of a sentence, that represented an idea I felt significant to the central questions of this study, I wrote the sentence in my notebook and wrote the relevant code next to it. I did this one sentence, one idea at a time, for each of data sets: the three participant interviews and four inquiry journals, including my own. This process took roughly five weeks in June and July of 2016. Some codes, though relevant, appeared only once in the collected data. Many codes were present multiple times throughout each participant's interview transcript and journal, and across the data of multiple participants. Some sentences contained multiples ideas, and would therefore appear several times thought the notebook, associated with different codes.

Despite having read each interview transcript and participant journal many times, it was still a challenging process to assign a code to each sentence, or in some cases portions of sentences, to mark them as representative of an idea. I had to trust in my familiarity with the data, my knowledge of the participants, and my personal experience

with the process to feel confident that each sentence represented the code that I assigned it to.

Guest et al. (2012) recommend that once the data have been coded, the researchers should then begin a count of code frequency, as the frequency of codes may reveal their “intensity” in the data (p. 174). The relative intensity of the codes helped to give me a sense of the themes that were most prevalent in the data, and thus significant to the experiences of the participants. Following the long coding process, I tallied the appearance of codes across the available data. Codes that appeared most frequently in the interview transcripts as well as the Participant Inquiry Journals included: Professional Development, Collaboration, Inquiry, In-service, Self Direction, Engagement, Solving Problems, Student Success, Community Development, My Practice, and Time. Several other codes, such as Reflection, Next Steps, Accountability, Readiness, and Administrative Support were also represented in the data, though with less frequency.

From these codes, broad categories of data and common themes became apparent. Connecting codes into categories and ultimately themes is the final stage of thematic analysis (Guest et. al., 2012). These themes are the primary form of evidence to support an author's interpretation of the data (Guest et. al., 2012). These themes and their relationships provided the basis of the findings of this study, which are discussed in detail in the following chapter.

Chapter 4. Findings

In this chapter, I provide a description and analysis of the participants' experiences and views of the inquiry-based professional development process. Each participant approached the inquiry cycle in unique ways. By focusing on the stories of inquiry of Rachel, Kim and Christine, and finally my own, I will share not only what we, as inquirers, had in common; how we were inspired by our inquiry questions to go above and beyond the project requirements to engage deeply with learning, but also how we collectively and individually felt this approach to professional development could be improved upon. I use an organizing metaphor provided by Christine who stated in her interview that,

I think my experiences with professional development that's not inquiry based, sometimes it feels more like someone is, maybe, planting seeds and hoping that they'll grow along the way, and whereas in the inquiry-based model sometimes we plant the seeds and then we have a chance to actually water them and help them to grow.

In the opening section for each participant, "Planting the Seed", I discuss what inspired them to participate in this inquiry-based professional learning project. Next, in "Watering the Plant" the participants' views of the process of inquiry they used are presented. Then, in "The Fruits of Our Labour", the direct and indirect outcomes of the inquiry cycles and the participants' experiences of the process are described. In "Famine, Flood, and Pestilence," the aspects of the process that participants found challenging, difficult or frustrating are presented. In the final section, the participants' views of the similarities and differences between inquiry-based professional development and the workshop-based in-service they were most familiar with prior to this research are presented collectively.

At times, in their interviews and Participant Inquiry Journals, the participants referred to the single day workshop style of in-service professional development simply as "in-service", which is, in my experience, common nomenclature among teachers in British Columbia.

4.1. Rachel's Story

4.1.1. Planting the Seed

Self-Direction

Rachel was an intermediate level teacher whose “big question” (the first stage in the Mountain View Cycle of Inquiry), was “How can I increase metacognition amongst my students?” Rachel chose this topic because, “...it’s an area that I’m very interested in but still figuring out what exactly that [metacognition] means.” Rachel chose to participate in this project because, “...it gives me some freedom of what I can focus on, and I like having that self-directed motivation.” Rachel finds motivation to learn when she is able select the topic for learning herself.

Rachel defined “metacognition” as “thinking about thinking.” The direct teaching of thinking skills was obviously important to Rachel, as she was willing to seek out opportunities that provided her with the time to develop her understanding of metacognition further. In her interview, Rachel reflected on inquiry-based professional development noting that she appreciated that she could “...take something and go in a direction that suits my style of teaching, that suits my interest, and find people that I want to work with that I feel that I work well with...”

For Rachel, her personal interests and her professional “style” directed the focus of her inquiry cycle. The self-directed nature of inquiry-based learning suited her needs as it provided freedom to engage with topics she considered important for her classroom.

Problem-Based Learning

For Rachel, the challenge of finding ways for her students to become increasingly aware of their own thinking or, in her words “metacognitive” was pedagogical in nature. She wanted to teach her students to understand their own thinking. From her interview:

Ok, so, my topic was “How can I increase metacognition amongst my students?” The reason for choosing it was because it’s an area that I’m very interested in but still figuring out what exactly that means. Also, it was something that I wanted to focus on because I’ve always been keen on having more time to devote to looking for specific measuring

points, so ways of recognizing whether or not the students are actually becoming more metacognitive.

It is clear in her Participant Inquiry Journal that Rachel put a lot of effort in to finding solutions to this problem of how to increase metacognition in her students. Rachel read books, including “How to Succeed with Thinking” by Kath Murdoch (2006), and attended a conference to learn more about, in her words, “helping students to understand and reflect on their thinking.” Rachel did find some answers; she shared in her interview that participating in the project reported here helped her gain insight into being more “direct” when teaching thinking strategies. Rachel’s knowledge and understanding of teaching thinking strategies had developed, but her curiosity was not yet satisfied. Rachel mentioned in her interview that she wanted to continue this line of investigation further, as she found inquiry to be, in her words, “a great model for focusing a query.” For Rachel, when your goal is to answer a question, inquiry-based learning is a model that supports this process. Seeking answers to her questions and finding solutions to her problems, were engaging parts of the process for Rachel.

4.1.2. Watering the Plant

Collaboration

Rachel’s project on metacognition is a good example of the power of collaborative learning. While Rachel did not have a formal “partner” in her inquiry project, she did not conduct her research in isolation. As part of her process of moving through the cycle of inquiry, Rachel attended the NOII (Networks of Inquiry and Innovation) Symposium. She believed the conference would enable her to deepen her understanding of inquiry, and the thinking strategies required to be a reflective learner. It was an opportunity for Rachel to share her ideas and learn from others, in order to develop a deeper understanding of metacognition.

As she noted in her journal, Rachel looked forward to sharing her ideas on metacognition with colleagues. “I would like to present my findings to colleagues for feedback...I like the idea of sharing with other teachers.” In her interview, Rachel noted that working with others who share her interests is what she likes most about inquiry-based learning, as it allows her to, “...find people that I want to work with that I feel that I work well with, as opposed to in-service being something that is being taught to me.”

The opportunities for shared learning and gathering feedback from colleagues were, for Rachel, strengths of the inquiry process as a form of professional development.

Process Over Outcomes

Rachel recognized that the inquiry process could be both frustrating and fulfilling at the same time. When asked to describe whether she felt that this inquiry project enabled her to improve her practice, she responded, “I have felt frustrated in the past because there isn’t a clear outcome, or a clear...there’s not always a clear product in inquiry.” However, it is also evident that Rachel valued the process as well as the outcomes of learning. When asked to describe her experience in general, she recognized that she was on a journey to understand metacognition, “I feel like it’s very much continuation of something I’ve started with in the past and will continue with in the future so...um...that’s the process for me.”

Rachel recognized that focusing on the process of learning, as well as outcomes, was not only important to her as a teacher, but an important message for her to convey to her students. In her journal, Rachel wrote that she was troubled that “Students are concerned with marks...as opposed to intrinsic motivation for authentic improvements.” For Rachel, grades represented outcomes that, for her, are not nearly as important for students as the process of developing a better understanding of themselves as learners. Despite feeling frustrated at times with inquiry, Rachel acknowledged that both she and her students would benefit by focusing on both the outcomes of learning, as well as the sometimes lengthy, sometimes challenging process of learning.

Reflection

In her interview and journal, Rachel mentioned reflection more than once as a sort of curative balm for the frustration she sometimes felt when engaging with inquiry. For instance, in response to the question asking whether inquiry can be effective for learning new ways to improve one’s practice, she stated that she viewed reflection as necessary for her deep engagement with the inquiry cycle. “There’s not always a clear product in inquiry. It is more of the process, and so when I can be really reflective on what I’m gaining in that process, then I really understand the richness of the cycle.” She seemed here to acknowledge the idea that, although she was continually learning throughout the inquiry process, she had to occasionally pause and reflect to fully

understand just how “rich” a learning experience a cycle of inquiry could provide. This was not the only time Rachel mentioned this idea of needing to be reflective for inquiry to feel like a successful enterprise. “I feel like there has to be an understanding of where I’m going and what I want to get out of it and a real sense of reflection in order to feel like I’m making progress with inquiry.” Reflection helped Rachel to get a sense of direction, an understanding of “where I’m going” with her inquiry and, at the same time, helped her to feel successful in the process.

For these reasons, Rachel hoped to see the same level of reflection in her students. Rachel viewed metacognition as a reflective process. One of the goals of her inquiry was to understand how to help students become more reflective, empowered learners. She wrote in her journal that along with “...the ability to know what they are doing and why they are doing it, I’d like them to be able to identify what is helping/hindering their progress.” Throughout her journal, Rachel described techniques that she wanted to try in the classroom to help her students engage in this type of reflection. This was her challenge to herself. The last words of her journal highlight this drive, “Besides writing”, she asked herself, “how do I know the students have reflected?” Rachel believed that a reflective learner is a more successful learner.

4.1.3. The Fruits of Our Labour

Community Building “Creating Ripples”

As part of her inquiry, Rachel decided to bring her learning outside of the walls of Mountain View School. In Rachel’s Participant Inquiry Journal, she wrote about her volunteer experience with the Choice Society (pseudonym). Rachel described the Choice Society as:

A counseling-based organization that helps people of all ages make changes in their life by adopting a thought process that helps them to develop emotional metacognition (awareness) of one’s life experience and the root of the presenting problems.

At the Choice Society, Rachel volunteered with people who needed help developing their metacognitive abilities. She had learned and read enough about metacognition to feel confident saying that, “Metacognition empowers me to be aware of my experience in life and to recognize how that experience is being shaped by my own

actions.” Learning about metacognition helped Rachel to see herself as a more reflective person, and because of this, she felt able to help others by volunteering to work closely with the clientele of the Choice Society. Here she helped people to develop thinking strategies with the goal of making better life choices. Developing these thinking strategies, the metacognitive understanding of “what is working and what is not in our lives” and to improve as a result, were not the initial goals of Rachel’s cycle of inquiry; however, her big question, “How can I increase metacognition amongst my students” and subsequent investigation of the topic helped Rachel to bring her learning beyond the walls of the school to help those in need in her community.

New Pedagogies

Rachel found that the engagement with a cycle of inquiry benefitted her pedagogy in several ways. She reported feeling more comfortable with facilitating inquiry-based learning in her classroom, and that her investigations into metacognition had positive effects on her teaching in ways she believed greatly benefitted her students’ learning.

Rachel explained in her interview that engaging with inquiry was not necessarily instinctive for her, and therefore was not a style of pedagogy she was previously entirely comfortable employing in the classroom.

So I’ve struggled over the past couple of years to understand or balance my own cycle of inquiry and how I move through the cycle of inquiry and how I want my students to....I feel like there has to be an understanding of where I’m going and what I want to get out of it and a real sense of reflection in order to feel like I’m making progress with inquiry. And if my students aren’t able to do that, I can feel...I project onto them like it’s a very frustrating process.

It seems here that Rachel wanted to convey a sense of frustration with the inquiry process, while still recognizing that it can be valuable. In her interview, Rachel stated that, “...inquiry is a really great way of engaging and deepening my practice”, and that, “...the inquiry is really open ended and I see it as an opportunity to make connections to what I find meaningful. So, I can take something and go in a direction that suits my style of teaching, that suits my interest....” It is interesting that, despite feeling sometimes frustrated, sometimes unsure, about inquiry, Rachel still viewed the process as an effective way of “deepening” her teaching.

In her Participant Inquiry Journal, Rachel related a number of strategies that she learned in her research that she felt would help her to become “More clear about what kind of thinking I want to see my students using.” There are many examples. She talked about “Taking Perspective”; “This strategy asks students to take the perspective of a person, object, or place – and explain what this perspective would observe, believe, care deeply about, and what questions they might have.” She also discussed what she calls the “4 c’s”:

After being exposed to certain information, students are asked to come up with a Connection, something they would/could Challenge about what they’ve learned, Identify a Concept Imbedded in the information and a c for how their thinking has Changed.

Rachel also spoke about engaging her class in reflection through modeling:

During whole class discussion, I will often model metacognitive thinking by asking students the kinds of questions they could be asking in their heads. “Think to yourself, did that go well? Was I successful in meeting my goals? If not, ask yourself what you could do differently next time.

During Language Arts, “When we are reading novels in class, the characters become a reference for modeling metacognitive thinking”. She discussed several other strategies that she had learning throughout her inquiry that she believed could be used to enhance metacognitive thinking in her students. Strategies she referred to as “Self-Assessment” and “Tug-o-war”. Rachel valued inquiry as a method for developing new professional knowledge, knowledge that she could apply to her teaching to reach her stated goals of finding ways to recognize, “whether or not the students are actually becoming more metacognitive” and to “have her students internalize their metacognitive thinking.”

In her Inquiry Journal, Rachel responded to stage two of the inquiry process, “Where am I going,” with the hope that she would be able to “...use my information to improve my teaching – to make changes in how and what I teach. I will demonstrate my learning by being a more intentional teacher.” It would be fair to say, when looking closely at her interview and journal, that Rachel developed her understanding of inquiry-based learning and metacognition through this process, and as a result, became a more intentional, reflective teacher, less frustrated with the lack of “concrete outcomes” of inquiry, and armed with a number of new strategies to help her to challenge her student’s thinking.

4.1.4. Famine, Flood, and Pestilence

The themes discussed in the previous sections reflect the aspects of Rachel's engagement with the Mountain View Cycle of Inquiry that inspired the construction of professional knowledge and the rewards that came from engaging in the process. In this section, I present aspects of the process that Rachel felt interfered with her learning and could be improved upon.

Time

Rachel was frustrated by the lack of time available for her inquiry. She mentioned time, or the lack of time, frequently throughout her interview and journal as the factor that interfered most with her investigation into metacognition. Rachel initially joined the project because of the classroom release time made available to participants. In response to the second interview question, which asked participants to explain why they selected their particular "big question", Rachel responded, "I've always been keen on having more time to devote to looking for ... ways of recognizing whether or not the students are actually becoming more metacognitive." Time, or rather the gift of time provided to those participating in the project, drove Rachel to participate. When asked to describe her general feelings regarding educator professional development, Rachel made a point about the challenge of time very succinctly. "As a teacher I feel like it's a luxury to have time to engage philosophically. I really like that, but at times when there are so many practical matters that need attending to...it's hard." Rachel believed that lack of time prevented her from engaging more fully with professional learning that she was passionate about.

Interestingly, Rachel referred to time more than once when comparing the process of engaging in a cycle of inquiry with the traditional workshop style of educator professional development.

Sometimes the practical pro-d pieces, someone who comes in and gives practical pieces of, um, you know examples of any of the subjects or things that you can use right away, even having time to deepen what is your working on in your class – dealing with the immediate future. Sometimes that feels like I'm getting stuff done but yet it's not making me a better teacher. So there's that balance of 'is my professional development being spent in getting better or getting what I need to do, done'. And I think I don't always feel, like without having a lot of time to devote to getting better, I feel like my time

needs to be spent in getting what I need to do done. So that time piece is really important for me.

In this revelatory paragraph, Rachel discussed her view that the key benefit of workshop in-service professional development which she described as "...when someone who comes in and give practical...examples", is time. She saw value in workshop based in-service professional development because it often helped her to deal with the "immediate future" and getting what she "needs to do done." Rachel indicated that while the workshop in-service style of professional development does not necessarily make her "a better teacher", it does aid her practice when she does not have "a lot of time to devote to getting better." It is evident here that Rachel wanted to engage more deeply, or "philosophically", with topics that were meaningful to her; however, when there is not enough time to do so, she will settle for professional development that helps her with "getting stuff done." A little later in her interview, she repeated this sentiment in a different way when referring to the benefits of in-service professional development, "Sometimes someone else has packaged information in a way better way than I could have. Or in a way that's super concise that saves me hours and hours of research.

Rachel felt that while inquiry can be more meaningful to her, workshop in-service could save her time. At the close of her interview, Rachel sought a balance between inquiry and in-service for developing professional learning.

I think it [inquiry] is a great as a model for ongoing professional development. I think that when we do have limited time, it can be a balance to have in-service, to have people come in that are experts and professionals that have wisdom to impart that have strategies to teach, that have things to share...and have an ongoing inquiry part where teachers do choose a focus for their year.

In this way, Rachel saw workshop in-service as a more time efficient method for providing professional learning, but remained adamant that inquiry, as method for professional development, offers something very meaningful; choice. For Rachel, this choice, or self-direction, can be time consuming, but also "meaningful" learning that leads to "making me a better teacher."

Accountability

Overall, Rachel's journal provided insight into many of her successes with the inquiry process. She was able to engage with some new reading, collaborate with other

professionals, develop a better understanding of inquiry as pedagogy, and attempt some new strategies in her classroom. That said, in her interview she revealed that she did not get as much from the process as she had hoped. She attributed this not only to a lack of time, but also to a lack of accountability. Despite enjoying the “self-directed” nature of the process, Rachel stated:

...I still feel like I need some sort of accountability to make that work. In the past, when I’ve initiated an innovation grant I’ve felt more accountable to it, so for this I feel that maybe I didn’t follow the process through to the end, nor do I feel like I put as much into it as I wanted to. Therefore, the whole process sort of feels like it fizzled and it’s not a great feeling.

Rachel felt that she could have accomplished more, but because there was no sense of accountability to anyone other than herself, she did not necessarily see the process “through to the end”. This “fizzling out” was evident in her journal. While Rachel’s Participant Inquiry Journal was rich with information about her process and her learning, the fact that she left three sections of her journal nearly blank is noteworthy. Stages five, six and seven were left almost empty of ideas or reflection. This does not mean that Rachel failed to “See patterns”, did not understand, “What does this mean to me” and took no “Action” based on her inquiry. In fact, the rest of the journal indicated that Rachel had made connections to herself and past learning and had taken action in her classroom and community as a result. However, failing to follow through with the documentation of some sections of her journal does reflect her feeling of not “seeing the process through to the end”. It could be argued that as a perpetual “cycle” of inquiry is never finished, practitioners need not be concerned so much with “finishing” as with learning. However, as Rachel reported feeling deterred by a lack of external accountability, it is fair to view accountability as an aspect of engaging with inquiry as a method for developing professional knowledge that warrants further investigation.

4.1.5. Comparing the Inquiry-Stance with In-service Workshop Professional Development

When reflecting on this action research project, Rachel indicated that she felt her inquiry-based professional development successfully resulted in new learning for her. Unlike other participants, she also continued to see value in the workshop in-service

professional development model. Rachel shared that she would like the opportunity to engage with both forms of professional development in the future.

