

**EXPLORING PRINCIPALS' PERCEPTIONS, BELIEFS AND PRACTICES
OF PROFESSIONAL DEVELOPMENT AS IMPLEMENTED THROUGH A
PROCESS OF COLLABORATIVE INQUIRY**

by

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Abstract

This thesis reports on a qualitative methodological study that explored six principals' descriptions of their perceptions, beliefs, and practices of professional development as implemented through a process of collaborative inquiry. Collaborative inquiry is commonly referred to within the educational literature, and is one form of professional development for educators. While plentiful, the literature presents ambiguous descriptions of professional development, resulting in a range of models being implemented with limited findings representing what does and does not work.

Participants were purposefully recruited and selected through a first-come first-serve approach using the elementary principal listserv of the participating school board located in Eastern Ontario. Two groups of principals were selected to participate; two who worked at Ontario Focused Intervention Partnership (OFIP) schools, identified by the Ontario Ministry of Education (OME) as having exceptional student learning needs, and four who worked at non-OFIP schools. Individual interviews and principals' professional development documents provided the data explored in this research study. The data analysis incorporated the following strategies: (a) unique case orientation; (b) inductive analysis; (c) voice, perspective, and reflexivity; and (d) context sensitivity. The emerging themes from this analysis were: (1) building teacher motivation; (2) supporting teacher learning toward improved and consistent practices; and (3) promoting accountability amongst principals in promotion of collaborative inquiry. These themes were then connected to relevant research and OME literature and mapped onto Guskey's (2000) evaluation of effective professional development framework. Recommendations for the future implementation of collaborative inquiry as a model of professional development included bringing a more balanced approach to equally emphasize applied teacher learning to coincide with the focus on teacher motivation. This thesis study voices the perceptions, beliefs, and experiences of principals currently using a collaborative inquiry model in the delivery of professional development. In doing so, this research may provide principals, school boards, and provincial stakeholders with authentic descriptions of what works

and does not work in an effort to improve the delivery and application of professional development within schools and school boards.

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List of Abbreviations

CI: Collaborative Inquiry

LNS: Literacy and Numeracy Secretariat

PD: Professional Development

OFIP: Ontario Focused Intervention Partnership

OME: Ontario Ministry of Education

SDL: Self-directed Learning

SIPSA: School Improvement Plan for Student Achievement

Chapter 1

Introduction

During my seventeen years as an educator at the elementary school level, I have participated in a number of professional development activities, both as a learner and as a facilitator. The range of experiences has been extensive and encompasses various professional development models, including information-sharing by recognized experts in the education field at large-scale local and provincial conferences; the use of whole-group, “train-the-trainer” models at the system level to promote the implementation of changes to curriculum content or the adoption of effective teaching practices; participation in self-directed and system-directed professional learning teams; and lastly, opportunities to take part in collaborative inquiry processes alongside school staff and principal colleagues. While each of these experiences has in some way contributed to my development as an education professional, I have noticed that the value I placed on each learning experience was often a determining factor in how consistent I was in applying changes to my own practice. Moreover, the forms of professional development that were of greatest value to me entailed collaborative experiences that involved critical dialogue about practice and sharing how my personal practice was changing.

This research study has been prompted by the disparate results I have observed both as a principal–learner participating in a number of collaborative inquiry learning experiences (some successful and others highly dysfunctional) and as a principal–leader facilitating collaborative inquiry processes (some of which have fostered an open mindset and produced noticeable changes in teacher practice, and others of which have resulted in

little to no change in teacher knowledge or practice). It has proven challenging to identify, describe, and understand the elements of professional development that promote teacher motivation while at the same time encouraging the application of new knowledge and the implementation of new strategies.

Purpose

The purpose of this research study was to explore how Ontario elementary school principals describe and characterize collaborative inquiry as a model of professional development for teachers. This involved inviting elementary principals to share their perceptions and beliefs regarding the collaborative inquiry process and to describe their practices of implementing the process as a means towards professional development for teachers. Four key questions guided the collection, analysis, and interpretation of data:

1. To what extent do the descriptions and observations provided by Ontario elementary school principals of their perceptions, beliefs, and practices regarding the collaborative inquiry process resemble the research literature?
2. In what ways do Ontario elementary school principals' perceptions of the collaborative inquiry process reflect Guskey's evaluative framework for effective professional development?
3. How is the collaborative inquiry process described by Ontario elementary school principals?
4. How is the collaborative inquiry process documented by Ontario elementary school principals?

Rationale and Potential Contributions

Research on the importance of teacher participation in professional development is plentiful, yet the literature available does not provide a clear idea of how to design and implement learning opportunities that will result in sustained and measurable changes in teacher practice and in improved student achievement outcomes (Bolden, B., Christou, T., DeLuca, C., Klinger, D., Kutsyruba, B., Pyper, J., Shulha, L., & Wade-Wooley, L., 2014; Guskey, 1995; Guskey, 2000; Leithwood, Leonard, & Sharratt, 1998; Little, 1999; Timperley, 2010; Timperley & Parr, 2007). The research literature stresses the importance of providing job-embedded professional development that promotes teacher collaboration, dialogue and meaning-making through sharing and reflecting upon authentic experiences of practice (Bolden et al., 2014; Butler & Schnellert, 2012; City, Elmore, Fiarman, & Teitel, 2009; Fullan, 1997; Fullan, 2001; Goodnough, 2005; Hargreaves & Fullan, 1998; Katz & Dack, 2013; Park et al., 2007, Timperley, 2010). In my experience as an elementary principal, I have witnessed this breadth of professional development opportunities and observed the trend towards providing more job-embedded collaborative inquiry.

The existing body of literature on professional development is vast yet vague. Within the literature, models associated with professional development are not referred to consistently and terminology is loosely applied. This adds to the challenge of using the available research as a guide for designing and implementing professional development models within schools, school boards, and the province. The present study contributes to the current body of research on the topic of professional development by presenting the first-hand experiences of principals currently engaged in the collaborative inquiry process

within school contexts. There is great value in voicing these principals' perceptions, beliefs, and experiences, as their descriptions can provide guidance for other educators embarking on similar professional development endeavours by broadening their understanding of the elements that contribute to adult learning, the processes that can be used to engage teachers, and the ways in which teachers can be motivated towards sustained participation in professional learning, as well as calling attention to the pitfalls that need to be considered and accounted for throughout the collaborative inquiry process.

As mentioned above, the driving force in undertaking this study has been the goal of understanding the elements of professional development that promote teacher motivation and that encourage the adoption of new strategies and practices. This research has provided me with a richer understanding of the factors that are conducive to adult learning, factors that need to be included in professional development experiences. The stories told by principals of using collaborative inquiry as a process of professional development have also helped me develop a better understanding of the limitations of this particular model, along with the shortcomings that are inherent in some of my own approaches to using the collaborative inquiry process.

Definition of Terms

Professional development.

“Professional development,” “professional learning,” “teacher training,” “teacher workshops,” and “learning teams” are all terms commonly used—often interchangeably—in the research literature to refer to activities in which teachers engage in acquiring new knowledge or developing new strategies. For the purposes of this study,

the term “professional development” will be used to represent the process of professional learning that results in a change of educator knowledge and practice. This term will be defined in greater detail in the Literature Review.

Collaborative inquiry.

Throughout this research study, “collaborative inquiry” (CI) refers to a process by which educators engage in a learning opportunity to explore a question that has arisen from the interests or needs of the participants. As members of a learning team, participants jointly decide upon the question and determine the actions and measures needed to investigate the question and to monitor student and teacher learning. Throughout the course of this bottom-up form of professional development, the discourse between educators is reflective, adaptive, relevant, and iterative with the intent of improving student achievement outcomes and changes in teacher practice (OME, 2010).

Thesis Overview

This thesis is presented in five chapters. The purpose of this first chapter has been to outline my interest and experience in the area of study, to identify the research purpose and the questions guiding the exploration, to provide a research-based context for undertaking the study, and to clarify my working definition of key terms. The next chapter presents a more thorough critical review of the research and educational literature pertaining to collaborative inquiry, adult learning, and motivation theory; as well, the Ontario Ministry of Education practices of professional development and a framework for evaluating the effectiveness of professional development (Guskey, 2000) are discussed.

Chapter 3 describes the qualitative methods design that was used in the implementation of this research study. I explain the process used for selecting participants, describe the two types of data collection, and provide an overview of the data analysis strategies that were used to discover the themes that emerged from the findings. In Chapter 4, I provide a description of the participants and the experiences they brought to the study. The discussion of the data analysis strategies has been deliberately included in this chapter, as each strategy relates to steps in the analysis process. I describe the recursive process of coding interview and document data and the clustering of codes into categories that revealed three emerging themes. I also present an overview of how the elements of collaborative inquiry described by principals map onto Guskey's (2000) evaluative framework of effective professional development. Chapter 5 interprets the findings from the preceding chapter and discusses the descriptions provided by principals in relation to the literature on the subject. The three themes identified in Chapter 4 are presented in the context of the study's three guiding questions. The final chapter also discusses the limitations of the present study and offers recommendations both for the implementation of professional development through a process of collaborative inquiry and for future research.