Rachel valued professional development very highly. In her words, “I really like professional development, I really like learning...I was on the pro-d committee for a while.” Reflecting on both the workshop and inquiry models of professional development, Rachel stated that an inquiry-based approach allowed her to have choice in her learning, and to be self-directed in a way that suits her interest, while addressing immediate, practical matters, such as managing the pressing demands on a teacher’s time, were benefits of the workshop model. “Sometimes someone else has packaged information in a way better way than I could have. Or in a way that’s super concise that saves me hours and hours of research.” In her final reflection, Rachel saw value in both forms of professional development

I wouldn’t say that one is superior to the other. It’s just, I think, a combination....I think that when we do have limited time, it can be a balance to have in-service, to have people come in that are experts and professionals that have wisdom to impart that have strategies to teach, that have things to share...and have an ongoing inquiry part where teachers do choose a focus for their year.

For Rachel, inquiry-based and in-service workshop professional development can work in tandem. She viewed balance, or at least the opportunity for teachers to choose between the two, as the best-case scenario for professional development delivery.

4.1.6. Rachel’s Epilogue

Despite feeling the need for greater external accountability for her work, and despite feeling that the release time provided to her was insufficient for all that she wanted to accomplish with this research, Rachel felt as though she accomplished quite a lot through this project.

She began with the “big question” of how to increase the metacognition skills or abilities of her students. She wanted her students to be more reflective, to think about how they learned, and to further develop the skills and strategies of metacognitive learners. To learn more about the topic, Rachel followed the steps of the Mountain View Cycle of Inquiry by attending a conference on metacognition, by reading books and articles relating to the topic, and by meeting with other educators to learn how they had

approached metacognition in their classrooms. As a result, she was able to take action by trying several new strategies that she felt would improve the metacognition of her grade six students. She also reported developing a better sense of how to facilitate learning via inquiry, that she was able to share her learning with her community, and that she gained a deeper sense how to develop lessons that would encourage metacognitive thinking.

In her final interview, Rachel said she felt her inquiry work was not over, and that she had more to learn on the topic of metacognition. After reading her journal and conducting the final interview with Rachel, I was not surprised to hear that she would like to continue this line of inquiry. Inquiry is designed to be a recursive cycle after all. It makes sense, then, that delving deeply into a topic of interest and solving problems that were directly related to her work would have encouraged Rachel to want to continue to ask questions and take action based on her learning.

While Rachel noted that she found some worth in workshop in-service professional development, she also saw great value in the inquiry-based approach to professional development. She found inquiry to be an effective means for engaging deeply, or philosophically, with learning, for solving problems, and for developing strategies for helping her students become more reflective learners. She also found, despite the challenges of time and accountability, that engaging with this inquiry process inspired her to collaborate, to rethink how she approached designing lessons and units, and gave her a better understanding value of inquiry-based learning for both herself and her students.

4.2. Kim and Christine’s Story

4.2.1. Planting the Seed

Self-Direction

Kim, the teacher-librarian at Mountain View, and Christine, the part time kindergarten and grade 1 teacher, chose to form a partnership for their inquiry project. That a partnership had formed was a happy surprise to me, as collaborative inquiry was not specifically proposed as a possible arrangement by the initial recruitment email or in the Participant Consent Form. Kim and Christine’s partnership was built around a shared

interest, and a shared curiosity. It not only gave an additional level of depth to this study, it also aided these teachers with their learning.

Kim and Christine's big question, as Kim stated in her interview, was "How can we use resources to support staff and student inquiry into first peoples' epistemologies?" I should note here that, because of how they use the word in their journals and interviews, I interpret Kim and Christine's use of the word "epistemologies" to mean simply "knowledge". In essence, these educators chose to inquire into how they could bring the knowledge and culture of the first peoples of the west coast of Canada to the staff and students at Mountain View Elementary School. This was a worthy undertaking. Aspects of First Nations education can be found throughout the BC curriculum, as stated on the British Columbia Ministry of Education website, "The First Peoples Principles of Learning are affirmed within First Peoples communities and are reflected in the development of all K-12 curriculum and assessment" (BC Ministry of Education, 2016). It was in the interests of this collaborative team, as well as the broader school community, to investigate how to bring this knowledge to teachers and students.

Kim was Mountain View's teacher librarian, and the ability to choose her topic for investigation was motivating for her professionally. From her Participant Inquiry Journal: "As teacher-librarian, I have a vested interest in obtaining accurate, age appropriate materials to support teacher programs and student learning." Kim was interested in Aboriginal Education because, as teacher-librarian, she was tasked with the job of building the resources necessary to help students meet curricular goals. As the curriculum was shifting in a way that was more inclusive of indigenous knowledge, Kim knew that classroom teachers would look to the school library and the teacher-librarian to support and supplement their classroom resources. For these reasons, this topic was important to her work. It was directly relevant to what she was already doing. It was this professional interest that helped her to choose this topic. From her interview:

I find, again this is from my point of view, I find, for me, Pro-d that's really successful is something that I'm already engaged in and using and learning.

Christine echoed the idea that the concept of self-direction motivated her to engage with this inquiry project. In her interview, when asked to describe the inquiry process, she responded that having the freedom to identify her own "big question" was

“empowering”. When asked why she selected the big question she chose, she responded that it was because she wanted to “...help teachers think about this relationship [between schools and First Nations communities] in hopefully new ways.” She also noted that, as a person with Metis ancestry, she was excited to participate in this research because the topic was important to her personally.

For both Christine and Kim, the opportunity to select a topic of shared interest for their professional development, and to be responsible for how that learning was approached, was both empowering and motivating.

Problem Based Learning

Kim spoke of why she chose to inquire into how to build resources to support the teaching of first peoples’ knowledge in this way, “My main reason for doing this was because I’m lacking resources, and the resources that I have are out of date and I think there’s better stuff out there” In her interview, Christine shared that they chose this topic because, “We decided that there was a need in this school, in particular with the new curriculum...people are curious about and wanting to know about how to unpack and learn more about first peoples’ epistemologies...” Both teachers were motivated to use the inquiry process to help solve the immediate problem of the dearth of adequate First Nations resources and knowledge in their school.

Solving the problem of the lack of adequate resources was so important to their work that it led Kim to seek out resources from people and places well beyond the walls of the school. Kim and Christine sought the advice of elders in the First Nations community most closely associated with their school. They spoke also with teachers and administrators in other schools and school districts. To answer the question she posed for her inquiry, Kim even made a weekend trip to Nanaimo to visit with an Aboriginal Education consultant who ran an educational resource centre and bookstore. Kim not only picked up books and lessons for use in Mountain View classrooms, she was also, in a way, changed by her experience. In her interview, when Kim spoke of learning about the importance of Aboriginal Education in schools from the consultant, she paused in reflection before saying, “I think I understood it before, but I don’t think I really felt it.” Participating in the inquiry process changed Kim’s understanding about this aspect of her practice. It was the seeking of answers, or solutions to the problem of bringing appropriate resources to classrooms, that led her to this insight.

For Christine, who has Metis heritage, it was a problem that some teachers were, in her words, “hesitant” about teaching about First Nations issues in their classrooms for fear of “getting it wrong”. It was an issue that was personal to her, and one that also led her on a journey of self-discovery. Stage four of the Mountain View Cycle of Inquiry asks, “Where is the information?” For Christine, the information was, in part, found in her own history. To help her solve the problem of the resource shortage, she looked to her family tree as a starting point for sharing her Metis ancestry with students at Mountain View. In her Participant Information Journal, Christine reported that at one point during her inquiry cycle, she “...posted the pay stub of a great-grandfather on a school bulletin board along with the students’ ancestors and their information. It created a new sense of belonging-recognizing publicly a newly learned part of my own history.” In this way, the problem of bringing First Nations history to Mountain View was solved in part by thorough investigation into her personal history. Motivated to solve the problem at hand, Kim looked beyond the borders of the school and district, while Christine looked within herself, to her own history, to discover truths that supported not only their professional learning, but student learning as well.

4.2.2. Watering the Plant

Collaboration

In their journals and interviews, Kim and Christine highlighted the importance of collaborative professional development for constructing knowledge. For the members of this team, working together not only helped to generate new learning, it was also “enjoyable” and “engaging”. In response to the question, “What was the experience like for you?” Christine reflected in this way:

The experience of going through the cycle of Inquiry? I loved it. I really enjoyed the experience. I love collaborating with other people and being part of a team was a key aspect of the experience for me. I thought it was empowering to go through that process and have that continuous dialogue throughout the year in thinking about this big question and also in finding ways to bring it to others – students, and staff, teachers in the school.

Not only did Christine “love” participating in shared learning with Kim, she also looked forward to sharing her learning with other non-team members. When writing in her journal about bringing First Nations knowledge into the school, Christine stated; “The next

piece of that would be chatting about it with my peers and colleagues and working in that collaborative space to start to figure out the next steps.” Christine saw collaboration as a positive, natural, and almost necessary component of learning through inquiry. This collaboration inspired her process and watered the plant of her learning.

For Kim, while the “joyous” feelings of partnership seemed more subdued in her reflections, collaboration was nonetheless important to her learning. Kim noted in her journal that she looked forward to working with her partner on this inquiry in the future. Kim wrote, “Next year we can go deeper.”

Like Rachel and Christine, Kim also made reference to the power of working with others outside of her inquiry partnership. When she admitted that she has more learning to do about the definition of the term “Metis”, she said, “I’m stuck on that right now, and I don’t really know which direction to go on with that and I think I need to talk to more people from First Nations groups to get other people’s opinions, not just mine.” Here, Kim demonstrated that her inquiry relied on shared knowledge. She required collaborators to fill her gaps in understanding. She also mentioned, when journaling about how to make this learning meaningful, that “In a perfect world I would like time built into the day so that I could communicate and collaborate with classroom teachers.” Later in the school year, Kim took action on this item, and requested some time from the Mountain View principal to meet with teachers who were interested in collaborating to develop lessons with indigenous content. Many teachers took advantage of Kim’s offer. Kim helped me to develop lessons on the legends of the Squamish First Nations and worked with Rachel to develop a series of art lessons based on First Nations symbols. For Kim, collaborating was such an important part of her learning that she extended her role in the school to become a sort of an unofficial Aboriginal Education consultant.

Kim viewed collaboration as an essential part of constructing her own knowledge. Bringing her learning to others was the action she took as a result of reflecting on and developing her understanding of First Nations’ issues. In this way, the collaboration that resulted naturally from her inquiry watered the plant of her professional learning. For both Kim and Christine, understanding the inquiry process and investigating their ‘big question’ required collaboration with educators within the school and outside of it. These participants viewed collaboration as integral to their professional learning and a key benefit of the inquiry process.

Process Over Outcomes

Christine spoke positively of the ongoing process of inquiry, “I thought it was empowering to go through that process and have that continuous dialogue throughout the year in thinking about this big question.” For Christine, this ongoing search for answers was “empowering” because, “It wasn’t just following a cycle over and over again, it was really looking at it...it gave me purpose throughout the entire process.” Christine, along with her partner, did not feel the need to work through the cycle of inquiry in search of a definitive or “final” solution, instead they moved in and out of the stages in order to learn more about their topic, and in doing so, recognized that the process was purposeful and useful for developing new learning.

Kim echoed Christine’s thoughts about the nonlinear nature of the inquiry cycle, “It was not as straightforward as I thought it was going to be, which was a bit surprising.” She also recognized that, while they accomplished much this year, the process would be ongoing. “Now that we have a good foundation,” she wrote in her journal, “next year we can go even deeper with Aboriginal education.” Neither partner viewed this work as ‘done’. Neither do I, nor did Rachel. Kim and Christine were able to look beyond the tangible, concrete outcomes of their learning to value inquiry as a learning process, with its own intrinsic value.

Reflection

It is a feature of the Mountain View Cycle of Inquiry to engage in reflection throughout the process. While Rachel believed reflection to be a guiding force for her learning, Kim was less enthusiastic about reflection over all. I believe that this lack of enthusiasm for documenting her reflections resulted from the pressure of time. “I think it’s valuable,” she wrote, referring to documenting her process and reflections, “but I know that’s important and it’s good to be able to look back...it’s just sometimes when you’re really busy the documentation is the last thing you want to do, but that’s a personal thing.” While feeling “really busy” may be a natural part of a teacher’s day, Kim acknowledged the value of looking back on your process. She demonstrated this value throughout her journal, as her reflections at each stage showed growth as a learner and a teacher. In these reflections, Kim identified her goals for the future, “My focus for next year though, will be to invite experts in to talk with students.” She also identified her challenges, “One challenge I had was communicating with classroom teachers”, her

successes with resources, “I have updated and weeded our collection of First Nations resources,” and her successes with students, “...the kids have really enjoyed the texts that I have shared with them.” In her reflections, Kim was able to illustrate her goals, her challenges and her successes. While reflection can be time consuming, Kim’s written reflection served as an important artifact of her learning.

While never mentioning reflection directly in her interview, Christine did share in her journal that a personal reflection from her time in teacher’s college led to her initial interest in Aboriginal Education:

My own spike in growth began 3 years ago in PDP with the ongoing self-reflection of the question-*What is your relationship with Aboriginal Peoples?* My underlying intention is to unpack this question further and to help teachers think about this relationship in hopefully new ways (less us/them language).

Christine had, through reflection, realized a personal mission to transform her fellow educators’ understandings of their relationships with First Nations education. This mission continued with this research, as updating resources to address issues of language and terminology was one of the goals of Christine and Kim’s cycle of inquiry.

Reflection also helped Christine adapt her research methods. For example, in her journal reflection under section 4 Christine wrote, “Where is the information?” Christine, wanting to get a sense of her colleague’s level of comfort with teaching topics related to Aboriginal Education, sent out a survey on the subject to all classroom teachers at Mountain View. She was, however, “... surprised at how few people responded to the survey considering that the intention of this innovation project [is] to support teachers.” She reflected instead that teachers were more comfortable sharing their needs with her and Kim in one-on-one conversations as, “We feel safe in having this dialogue with one another, it seems to happen organically as questions come up throughout our units of inquiry and personal/professional journeys.” Reflection provided a needed change of approach, and helped the team understand that collecting data needed to be accomplished in different ways from what they had expected.

Like Kim’s, Christine’s journal reflections showed her setting goals, commenting on challenges and pondering directions for future research. For Kim and Christine,

reflection may have been at times burdensome, but it also allowed both educators to think deeply about their inquiries and helped them shape their learning.

4.2.3. The Fruits of Our Labour

Community Building “Creating Ripples”

For Kim and Christine, community building by helping staff and students develop a better understanding of indigenous knowledge was an essential goal of their inquiry, and both participants reported feeling they had successfully met this goal. In order to seek answers, their inquiry took them beyond the walls of the school. Kim travelled to Nanaimo to meet with an Aboriginal Education consultant in order to build her understanding of First Nations resources. In February, Christine took her family to a Coast Salish People’s arts and culture festival, to develop her personal understanding of First Nations culture. She did this to bring a personal understanding of the First Nations peoples to her school community. Sharing your learning is not a necessary part of the Mountain View Cycle of Inquiry, but each of the participants reported wanting to bring their learning to the community and took steps to do so.

When describing the experience of engaging with this inquiry, Christine spoke about sharing her knowledge as one of the greatest benefits of her process. Christine found it empowering to think about her big question, “...and also in finding ways to bring it to others – students, and staff, teachers in the school. And other schools as well, because that was part of the experience, in that it extended to other schools.” Christine shared “her journey”, her understanding of First Nations’ culture and resources, with other schools within the district in what she refers to as “...a way of deepening dialogue within my community-creating ripples”. In this way, the community of schools within the West Metro school district benefitted from the learning of the inquiry team. For Christine, sharing her understanding outside of the school was essential to her process. “I really think that community building piece is essential,” she stated in her interview.

Kim wanted to share her learning by bringing the community into Mountain View Elementary. Kim travelled the furthest of the participants during her inquiry to visit Nanaimo, but when attempting to bring experts into the school, she struggled. She reported in her journal that while she felt she successfully sought knowledge of First Nations issues from other teachers, as well as school and district administration who had

experience with the subject, she also wished for First Nations elders to come into the school to speak with students about indigenous knowledge but was unable to make this happen. In her journal, she wrote, “It was very difficult to make contact.... My inquiry partner and I tried several times but to no avail.” In her journal at stage seven, Kim again reiterates that it was important for her to bring experts from local First Nations groups into the school, and that she hoped that in the future she would be able to do so. In this way, Kim’s inquiry journal reflections demonstrate her feelings of the importance to her inquiry of connecting with experts in the community. While they were not able to accomplish all that they had intended in the community, this inquiry team did “create ripples” of understanding of First Nations issues within the school and beyond.

New Pedagogies

To begin a discussion of what Kim and Christine felt they accomplished with their inquiry as it relates to the development of pedagogy, it is important to remember where they began. From Christine’s interview:

We decided that there was a need in this school, in particular with the new curriculum...people are curious about and wanting to know about how to unpack and learn more about first peoples’ epistemologies and understanding what that means and then trying to figure out what are the resources that are accessible to us, what don’t we have, where can we find those resources, and then understanding that everybody is at a different place of comfortability [sic] and so, trying to help them, um, access the resources and feel competent and comfortable in using them in their classrooms and their lives, and I think that was our main reason.

As the new provincial curriculum asked teachers to incorporate the First Nations principles of learning into their teaching, Kim and Christine felt that teachers would need reliable and up-to-date materials, as well as support with developing a certain level of comfort with using these materials. A lot of work went into their process, far beyond the six hours of release time allotted for this project. The question remains, then, did they feel they had accomplished this goal? Both participants seemed conflicted about the answer. It can be seen, however, that these teachers learned much, shared a lot, and developed new understandings about their practice and pedagogy in the process.

To gain a better understanding of their topic, Christine and Kim spoke with educators within the district and around the province. As part of a “needs assessment” they created an online survey for staff at Mountain View to ask teachers what they

needed to incorporate First Nation's knowledge into their lessons. During a staff meeting they asked teachers to reflect on their own classroom practices by writing down an answer to the question "How do you incorporate First Nations history and knowledge into your teaching." Christine even took an online course, a MOOC (massive online open course) through the University of British Columbia entitled "Reconciliation Through Indigenous Education" which she reported to have been "... a serious time commitment and undertaking-although the information and time spent thinking about epistemologies was beneficial." They shared many details about the things they learned about Aboriginal Education their journals and interview responses. They took their investigation seriously and dedicated many hours to their learning. Fortunately for the school, this learning helped shape the instructional style and approaches of Kim and Christine with direct benefits to our school community.

Kim, as the teacher-librarian, was able to apply her new learning to many areas of her pedagogy. She felt that one of her initial successes came in the changes she made to the school library.

I have updated and weeded our collection of First Nation's resources. I have made a 'special collection' area specifically for First Nation's resources, as well as labeling the books 'First Nations'. We have a very good representation of First Nations communities from across Canada.

To make it easier for classroom teachers to use her 'special collection', Kim created a document that she titled "List of Read Alouds in the Library", in which she organized Mountain View's new and updated First Nations resources by grade and reading level. For each grade, Kim listed all available resources by author and title, which teachers could then use to find appropriate books with First Nations content. Where Kim and Christine had once felt that teachers at Mountain View were "hesitant" to use First Nations resources in the classroom, now because of their work finding and utilizing appropriate resources, this had become much easier for teachers. In this way, Kim was successful in meeting her stated goal of "Understanding what is appropriate for school-aged children, and to make such appropriate resources available to teachers and students."

An interesting example of how Kim brought her learning to students was revealed in both her interview and journal reflection. When asked in the interview to share any

new learning or insights, Kim excitedly spoke of how she learned about division of labour within some First Nations communities. Her tone was enthusiastic when she described how,

Different families were given different jobs within the community. For example, to make sure the salmon can come up the stream to spawn, the family might make sure that the stream is clear of branches, tree trunks, other debris that might get in the way. Another group might be really aware of the forest and how dry it is, and should there be a controlled burn to make sure there isn't a bigger fire later. Some other people may...

Kim took some time to explain to me her new understanding of the division of labour in First Nation's communities. This excitement is later mirrored in her Participant Inquiry Journal, when reflecting on stage two of the cycle of inquiry, "How will I demonstrate my learning?"; she shared some of her successes with students,

The kids have really enjoyed the texts I have shared with them. The grade 2's can easily differentiate between west coast dugout canoes, and eastern woodlands bark canoes. A comment I overheard in the staffroom was, "Where is the value in learning about canoes?" An excellent question. On the surface it may appear to be a version of tokenism. When I look at a meta concept like transportation, I think of labour. Who made this? How is labour divided among the community? What roles do people have in the community? This is where the discussion becomes rich.

Kim learned about how the division of labour was important to the communities of First Nations peoples, and she was able to bring that knowledge to both staff, in conversation, and to students, in how and what she teaches.

While engaging with her cycle of inquiry, Kim updated the school's resources, made access to those resources easier for staff and students, and applied her learning of First Nations communities to her pedagogy and interactions with students and staff. In many ways, the Mountain View Elementary School community is enjoying the fruits of Kim's inquiry.

Christine often worked side by side with Kim to develop their knowledge of First Nations culture and history and to upgrade the resource collection at the school. However, in her journal and interview, Christine's reflections demonstrate that for her, the fruits of her labour, the benefits of engaging with her cycle of inquiry, came primarily from the changes that she made to her pedagogy, and the positive effects that she

believed those changes had on her students. In her Participant Inquiry Journal, Christine wrote extensively about how she brought her knowledge of First Nations issues to her students, as well as how engaging in inquiry helped her to be more direct in using inquiry as a method of teaching.

An important part of my journey was using the MV inquiry cycle to design units of inquiry for this project as well as with learners in our class. I developed a multi-faceted understanding of the inquiry cycle by using it in a tangible way with learners and exploring it within our innovation project. I was able to pull in my knowledge of other phases and cycles of inquiry along with concept-based learning to strengthen what we were doing with the MV cycle.

As a direct result of engaging personally with a cycle of inquiry, Christine was able to plan and teach using the inquiry model in her classroom. “And so,” she continued, “in my Kindergarten class, I used that to redesign the curriculum for socials, “because I do socials on Thursdays, and this helped me to inform my practice.” Though not a stated goal for her cycle of inquiry, developing her understanding of inquiry as pedagogy resulted from her process. From this professional learning, Christine was able to bring inquiry into her classroom, changing how she developed units for her Social Studies program.

Changes to her teaching that resulted from this study also included the creation of lessons for co-teaching,

It was great to have some switched days with my job share partner as it allowed me the opportunity to co-teach with Kim in the library. A wonderful experience for us as we were able to bring some ideas to fruition together.

And by periodically changing her students’ learning environment:

Offering hands on ways for learners to engage and wonder, I moved the classroom to the outside forest area for two blocks of every Thursday. Learning in the forest has engaged learners in the First Peoples Principles in ways I couldn’t have accomplished indoors... This tells me that when I am co-learning outdoors with colleagues/classes, it is an opportunity to share the simple ways that connection with the land and its stories can benefit our understanding of the natural world and our place within it.

Changing how she developed lessons to include inquiry-based instructional methods, co-planning with other teachers, and bringing students into the natural

environment to learn about their connections to nature are three ways in which Christine felt that her cycle of inquiry had positively benefited her pedagogy.

The partner participants in this study came to believe that engagement with a cycle of inquiry had positive benefits to how they understood inquiry as pedagogy, how they used and develop resources, how they planned lessons, how they taught, and how they viewed the environments in which they taught. They were both enthusiastic in their interviews when discussing the positive changes to their pedagogy that resulted from their inquiries.

4.2.4. Famine, Flood, and Pestilence

Time

For Kim and Christine, much as it was for Rachel, time was the greatest challenge to accomplishing the goals of their inquiry cycles. For Christine, time was a challenge in two ways. The first challenge was completing the MOOC Course “Reconciliation Through Indigenous Education”.

The MOOC course is a serious time commitment and undertaking-although the information and time spent thinking about epistemologies was beneficial, I think I would recommend it positively with a light caution of what it entails: assignments to read and write projects, group dialogues online, videos etc.

While Christine viewed the course as a beneficial addition to her inquiry, she admitted that the workload was a serious time commitment. She would recommend the course, she wrote in her journal, but only with a note of caution for the time commitment involved. While taking a course was not an expectation of the participants in this study, Christine felt inspired to do so because of her deep engagement with her inquiry. This level of dedication to her students and school community was admirable, but very demanding of her time.

Christine also felt challenged by time was when she was unable to schedule classroom visits from the elders local First Nations. Christine noted in her journal that, “...it is a challenge to match guest speakers to classes in a timely way as the guest speakers book months in advance and need more lead time.” Again, here, the time frame of the project made it difficult to accomplish one of Christine’s main goals. There

just was not enough time from the beginning of the project to the end of the school year to arrange for what Christine considered to be a key element of her inquiry.

It is interesting that while Christine was challenged by the time frame of her inquiry project, she also noted that, despite those challenges, she still tried to make time for what she considered important. The same can be said for Kim. Despite having difficulty finding the time to complete some elements of her process, Kim recognized that these elements were nonetheless very important, and did what she could to make the time to accomplish them.

Kim was the one participant who mentioned a dislike for the Participant Inquiry Journal. When asked in the final interview to discuss her engagement with the cycle, she said, "Sometimes I was a little frustrated with documenting my process. But I know that's important and it's good to be able to look back...it's just sometimes when you're really busy the documentation is the last thing you want to do, but that's a personal thing." Kim, like Christine when she spoke of the MOOC course, noted that she saw the value in this part of the process, in the documentation, but that making time for it was hard. Finding time to engage with something that may not directly benefit your classroom that day or week can be a challenge for teachers. Despite these challenges, Kim did document her process in her Participant Inquiry Journal. It was there where Kim shared another reason that time was a challenge to her learning.

One challenge I had was communicating with classroom teachers. Everyone is so busy that many of our conversations took place while walking down the hall or in the staffroom. I find that a bit rushed and in a perfect world would like time built into the day so I could collaborate and communicate with classroom teachers.

Remember that Kim's stated goal was to support staff by bringing First Peoples' knowledge into the classroom. While Kim did eventually work with the school principal to build time into her schedule for collaboration, she was initially frustrated with just how "busy" she and her fellow teachers were. This busyness interfered with the time available for working with teachers on what Kim considered being a very important topic. "In a perfect world," Kim wished most for more time.

Administrative Support

Christine mentioned administrative support, or lack thereof, three times in her journal as something she was concerned with throughout her inquiry. In one of her reflections, she wrote; “Wondering how the admin wants the inclusion of AbEd from the transformed curriculum to unfold... is it a quiet, subtle support, a gentle nudge, an unveiling and guided support, a directive? Is there a vision in place already? Is there a team?” At another point she reflected in a similar fashion, “...starting to understand that my ambitions to invite guests in to support units etc. are a bit early for where admin would like the ship to sail.” Christine was clearly uncertain about how her learning could be incorporated into the school’s vision and goals, goals that were written largely by the administration at Mountain View. Her struggle was not her learning, but how to apply it when she required approval from administration to take on initiatives beyond her own classroom. In response to stage two, “Where are we going”, Christine noted in her journal that, “A big part of my learning here has been getting to know the style and intentions of admin.” Again, here, we can see that Christine felt she needed to balance the “self-directed” nature of her inquiry cycle against the school administration’s vision for the implementation of programs. Christine noted that a part of her learning was trying to understand how the “intentions” of administration met the goals of her inquiry. While she did not imply that the school administration in any way inhibited her learning, she did see the need to find ways collaborate and communicate with administrators as a challenging aspect of in her inquiry process.

Inquiry Knowledge

Throughout her interview and journal Christine referred often to collaboration with teachers and other educators as something she enjoyed most about professional development. She also reported that she felt that other educators may not have the same level of comfort with inquiry-based learning that she had. Earlier, in the section “The Fruits of Our Labour” I noted that Kim and Christine believed that they each had developed a better understanding of inquiry-based learning by participating in this study. Christine noted in her interview that teachers who have not had the same opportunity may not have sufficient knowledge to engage with an inquiry cycle effectively. When asked, “How do you feel about the role that inquiry may or may not play as a method for educator professional development?” Christine, with some hesitation before responding, said:

I think it's not super comfortable for everyone. I think that's been part of my journey in this innovation project is understanding that everyone is at a different place with inquiry. So, I guess when I think about it as a method for educator professional development I want to make sure that first we build community at our schools so that people can actually feel safe in taking risks with inquiry, before really launching into the inquiry.

To my mind, this was very well stated. Before expecting educators to engage in an independent cycle of inquiry, ensuring that they understand what the process can be like, what can be expected, and how others have approached the process before them, should be an essential part of the learning.

4.2.5. Comparing the Inquiry-Stance with In-Service Workshop Professional Development

Of the four participants that saw the research through to the end, Kim was the most enthusiastic about inquiry-based professional development when she compared it with the workshop in-service model. During her interview, the final reflective portion of the action research project, Kim shared that she felt that professional development needed to engage her interests and be directly relevant to her daily work for it to be meaningful. "I find, for me, Pro-D that's really successful is something that I'm already engaged in and using and learning." She compared this to her former experiences with the in-service workshop model of professional development, which she viewed as lacking relevance, and therefore, meaning. "...If I'm not interested in the specific PD that's being delivered to me, it's not going to be as meaningful for me as something I can choose myself." Kim also liked taking an active role in her professional development. She enjoyed participating in pro-d where she could, "...see a concept through from start to finish", she enjoyed being active in the sense of movement, she liked to, "...get up and do something" rather than being asked to sit and listen. "I find the sit and listen method tough for me, but that's my learning style." In response to the final question of the interview, *How do you feel about the role that inquiry may or may not play as a method for educator professional development?* Kim was unambiguously in favour of inquiry-based professional development over the in-service workshop model of professional development; "To me I see more value in that than getting pieces, here or there."

Christine also preferred the inquiry-based approach to professional development. However, she noted that while it is a preferable model, there are issues that need to be addressed to improve inquiry-based professional development. Remember Christine's comparison from earlier in this chapter:

And so I think my experiences with professional development that's not inquiry based, sometimes it feels more like someone is, maybe, planting seeds and hoping that they'll grow along the way, and whereas in the inquiry based model sometimes we plant the seeds and then we have a chance to actually water them and help them to grow, with your team, collaborating, working together, and figuring out what that means. I think that the benefit of the inquiry-based model is that you can think more deeply about your practice in a community environment.

For Christine, inquiry allows teachers to think deeply about a topic over time and connect with other educators in the process. These two pieces were especially important for her. Yet despite her preference for an inquiry-based approach, Christine responded to the final question in the interview with a reminder that there was room for improvement, that not every teacher had a complete understanding of inquiry, and that teachers need to be supported in order to develop and refine their use of inquiry for it to be a successful method of professional development for all educators.

Christine was also challenged by the organization of the Mountain View Cycle of Inquiry itself. For Christine, this specific cycle of inquiry was challenging in the following ways;

I had some trouble with the Mountain View inquiry cycle. It didn't always speak to me...so I found that because I'm so comfortable with this 'in and out' form of inquiry, I didn't want to stick with a cycle. I wanted to go with "yes, this is where we're at, this is the actions we're taking" but at the same time we are finding out more, we're going more in depth with the beginning parts of the cycle, and so it wasn't just following a cycle over and over again, it was really looking at it...I don't know, maybe more holistically, so I guess that was a big part of it.

While Christine viewed the inquiry-based approach to professional development as an effective way to construct professional knowledge, she felt that there were issues that needed to be addressed for inquiry-based professional development to be as effective as possible.

4.2.6. Kim and Christine's Epilogue

The story of Kim and Christine, Mountain View's teacher-librarian and kindergarten teacher is an example of the effectiveness of inquiry-based learning for the construction of knowledge. While Kim and Christine felt challenged at times by the crunch of time and the support (or lack of) of their administration, they both reported that they had accomplished much of what they set out to, more, with their cycles of inquiry.

Beginning with the 'big question' of how they could build capacity for the teaching of First Nations' issues at Mountain View, Kim and Christine went to great lengths to ensure that teachers and students had access to resources and information about First Nations groups in British Columbia. They began their cycles of inquiry by gathering information. Kim spoke with West Metro teachers and librarians and met with an Aboriginal Education consultant in order to refine her understanding of Aboriginal Education as it related to the curriculum in BC. Christine took an online course, dug into her own personal history, and met with teachers and administrators in the district to better understand the epistemologies of First Nations peoples. They also surveyed and met with Mountain View staff in groups and one-on-one order to understand how to meet the needs of the teachers in the school. To that end, they built a resource library of books, videos and websites, organized by grade level, to support the teaching of First Nations knowledge in classrooms. They also worked with school administration to build collaboration time into the school timetable so as to better foster authentic Aboriginal Education in classrooms.

Not only did their inquiry cycles help them to develop their own understanding of an important curricular topic, their work helped teachers and students at Mountain View and throughout the district to gain a better understanding of the history and beliefs of the first people of British Columbia. Kim and Christine also reported that an added benefit was found in their new understanding of inquiry-based learning, which shaped their teaching and opened the door for new, experiential learning experiences for their students.

Both teachers reported being interested in continuing this work, having detailed in their journals their plans for further efforts in bringing first peoples' epistemologies to Mountain View students. Like Rachel, they are motivated to continue this work long after

the “completion” of the first cycle of inquiry. Where workshop in-service pro-d has failed in the past to motivate Kim to engage with professional development, the work she put into this project was hours, days even, beyond what would be asked of her three months of in-service professional development. Kim felt that conducting active research into a topic that concerned her on a daily basis was highly engaging, even joyful. Similarly, Christine used the word “empowering” more than once to describe her inquiry cycle. Personal choice in research topic, as well as choice in *how* she was going to learn about the topic, meant for Christine, as it did for Kim, spending a lot of time learning and collaborating with others, far beyond the usual scope of professional development in-service workshops.

Kim and Christine’s story was one of teachers feeling engaged with professional development, feeling motivated to learn, and to continue to learn, about a topic important to them both personally and professionally. It was the story of powerful and constructive professional development.

4.3. Nathan’s Story

4.3.1. Planting the Seed

Self-Direction

My big question, “How can I bring the learning and experiences from my years as a learning support teacher to my new role as a school administrator and general classroom teacher?” was a highly engaging topic to explore. This form of self-study required self-direction, as it was personal and reflective in nature and could not be studied outside of my personal experience. There was no in-service workshop for this manner of investigation, known as a living educational theory self–study. A living educational theory self-study asks researchers to examine the alignment of their beliefs and practices, and generate theories for their lived practice (Samaras, 2011). In my Participant Inquiry Journal, I addressed the issue of “why I chose this question to investigate” in this way,

I believe that all students should be given the opportunity to reach their greatest potential as learners, but this is easier to say than do in the classroom. As learning support teacher, I often encouraged teachers to accommodate and adapt their practices to support the

needs of all their students. I want to know if I can do the same for my students now that I am returning to the classroom. ...I also feel it is my responsibility to support the staff in accomplishing the same goal – supporting all of their learners. I am very curious if, given the challenges of classroom teaching, I can successfully practice what I once preached.

I was excited to use this opportunity to delve deeply into my work from my time as a learning support teacher. My self-study involved reviewing meeting notes, the IEPs (individual education plans) that I authored, my emails and correspondence with teachers, parents and administrators, and the presentations that I prepared for other educators in my school and district. I felt that this body of information would fairly represent my beliefs about inclusive education. My goal was to review this data to see if my beliefs aligned with my practices as a classroom teacher and administrator, and to learn, if they did not, how I could re-align my practices with my beliefs. I could have directed this research project as a pure observer, but I wanted to take the opportunity to examine my practices and direct my learning wherever that might have taken me. It was very important for me to do this well – to be an advocate in my classroom and school for inclusive education was an important personal and professional goal. This inquiry process was entirely self-directed, which motivated me to engage with the process, and I believe it led to changes in my pedagogy in ways that directly benefited both my students and my school community.

Problem Based Learning

I investigated how my past experiences working with struggling learners as a learning support teacher applied to my new work as a sixth-grade classroom teacher. It would have been a professional and ethical problem for me if my beliefs and practices were not in alignment. In attempting to solve the problem of true alignment between practice and belief, I learned a lot about my work and myself.

Despite having written the IEPs that I was reviewing, I was surprised to find that I had overlooked in my own classroom some of the strategies for inclusion that I had suggested for other teachers in years past. In my Participant Inquiry Journal, I referred to some of the strategies that I once shared for helping challenging children with behavioral issues as “insightful”. For instance, during my investigation period I had a student in my class, “Sarah”, who would often be disruptive during group discussions. I was at a loss for how to help her focus until I read an IEP that I wrote three years prior for another

student, “Darren”, who was nervous about being put on the spot during class discussion. I applied the strategy that I once wrote for Darren to my current class discussions involving Sarah. Before I would ask her a question in front of the other students, I gave her a verbal cue, “first I’ll ask Marc to respond, then Arish, then Sarah”. This seemed to help Sarah be decidedly less anxious and increasingly focused during class conversations. The problem of how I could apply my past beliefs and understandings to my current work helped support a student who required an “insightful”, or at least a different strategy, than what I was currently using. I was not spending time researching a topic that was suggested to me; I was seeking real solutions to problems that my students and I faced on a daily basis. This was incredibly motivating for my inquiry process.

4.3.2. Watering the Plant

Collaboration

While a living educational theory self–study looks inward, there were nonetheless many opportunities for collaboration throughout my inquiry cycle. The collaborative process began with the development of this research study. I knew that I wanted to investigate inquiry as a method of professional development, but it was in the initial meeting with participants that the shape of the study was truly formed. This collaborative meeting sparked some interesting conversation about pro-d, inquiry, and action research. It was a pleasure to be part of a team interested in working together to solve a problem. I felt the same joy that Christine spoke of when she reflected that she loved “...collaborating with other people and being part of a team.” It was a joy to work with other educators on this project. We were not a passive audience collecting information from a lone presenter; we were explorers looking to contribute not only to our own knowledge base, but to the cumulative knowledge base of our profession. From the outset, this project was exciting in part due to having the opportunity to explore it with other professionals.