Chapter 2

Literature Review

The literature review presented in this chapter is intended to draw attention to the common themes that emerge from studies pertaining to the professional development of teachers. The chapter begins by examining the perspectives presented in the existing literature on the topics of collaborative inquiry and professional development. This is followed by the presentation of Guskey's evaluation framework for effective professional development, as Guskey's five levels of evaluation criteria will be used to analyze the data for this study. Reeves (2010) describes Guskey's evaluative framework research as among the most important works in professional development (PD) literature. In light of the frequent reference to Guskey's evaluative model (2000) within PD research, it was used as a theoretical framework within this study. Following this, I discuss how professional development practices within Ontario elementary public schools have changed over the past decade; I also review the description of collaborative inquiry provided by the Ontario Ministry of Education and the Ministry of Education's process for designating schools for increased support through an Ontario Focused Intervention Partnership (OFIP). The role of the principal in professional development is then discussed. The final two sections review the effectiveness of individual interviews and document analysis as methodologies for obtaining qualitative responses and data.

Collaborative Inquiry from a Research Perspective

The literature on educational research makes frequent use of the term “collaborative inquiry” but usually lacks a clear definition of what this process entails (Bolden et al., 2014; Leithwood et al., 1998). The goal of a collaborative inquiry process is to use students’ learning needs to determine what the focus of teachers’ learning should be (Katz & Dack, 2013); the process is thus oriented towards learning that is meaningful to teachers in the field. Collaborative learning engages individuals in a process of questioning, reflection, problem-solving, and analysis that is intended to challenge the individual’s thinking and practice (Bolden et al., 2014; Butler & Schnellert, 2012; Goodnough, 2005; Katz & Dack, 2013). Such processes may take several different forms, but all include an effort by groups of staff to improve lesson design, analyze student work and create meaningful ways to diagnose and monitor student learning (Leithwood et al., 1998). As this learning adopts a bottom-up approach, teachers hold each other accountable and engage in self-regulation, with the goal of nurturing reflective practices that can create shifts in thinking and behavior (Bolden et al., 2014; Butler & Schnellert, 2012; Goodnough, 2005; Katz & Dack, 2013).

Building coherence and knowledge through collaborative inquiry.

The need to establish coherence between what is being studied and the outcomes of the study is integral to the collaborative inquiry model (Earl & Katz, 2006; Katz & Dack, 2013; Leithwood et al., 1998; Sharratt & Fullan, 2012; Timperley, 2010; Timperley & Parr, 2007). To achieve this coherence, participants must develop deep knowledge about the topic under investigation (Timperley & Parr, 2007; Timperley & Phillips, 2003). Of particular interest is a study conducted by Timperley and Parr (2007)

that involved teachers, principals, and instructional coaches from a variety of elementary schools in Australia. The study was designed to examine the use of evidence-informed inquiry in creating coherence, building knowledge, and closing the achievement gap for students. Timperley and Parr, whose research methodology incorporated similar elements to those used in the present study, provided a variety of means through which they were looking to add coherence. Coherence was achieved by connecting school board policy and procedures to activities within the school (Timperley & Parr, 2007), and was further established between participants' actions as a result of discussing disagreements and misunderstandings and setting new action steps (Timperley & Parr, 2007). Knowledge-building was found to be a critical component of inquiry (Timperley, 2010; Timperley & Parr, 2007). Timperley and Parr (2007) suggested that knowledge-building involves developing content knowledge, fostering assessment literacy to understand the data, and describing how to work with individuals at varying levels. The inquiry process described in the research study involved:

1. identifying reasons for activities, forming agreements, and committing to shared responsibilities;
2. discussing every piece of evidence collected through the inquiry;
3. specifying action plans based on a shared understanding between teachers and principals regarding the evidence for student and professional learning needs; and,
4. providing feedback that challenged and affirmed practice (Timperley & Parr, 2007).

Despite some improvements in student outcomes, which were reflected in student data sources, Timperley and Parr's findings (2007) did not conclusively relate coherence and evidence-based inquiry to improved student outcomes. In light of this limitation and the challenge of relating teacher practice to student achievement, my thesis study will focus on principals' perceptions of collaborative inquiry as a process for professional development instead of linking teacher practice to student outcomes. However, building upon the coherence research of Timperley and Parr (2007), I will explore the focus for inquiry in relation to school improvement goals and Ontario Ministry of Education (OME) priorities. By examining documents from the OME, school board, and individual schools, I should be able to identify similar themes that might illustrate coherence across all educational levels. This could further support the findings of Timperley and Parr's (2007) study and add to the body of research literature.

In summary, the research literature (Earl & Katz, 2003; Katz & Dack, 2013; Leithwood et al., 1998; Sharratt & Fullan, 2012; Timperley & Parr, 2007; Timperley & Phillips, 2003) makes varying use of the term "collaborative inquiry." This continues to make the process ambiguous and difficult to describe for the purpose of replication. Nonetheless, the frequency of collaborative inquiry as a topic within the literature suggests that it is an important component of many professional development initiatives. The action-oriented themes of collaborative inquiry that emerge from the research on the subject (Bolden et al., 2014; Earl & Katz, 2003; Katz & Dack, 2013; Leithwood et al., 1998; Sharratt & Fullan, 2012; Timperley, 2010; Timperley & Parr, 2007; Timperley & Phillips, 2003) can be summarized as follows:

- use data for informed decision-making;

- question practice;
- build knowledge about best instructional practices;
- collaborate with peers and engage in deep conversation;
- take action to implement a shared plan;
- seek and provide feedback on what’s working and what is not working;
- reflect using a continuous, iterative approach; and,
- celebrate the progress.