Another example of a time when the participants had the opportunity to collaborate as a team came at the very end of this project, at the West Metro Innovation Celebration. The West Metro Innovation Celebration brought together all of the educators who had classroom release time funded by the West Metro Innovation Grants

program to share their work with others. Kim, Christine and I were able to speak about our inquiry projects with over two hundred other teachers, school administrators, counselors, speech and language pathologists and other professionals in the West Metro school community. We talked about our individual and team research into the effectiveness of inquiry-based pro-d and presented some of the artifacts that we had gathered throughout our cycles of inquiry. Though unwell on the day of the presentation, Rachel made clear in her journal that she had looked forward to presenting her findings on metacognition at the Innovation Celebration as well. She was also there during a short meeting that we held to decide how we wanted to present our research to others. This presentation was a collaborative effort that helped us focus what we felt was most important to share about the process and results of our inquiry.

There were many examples of collaborations that resulted from this research. I will speak to a favourite of mine, an inquiry unit that Rachel and I developed together, in a later section of this chapter. My takeaway from reading about and participating in the collaborative aspects of this inquiry is that collaboration is a powerful driver of professional development. When the teachers in this study planned their inquiries together, shared their learning with others, developed and co-taught lessons, or met to discuss resources or teaching strategies, they engaged in a depth of collaboration that may not have been possible using an in-service workshop professional development model. While collaboration was not a mandatory part of our research, it emerged from the process we engaged in and the excitement we felt about our learning. The extent of the voluntary collaboration among the participants is a statement about the strength of inquiry-based learning to engage professionals to share in the joy of their learning with others.

Process Over Outcomes

By taking a closer look at what I have said and done in the past, I was able to incorporate many of my beliefs into my classroom practices that were absent prior to beginning this research. Due to the immense value that I found in the work, I am confident that this process will continue as long as I am teaching. One example of this learning process began with a presentation that I put together for school district staff a few years ago entitled “Adaptations in Your Classroom”. In it, I promoted the idea that visual aids can help learners manage some aspects of their executive functioning. After

reexamining this presentation, I began to apply more visual elements to my teaching. One tool that worked well was to hang a clock with a glass face at the front of the room. The glass face allowed me to use whiteboard markers to colour in fractions of the clock. This let students know the amount of time we would have for certain activities, and would, I hoped, encourage conscientious time management. I believed that this adaptation was quite successful for many students in my class, but especially for those who had challenges with planning their time. The “glass face clock” adaptation was something I had read about years earlier, had shared with colleagues, but completely forgot about until this study encouraged me to look back at my work as part of the inquiry process. Specifically, the stage in the Mountain View Cycle of Inquiry, “Where are we now (?)” which encourages reflection on past and current knowledge.

Making teaching and thinking more visible is something I will continue to work on. In the summer following this research, I read “Making Thinking Visible” by Ron Ritchhart, Mark Church and Karin Morrison, as recommended by Rachel, so that I was better able to incorporate more strategies like the glass clock into my future teaching. The clock was not a solution to a problem; it was part of my development as a successful teacher. This development is ongoing. My journal reflection for stage two, “Where are we going” demonstrated that trying, and possibly failing, was part of my learning.

I want to continue to build a growth mindset. It’s important that I try things that I’m not sure about. Throw it at the wall and see if it sticks. Be ok with making mistakes.

If I was entirely outcome focused, then implementing failing strategies may have discouraged me entirely. This project helped me to understand that once something is learned, it needs continually practiced and reexamined to continue to be useful. By viewing learning as an ongoing process, I was better able to understand my practice as continually in development, despite potential setbacks.

Reflection

For Christine, personal reflection inspired her engagement with the topic for her inquiry project. For Rachel, reflecting on her learning helped to shape how she approached teaching metacognitive strategies to her students. Kim found reflection to be an important tool for determining the scope and focus of her learning. Reflecting on my past and acting on that learning was my inquiry. Not only did I reflect on my beliefs

through a reexamination of my collected writing, I wrote about what I was learning from this reexamination at each stage of my cycle of inquiry in my Participant Inquiry Journal. At stage six, “What does this mean to me?” under the “Reflection” heading, I wrote, “Knowing and doing are completely different animals.” I realized here that, where I was at one time confident that I would be able to apply my knowledge of inclusive education to a classroom of thirty students, it was actually much more difficult than I had anticipated. In this way, reflecting on how my beliefs and practices aligned encouraged me to experiment with inclusive strategies in my classroom. For Christine and me, reflection drove our learning. For Kim and Rachel, reflection kept them on course, and gave them purpose. Reflection, as a key element of the Mountain View Cycle of Inquiry, served to motivate and direct my learning throughout the inquiry process.

4.3.3. The Fruits of Our Labour

Community Building

Community building means reaching out, but it also means inviting in. For me, this occurred when I considered how to best create a physical environment in my classroom that I believed would best suit the needs of all learners. Part of my self-study involved reviewing several emails that I wrote to district administration in search of funding to build a more comfortable environment in the learning support center of my previous school. In these emails, I expressed how I wanted to change the lighting and the furniture to create a learning centre that would help students to relax, focus and self-regulate. When I looked at my Mountain View classroom, which contained thirty desks, fluorescent lights, hard plastic chairs and little else, I felt that I needed to make changes to the environment if I were to align my beliefs about calm learning. environments with my current practice. So, I looked to the district community for support.

Throughout my investigation period, I invited an occupational therapist in to observe my classroom and met with district administrators in the Student Support Services department in order to understand as much as I could about environments that would be most suitable for learning. I also visited other intermediate level classrooms in the district to speak with teachers and administrators about learning environments, and to see how they have adapted and modernized their classrooms. The actions that I took as a result of this learning enabled me to redesign my classroom with a range of seating,

storage, and lighting options that I believed were more suited to the needs of a diverse class of learners. This was how my inquiry brought the community into the school, and myself into the community. Other teachers in my school soon after wanted to talk about how and why I made the changes that I did. As Christine might say, my cycle of inquiry “created ripples” of learning in the school.

New Pedagogies

When I began this project, it did not seem likely to me that I would develop new pedagogies as a result of my self-study. Instead, I assumed that my process would reaffirm and refocus my teaching but leave little room for generating new learning. This did not turn out to be the case. While I made several notations in my journal about strategies and resources that I found to be successful in my classroom, strategies that came back to me through self-study, I can say confidently that I felt most satisfied in learning, through this research, how to teach my students to conduct a cycle of inquiry.

I began the year uncertain about how to effectively use inquiry in my classroom. I had just returned to the classroom after three years as a learning support teacher. In learning support, you teach tools and strategies to help students to access curriculum, but you do not necessarily develop lessons to address curricular topics. Now that I was back in the classroom just as inquiry-based learning was becoming a foundation of the new curriculum, I wanted to “do inquiry” right.

At the beginning of the school year I designed a template for a social studies project that I modeled after the Mountain View Cycle of Inquiry. I drew the inquiry cycle on an 11x17 piece of paper and left a blank space under each step for note taking. I then gave each student a “big question” to investigate and asked them to move through the cycle one step at a time as they investigated the given topic. For each step, I asked the students to record three points of information on the 11x17 sheet. To me, this felt and looked like guided inquiry. It was not. After moving through the cycle myself I began to understand why my students struggled. Like them I was unable to move through the MVCOI in a step-by-step progression. During my inquiry project, I jumped around within the cycle. I added and took away from my notes as I worked. My journal was full of scratched out information because, as my focus shifted throughout the process, my goals shifted with them. I learned through my inquiry process that that the cycle is non-linear, that one cannot count points of information, and that often the work can feel

incomplete, or unfinished, because new questions kept coming up. As I worked through my own cycle of inquiry, I began to see that the way I approached inquiry with my students needed to change as well. As I learned, and as Rachel has put it in her interview “inquiry is really open ended”, I needed to allow for this opened ended, less prescriptive style of inquiry for my students. My inquiry journal, stage six, “What does this mean to me” reads in part:

Knowing and doing are completely different animals. I thought I had a decent understanding about inquiry and its usefulness in the classroom. Instead I had a very basic understanding of the shape of an inquiry cycle. Need to use what I’ve learned to build better projects for the kids.

Near the end of the school year, I stopped counting bullets, designing templates, choosing topics, and looking only for results. Instead, I asked students to develop their own inquiry questions, and worried less about *how much* they learned, as long as they could demonstrate new learning. Our final socials studies project for the year was one that Rachel and I developed together. After working through our own cycles of inquiry, we decided that it would be most appropriate to grade the students not only on the work they produced, but also on how they engaged with the inquiry process. So, as long as it related to the curricular unit of “Complex Global Problems” we encouraged our students to choose their own topic, or “big question” for their inquiries. We suggested a schedule, provided a journal to track their progress, and made suggestions on where to look for information. To grade them, we looked for evidence of their engagement with their topic via their journal reflections, in class observation, and in follow-up interviews with each student. As a sort of capstone, we held an event after school hours where students shared artifacts of their inquiry cycles with parents and other community member. Admittedly, it was a proud moment for me to watch as students shared with enthusiasm their understanding of topics such as “Child Poverty”, “Women’s Rights” and “The Disappearance of Honey Bees”. I felt that my class was more engaged with this project than any other throughout the school year. Rachel and I began to write this unit together after I shared with her a small piece of my Participant Inquiry Journal, in which I wrote. “How...can we let the kids decide what they want to learn? How do we give them choice?” An open-ended inquiry project was the answer. I believed that, for the most part, my students appreciated the change in assignment style immensely, and I believed that many of them constructed some excellent learning as a result. In this way, I developed a new style of teaching inquiry as a result of engaging with inquiry myself.

4.3.4. Famine, Flood, and Pestilence

Time

Time is precious. I named this section “Famine” because I felt, as did each of the participants in this study, starved for time. As I was without classroom release time, I conducted my inquiry entirely on my own time outside of school. It was difficult, I admit, to fit this work into my schedule. I tried to make time to do the work every Sunday morning, for about an hour or so, throughout the investigation period. On some Sundays I was able to do the work for an hour or more, on some weekends I had report cards or lesson planning to attend to instead. Finding time to communicate with other professionals, for example when I met with the educators who would help me to modernize my classroom environment, had to be done early in the morning, or after school hours. I was very grateful to the teachers who let me visit their classrooms at 6:00 pm, or the district leaders who met with me at 7:30 am on a Thursday morning at Starbucks to discuss finding funding for new classroom furniture. These were dedicated educators who freely gave of their time to help students, and not even their own students. Despite the accommodations that others made to help me with this research, finding time for this inquiry was often difficult, required careful planning, and at times meant sacrifices to other aspects of our work. For me, and for the other participants who had six hours of classroom release, finding the time for this work was a significant challenge to the process.

THE MVCOI

Apart from finding time to engage in the self-study, I was challenged most by the structure of Mountain View Cycle of Inquiry itself. I felt that some steps, such as stage four “What are the patterns” and stage five “What does this mean to me” added little to my learning. This was evident in my inquiry journal, where I wrote comparatively little in these sections. Rachel, as well, seemed not to place much value in those specific sections, as she left them largely blank in her journal.

The other participants and I seemed more focused on some of the earlier stages of the inquiry cycle, where we were asked to focus our question, set goals, and seek out information. It was not that the other stages, where one is asked to look for patterns and to find personal meaning in the data, were ignored, but less was written about these

stages in Rachel's journal, as well as my own. Christine and Kim struggled with elements of the MVCOI as well. The exception was stage seven, which focused on "Taking action", something that all participants discussed enthusiastically in their journals and interviews. It may be that time was a limiting factor for participants, in that they began the cycle by focusing heavily on the earlier stages and ran out of time before fully investing their energy into the later stages. It may also be that the participants found more value in the earlier stages of the MVCOI. This was my experience. The bulk of my learning was accomplished in the first four stages of this cycle, and in the final "taking action" stage. It may be then that additional steps needlessly complicate the Mountain View Cycle of Inquiry.

4.3.5. Comparing the Inquiry-Stance with In-Service Workshop Professional Development

Upon reflecting on this process of inquiry, I feel I have learned more from it than I ever have from a pro-d in-service workshop. I feel as though I was able to make greater changes to my pedagogy, changes that I believe had positive effects on my students and school, than I have ever made following a workshop. That said, like Christine, I understood upon completion of my inquiry cycle that there were challenges that needed to be addressed before the model could be as successful as possible.

4.3.6. Nathan's Epilogue

It would have been challenging to conduct a living-educational self-study as workshop in-service professional development. The amount of reading material and the time I needed to go through it was far beyond the scope of a single day of in-service. I needed time to read, to experiment in my classroom, to reflect on my learning, and to take action. While I felt, like the others, challenged to find all the time I needed for my study, and not entirely satisfied with the specific inquiry model that we employed, the benefits of learning in this manner far outweighed the challenges.

I began my inquiry by asking how I could align my beliefs about inclusive education with my classroom practices. I looked to my past work as a learning support teacher to help me to define my beliefs. From there, I was able to apply strategies in the classroom that created a more inclusive learning environment for my students. Not only

did this process help to me recall and reevaluate strategies that I had recommended in the past, it also encouraged me to see my physical classroom as inefficient for learning. My inquiry took me through the lengthy process of learning about the physical self-regulatory needs of my students, and in doing so, lead me to change the lighting, storage and seating in my classroom.

This process also enabled me to develop my understanding of inquiry-based learning, and to change my approach to inquiry with my students. I began developing lessons and units that were more open ended and, I felt, more interesting for my students, giving them choice and self-direction in their learning. I learned to evaluate their work not only on the outcomes, but also on their engagement in the process of learning itself.

Reflecting on this work, I believed that my inquiry cycle helped me to become a better teacher for my students, and a more knowledgeable administrator in my school. I was grateful for the work and all the benefits derived from my professional development, and I looked forward to continuing this work in the future.

4.4. Summary

Each participant in this study began with a question or problem that they felt was relevant to their professional learning, to their classroom practice, to their school community, or to some combination of the three. The participants faced a variety of challenges throughout the process of answering these questions via a cycle of inquiry. Time was the most limiting factor when engaging with our inquiries and developing our professional knowledge. For one potential participant, Beth, the demands of her time kept her from participating altogether. Some of the participants also acknowledged that organization of the Mountain View Cycle of Inquiry itself presented its own challenges. On top of this, cooperation with school administration, the knowledge base of other community members, and accountability demands of inquiry-based professional development tested some of the participants' abilities to engage fully and completely with their cycles of inquiry.

Despite these challenges, the participants shared many aspects of the process of engaging in the Mountain View Cycle of Inquiry that they felt inspired, contributed to, and

resulted from the new professional learning they acquired. Elements that inspired participants, that “Planted the Seed” of professional learning, include the self-directed and problem-based nature of inquiry-based learning. It was not enough to inspire the learning, to grow the plant must be watered. For the participants in this study, it was the collaborative nature of their inquiries, their focus on the process as well as the outcomes, and their reflective practices that helped to shape the direction and scope of their learning. The participants reported gaining much from their inquiries. They also believed their students benefited from the addition of new or revamped instructional strategies and environments, that the community benefited by being invited into the school, or by school members getting out and involved in the community, and that they themselves benefitted by developing a better understanding of the topics they investigated. Importantly, the participants reported feeling a deeper and more complete understanding of inquiry-based learning as pedagogy. In this section, entitled, “The Fruits of Our Labour”, participants reported that the benefits of this process were many, and far reaching.

When comparing this inquiry-based approach to professional development to the traditional workshop in-service model, the participants were unanimous in the view that inquiry was the more engaging method for constructing professional knowledge. Kim, for example, valued the active and investigatory nature of inquiry greatly, while finding very little value in “sit and get” workshop in-service that often left her feeling bored. Rachel, while noting that in-service can “save time”, also came to find that inquiry is a much better method for solving problems and addressing the deeper, “philosophical” aspects of her work. Christine and I also preferred the inquiry-based pro-d to our past experiences with in-service workshops. Our inquiries were highly self-reflective and involving in ways that we believed to be greatly beneficial to our teaching, but may not have been possible with limited and prescriptive workshop in-service pro-d. That said, despite the rich, deep learning that we experienced during our research, the participants each found that there were some issues or challenges with professional development modeled on inquiry. Challenges such as the lack of time, accountability, inquiry knowledge and administrative support, or lack thereof, impeded the inquiry process of our participants. The specific cycle of inquiry, the MVCOI, was also at times burdensome and irrelevant to our learning. Such issues should be addressed in order for inquiry-based professional development to better suit the needs of teachers.

From the data collected in the Participant Inquiry Journals and the in-depth participant interviews, when approached through a process of Thematic Analysis, it can be said that participants found an inquiry-based approach to learning to be a valuable tool for professional development. While each of the participants ran into complications throughout the process, what we shared in common was very powerful. Each of us felt inspired to engage with learning, interested in the process throughout, enthusiastic about working with others, and ultimately satisfied with how we felt our learning benefited our students and our school community.

Chapter 5. Conclusions and Discussion

5.1. Conclusions

The central aim of this study was to understand how teachers experienced and perceived the process of engaging in an inquiry-based approach to professional development. The findings suggest that the participants felt an inquiry-based model of professional development was an effective means for generating knowledge that benefitted their classrooms and school communities. The participants were at times “engaged”, “motivated” and “empowered” by the self-directed process of inquiry. Each participant in this study reported that they appreciated having choice in the topic and direction of their professional learning. This finding is in line with tenets of adult learning theory, also known as andragogy, which states that adult learners will find the greatest success with learning that is self-directed, problem based and relevant to their contexts (Garrison, 1997; Kidd, 1959; Knowles, 1980; Knowles, Holton & Swanson, 2005).

The participants also felt that the collaborative and reflective nature of the Mountain View Cycle of Inquiry enabled them to develop new pedagogical strategies that they were able to use in their classrooms. The participants noted that through their research they grew to understand inquiry as a powerful learning tool, which enabled them to better plan lessons and classroom activities using an inquiry-based approach. This is important because the recently revised curriculum of British Columbia includes a focus on engaging students in inquiry-based learning (British Columbia Ministry of Education, 2011; British Columbia Teacher’s Federation, 2008). Moreover, the participants’ inquiry cycles created ripples of interest in the school community and beyond.

Another aim of this study was to examine how participants compared an inquiry-based approach to professional development with the more traditional in-service workshop model of professional development. The participants in this study had mixed responses to this question. Christine felt that, upon reflection, the in-service workshop model of professional development did not motivate her as effectively as the inquiry model, which she termed “empowering”. Kim viewed an inquiry-based approach as an effective method for learning about her practice, valuable for constructing knowledge in

ways that surpassed her experiences with workshop in-service professional development. One participant, Rachel, reflected that the two models serve different purposes. In her view, the inquiry-based approach helped her become, in her words, “a better teacher”, whereas the in-service workshop model, when delivered by knowledgeable experts on topics related to her professional interests, has helped her to meet the more immediate demands of her classroom. I have found the workshop in-service model of professional development to often be devoid of context and self-direction, and out of line with how teachers are expected to teach in British Columbian schools. My experiences are similar to those of Christine. For us, despite its challenges, the inquiry-based approach was engaging, fruitful, and we believed, more meaningful to our practice than the in-service workshop model of professional development.

The educators in this study also faced some challenges. They each struggled with the time demands of conducting inquiry while meeting the demands of their jobs. In addition, one participant felt the process lacked accountability. Another participant noted that administrative support was essential, though sometimes lacking, to the implementation of the outcomes of her learning in the school. Only two of the participants had access to universities, and therefore access to the most current academic scholarship on the topics they chose to study. Also, three of the participants found the Mountain View Cycle of Inquiry to be an inefficient and needlessly complex model for inquiry-based learning.

It is important to note that, given the design of this study, the findings reported here are not generalizable; they describe only the experiences of the participants in this study. Nonetheless, the following general principles about professional development are suggested. First, professional development is complicated. It is likely not realistic for the educational community to attempt to design a form of professional development that will meet the needs of all educators, in all contexts. Secondly, the findings suggest that participants felt, despite its challenges and limitations, that meaningful professional learning can be achieved when teachers take an active and engaged role in the learning process through self-directed inquiry.

5.2. Discussion

In chapter four I highlighted aspects of the inquiry process that, based on thematic analysis, demonstrated the participants' views of the strengths and weaknesses of engaging with the Mountain View Cycle of Inquiry as a means of constructing useful professional knowledge. In this section I discuss the findings from this study in light of the literature from the fields of adult education, inquiry, and educator professional development. I conclude with recommendations for future research.

5.2.1. Adult Education

Kidd, in *How Adults Learn* (1959), wrote that adults engage most in learning tasks that are embedded into their everyday preoccupations. Kidd believed that unless what an adult is trying to learn, or is asked to learn, applies to the work that they are occupied with on a day-to-day basis it will, "...neither take hold or move forward" (Kidd, 1959, p. 138). In light of Kidd's views, it was not surprising then that each of the participants decided on their inquiry topics, or "big questions" based on the work they do daily in their classrooms and schools. Kim's beliefs about her own learning reflected Kidd's position when she said in her interview that she finds pro-d to be most successful for her when it is directly relevant to something that she is doing on a day-to-day basis. The choice of inquiry topic was not prescribed, so it is noteworthy that Kim, and all participants in this study chose, as Kidd may have predicted, a topic that concerned them and connected to their daily work.

Knowles, Holton and Swanson, in *The Adult Learner* (2005), posited two other factors that they believe must be present to fully engage adults in learning tasks: "doing" and "self-direction" (p. 257). These authors claim that having control over the direction of their learning is very important for adults.

In fact, it is having the freedom to choose their learning strategy that is critical. It is the sense of personal autonomy.... that seems to be most important for adults. The biggest problems arise when adult learners want to have more independence in their learning but are denied that opportunity" (Knowles, Holton & Swanson, 2005, p. 189).

The participants in this study had the opportunity to choose their inquiry topics and direct their own learning processes. Throughout their cycles of inquiry, they determined for

themselves the most appropriate learning strategies, as well as how and when to apply them. Throughout this study, the teachers actively engaged in their learning by reading, attending conferences, taking courses, visiting other schools and communities, building resource collections, and trying out new ideas in their classrooms. The participants in this study did the work of learning with personal autonomy and independence. The Mountain View Cycle of Inquiry provided a framework, but that framework was used or ignored as the participants saw fit.

Garrison (1997) developed a model of adult learning that suggested adults learn best when they feel motivated to begin any learning task. Garrison (1997) believed that motivation for the adult learner could be sustained through self-directed learning tasks, which will lead to critical thinking and “deep and meaningful learning outcomes” for adult learners (p. 29). In this study, the participants were motivated to solve problems that affected their work on a day-to-day basis, and by actively directing their own learning toward goals that they defined for themselves, they believed meaningful learning resulted. In their interview and journal reflections, the participants shared in various ways how they felt the outcomes of this learning were meaningful to their classrooms and school communities.

An inquiry-based model of professional development that encouraged adults to engage with learning that was in line with the tenets of andragogy enabled teachers to construct professional knowledge that they believed to be “deep and meaningful.”

5.2.2. Inquiry

Poekert’s (2011) definition of educator inquiry requires a curious teacher, a teacher interested in solving the problems they face each day in their classrooms.

In essence, it is a process in which teachers problematize their own practice. Teachers begin with a wondering about their classroom practice, craft a research question from this wondering, collect relevant data on that question, analyze the data in reference to pertinent research literature, and take action in the classroom based on their findings (p. 20).

For Poekert, successful teachers are inquirers; they are both learners and doers. They seek to understand the knowledge gained by those who have come before them, and actively create their own knowledge through teaching. This was the intent and effect of

the process in this inquiry-based study. A small excerpt from Kim's interview reflects this in one or two sentences. In order to teach First People's epistemologies, Kim felt she needed to develop a concrete understanding of some of the terminology she came across. When she struggled to find a universal definition of the term "Metis", this became a problem for her that needed solving, "Some of the things I thought I knew weren't as in agreement as I might of thought they would be..." Kim spoke with multiple people in search of an answer, including an Aboriginal Education consultant. This reflection is telling:

And so that was a very interesting conversation, and I'm stuck on that right now, and I don't really know which direction to go on with that and I think I need to talk to more people from First Nations groups to get other people's opinions, not just mine.

Here, Kim was demonstrating the willingness to construct her own knowledge by acting as a researcher to seek answers to her problem, much as Poekert described. While Kim had not solved this dilemma by this point in her inquiry, she was engaged by the problem of confusing terminology, and actively sought satisfactory answers. Poekert (2011) found that inquiry is more meaningful to teachers when it is grounded in their own dilemmas. This was also the experience of Kim and the other participants in this study.

An important strength of the inquiry-based approach to professional development used in this study was that it helped align how the participants were expected to teach in British Columbian classrooms with how they themselves were learning. Dewey wrote that teachers should be taught in a way that most closely reflects how they are expected to teach (Dewey, 1904). The new curriculum in British Columbia is based largely on the principles of inquiry-based learning (BC Ministry of Education, 2012; BC Ministry of Education, 2013). Workshop professional development is not inquiry-based. Bransford, Brown and Cocker (1999) also identify the disconnection between inquiry-based teaching and how teachers are taught in pre-service education programs, "Although teachers are urged to use student-centered, constructivist depth-versus-breadth approaches in their education classes, new teachers often see traditional teaching in use in the college level and in the classroom next door" (p. 192). The authors feel that this disconnect can, at its worst "...significantly affect teachers' lifelong learning and development as professionals" potentially leading to, "...rejection of educational research and theory by teachers" (p. 192). It is important then that the way teachers learn is aligned with how they are meant to teach. Inquiry-based professional

development may help to resolve this disconnect in schools where inquiry-based learning is the expectation for students.

This resolution was evident in this study. Similar to how the new curriculum in British Columbia encourages students to do, each of the participants developed a question or identified a problem connected to their interests then went about finding answers by studying, working with others, taking action, and reflecting on those actions. Christine, for example, saw an issue that she felt interested in addressing: how to help teachers overcome what she perceived as a hesitancy to bring Aboriginal content in to their classrooms. From there, she looked to the roots of the problem, she educated herself, she worked collaboratively with others to understand multiple perspectives, and began to find answers. The Mountain View Cycle of Inquiry, as a structure and a process, provided the participants in this study with the opportunity to problematize their practice, and work to address these problems in the same way that Mountain View students were expected to learn; through inquiry. The inquiry-based approach used in this study was very much grounded in the daily experience of the teachers in this study. As argued by Dewey (1904), teaching methods should not be divorced from how teachers are instructed. These teachers, who are asked to facilitate inquiry in their classrooms, found it beneficial to their instruction to experience learning via inquiry-based practices.

There were many benefits of the participants' inquiries, but also many challenges. The teachers had difficulties managing the time they needed to research, study and collaborate. Some found that the inquiry process lacked accountability, or that the administration did not always support their work. These challenges, however, may have been in part the growing pains of teachers taking on the responsibility of constructing knowledge for themselves. Cochran-Smith and Lytle reported that this is common in teacher research.

These transformations will inevitably cause conflict as those traditionally disenfranchised begin to play increasingly important roles in generating knowledge and deciding on how it ought to be interpreted and used (Cochran-Smith & Lytle, 1992, pp. 25-26).

This was true for the participants in this study; there were challenges, and feelings of uncertainty. Rachel shared this in an early reflection, "I can get really lost in that cycle of inquiry...I have felt frustrated in the past because there isn't a clear outcome, or a

clear...there's not always a clear product in inquiry." Cochran-Smith and Lytle stated that when teachers are used to receiving professional knowledge in the form of top-down instruction, conflicts will arise when they are given the opportunity to direct their own learning (Cochran-Smith & Lytle, 1992).

Despite facing challenges, all participants in the study reported feeling engaged and motivated by this form of inquiry-based learning. The participants approached professional learning in a manner consistent with how they were expected to help their students learn: by beginning with curiosity and solving problems through active investigation. At the same time, each of the participants demonstrated, in their interviews or journals, a belief that inquiry-based learning had direct benefits to their pedagogy, classrooms, or school communities. These findings are in line with those of Poekert (2016) who found that, "as a professional development strategy, teacher inquiry fulfills its promise of enhancing teacher learning and collaboration toward the end of improving teacher practice" (p. 36).

5.2.3. Professional Development

In British Columbia and across Canada, professional development is considered to be a legal right and responsibility of public educators (British Columbia Ministry of Education Teacher Regulation Branch [TRB], 2012; Campbell et al., 2016). There are many definitions of professional development, but the one most useful in the context of this study is the definition proposed by the Teacher Regulation Branch of British Columbia (2012):

Educators develop and refine personal philosophies of education, teaching and learning that are informed by theory and practice. Educators identify their professional needs and work to meet those needs individually and collaboratively (p. 3).

In a 2016 study of professional development across Canada, Campbell et al. year found that, "Workshops and collaborative professional learning opportunities are the predominant forms of this activity" (p. 8). However, despite the popularity of workshop in-service professional development, some researchers have found that "...it does not encourage the longer-term creativity and flexibility that teachers need to meet the evolving challenges typically encountered in teaching situations" (Bertanees, Parr & Timperly, 2009, p. 204). Bransford, Brown and Cocking (1999) describe the "typical

workshop” as professional development tasks that “... tend to occur once, deal with decontextualized information, and often do not resonate with teachers perceived needs” (p. 192). This description put in-service workshops directly at odds with what the research indicated to promote effective learning for adults (Bransford, Brown and Cocking, 1999; Garrison, 1997; Kidd, 1959; Knowles, Holton & Swanson, 2005). While workshops may not meet the needs of teachers, they are one of the most prominent forms of professional development in Canada. This is a problem for teachers and students alike. Professional development is about “developing and refining” your practice, and it was the inquiry-based method that helped Rachel with “getting better” as a teacher. It is also noteworthy that Rachel’s inquiry was informed by theory, as she read books and articles on metacognition, as well as practice, as she had applied her learning about metacognition to classroom activities throughout the course of her inquiry-cycle. Reflecting on both her “theory and practice”, Rachel felt satisfied that, yes, inquiry “...is great as a model for ongoing professional development.”

Engaging with a cycle of inquiry helped Kim, Christine and I to refine our professional knowledge through theory and practice as well. “The Fruits of Our Labour” section of the previous chapter spoke to the benefits to our pedagogy that resulted from this process. Kim and Christine developed a greater understanding of First Nations culture by taking courses, speaking with other professionals, and studying the history and culture of local First Nations groups. They then applied this knowledge, as well as their knowledge of inquiry, to their classroom practices. Throughout my inquiry cycle, I studied my own work as well as the work of those who have studied inclusion and differentiation and used this learning to help my students meet curricular goals. Cochran-Smith and Lytle (1993) have written about how teacher inquiry could benefit teachers, schools and communities alike, “Research by teachers is a significant way of knowing about teaching.... Through inquiry, teacher researchers generate knowledge: for their own practice, for the immediate community of teachers, for the larger community of educators” (p. 44). The participants in this study experienced what Cochran-Smith and Lytle predicted they might almost three decades ago, that when teachers are engaged with learning through inquiry, there will be great benefits to their practice. For the participants, the first criterion of professional development is then met, in that they each believed they had developed and refined their educational philosophies through theory and practice.

The second criterion for educator professional development in British Columbia is; “Educators identify their professional needs and work to meet those needs individually and collaboratively” (British Columbia Ministry of Education Teacher Regulation Branch, 2012). They participants in this study defined their learning needs, they set goals, and they worked to meet them. This reflects the view that professional development that provides “...participant-driven active learning opportunities,” can lead to “enhanced knowledge and skills as well as changes to classroom practice” (Poekert, 2011, p. 36). By driving their inquiries, the work of the participants in this study did effectively meet the Teacher Regulation Branch’s definition of professional development.

Poekert’s contention that participant driven professional development can lead to enhanced classroom practices was a view shared by the teachers in this study. Others who have written about educator professional development have shared Poekert’s view. Lane and Youngs (2014) argued that taking an “inquiry-stance” is an effective way for teachers to develop their practice. In their words,

...professional development activities that meaningfully engage teachers in sustained inquiry with colleagues are likely to support continued teacher learning in and from practice over time, implementation of ambitious instruction, and engagement of students in high level learning (p. 286).

For the participants in this study, inquiry-based professional development was effective method for engaging them both philosophically and actively in developing their professional practice, more so, in their estimation, than the traditional in-service form of professional development. The experiences of the participants in this study are reflected in the research and findings of professionals who have investigated the relationship between inquiry and professional learning.

5.2.4. Participatory Action Research

Participatory action researchers plan an investigation together, conduct research, and reflect on their learning (Kemmis, McTaggart and Nixon, 2014; Wells, 2012). The participants in this study planned an investigation into the effectiveness of an inquiry-based model of professional development for constructing knowledge. The goal of action research in schools is the “...improvement of practice or expansion of knowledge” (Calhoun, 2002, p. 20). Chapter four highlighted many of the changes to practice and the

expansion of knowledge that resulted from the inquiries of the participants. How did these findings relate to the findings of those who write about educator research?

Cochran-Smith and Lytle believed that if teacher development were based in inquiry, or teacher research, teachers would become active agents of change within their school communities; willing to labour to understand and possibly alter their schools and classrooms (Cochran-Smith and Lytle, 1992). A desire to continue with a line of inquiry over time could be considered taking an “inquiry-stance” to professional learning (Cochran-Smith and Lytle, 1993). Kim and Christine both wrote and spoke about how they would like to continue with their work of bringing First Nations culture and knowledge into Mountain View Classrooms “next year”. Kim wrote, “My focus for next year though will be to bring in more experts to talk with the children.” When asked about the role inquiry might play in educator professional development, Kim said this;

I see a lot of potential for teacher inquiry and inquiry as a method for disseminating PD. Because again you get people who are engaged, motivated, and you know, I would assume dedicated to see a concept through...

Kim was motivated to continue her learning, to “see it though” year after year, despite her commitment to this study having ended with her interview. Christine also made plans for “next year” that are extensive. In this way, the Kim and Christine demonstrated that this form of inquiry-based professional development encouraged learning that could continue year after year. They had experienced the power of inquiry to inspire “...lifelong learning and their development as professionals” (Bransford, Brown & Cocking, 1999, p. 192). Rachel also considered her learning about metacognition to be ongoing, and I continued with my work on building an inclusive classroom long after this study had ended. While the participants’ commitment to this research officially ended with the interview, they felt their work would not. The participants in this study came to develop an inquiry stance to their learning by developing the “...habit of systematically studying their practice, contributing to their own learning, and to the learning of others” (Cochran-Smith and Lytle, 1993, p. 307).

The participants also grew to understand the power of collaborative inquiry-based professional development. According to Fisher and Sax (2001) the purpose of any action research study is for teachers to “...become partners in the research process and share responsibility for identifying specific problems and applying local, action-oriented

strategies.” (p. 71). Before this study was complete, Christine reflected in her inquiry journal that in the future she would like to work on developing collaboration session with teachers in the district. It was her stated intention to facilitate sessions that enable, “...connecting with other schools to learn about their journeys, resources and trading/sharing to see what is useful.” Kim and Christine also mentioned in their journals and interviews several times how working as a team supported and encouraged their learning. Rachel, who worked often in isolation, also reflected that she would like to share her learning with others. After the completion of this study, Rachel and I worked collaboratively to develop an inquiry-based Social Studies project for our grade six classes based on what we had learned about inquiry. This was the first time we had worked on a joint project in this fashion. Kim and Christine became partners in their research, and in a way so did Rachel and I, at least in the application of what we had learned. By co-developing an inquiry unit, we applied “action-oriented strategies” to the problems we faced in the classroom. Looking closely at the intentions and behaviors of the participants, it is evident that we valued the collaborative nature of this professional development opportunity. We developed our understanding of how working closely with other educators to inquire into aspects of our pedagogy can have benefits for our students and classrooms. Developing an understanding of this value of collaborative inquiry can have many positive benefits for educators:

In addition to improved classroom teaching and learning, the reported benefits of collaborative inquiry for schools include: greater curriculum alignment within and across grade levels; introduction of new ideas that can be incorporated into school improvement goals; professional development targeted to teachers’ needs; shifts to collaborative school cultures that can support inquiry into student success...(Christou et. al., 2015, p. 24).

While this was not the first time that any of the participants collaborated with another as educators, this study inspired further collaboration, and reinforced the value of collaboration among the participants.

Another result of this participatory action research project was that changes to the Mountain View Cycle of Inquiry (MCVOI) itself were proposed. Though developed by the teaching staff at Mountain View Elementary, this research project was the first time these Mountain View teachers had formally attempted to follow the cycle to construct knowledge for themselves. The MVCOI was developed for student use, but as the

teacher participants and I attempted to navigate the cycle, it became apparent that there were some stages in the cycle that were unnecessary, even burdensome. However, as Kemmis, McTaggart and Nixon (2014) pointed out, close adherence to the stages of an action research cycle are not what is most important about inquiry,

For critical participatory action research, the criterion of success is not whether participants have followed the steps faithfully, but whether they have a strong and authentic sense of development and evolution in their practices, their understandings of their practices, and the situations in which they practice (pg. 19).

While the participants reported feeling that their practice evolved, strict adherence to the MVCOI was not something they shared. Rachel, for instance, left her inquiry journal blank for two stages of the cycle. Leaving pages blank would seem to indicate that either she did not have time to address these stages, or that she did not feel they were important to her investigation into metacognition. My inquiry journal was similar to Rachel's in this way; I did not include much information in Sections 5 or 6. Most of my writing and reflection efforts could be found in the early stages of the cycle, which asked participants to find information and set goals, as well as the final section, where I commented on the actions I took or would like to take as a result of my learning. Kim used her journal at each stage of her cycle but did note that it was burdensome to do so. Unlike the other participants, Christine spoke about her frustrations with the Mountain View Cycle of Inquiry directly in her follow up interview, "I had some trouble with the MV Inquiry Cycle. It didn't always speak to me.... I didn't want to stick with a cycle." Christine felt the cycle to be too prescriptive for her needs. She did not want to work in stages, instead she suggests an alternate form of inquiry that she feels "speaks to her" in ways that she can "stick with." While Christine's journal included information and reflection at every stage of the MVCOI, she nonetheless felt that the organization of this cycle left her wanting something with greater flexibility.

The Mountain View Cycle of Inquiry posed problems for each participant in this study. In general, something simpler, less cumbersome, and less prescriptive would likely have been a preferable structure for their inquiries. When I shared these findings with Beth, the Mountain View Principal, she encouraged me to seek and propose alternative models for the school. After navigating the cycle myself, and hearing the frustrations of the participants in this study, I began looking for a new, simpler model of inquiry that resembled more closely the action research cycle proposed by Kemmis,

McTaggart and Nixon (2014), which cycles through only the four stages of planning, acting, observing, and reflecting (p. 19). In my experience and based on the experiences of the participants in this study, I believe that a simpler model would benefit both students and teachers alike.