Professional Development

The tendency to use the terms “professional development” and “professional learning” interchangeably has led to disagreement within the literature on educational research as to whether these two terms do in fact mean the same thing (Guskey, 2000; Katz & Dack, 2013; Timperley & Phillips, 2003). For the purposes of this study, the term “professional development” will be used to describe the learning that happens when colleagues collaborate to create a “permanent change in knowledge and behaviour” (Katz & Dack, 2013, p.15). This term draws upon definitions emerging from the Ontario Ministry of Education’s (OME) reports and discussion papers.

Evolving from an Ontario Ministry of Education discussion paper titled, “Teacher Excellence—Unlocking Student Potential through Continuing Professional Development” (2004), the OME engaged Ontario educational partners in a working table to define types of teacher training and important characteristics of professional development. The 2007 report from this working table group encouraged the following types of activities to be characterized as examples of professional learning:

- (a) Training—content knowledge required for the job;

- (b) Staff development—job-embedded professional learning activities that are often decided by the system, based on common educational needs; and,
- (c) Professional development—self-directed learning activities that a teacher engages in on an individual basis or as part of a learning community.

Recognizing that professional learning can occur in many different forms, the table group identified five characteristics of effective learning that should be part of any activity: (a) coherent; (b) attentive to adult learning styles; (c) goal-oriented; (d) sustainable; and, (e) evidence-informed (OME, 2007). Coherence emerges from learning that keeps improved student achievement as the most important outcome of professional development activities that connect provincial, system, school, parent, and classroom priorities (OME, 2007). Teachers bring a variety of knowledge, skills, and experiences to their role and it is important to consider adult learning principles when designing professional development. Providing opportunities for choice, relevancy, differentiation, and recognition create a respectful adult learning culture that helps to bring meaning to the learning and encompasses adult learning styles (OME, 2007). Professional development is made more meaningful to teachers when it reflects their daily work, connected to specific goals for improved student achievement and professional learning (OME, 2007). Sustainable professional development occurs when the learning is a process, supported over time and with the resources needed to allow for reflection that promotes the construction, deconstruction, and reconstruction of new knowledge and practices (OME, 2007). Lastly, the professional development of teachers needs to be evidence-informed by a variety of data and research, all of which are aligned with the needs to teachers and students (OME, 2007).

Similar to the findings in the OME working table report (2007), for professional development to be effective, teachers need to engage in critical discourse with others in order to reflect on the work they do and the ways in which they teach (Park et al., 2007). Thus job-embedded professional development is the most critical learning model for teachers, as it creates the conditions for them to immediately implement what has been learned into their daily practice (Bolden et al., 2014; City et al., 2009).

Guskey's Five Levels of Evaluation of Effective Professional Development

After investigating the possible underlying reasons for the failure of traditional professional development models to result in improvements in instructional practice, Guskey (2000, 2002, 2005) identified five levels of evaluation of the effectiveness of professional development. The five levels within this model are: (a) participants' reactions; (b) participants' learning; (c) organization support and change; (d) participants' use of new knowledge and skills; and, (e) student learning outcomes (Appendix A). Each of these levels builds upon the others, and each requires the collection of evidence to determine what has been done well, what has not worked well, and what can be improved (Guskey, 2000, 2002, 2005). Additionally, each higher level increases in the time and resources needed to evaluate the effectiveness of the professional development (Guskey, 2000). In developing this evaluation framework, Guskey provided criteria by which other forms of professional development can be examined.

The first level of evaluation in the framework is participants' reactions to the experience. The information is often collected through questionnaires and surveys to gain a sense of participants' happiness with the learning experience (Guskey, 2000). This level

of evaluation sets the foundation for subsequent levels and progress as it focuses upon the importance of meeting individuals' personal needs (Guskey, 2000).

The second level of professional development builds on participant satisfaction by measuring the knowledge, skills, and attitudes acquired through the learning experience (Guskey, 2000). Simulations, portfolios, some pen and paper tasks are commonly used as tools to collect the data to assess the effectiveness of professional development at this level (Guskey, 2000). Unlike the previous level, it is important for criteria and targets to be embedded in these learning experiences to gauge the acquisition of learning against the anticipated outcomes (Guskey, 2000).

The focus of professional development at Level 3 shifts from the individual to the organization, more specifically, organization variables to support learning and change (Guskey, 2000). This is the level when professional development gains can be lost if the organization does not properly support implementation of learning into practice; through public support of changed practices, further opportunities for collaboration, resource allocation, and time (Guskey, 2000). At this level, the evaluation of professional development depends upon the goals of the activity and can involve the analysis of school records, minutes from meetings between meetings, interviews with participants, and questionnaires pertaining to the organization's support and recognition of change efforts (Guskey, 2000).

Level 4 of the evaluative framework measures the impact the learning has had on participants' practice and whether it made a difference (Guskey, 2000). This level cannot be measured at the end of the professional development session; it requires time to allow for changes in practice to occur (Guskey, 2000). The most accurate tool to measure

impact on practice is to observe participants' practicing intended knowledge, skills, and attitudes (Guskey, 2000). Additional measures may be needed over time due to the gradual and uneven process of implementing changes in practice (Guskey, 2000).

The fifth level of evaluation explores whether the professional learning made an impact on student learning in any way (Guskey, 2000). As teachers reflect on the impact their actions are having on students, it is important to consider intended and unintended outcomes (Guskey, 2000). It is possible for student outcomes to increase related to the program area of focus, and potentially decrease in areas of practice lying outside the current focus (Guskey, 2000). By considering measures for both outcomes, teachers, schools, and PD providers can use this information as ongoing feedback for improved program design in the classroom and in adult learning opportunities (Guskey, 2000).

Guskey's investigations concluded that professional development rarely surpasses Level 3: the process meets the needs and interests of participants while providing learning opportunities, but falls short in creating sustained change in teacher practice and in improving student achievement outcomes (Guskey, 2000). A decade later, Guskey's call for evaluation of professional development to extend beyond participant satisfaction to the impact on student learning acts as foundational literature for further research, as illustrated by an inquiry that reflected over 2500 citations to his work.

Historical Ontario Elementary School Professional Development Perspective

The Ontario Ministry of Education (OME) has used a variety of professional development models over the past ten years. In the late 1990s and early 2000s, local school boards were often provided with financial resources in order to support teacher training for implementing new and revised curriculum documents. During this time, the

OME employed a training model that defined the funds to be used, the staff to be included within the training, and the manner in which the training was to occur (Hargreaves & Shirley, 2012). I was a curriculum coordinator during this time period and was responsible for providing professional development to teachers in my school board. Based upon my experiences from this period (being required to adhere to training schedules, account for the implementation of training plans, and submit expenditure reports), I would characterize the method used as following a “train-the-trainer” model. Schools would often be required to identify one teacher who would be trained by central school board staff, through release time, and then expected to return to the school site and train all other colleagues during after-school staff meetings.

With the establishment of the Literacy and Numeracy Secretariat (LNS) branch in 2003, the OME shifted its focus to building teacher capacity in literacy and numeracy (Hargreaves & Shirley, 2012). The government’s strategy was to secure higher levels of student achievement in literacy and numeracy by using a “high pressure-high support strategy” (Hargreaves & Shirley, 2012, p. 33). The government was changing the tone of relationships within the province, adopting a less punitive approach in order to support increased student achievement and rebuild teacher trust after years of union turmoil (Hargreaves & Shirley, 2012). Significant amounts of funding were directed to support school boards and staff in reaching targets, and a significant support system for schools and teachers was established.

In addition to this, the OME provided increased opportunities for training and coaching, encouraged the development of numerous, quality teaching resources, and promoted opportunities for networking (Hargreaves & Shirley, 2012). The LNS

supported school boards, schools, and teachers by assigning Student Achievement Officers to regions within the province (Hargreaves & Shirley, 2012). These individuals worked closely with school board personnel to collaboratively implement the literacy and numeracy goals set out by the OME and acted as external auditors, monitoring the achievement of their assigned school boards (Hargreaves & Shirley, 2012). Hargreaves and Shirley (2012) describe this model, which was used from 2003 to approximately 2009, as “prescribed collaboration,” as the goals, targets and actions were initiated by the Ontario Ministry of Education, with an emphasis on external accountability measures.

As the OME continued to focus on attaining targets for student achievement in literacy and numeracy, teacher morale began to falter (Hargreaves & Shirley, 2012). The high expectations had not been established with punitive intent, but teacher motivation started to drop, and emphasis was often placed on securing student achievement at the provincial standard (Hargreaves & Shirley, 2012). School systems started to “organize to produce the required result by creating a set of ‘perverse incentives’ to manufacture the numerical outcome” (Hargreaves & Shirley, 2012, p. 38). From a local perspective, I saw this manifest itself in various ways: in certain student populations being exempted from provincial assessments, in additional accommodations being offered in order to enhance students’ success, and in subtle variations to ways in which assessments were administered.