Cochran-Smith and Lytle (2009) define the purpose of teacher action research as, “The efforts of action researchers center on altering curriculum, challenging common school practices, and working for social change by engaging in a continuous process of problem posing, data gathering, analysis and action” (p. 40). Participants in this study worked together to study the effectiveness of the inquiry-based professional development based on the Mountain View Cycle of Inquiry, and in doing so they began an ongoing cycle of learning, acting, and reflecting that lead to changes within their classrooms and the school community.

5.3. Recommendations

Several recommendations for the practice of inquiry-based professional development emerged from this study. They fall into six areas including: preservice teacher education, administrative support, connecting to current scholarship, inquiry design, accountability, and flexible professional development.

5.3.1. Pre-Service Teacher Education

Dewey (1904) wrote that teachers should be taught using the methods they are expected to use in the classroom. “The curriculum of the elementary and the high school constituting the ‘practice’ or ‘model’ school ought to stand in the closest and most organic relation to the instruction in subject-matter which is given by the teachers of the professional school” (p. 23). As British Columbia has moved to a curriculum based on student inquiry, Dewey’s argument implies that universities should be engaging pre-service teachers in the process of inquiry as well. It was a concern for Christine that teachers on the Mountain View staff were not entirely prepared to engage in inquiry, as they are all “at different places” with it. They are not alone. Dibiasse and McDonald (2015) conducted a survey of 275 “middle grade and secondary science teachers” in order to “to determine teachers’ attitudes, values, and beliefs about inquiry” (p. 29). The survey revealed that while these teachers believed inquiry could be an important part of their

teaching, they did not feel they had been prepared to effectively implement inquiry-based learning in their classrooms.

A majority of the teachers surveyed indicated that they believe inquiry to be an important effective component of a science teaching method. However, the teachers, for the most part, do not feel prepared to implement inquiry nor do they have the skills necessary to manage inquiry activities. In addition, many feel that they do not have the requisite background knowledge to effectively implement inquiry (DiBiase & McDonald, 2015, p. 33).

There may be a need for further research into how teacher education programs can focus on helping new educators develop an understanding of inquiry. Cochran-Smith and Lytle (1993) argue that inquiry should be a required element of teacher education,

Hence, what is required in both preservice and in-service teacher education programs are processes that prompt teachers and teacher educators to construct their own questions and then begin to develop courses of action that are valid in their local contexts and communities (p. 63).

Engaging with inquiry in pre-service as well as in-service teacher education could help teachers become increasingly familiar with inquiry as pedagogy. For example, part of pre-service teacher education could involve students in the experience of inquiry by asking them to work through an independent cycle of inquiry, which, as both our participants and Cochran-Smith and Lytle have indicated, can help educators to develop a strong belief in inquiry as a powerful learning tool.

5.3.2. Administrative Support

As stated by each the participants of this study, the greatest difficulty they faced with their inquiries was finding the time to do the work. While much was accomplished by the participants, the six hours of classroom release time was only the beginning of a process that required each of the educators to complete their work on weekends and after school hours. This was in addition to the many demands already placed on the teachers' time outside of their classrooms. This made the inquiry process challenging, and sometimes frustrating, for the participants. The participants found, like Cochran-

Smith and Lytle (1993), that “Teacher research cannot simply be an additional task added to the already crowded teacher’s day” (p. 93).

For inquiry-based professional development to meet the needs of busy teachers, teachers, principals and district administrators need to work together to find time for teachers to engage with this manner of learning. Rachel described how the freedom of time can be immensely beneficial to her learning, “So that time piece is really important for me. I like learning in the summer for that reason, because I feel like I can do it in a relaxed manner because I don’t feel like I have other pressures, so that matters.” Summer may be, as Rachel put it, a good time for her to “take on a project that I feel personally challenged by or personally committed to.” However, while summer provides the freedom of time, it may not be enough. Teachers do not have the same access to important resources and to other professionals in the summer that they have during the school year. This time needs to be found during the school year. Butler and Schnellert (2012) call on school administrators to assist teachers in finding ways to engage with inquiry, “these include providing time, resources, and structured opportunities for collaboration” (p. 1217). Cochran-Smith and Lytle (1993) suggest that creative rearrangements of school schedules could facilitate this type of work. “Supporting teacher-research communities may entail redistributing some of the time during the school day that is already allotted for other purposes” (p. 93). If teachers are to engage fully with inquiry, to feel personally challenged and committed to an inquiry project, creative solutions must be found to the challenge of time.

Assisting teachers to find the time to engage with inquiry is one way that administrators can be more supportive of the process. However, this is not the only way that administrators and teachers can work together to support educator inquiry. In her journal, Christine suggested that teachers are not always and entirely comfortable with engaging with inquiry. As school leaders, administrators have the opportunity to help build a community of educators who are comfortable and confident with inquiry. For Christine, this is “essential”. Focused investigations during staff meetings, building collaborative time into the school schedule, inviting guest speakers or experts to work with teachers on developing their knowledge of inquiry, could all go a long way toward creating a school culture where teachers engage confidently with inquiry-based learning.

In a study of over 91 schools in New Zealand, Parr and Timperley (2007) found that student scores improved in reading and writing for the following reasons, "...coherence within and between the multiple levels of the schooling and educational administration systems, and a focus on evidence-informed inquiry into effectiveness at each level of the system" (p. 91). In this study of student achievement, the authors found that an essential element of their students' success came from teachers and administrators working together to investigate how to "close the achievement gap" through inquiry-based practices (Parr & Timperley, 2007, p. 90). This suggests that when teachers and administrators work together to build a community of inquirers, they can create greater opportunities for student success. According to Bissex and Bullock, (as cited in Cochran-Smith and Lytle, 1993), there are many ways in which administrators could support teacher research and inquiry.

A variety of arrangements have been proposed to enable teachers to do research. These include reduced loads, released time, paid overtime, and summer seminars or institutes in which teachers can write about and reflect on their teaching practices (Bissex & Bullock, 1987, p. 21).

Further study into how this can be accomplished in specific contexts is required. However, it is evident that teachers require the support of administrators to engage deeply with inquiry-based learning. Concrete solutions to the lack of time, funding, resources, and other challenges are required to support meaningful inquiry by teachers. Administrators should be involved at every step of the process of building a community of inquirers. Writing about how to support inquiry-based professional development for teachers, Lane and Youngs (2014) made this point succinctly.

In order to enact these approaches to professional development effectively and sustain them over time, principals and district administrators must ensure that several conditions are present. These include providing opportunities for teachers to learn about these approaches and to develop research skills...promoting teacher ownership over these approaches, enabling teachers to learn from their peers, promoting inquiry and collaboration across school faculties, and drawing on outside experts (p. 300).

5.3.3. Current Scholarship

The teachers in this study looked mostly to their colleagues and to popular educational literature to develop their knowledge. Rachel also went to a conference and

Kim and I spoke with others outside of education who could help us with our inquiries, but only Christine, who took an online course on Aboriginal Education offered by a local university, and myself as a graduate student, had access to current scholarship and academic writing on our topic. Mayer (2004) wrote that in order to best understand how students learn, it is important to look to scientifically rigorous research. Kim and Rachel did not have access to university libraries or research databases when investigating their topics, thereby limited their access to current research. It has been shown that professional development that connects educators to universities helps teachers to connect their practical knowledge with theoretical knowledge, and such relationships can lead to innovative learning for teachers (Jaquith, Mindich, Wei & Darling Hammond, 2010). When teachers have restricted access to universities and current scholarship, they are limited in their ability to access the most current research on student learning. I believe that access to current scholarship could have provided Rachel with a larger pool of resources on metacognition, or Kim and Christine with greater access to current research on Aboriginal Education in British Columbia and elsewhere. Any form or program of educator professional development should ensure that educators have access to current and scientifically based research on topics in education. The Teacher Regulation Branch of British Columbia (2012) also states that teacher learning should be informed, in part, by theory. Innovative ways to help connect teachers with universities and for all educators to have access current academic scholarship should be sought in order for self-directed inquiry to be as effective a method for educator professional development as possible.

5.3.4. Inquiry Design

The Mountain View Cycle of Inquiry, the inquiry cycle that was adopted for this study, was developed by the staff at Mountain View Elementary in a series of staff meetings that took place throughout the 2013/2014 school year. It is a seven-stage cycle of questioning, predicting, researching, looking for patterns, sorting information, reflecting and taking action. Kim felt that keeping documentation for each of the steps was burdensome. Rachel did not keep journal entries for several stages of the cycle. Christine said in her interview that she had a difficult time adhering to the stages of the cycle in order, and that she did not connect with the style of inquiry it proposes. Perhaps a more concise model for inquiry, such as the four-stage model of action research;

planning, acting, observing and reflecting, proposed by Kemmis, McTaggart and Nixon (2014) would be less burdensome, and more intuitive, for teacher researchers.

5.3.5. Accountability

Rachel mentioned in her interview that feeling a lack of accountability challenged her commitment to the inquiry process. She stated that despite enjoying the process of inquiry, “I still feel like I need some sort of accountability to make that work.” Rachel seemed to be saying here that because she never felt that she would be made to account for her learning, or to take responsibility for it, she was less motivated than she may have been otherwise. Butler and Schnellert (2012) found that while multiple stakeholders in British Columbia understand the importance of professional development, the concept of who is ultimately accountable for it does lead to tension within the educational system. They propose that this “...press for accountability may lead schools and districts to impose top-down initiatives” for educator professional development (p. 1206). Top down, administrator or district driven plans are antithetical to teacher-directed learning. Such top down initiatives are what Cochran-Smith and Lytle (1992) refer to as those which are “disenfranchising” for teachers who desire to “...play an increasingly important role in generating knowledge and deciding how it should be interpreted and used” (p. 26). There may be ways, however, to balance the need or desire for accountability among stakeholders without the imposition and potential conflict of top down measures.

The practitioners in this study were accountable to themselves when they set goals for their learning, to their students when they set out to provide avenues for their success, and to each other when they shared their learning or worked collaboratively on their cycles of inquiry. Teachers naturally took ownership over the inquiries because they were interested in how inquiry could address issues in their day-to-day work. However, if external accountability is helpful to teachers, collaborative inquiry and inquiry coaches may be two avenues to provide it.

Butler and Schnellert (2012) recommend collaborative inquiry, as opposed to top-down initiatives, as a response to the press for accountability that can ensure teacher professional development is goal directed and focused on improving outcomes for students. The inquiry team of Kim and Christine shared the view that working in a team

helped to ensure dedication to the process. They often made references in their journals to “supporting” each other, engaging in dialogue, and working closely together to achieve shared goals. Rachel and I applied what we learned to projects for our grade six classes, and several of the participants shared their learning with other educators in the district at the yearly “Innovation Celebration.” Working with others helped keep the inquiries on track. Sisk-Hilton (2009) wrote that while this type of collaborative inquiry may be time and resource intensive, it can lead to rich and sustained inquiry. Collaborative inquiry, when it is contextually relevant, is “professional development that is meaningful to teachers who wish to move beyond preplanned workshops” (Sisk-Hilton, 2009, p. 157). Working together on collaborative inquiry projects may provide accountability that is based in having shared goals and avoids the top down press for accountability that Butler and Schnellert (2012) wrote about.

This study did not include the involvement of an inquiry coach. An inquiry coach is a teacher who is confident enough in his or her understanding of inquiry to act as a guide or mentor to help facilitate educator inquiry in schools (Dana & Krell, 2012). Dana and Krell (2012) wrote that an inquiry coach could take on many roles,

....coaches can structure time and garner resources to scaffold teachers, and tools, such as protocols, that can be utilized to foster productive collaboration among teacher inquirers at each critical juncture in the action research process (p. 833).

Dana and Krell (2012) also noted that inquiry coaches could also play a critical role of “...negotiating the inquiry process with administrators, who greatly influence the impact of the process” (p. 841). This idea that an inquiry coach, a teacher who can help build relationships between staff and administration, who can help develop resources, and who can guide and scaffold the inquiry process for teachers, is an idea worth exploring further. An inquiry coach, like collaborative inquiry projects, may add a layer of external accountability to the inquiry process that would be appreciated by teachers and administrators alike.

5.3.6. Flexible Professional Development Opportunities

When reflecting on their research, participants in this study found that inquiry can be an effective form of professional development. Still, these findings do not support the idea that educator professional development be exclusively inquiry-based in nature.

However, the experiences of the participants in this study suggest that inquiry approaches should be made an option for educators' professional development when unions, schools and school districts are crafting their professional development policies and schedules. Bogler and Nir (2008) found that "...an organizational culture that fosters individual perspectives and considerations is more likely to promote teachers' satisfaction related to professional development processes" (p. 384). Giving teachers flexibility in their choice of professional development opportunities would likely increase their satisfaction with professional development.

Rachel, for example, expressed that her ideal professional development program would look like a blend of inquiry and in-service workshops. Given the opportunity, she would take on independent inquiry project as a focus for her year, while also taking part in in-service workshops if they aligned with her interests and if she saw value in the expertise of the facilitator. What is important, I believe, is not that teachers unions, school districts and school administrators sit down and attempt to design the perfect professional development that satisfies everyone's needs. Instead, I recommend further research be conducted on how school districts can give teachers choice in how they engage with professional learning. However, because the participants identified choice and self-direction as important to their professional learning, inquiry-based professional development should be an available option for teachers within any professional development program. By giving teachers the ability to choose to engage with inquiry as a means of constructing new learning, they may feel empowered to meet their professional goals. (Cochran-Smith and Lytle, 1993; Jacobs & Yendol-Hoppey, 2014; Poekert, 2011). Bransford, Brown and Cocking (1999) drew the following conclusion:

Before a teacher can develop powerful pedagogical tools, he or she must be familiar with the progress of inquiry and the terms of discourse in the discipline, as well as understand the relationship between information and the concepts that help organize that information in the discipline (p. 20).

Participants in this study became very familiar with the "process of inquiry and the terms of discourse in the discipline" and become confident enough to use inquiry-based practices in their classrooms. Professional development is, after all, meant to advance teachers' understandings of their pedagogy (Teacher Regulation Branch of British Columbia, 2012, p. 3).

If teachers are provided with only the more traditional forms of in-service workshop professional development, they may lack choice, self-efficacy, and may ultimately feel discouraged with their professional learning (Kragler et. al, 2014). Jacobs and Yendol-Hoppey (2014) described the possible effects of this lack of choice may have on teacher learning.

Currently, in many school districts, teachers are describing professional development as *mandated* and *forced*. These conceptions of professional development reflect a lack of teacher voice and feelings of disempowerment (p. 315).

However, teachers may feel empowered in their learning and ultimately be more effective as educators when they are provided with more opportunities to engage in inquiry-based learning as professional development. Not only could this choice empower teachers, but also the community as a whole. “Through inquiry, teacher researchers generate knowledge: for their own practice, for the immediate community of teachers, for the larger community of educators” (Cochran-Smith and Lytle, 1993, p. 44).

References

- Alber, S.M. (2011) A toolkit for action research. Toronto, Ontario: Rowman and Littlefield Publishers Inc.
- Artigue M. & Blomhoj, M. (2013). Conceptualizing inquiry-based education in mathematics. *Mathematics Education*, 45, 797–810. doi: 10.1007/s11858-013-0506-6
- Adelson, J., Casa, T. & Truxaw, M. (2011). A Stance toward inquiry: An investigation of Preservice Teacher's Confidence Regarding Educational Inquiry. *Teacher Education Quarterly*, 38(4), 69 – 95. Retrieved from: <http://www.jstor.org.proxy.lib.sfu.ca/stable/23479631>
- Andreitz, I., Erlacher, W., Rauch, F., & Zehetmeiser, S. (2015). Researching the impact of teacher professional development programmes based on action research, constructivism, and systems theory. *Educational Action Research*, 23(2), 162 – 177. doi: 10.1007/s10972-010-9223-y
- Atkins, L. & Wallace, S. (2012). *Qualitative research in education*. London: Sage Publications.
- Bean, R.M. & Dagen, A.S. (2014). Chapter 3: High Quality Research-Based Professional Development: An Essential for Enhancing Teaching. In Bauserman, K. L., Kragler, S., Martin, L. E., Quatroche, D.J. (Eds.) *Handbook of professional development in education: Successful models and practices, PreK-12*. (pp. 42 - 64) New York, New York: The Guilford Press.
- Bennett, M. (2015). The Invisible Hand of Inquiry-based Learning. *Childhood Learning*, 91(5). doi: 10.1080/00094056.2015.1090854
- Bertanees, C., Parr, M., & Timperley, H. S. (2009). Promoting professional inquiry for improved outcomes for students in New Zealand. *Professional Development in Education*, 35 (2), 227 – 245. doi: 10.1080/13674580802550094
- Bissex, G., & Bullock R. (1987). Seeing for ourselves: Case study research by teachers of writing. Portsmouth, NH: Heinemann.
- Blase J. & Blase J. (2002). The Micropolitics of Instructional Supervision: A Call for Research. *Educational Administration Quarterly*, 38(1), 6 -44. doi: 10.1177/0013161x02381002
- Bolden, B., Christou, T., DeLuca, C., Klinger, D., Kutsyuruba, B., Pyper, J., Shulha, L., & Wade-Woolley, L. (2014) *Professional Learning Cultures: An Evaluation of Collaborative Inquiry in Ontario Elementary Schools*. Kingston, Ontario: Queens University Faculty of Education.