Professional development in Ontario elementary schools from 2009 to the present has reflected a greater emphasis on promoting learning from the bottom-up rather than the traditional top-down model (Ontario Ministry of Education, 2013). Moreover, the primary model for professional development has shifted from prescribed collaboration to

collaborative inquiry, with an accompanying shift from external accountability to self- and co-regulation (Hargreaves & Shirley, 2012). Hargreaves and Shirley (2012) suggest that “recovering, renewing, and reinventing teaching and teachers builds the basic capital that yields continuous improvement and student achievement” (p. 164). The creation of a culture that promotes critical thinking, questioning, and risk-taking defines collaborative inquiry (Hargreaves & Shirley, 2012). This shift from directed collaboration to a culture of professional inquiry is reflected within the current initiatives suggested by the OME.

Ontario Ministry of Education Collaborative Inquiry Process

The OME suggests collaborative inquiry is a process for teachers to “build and integrate new knowledge and understanding of student learning and classroom instruction into their existing knowledge of professional practice” (Ontario Ministry of Education, 2013). A number of collaborative inquiry initiatives have been promoted by the Literacy and Numeracy Secretariat branch of the Ministry of Education. The common components in these initiatives, based on a comparison of the web-based descriptions with the research literature, include job-embedded learning, evidence-based instruction, increased opportunities for inquiry about teacher practice, and collaborative sharing (Bolden et al., 2014; City et al., 2009; Earl & Katz, 2006; Fullan, 2001; Hargreaves & Shirley, 2012; Katz & Dack, 2013). Current OME collaborative inquiries include the Early Primary Collaborative Inquiry, the Student Work Study Teacher initiative, the Teacher-Learning Critical Pathways initiative, and the Collaborative Inquiry for Learning in Mathematics.

The OME’s collaborative inquiries build teachers’ professional development around needs defined in response to students’ learning needs. In designing these collaborative inquiry initiatives, the OME has provided more autonomy for teachers to

select the area of focus for their learning and to define the evidence to be collected to determine whether what they are doing is meeting both their own and their students' needs (Fullan, 2001; Hargreaves & Shirley, 2012). Most recently, the OME has further clarified five requirements for effective collaborative teacher processes that are to guide collaborative inquiry. Based on the work of Cosner (2011), the five requirements for effective collaborative inquiry as defined by the OME are:

- consensus about purposes for collaboration;
- specific goals that translate purposes into action;
- trust among colleagues with leaders;
- use of student assessments to query past instructional practice; and
- specific instructional plans based on the assessments of student learning.

There seems to be some congruity between the Ontario Ministry of Education's identified requirements for collaborative inquiry and Guskey's five levels of evaluation for effective professional development: Guskey also references teacher consensus for the purposes of collaboration, the need for trust among colleagues and leaders, and the use of student assessments as a source to inform instructional practice. It is not surprising to find that these two frameworks overlap, as both have a foundational emphasis on learning.

The Principal's Role in Professional Development

The role of the principal involves being a problem-solver, being adaptive, being able to ask good questions of practice, and being able to collaborate effectively to secure increased achievement of students and create sustainability (Fullan, 2001). The reality is that principals cannot independently bring about change in achievement or create sustainability, as they are too far removed from the students (City et al., 2009; Fullan,

2001; Hargreaves & Fullan, 1998; Schmoker, 1999). The role of the principal is to create the culture for change and achievement, and professional development is the means through which they do so (Fullan, 2001). Hargreaves and Fullan (1998) argue that “the quality and the morale of teachers are absolutely central to the well-being of students and their learning” (p. 4). The principal plays a key role in supporting teachers by building relationships to foster teacher morale and by building knowledge to enhance the quality of instructional practice. In order to support learning and enhance morale, principals need to empower teachers and develop organizational structures that support collaboration and knowledge-building (DuFour, DuFour, Eaker, & Karhanek, 2004; Fullan, 2005; Hargreaves & Fullan, 1998; Hulley & Dier, 2005).

Organizational structures to support collaboration and learning.

The most important piece of knowledge for a principal to share with teachers is how to work as part of a collaborative team (Leading Student Achievement Series, 2009). The role of the principal is to create opportunities for teachers to come together to ask questions, to collaborate, to act, and to reflect (Earl & Katz, 2006; Fullan, 1997; Hulley & Dier, 2005; Sharrat & Fullan, 2012). This is achieved by developing structures that facilitate collaboration, which creates opportunities for colleagues to challenge one another, to constantly build knowledge, and to critically assess new ideas and practices (Fullan, 1997, 2001; Hargreaves & Fullan, 1998). Through professional development opportunities, principals mobilize teachers to share a moral purpose. The principal fosters a shared moral purpose and urgency by building teacher knowledge about how to understand data, how to set goals, and how to identify desired results (Earl & Katz, 2006; Fullan, 1997; Hulley & Dier, 2005; Sharrat & Fullan, 2012). Collaboration and

knowledge-building are achieved when principals model the vision and values of the school, empower others to share in a sense of purpose, and present themselves as risk-takers and learners (Earl & Katz, 2006; Hulley & Dier, 2005).

Facilitating Adult Learning

Teaching is a profession in which lifelong learning is an essential component to ensuring that individuals and organizations remain current with best practices and to promoting public confidence in the profession (Early, 2010). While there is significant research that describes the professional development of teachers, much of this literature arises from professional affiliations and lacks a strong connection to research and theoretical foundations and does not address how effectively learning is applied to practice (Early, 2010). Much of the literature on the subject is consistent in its promotion of learning and growth within the individual and within the organization (Early, 2010; Knowles, 1980; Merriam, 2010; Rubenson, 2010). This led me to pose further questions that pertain to adult learning, as a theoretical foundation, with the goal of more effectively providing professional development opportunities for teachers. These questions include whether lifelong learning is an expected component of being a professional, what “adult learning” is, and what the theoretical foundations of adult learning are.

Adult learning overview.

Learning results in a change of behaviour, attitude, beliefs, and/or values; it can be a complex phenomenon, as it also constitutes the everyday experiences of individuals, a variable factor in light of the increasing experiences among and differences between adults (Katz & Dack, 2013; Knowles, 1980; Merriam, 2010; Rubenson, 2010). Because

of the maturity, breadth of life experiences, and autonomy that define the nature of adult individuals, adult learning as a field of study is distinct from children's learning, and learning design must reflect this difference (Knowles, 1980; Rubenson, 2010). In designing learning opportunities for adults, Knowles (1980) suggests that the "resource of greatest value for adult learners are their life experiences," as adults make meaning by connecting their learning to experience (Merriam & Clark, 2006).

Adult learning builds upon previous experiences and involves cognitive components, incentives, and social elements (Early, 2010; Illeris, 2003; Merriam, 2010; Merriam & Clark, 2006). The cognitive dimension of adult learning is comprised of the knowledge, understanding, skills and abilities that are developed within the individual. Often this dimension can be developed through assimilation and the transfer of knowledge and skills, as the individual is very much aware of the content and skills to be acquired and can easily connect new learning to schema (Illeris, 2003). When faced with a challenge that differs from prior experience, an adult may not be able to easily make the necessary connection and may have to make an adjustment to prior thinking and experiences in order to accommodate the new information, which can be a taxing situation, requiring a reconstruction of schema (Illeris, 2003; Merriam, 2010). This type of adult learning situation connects to the incentive dimension of learning, which encompasses the motivation, incentives, and feelings associated with a learning experience (Knowles, 1980; Illeris, 2003). This dimension can be one of the more challenging factors in promoting learning, as the learners' emotional responses can create barriers to learning that arise from feeling overwhelmed or powerless or that arise as a mental defense against competing demands (Knowles, 1980; Illeris, 2003).

Lastly, learning in adulthood is often part of an individual's social context, an activity that involves dialogue, interaction, cooperation and communication, whether the setting is formal or informal (Illeris, 2003; Merriam, 2010; Merriam & Clark, 2006; Rubenson, 2010). Learning rarely occurs in isolation from the learner's world, and an adult's social structures shape the context of his/her learning, influencing expectations as to what the learner wants to learn, how s/he will learn, and the amount of energy put into the learning (Knowles, 1980; Merriam, 2010; Merriam & Clark, 2006). In essence, adult learners are self-directed, in that adults select what they want to learn and determine what is meaningful to them; adult learners connect to past experiences as they are learning, and are not particularly inclined to persevere or attend to new learning that does not hold meaning for them or that holds little incentive. Three predominant theories—*andragogy*, *self-directed learning*, and *transformational learning*—provide the foundation for the study of adult education. It should be noted, however, that each theory focuses solely upon the individual in his/her learning situation.

Andragogy.

Andragogy provides a framework to understand the characteristics of adult learners in response to learning situations. As defined by Knowles (1978), *andragogy* is a deliberate activity aimed at a change in adults, based upon the assumption that adults are likely to avoid learning situations that are rigid and uncompromising in nature and that do not include the life experiences and interests of the individual learner. Knowles (1980) characterizes adult learners as follows:

1. Adults are motivated to learn as their needs and interests are met by the learning situation.

2. Adults are more interested in learning that is life-centred and problem-centred.
3. Experience is the best resource for adult learning, and analysis of experience is a core method of learning.
4. Adults need to be self-directed and should be engaged in collaborative inquiry instead of the transmission of knowledge.
5. Individual differences increase with age, and adult education situations need to prepare for different learning styles, pacing, timing, and readiness.
6. Adults need to know why they need to learn something.