- Boyatzis, R. E. (1998). *Transforming qualitative information: Thematic analysis and code development*. Thousand Oaks, CA: SAGE Publications.
- Bransford, Brown & Cocking (1999) *How people learn: Brain, mind, experience and school*. Washington, US: National Academies Press. Retrieved from: <http://www.ebrary.com.proxy.lib.sfu.ca>
- Bransford, J., & National Research Council (U.S.). (2000). *How people learn: Brain, mind, experience, and school*. Washington, D.C.: National Academies Press.
- British Columbia Ministry of Education (2016). *Aboriginal Education*. Retrieved from: <https://www.bced.gov.bc.ca/abed/>
- British Columbia Ministry of Education (2011). *BC's Education Plan*. Retrieved From: http://www2.gov.bc.ca/assets/gov/education/kindergarten-to-grade-12/support/bcedplan/bcs_education_plan.pdf
- British Columbia Ministry of Education (2012) *Enabling education: Transforming curriculum and assessment*: Retrieved from: http://www.bced.gov.bc.ca/irp/docs/ca_transformation.pdf
- British Columbia Ministry of Education (2013) *Exploring curriculum design: Transforming curriculum and assessment*. Retrieved from: http://www.bced.gov.bc.ca/irp/docs/exp_curr_design.pdf
- British Columbia Ministry of Education (2014). *Thinking Competencies Draft*. Retrieved From: https://curriculum.gov.bc.ca/competencies/critical_thinking
- British Columbia Ministry of Education (2015a). *Provincial Reports*. Retrieved from: <http://www.bced.gov.bc.ca/reporting/province.php>
- British Columbia Ministry of Education (2015b). *School Reports*. Retrieved from: <https://www.bced.gov.bc.ca/reporting/school.php>
- British Columbia Ministry of Education (2015c). *Satisfaction Survey 2014/15 04545070 - Ridgeview Elementary*. Retrieved from: <http://www.bced.gov.bc.ca/reporting/province.php>
- British Columbia Ministry of Education Teacher Regulation Branch (2012). *Standards for the Education, Competence and Professional Conduct of Educators in BC (4th Ed.)*. Retrieved From: <https://www.bcteacherregulation.ca/Standards/StandardsDevelopment.aspx>
- British Columbia Teacher's Federation (2015). *Pro D Calendar*. Retrieved From: <https://bctf.ca/PDCalendar/index.cfm?action=year&year=2015>

- British Columbia Teacher's Federation (2008). *Teacher Inquiry in the BCTF: A focus for supporting teachers' professional development*. Retrieved From: <https://www.bctf.ca/uploadedFiles/Public/ProD/TeacherInquiry/BCTFTeacherInquiryWGRReport2008.pdf>
- British Columbia Teacher's Federation (n.d.). *The BCTF Teacher Inquiry Program* [PowerPoint Document]. Retrieved from Online Website: <https://bctf.ca/uploadedFiles/Public/ProD/TeacherInquiry.pdf>
- British Columbia Teacher-Librarians' Association. (2011). *The Points of inquiry: A framework for information literacy and the 21st century learner*. British Columbia, Canada: BCTF.
- Brockett, R.G., & Hiemstra, R. (1991). *Self-Direction in adult learning: Perspectives on theory, research and practice*. New York: Routledge.
- Burley, H. & Chestnutt, S.R., (2015). Self-efficacy as a predictor of commitment to the teaching profession: A meta-analysis. *Educational Research Review*, 15, 1 – 16. doi: 10.1016/j.edurev.2015.02.001
- Butler, D. L., & Schnellert, L. (2012). Collaborative inquiry in teacher professional development. *Teaching and Teacher Education*, 28, 1206 – 1220. doi: 10.1016/j.tate.2012.07.009_
- Calhoun, E.F. (2002). Action research for school improvement. *Educational Leadership*, 59(6), 18-24. Retrieved from: http://educationleader.com/subtopicintro/read/ASCD/ASCD_408_1.pdf
- Campbell, A., Gilroy, P. & McNamara, O. (2004). *Practitioner research and professional development in education*. London, UK: Paul Chapman Publishing.
- Campbell, C., Osmand-Johnson, P., Faubert, B., Zeichner, K., & Hobbs-Johnson, A. (with Brown, S., DaCosta, P., A., Kuehn, L., Sohn, J., & Steffensen, K.) (2016). *The state of educators' professional learning in Canada: Executive summary* Oxford, OH: Learning Forward.
- Christou, T., DeLuca, C., Kliner, D., Luhanga, U., Shula, J., & Shulha., L., (2015). Collaborative Inquiry as a Professional Learning Structure for Educators: A scoping review. *Professional Development in Education*, 41(4), 640-670. doi: 10.1080/19415257.2014.933120
- Clark, R. E., Kirschner, P.A., & Sweller, J. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, 42(2), 75 -86. doi: 10.1207/s15326985ep4102_1
- Cochran-Smith, M., & Lytle, S. (1993). *Inside Outside: Teacher Research and Knowledge*. New York, NY: Teachers College Press.

- Cochran-Smith, M., & Lytle, S. (2009). *Inquiry as stance: Practitioner research in the next generation*. New York, NY: Teachers College Press.
- Cochran-Smith, M., & Lytle, S. (1992). Teacher Research as a Way of Knowing. *Harvard Educational Review*, 62(4), 447 – 474. doi: 10.17763/haer.62.4.4lm3811r1033431n_
- Copland, A. (2003). Leadership of inquiry: Building and sustaining capacity for school improvement. *Educational Evaluation and Policy Analysis*, 25(4), 375-395. doi: 10.3102/01623737025004375
- Corely, M. A. (2011). TEAL center fact sheet #11: Adult learning theories. *The teachingexcellence in Adult Learning Centre*, 11, 1-4. Retrieved from: <https://lincs.ed.gov/programs/teal/guide/adultlearning>
- Craft, A. (2000). *Continuing professional development: A practical guide for teacher and schools* (2nd ed.). New York; London: Routledge.
- Crecci, V. M., & Fiorentini, D. (2015). Dialogues with Marilyn Cochran-Smith. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 88(1), 9-14. doi: 10.1080/00098655.2014.977841
- Creswell, J & Miller, D. (2000). Determining Validity in Qualitative Inquiry. *Theory Into Practice*, 39(3), 124-130. doi: 10.1207/s15430421tip3903_2
- Dana, N.F. & Krell, D.E. (2012). Facilitating action research: as study of coaches, their experiences, and their reflections on leading teachers in the process of practitioner inquiry. *Professional Development in Education*, 38(5), 827 – 844. doi: 10.1080/19415257.2012.666052
- Dana, N.F. & Yendol-Hoppey, D. (2009). *The reflective educator's guide to classroom research*. 2nd ed. Thousand Oaks, CA: Corwin Press.
- Desimone, L.M., & Stuckey, D. (2014). Sustaining Teacher Professional Development In Bauserman, K., Kragler, S., Martin, L., & Quatroche, D. (Eds.) *Handbook of Professional Development in Education: Successful Models and Practices, PreK-12* (pp. 304 – 315) New York, NY: The Guildford Press
- Dewey, J. (1916). *Democracy and Education*. Norwood, Massachusetts: Norwood Press Retrieved from: <https://ia800206.us.archive.org/34/items/democracyandeduc00deweuoft/democracyandeduc00deweuoft.pdf>
- Dewey, J. (1910) *How we think*. Boston, Massachusetts: Health & Co. Retrieved from: <https://archive.org/details/howwethink000838mbp>
- Dewey, J. (1913). *Interest and Effort in Education*. New York: Houghton Mifflin Company. Retrieved from: <http://tinyurl.galegroup.com/tinyurl/yBnL6>

- Dewey, J. (1938). *Logic: The Theory of Inquiry*. New York: Henry Holt and Company.
Retrieved from:
[https://archive.org/stream/JohnDeweyLogicTheTheoryOfInquiry/\[John_Dewey\]_Logic_-_The_Theory_of_Inquiry_djvu.txt](https://archive.org/stream/JohnDeweyLogicTheTheoryOfInquiry/[John_Dewey]_Logic_-_The_Theory_of_Inquiry_djvu.txt)
- Dewey, J. (1904). *The Relation of Theory to Practice in the Education of Teachers*. Chicago: University of Chicago. Retrieved from:
https://people.ucsc.edu/~ktellez/dewey_relation.pdf
- DiBiase, W., & McDonald, J. R. (2015). Science teacher attitudes toward inquiry-based teaching and learning. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 88(2), 29-38. doi: 10.1080/00098655.2014.987717
- Donohoo, J. (2013). *Collaborative inquiry for educators: A facilitator's guide to schoolimprovement*. Thousand Oaks, CA: Corwin Press.
- Doorman, M., Mooldikl, A., Pead, D., & Swan M. (2013). Designing and using professional development resources for inquiry-based learning. *Mathematics Education*, 45, 945 – 957. doi: 10.1007/s11858-013-0520-8
- Efron, S. E. & Ravid, R. (2013). *Action research in education: A practical guide*. New York, New York: The Guilford Press.
- Eikeland, O. (2003) Unmet challenges and unfulfilled promises in action research: A reply to Davydd J. Greenwood and Bjorn Gustavsen. *Concepts and Transformation*, 8(3) 265–273.
- Fisher, D., & Sax, C. (2001). *Using qualitative action research to effect change: Implications for Professional Education*. *Teacher Education Quarterly*, 28 (2), 71-80. Retrieved from: <http://www.jstor.org.proxy.lib.sfu.ca/stable/23478278>
- Forde, C., & Torrance, D., (2015). Social justice and leadership development. *Professional Development in Education*, 43(1), 105-120. doi: 10.1080/19415257.2015.1131733
- Freebody, P. R. (2003). *Introducing Qualitative Methods: Qualitative research in education* : SAGE Publications Ltd: doi: 10.4135/9781849209670
- Friesen, S. & Scott, D. (2013). Inquiry-Based learning: A review of the research literature. *Galileo Educational Network, University of Calgary*. Paper Prepared for the Alberta Ministry of Education. Retrieved from:
<http://galileo.org/focus-on-inquiry-lit-review.pdf>
- Garrison, D.R. (1997). Self-directed learning: Toward a comprehensive model. *Adult Education Quarterly*, 48(1), 18 – 33. doi: 10.1177/074171369704800103
- Gibbs, G. (2007). *Analyzing qualitative data*. Thousand Oaks, CA: Sage Publications.

- Gibson, N. (2004). Action research. In M. S. Lewis-Beck, A. Bryman & T. F. Liao (Eds.), *The SAGE encyclopaedia of social science research methods* (Vol. 3), (pp. 5-6). Thousand Oaks, CA: SAGE Publications Ltd. doi: 10.4135/9781412950589.n4
- Gratton, R. (2003). Professional development through action research. *Management in Education*, 7(5), 13 – 15. doi: 10.1177/08920206030170050501
- Green, J., Willis, K., Hughes, E., Small, R., Welch, N., Gibbs, L. & Daly, J. (2007). Generating best evidence from qualitative research: The role of data analysis. *Australian and New Zealand Journal of Public Health*, 31(1), 545–550. doi: 10.1111/j.1753-6405.2007.00141.x
- Greenwood, D. J. (2002). Action research: Unfulfilled promises and unmet challenges. *Concepts and Transformation*, 7(2), 117–140.
- Grimmett, H. (2014). *The practice of teacher's professional development*. Boston, Massachusetts: Sense Publishers
- Guest, G., MacQueen, K.M., & Namey, E.E. (2012). *Introduction to applied thematic analysis*: Thousand Oaks, CA: Sage Publications.
- Guskey, T., & Peterson, K. (1996). The Road to Classroom Change. *Educational Leadership*. Vol. 52, 14 -19. Retrieved from: <http://www.ascd.org/publications/educational-leadership/dec95/vol53/num04/The-Road-to-Classroom-Change.aspx>
- Gustavsen, B. (2003) Action research and the problem of the single case. *Concepts and Transformation*, 8(1), 93–99.
- Halbert, J. & Kaiser L. (2013). *The Spirals of inquiry: For equity and quality*. Vancouver, British Columbia: The BC Principals and Vice-Principals Association.
- Harbey, M. (2013). So you think you are doing action research? Indicators of enactment of participatory action research in higher education. *Action Learning, Action Research Journal*, 19(1), 115 – 134. ISSN: 1326964X
- Harrison, J.L. (2011) Parsing “participation” in action research: Navigating the challenges of lay involvement in technically complex participatory science projects. *Society & Natural Resources*, 24 (7), 702-716, DOI: 10.1080/08941920903403115
- Hart, C. (1999). *Doing a literature review: Releasing the social science research Imagination*. Thousand Oaks, California: Sage Publications
- Hein, G.E. (1991). *Constructivist learning theory*. Paper presented at CECA (International Committee of Museum Educators) Conference. Jerusalem Israel, 15-22 October 1991. Retrieved From: <http://www.exploratorium.edu/education/ifi/constructivist-learning>

- Henschke, J. A. (2008). Reflections on the Experiences of Learning with Dr. Malcolm Shepherd Knowles. *New Horizons in Adult Education and Human Resource Development*, 22, 44–52. doi:10.1002/nha3.10316
- Hollins-Alexander, S. (2013). *Online professional development through virtual learning communities*. Thousand Oaks, CA: Corwin Press.
- Huang, Y.M., Hwang, G. J., Wu, P. H. & Zhuang, Y.Y. (2011). Effects of inquiry-based mobile learning model on the cognitive load and learning achievement of students. *Interactive Learning Environments*, 21(4). doi: 10.1080/10494820.2011.575789
- Inquiry (n.d.). Merriam-Webster Online. Retrieved From: <http://www.merriam-webster.com/dictionary/inquiry>
- Israel, S.E. & Lasseonde, C.A. (2010). *Teacher collaboration for professional learning: Facilitating study, research and inquiry Communities*. San Francisco, CA: John Wiley & Sons, Inc.
- Jacobs, J & Yendol-Hoppey, D. (2014). Using Action Research to Target and Generate Professional Learning. In Bauserman, K., Kragler, S., Martin, L., & Quatroche, D. (Eds.) *Handbook of Professional Development in Education: Successful Models and Practices, PreK-12* (pp. 304 – 315) New York, NY: The Guildford Press.
- Jaquith, A., Mindich, D., Wei, R.C., Darling-Hammond, L. (2010). *Teacher professional learning in the United States: Case studies of state policies and strategies*. Oxford, OH: Learning Forward.
- Kemmis, S., McTaggart R. & Nixon, D. (2014). *The action research planner. Doing critical participatory action research*. New York, New York: Springer.
- Kidd, J.R. (1959). *How adults learn*. New York: Association Press.
- Kidd, S. A. and Kral, M. J. (2005) Practicing participatory action research. *Journal of Counseling Psychology*, 52 (2). 187 – 195. doi: 10.1037/0022-0167.52.2.187
- Kindon, S., Kesby M., & Pain, R. (2007). Chapter 2: Participatory action research: Origins, approaches and methods. In Kindon, S., Kesby M., and Kindon, S. (Eds.) *Participatory Action Research Approaches and Methods*. (pp. 10 – 18). New York, NY: Routledge
- Knowles, M. (1980). *The modern practice of adult education: From pedagogy to andragogy*. New York, NY: Cambridge Adult Education.
- Knowles, M.S., Holton, E.F. & Swanson, R.A. (2005). *The adult learner* (6th ed). Amsterdam: Routledge.

- Kose, B.W. (2009) The principal's role in professional development for social justice. *Urban Education*, 44(6), 628 – 663. doi: 10.1177/0042085908322707
- Kragler, S., Martin, L., & Sylvester, R., (2014). Chapter 25: Lessons Learned: What Our History and Research Tells Us about Teacher's Professional Learning. In Bauserman, K. L., Kragler, S., Martin, L. E., Quatroche, D.J. (Eds.) *Handbook of professional development in education: Successful models and practices, Prek-12*. (pp. 483 – 505) New York: The Guilford Press.
- Kuhlthau, C. C., Caspari, A. K., & Maniotes, L. K. (2007). *Guided inquiry: Learning in the 21st century*. Santa Barbara, California: Libraries Unlimited.
- Lambert, L. (1989). The End of an Era of Staff Development. *Educational Leadership*. 47(1), 78-81.
- Leiberman, A and Miller, L. (2014). Chapter 1: Teachers as professionals: Evolving definitions of staff development. In Bauserman, K. L., Kragler, S., Martin, L. E., Quatroche, D.J. (Eds.) *Handbook of professional development in education: Successful models and practices, Prek-12*. (pp. 3 - 21) New York: The Guilford Press.
- Lane, J and Youngs, P (2014). Chapter 15: Involving Teachers in their own Professional Development. In Bauserman, K. L., Kragler, S., Martin, L. E., Quatroche, D.J. (Eds.) *Handbook of professional development in education: Successful models and practices, Prek-12*. (pp. 284 – 303) New York: The Guilford Press.
- Long, R. (2014). Chapter 2: Federal investments in professional development: What do 50 years of experience tell us about what it takes to make a difference? In Bauserman, K. L., Kragler, S., Martin, L. E., Quatroche, D.J. (Eds.) *Handbook of professional development in education: Successful models and practices, Prek-12*. (pp. 22-41). New York: The Guilford Press.
- Maeots, M., Manoli, C., Pedaste, M., C.. Riesen, S., Siiman, L., Tsourlidk E., Zacharia, C. (2015). Phases of inquiry-based learning: Definitions and the inquiry cycle. *Educational Research Review*, 14, 47-61. doi: 10.1016/j.edurev.2015.02.003
- Mayer, R. (2004) Should there be a three-strikes rule against pure discover learning? The Case for guided methods of instruction. *American Psychologist*, (59), 14 -19. doi: 10.1037/0003-066x.59.1.14
- McAteer, M. (2013). *Research methods in education: Action research in education*. London: Sage Publications.
- Mclaughlin, C. (2012). Chapter 1: Creating a place for research in schools. In Khine, M.S. & Selah, I.M. (Eds.), *Practitioner research in teacher education: Theory and best practices* (pp. 1 – 20). Frankfurt: Peter Lang GmbH, Internationaler Verlag der Wissenschaften. Retrieved from: <http://www.ebrary.com.proxy.lib.sfu.ca>

- McNiff, J. and Whitehead, J. (2002). *Action research: Principles and practice* (2nd ed). London: Routledge
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation* (3). Somerset, US: Jossey-Bass.
- Mills, G.E. (2014). *Action research: A guide for the teacher researcher* (5th ed.). Boston, Mass: Pearson.
- Morant, R. W. (1981). *Inservice education within the school*. London, UK: George Allen & Unwin.
- Nelson, T.H. & Slavit, D. (2008). Supported teacher collaborative inquiry. *Teacher Education Quarterly*, 35(1), 99–116. Retrieved from: <http://www.jstor.org.proxy.lib.sfu.ca/stable/23479033>
- Nolen, A & Putten, J.V. (2007). Action research in education: Addressing gaps in ethical principles and practices. *Educational Researcher*, 36 (7), 401 – 407 doi: 10.3102/0013189x07309629
- Ontario Ministry of Education (2011). Getting started with student inquiry. *BuildingCapacity Series*, 24, 1 – 4. Retrieved from: http://www.edu.gov.on.ca/eng/literacy_numeracy/inspire/CBS_StudentInquiry.pdf
- Ortlieb, E. T., & Lu, L. (2011). Improving teacher education through inquiry-based learning. *International Education Studies*, 4(3), 41-46.doi: 10.5539/ies.v4n3p41
- Parr, J.M. & Timperley, H.S. (2007) Closing the achievement gap through evidence based inquiry at multiple levels of the education system. *Journal of Advanced Academics*, 19(1), 90 – 115. doi: 10.4219/jaa-2007-706_
- Parr, J.M. & Timperley, H.S. (2010). Multiple ‘black boxes’: Inquiry into learning within a professional development project. *Improving Schools*, 13 (2), 258 – 171. doi: 10.1177/1365480210375349_
- Patton, MQ. (2001). *Qualitative research and evaluation methods* (2nd Ed). Thousand Oaks, CA: Sage Publications.
- Pedaste, M., Mäeots, M., Siiman, L. A., de Jong, T., van Riesen, S. A. N., Kamp, E. T. (2015). Phases of inquiry-based learning: Definitions and the inquiry cycle. *Educational Research Review*, 14, 47-61. doi: 10.1016/j.edurev.2015.02.003
- Pellegrino, A. M., & Kilday, J. (2013). Hidden in plain sight: Preservice teachers'orientations toward inquiry-based learning in history. *Journal of Social Studies Education Research*, 4(2), 1-26. Retrieved from: <http://jsser.org/article/view/1045000150>