While andragogy presents some clearly defined characteristics of adult learners, this theoretical framework lends itself to highly individualized and self-selected learning situations. Knowing the characteristics of adult learners, as described in this theory, provides insight to the inclusion of experience and teacher input into professional development opportunities. However, the heightened focus on the individual and self-selection conflicts with the coherence of practice that can be gained through professional development opportunities that promote collective learning of individuals; this individual focus also tends to ignore the social context of learning (Merriam, 2010).

Self-directed learning.

Self-directed learning (SDL)—learning that occurs in the everyday life of an adult and is not dependent upon formal structures or facilitation—has been a significant contributor to understanding adult learning (Merriam, 2010). The literature on adult education describes self-directed learning as fostering the skills and capacities for lifelong learning, such as the ability to initiate one’s own learning through the development of learning goals and the design and implementation of a learning plan

(Taylor, 2010). Inherent in this description is the focus on the individual to set his/her own course of learning (Rubenson, 2010). Furthermore, the literature describes SDL as something that is unique to adult learning, as individuals at this stage in life can take control of their own personal growth, are more able to assume responsibility for choices, and have a more developed sense of identity (Merriam, 2010; Merriam & Clark, 2006; Taylor, 2010). As the field of literature has expanded in relation to this theory, there has been a shift from regarding SDL as a set of learning activities to a collection of personal attributes and dispositions that characterize self-directed learners (Merriam, 2010; Taylor, 2010).

Emerging from this literature is an understanding that individuality, autonomy, motivation, critical thinking, and independence are characteristics of effective self-directed learners within individual and collective contexts (Knowles, 1980; Merriam, 2010; Merriam & Clark, 2006; Taylor, 2010). Similar to the literature on andragogy, SDL contributes to the characterization of the adult learner. Understanding the disposition of adult learners and the role of SDL in promoting lifelong learning can enhance the ways in which continuing opportunities for professional development are designed. This literature enables facilitators to draw upon the attributes of individual learners to ensure a sense of autonomy, motivation, and critical thinking is embedded within the learning context.

Transformational learning.

Transformational learning is a third area of study that has contributed to the theoretical foundation for understanding learning in adulthood. Transformational learning is the process of making meaning and involves the mature cognitive functioning that makes adult learners unique from children (Merriam, 2010). According to Mezirow

(1985), whose studies have defined transformational learning, learning extends beyond adding onto what one already knows and/or has experienced and involves a process of constructing a revised perspective on the meaning of the experience and results in a transformation of one's beliefs, understanding, or attitudes. In order for an individual to be able to transform his/her perspectives, cognitive processes must be accessed to examine and critically reflect on the experience to make meaning (Merriam & Clark, 2006; Mezirow, 1985). Furthermore, changes in thinking represent cognitive development and depend upon adults having the maturity to question, reflect, and examine assumptions in order for learning to occur (Merriam & Clark, 2006). In contrast to the aforementioned learning methods of assimilation and accommodation, transformational learning is more difficult to plan for and implement, as it requires a change in knowledge, skills, and attitudes, and implies a change in the learner's sense of identity resulting from a challenge that s/he feels is urgent or unavoidable (Illeris, 2003; Mezirow, 1985).

The emphasis in each of the theories outlined above is on the individual. In light of the emphasis placed upon learning as being shaped by social context and the reference to the importance of learning as a social activity requiring interaction, collaboration, and communication, this seems to be a shortcoming of these three theories. While understanding the individual characteristics of adult learners is a crucial factor in the design of learning situations, it is also important to consider these characteristics within a social context, as this is where adults test ideas, critically reflect, and deepen understandings (Merriam, 2010; Merriam & Clark, 2006; Rubenson, 2010). In reflecting upon the adult learning literature and the educational goals of improving teacher practice

and building coherence of practice within an organization, effective professional development for teachers will need to empower teachers to decide upon the learning goals that meet their individual and collective needs, promote learning and development through the transformation of teachers' knowledge, skills, attitudes, and beliefs, and engage and motivate teachers as adult learners.

Teacher empowerment.

The element of motivation and hope is critical to the process of empowering teachers in educational settings (Fullan, 2005; Hargreaves & Fullan, 1998; Hulley & Dier, 2005), which is vital in effectively meeting the challenges of teaching and learning. The challenge for principals is to nurture teachers' intrinsic motivation by connecting teachers' individual sense of meaning, competence, choice, and impact (Fullan, 1997; Spreitzer, 1995; Spreitzer et al., 1999; Thomas & Velthouse, 1990). Empowerment can energize and enable others for a common goal, which creates motivation (Fullan, 1997). Empowered people see themselves as effective in their work, making them more innovative and more willing to try something new (Quinn & Spreitzer, 1997). Empowerment results in behaviours that can directly influence how teachers perceive and perform their work, creating a culture of influence that can support all teachers to transform beliefs, attitudes, perceptions, and experiences (Fullan, 1997, 2001).

Promoting Teacher Efficacy as