- Peterson, C. M. & Ray, C. M. (2013). Andragogy and pedagogy: The evolution of neologisms. *Journal of Adult Education*, 42(2), 80 – 85.
- Poekert, P. (2011). The pedagogy of facilitation: Teacher inquiry as professional development in a Florida elementary school. *Professional Development in Education*, 27 (1), 19 -37. doi: 10.1080/19415251003737309_
- Samsaras, A. P. (2011). *Self-study teacher research: Improving your practice through collaborative inquiry*. Thousand Oaks, California: 2011.
- Schön, D. (1987) *Educating the reflective practitioner*. San Francisco: Jossey Bass.
- Schreier, M. (2013). Qualitative content analysis. In E. Flick (Ed.) *The SAGE Handbook of Qualitative Data Analysis* (pp. 170 – 198). London: SAGE Publications Ltd.
- Schatz, M. & Schwarz, J.F. (2012). Chapter 5: From portrait to practice learning to research into learning and teaching. In Khine, M.S. & Selah, I.M. (Eds.), *Practitioner research in teacher education: Theory and best practices* (pp. 1 – 20). Frankfurt: Peter Lang GmbH, Internationaler Verlag der Wissenschaften. Retrieved from <http://www.ebrary.com.proxy.lib.sfu.ca>
- Schwab, J. (1958). The teaching of science as inquiry. *Bulletin of the Atomic Scientists*, 14(9), 374 – 379. doi: 10.1080/00963402.1958.11453895
- Scott, D.E. and Scott, S. (2010) Chapter 10: Innovations in the use of technology and teacher professional development. In Olofsson A.D. and Lindberg, J.O. (Eds.) *Online learning communities and teacher professional development: Methods for improved education delivery*. (pp. 169 – 189). Hershey, PA: Information Science Reference
- Sheared, V., Sissel, P.A., & Ebrary, I. (2001). *Making space: Merging theory and practice in adult education*. Westport, CT: Bergin and Garvey.
- Sisk-Hilton, S., (2009). *Teaching and learning in public: Professional development through shared inquiry*. New York, NY: Teachers College Press.
- Statistics Canada (2011). *Census profile (West Vancouver) (Data file)*. Retrieved from: <http://www12.statcan.gc.ca/census-recensement/2011/dppd/prof/details/page.cfm>
- Statistics Canada (2011). *NHS focus on geography series (West Vancouver) (Data file)*. Retrieved from: <http://www12.statcan.gc.ca/nhs-enm/2011/as-sa/fogs-spg/Pages/FOG.cfm?lang=E&level=4&GeoCode=5915055>
- Stone, J.E. (1996). Developmentalism: An obscure but pervasive restriction on Educational improvement. *Education Policy Analysis Archives*, 4(8), 1-32. doi: 10.14507/epaa.v4n8.1996

- Suter, W.N. (2012). *Introduction to educational research: A critical thinking approach* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Tack, H., & Vanderlinde, R. (2014). Teacher educators' professional development: towards a typology of teacher educators' researcherly disposition. *British Journal of Educational Studies*, 62(3), 297–315. doi: 10.1080/00071005.2014.957639
- Tracy, S. J. (2010). Qualitative quality: Eight “big tent” criteria for excellent qualitative research. *Qualitative Inquiry*, 16(10), 837 – 851. doi:10.1177/1077800410383121_
- Van den Hoonaard, D., (2012). *Qualitative research in action: A Canadian primer*. Don Mills, Ontario: Oxford University Press.
- Webster-Wright, A. (2009). Reframing professional development through understanding authentic professional learning. *Review of Educational Research*, 79(2), 702–739. doi: 10.3102/0034654308330970
- Webster, J. & Watson, T. (2002) Analyzing the past to prepare for the future: Writing a literature review. *MIS Quarterly*, 26(2), xiii-xxii. Retrieved from: <http://www.jstor.org.proxy.lib.sfu.ca/stable/4132319>
- Wells, M. (2012). Chapter 6: Teachers as researchers: Models of professional learning. In Khine, M.S. & Selah, I.M. (Eds.), *Practitioner research in teacher education: Theory and best practices (1 – 20)*. Frankfurt: Peter Lang GmbH, Internationaler Verlag der Wissenschaften. Retrieved fro <http://www.ebrary.com.proxy.lib.sfu.ca>
- Welton, W. R. (1995) *In defense of lifeworld: Critical perspectives on adult learning*. Albany, New York: State University of New York Press
- West Vancouver School District (2014). *District achievement contract*. West Vancouver, British Columbia. Retrieved From: <http://westvancouver.schools.ca/docs/DistrictAchievementContractforMofEJune192012.pdf>
- Whitford, B.L., and Wood, D. R. (2010) *Teachers learning in community*. Albany, New York: State University of New York Press
- Zafra-Gómez, J. L., Román-Martínez, I., & Gómez-Miranda, M. E. (2015). Measuring the impact of inquiry-based learning on outcomes and student satisfaction. *Assessment & Evaluation in Higher Education*, 40(8), 1050-1069. doi: 10.1080/02602938.2014.963836_
- Zenkov, K., Corrigan, D., Beebe, R.S. (2013) *Professional Development Schools and Social Justice*. Lexington Books (Online). Retrieved from: <http://www.myilibrary.com?ID=539970>

Appendix A.

Authorization Form

[Asking the Big Questions: Elementary Educators Developing their Professional Practice Through Inquiry]

Principal Investigator Nathan Blackburn would like to conduct a study at (School name and district removed to protect the anonymity of the participants)

Address:

Phone: XXX XXX-XXXX

Signing this authorization form is voluntary. You have the right to refuse authorization to conduct research in your institution. If you decide to authorize this study, you may choose to withdraw authorization at any time without giving a reason, and without any negative impact on you.

In all published materials relating to this study, pseudonyms will be used to ensure the confidentiality of all participants and locations.

- Your signature below indicates that you have received a copy of the Study Protocol form, which provides the details relating to the study.
- Your signature indicates that you consent to authorize this study at (School name and district removed to protect the anonymity of the participants)

Administrator Signature

Date (yyyy/mm/dd)

Administrator Printed Name

Appendix B.

Recruitment Materials

[Asking the Big Questions: Elementary Educators Developing their Professional Practice Through Inquiry]

The following message will be shared with potential participants at XXXXXXXX Elementary School via their publically available school district email addresses.

Subject: Research Participation Invitation: A Study on Inquiry and Professional Learning

Email Message Body:

Hello XXXXXX Educators,

I am beginning a research study titled “Asking the Big Questions: Elementary Educators Developing their Professional Practice Through Inquiry”. The purpose of this study is to discover how educators in a public, k – 7 elementary school in British Columbia experience and perceive an independent, inquiry-based approach for generating new learning about their practice.

Participants in the study will be asked to engage with a personal cycle of inquiry based on the seven step XXXXX Cycle of Inquiry, over the period of five months, January until June of XXX

Participants will be asked to develop a “Big Question”, a research topic of interest. They will then be provided with classroom release time of six hours to engage with the topic or “Big Question” of their choice through the seven-step XXXXX Cycle of Inquiry process. (Attached) Participants will determine dates and time(s) of classroom release within the parameters above. How participants engage in the cycle of inquiry is up to them. Funding for release time will be provided through a XXXXX School District Innovation Grant.

Participants will be asked to keep a written journal of their inquiry exploration throughout the cycle of inquiry (attached) and commit to a final interview with the principal investigator, Nathan Blackburn, following the completion of the cycle of inquiry. Completion of the cycle of inquiry is identified by the completion of six hours of classroom release time, and/or completion of stage 7 (page 9) of the “Participant Inquiry Journal.”

Nathan Blackburn is a graduate student (Curriculum and Instruction Foundations, M.A) at Simon Fraser University. He is conducting research in support of his thesis. A thesis is a public document, which may be made available to the public in printed or electronic form. However, your confidentiality will be respected by the use of pseudonyms in all published or shared version of this study.

Please send an email response if you think you would like to participate in this study. I will contact you shortly to review the consent form and study details with you.

Any questions about the research project can be directed toward the Principal Investigator, Nathan Blackburn.

Principal Investigator:

Nathan Blackburn
Simon Fraser University
Department of Education
Phone: XXX XXX-XXXX
Email:

Thank you for your time,

Nathan Blackburn

Appendix C.

Participant Consent Form

[Asking the Big Questions: Elementary Educators Developing their Professional Practice Through Inquiry]

Study Team: *Who is conducting the study?*

Thesis Supervisor:

Dr. Paul Neufeld

Director, Professional Programs, Faculty of Education
Associate Professor, Faculty of Education

Phone: XXX XXX-XXXX

Email:

Principal Investigator:

Nathan Blackburn

Simon Fraser University

Department of Education

Contact:

Phone: XXX XXX-XXXX

Email:

Study # XXXXXXXXXXXX

Nathan Blackburn is a graduate student at Simon Fraser University (Curriculum and Instruction Foundations, Master of Arts). He is conducting research in support of his thesis. A thesis is a public document, which may be made available to the public in printed or electronic form.

Sponsor: *Who is funding this study?*

This study is made possible in part by funding from a XXXXX Schools “Innovation Grant”. Funding made available to the principal investigator and participants through the XXXXX School District’s Innovation Grant will provide for the classroom release time required for this study. Available funding totals \$2000.00.

XXXXXX School District
City: XXXXX, BC
Canada

Phone: XXX XXX-XXXX
Voicemail: XXX XXX-XXXX
Fax:
General Email:

Invitation and Study Purpose: *Why should you take part in this study? Why are we doing this?*

We want to gain insight into how educators experience and perceive engaging in a cycle of Inquiry method for constructing knowledge or developing new understandings of some aspect of their practice. We asked you to participate because, as an educator working in a publicly funded elementary school, you have participated in a variety of forms of professional development. And, as an educator who is open to developing new understandings, you are best able to share your experiences, beliefs and attitudes about engaging in a cycle of inquiry as a method for developing professional learning.

Voluntary Participation: *Your Participation is Voluntary*

Your participation is voluntary. You have the right to refuse to participate in this study. If you decide to participate, you may still choose to withdraw from the study at any time without any negative consequences to the education, employment or other services to which you are entitled or are presently receiving.

Study Procedures: *What happens if you say, “Yes, I want to be in the study”? What happens to you in the study? How is the study done?*

If you decide to take part in this research study, the procedure that you will be asked to be part of will include the following;

Initial Meeting: (60 Minutes) Date: XXX

At the beginning of the study, all participants will meet with the principal investigator to review the details and procedure of this study by reading through the process as outlined in the Participant Consent Form. Participants will also review the XXXXX Elementary

Inquiry Cycle at this time. A copy of this document is attached. The XXXXX Elementary Inquiry Cycle demonstrates the process of engaging in cycle of inquiry in this manner:

Stage One: What are we going to learn? *What is your Big Question?*

Stage Two: Where are we going?

Stage Three: Where are we now?

Stage Four: Where is the information?

Stage Five: What are the Patterns?

Stage Six: What does this mean to me?

Stage Seven: What action(s) could I take?

In this study, a “big question” can relate to any aspect of a participants’ work in education that they feel that it is important for them to understand more deeply or develop further.

The exact date and time of this meeting will be based on the availability of all participants. The meeting will last no longer than one hour.

Independent Research and Investigation: (6 Hours) Date: XXX

For the period of January to May, 2016, participants will be invited to independently engage with a cycle of inquiry. Participants will be asked to investigate their personal ‘big question’ by following the XXXXX Elementary Inquiry Cycle via any means available to them. This might include conducting independent research, attending conferences, reading books, journals or websites, watching films, observing other educators, etc.

Funding provided by the XXXXX School District innovation Project will be provided for each of the participants. This funding will allow roughly 6 hours (2 half days) of classroom release time, which will free the participant to engage in the cycle of inquiry. Participants are also free to engage with their cycle of inquiry at any time of their choosing outside of the classroom release time. Funding will only be provided for teacher release time.

Each participant will be asked to keep a record of his or her inquiry investigation on a document provided by the principal investigator. This document, referred to as the “Participant Inquiry Journal” is attached. The purpose of this document is to keep a record of participant’s learning and reflections at each stage in the inquiry cycle. The contents of this document will be shared. Please do not include any information that you do not wish others to view.

Final Interview: (60 minutes) Date: XXX

When participants complete their cycle of inquiry they will meet the principal investigator to complete an in-depth semi-structured interview. Interviews will be scheduled at a time convenient to the participant. Completion of the cycle of inquiry is identified by the completion of a) six hours of classroom release time, and/or completion of the written portion of stage 7 (page 9) of the “Participant Inquiry Journal,” titled “What action(s) could I take?” Interview questions will be limited to the following:

1. Describe your process of engaging in a cycle of inquiry.
2. What was your topic or “big question” and what were your reasons for selecting it?
3. What was the experience like for you?
4. Was there anything about the process that surprised you?
5. If you gained any insight or new learning, can you describe it and how you may or may not choose to act on it?
6. Was engaging in a cycle of inquiry an effective means for you to engage in learning ways to improve your practice? If so, why? If not, why not?
7. From your past experiences, how would you describe your feelings about educator professional development?
8. Describe what you see as the similarities and differences between an inquiry-based model for developing new learning about your professional practice and the inservice model of professional development.
9. How do you feel about the role that inquiry may or may not play as a method for educator professional development?

Potential Risks of the Study: *Is there any way being in this study could be bad for you?*

There are no foreseeable physical, social or emotional risks to the participants in this study.

The principal of XXXXX Elementary School, XXXXX, has given permission for participants to participate in this study.

The Director of Instruction for the XXXXX School District, XXXXXX, has given permission for participants to participate in this study.

There may be inconveniences to participants. You will be asked to volunteer your time to commit to keeping written notes of your process, and to participate in an interview. If at any time you choose to withdraw from any aspect of the study, or the study entirely, for any reason, you may do so without risk of consequences. If any participants who volunteer for the study decide to withdraw at a later time, all data collected about them will be destroyed.

You may withdraw from this study at any time without giving reasons and with no negative effects to you personally.

Because of the low level of risk for participants, this is considered a minimal risk study

Potential Benefits of the Study: *Will being part of this study help you in any way? What are the benefits of participating?*

There may or may not be direct benefits to you from taking part in this study. However, as a result of participation in this study you may, by the nature of the inquiry process, generate new learning about some aspect of your profession.

It is possible that in the future, others in the education community may benefit from what we learn in this study.

Confidentiality: How will your identity be protected? How will your privacy be maintained?

This study will include the collection of directly identifying information about the participants, including names, occupations, and place of work. However, your confidentiality will be respected. Information that discloses your identity will not be released without your consent unless required by law.

To safeguard the personal information of participants, pseudonyms will be used in place of participant names and places of work, including the school and school district, in all shared literature and documentation relating to this study, including the thesis of the principal investigator, Nathan Blackburn. No physical documentation linking participant information to pseudonymous information will be kept. This is possible due to the limited number of participants and locations in this study.

All physical documentation relating to this study, including the consent forms and participant inquiry journals, will be kept in a locked filing cabinet at XXXXX School in XXXXX, BC.

All digital documentation relating to this study will be kept on a USB flash drive belonging to principal investigator, Nathan Blackburn. The USB flash drive will be secured in a locked filing cabinet at XXXXX Elementary School in XXXXX, BC.

This principal investigator will make an audio recording of the final interview with each participant. Only the principal investigator will have access to the recordings, which will be kept on a USB flash drive in a locked filing cabinet at XXXXX Elementary School. This USB flash drive will be password protected. Audio recordings will be transcribed and portions may be included in literature and documentation relating to this study, including the thesis of the principal investigator, Nathan Blackburn. Transcriptions of audio recordings will also be kept in a locked cabinet at XXXXX Elementary School. Audio recordings will be deleted immediately after they have been transcribed.

Only the principal investigator Nathan Blackburn will have access to raw data (Participant Inquiry Journals and interview data)

All data, inclusive of the consent forms, participant inquiry journals, audio recordings and interview transcripts will be destroyed two years after the completion of the study.

Data collected in this study will not be used for any secondary purposes (later research, etc.).

Withdrawal: What if I decide to withdraw my consent to participate?

If you choose to enter the study and then decide to withdraw at a later time, all data collected about you and by you during your enrolment in the study will be destroyed. You may withdraw from this study at any time without giving reasons and with no negative effects to you personally. Participants are not required to submit a request for withdrawal in writing.

Study Results: *How will the results of this study be disseminated?*

The results of this study will be reported in a graduate thesis and may also be published in journal articles and books. The main study finding may also be presented at academic and professional conferences.

If you wish to obtain a report on the findings of this study, please include your mailing address on the space below:

Address:

City:

Province:

Postal Code:

Contact for Information About the Study: *Who can you contact if you have questions about the study?*

The principal investigator, Nathan Blackburn and/or his Thesis Supervisor Dr. Paul Neufeld are available to answer any inquiries concerning the procedures of the study to ensure that they are fully understood by all participants:

Nathan Blackburn

Phone: XXX XXX-XXXX

Email:

Dr. Paul Neufeld

Director, Professional Programs, Faculty of Education
Associate Professor, Faculty of Education

Phone: XXX XXX-XXXX

Email:

Complaints: *Who can you contact if you have complaints or concerns about the study?*

If you have any concerns about your rights as a research participant and/or your experiences while participating in this study, you may contact:

Dr. Jeffrey Toward

Director, Office of Research Ethics

Email:

Phone: XXX XXX-XXXX

Future Use of Participant Data:

There is no known future use of this data beyond the conclusion of this research study. Information collected in this study, including personal information and research data will not be used in further research.

Future Contact:

The principal investigator, Nathan Blackburn, may wish to re-contact you as part of the study or after completion of the study. Do you give permission for the principal investigator to re-contact you during or following your participation in this study?

YES

NO

Do you give permission for the principal investigator, Nathan Blackburn, to contact you for you participation in further studies?

YES

NO

Audio Recording:

Do you give permission to be audio-taped? Audio recordings will be deleted immediately after they have been transcribed.

YES

NO

Participant Consent and Signature Page

Taking part in this study is entirely up to you. You have the right to refuse to participate in this study. If you decide to take part, you may choose to pull out of the study at any time without giving a reason and without any negative impact on you.

- Your signature below indicates that you have received a copy of this consent form for your own records.
- Your signature indicates that you consent to participate in this study.

Participant Signature

Date (yyyy/mm/dd)

Printed Name of the Participant signing above

Appendix D.

Participant Inquiry Journal

A tracking tool for your Cycle of Inquiry

“My Cycle of Inquiry” Document:

Participant’s Name:

Employment Description:

Purpose: Please use this document to journal each stage of your cycle of inquiry. Feel free to attach any additional pages, notes or artifacts.

Please return this documents to Nathan Blackburn upon completion.

Nathan Blackburn

Address:

Phone: (XXX) XXX-XXXX

Email:

Please Note: Experts from this document may be reported in the graduate thesis of the principal investigator and may also be published in academic journals and books. The main study finding may also be presented at academic conferences. Confidentiality will be respected through the use of pseudonyms in all published material relating to this study.

Stage One: What am I going to learn? What is the big question that I am investigating?

Why I chose this question to investigate:

Reflections:

Stage 2: Where am I going? How will I demonstrate my learning?

Reflections:

Stage 3: Where am I now? What do I already know? What can I already do?

Reflections:

Stage 4: Where is the information? Where will I look to aid my learning?

Reflections:

Stage 5: What are the patterns? What have I learned? What is the important information? How to I sort my evidence?

Reflections:

Stage 6: What does this mean to me? What connections can I make with this new learning and information to my personal practice?

Reflections:

Stage 7: What action can I take? Do I need to investigate further? How could I make this learning real?

Reflections: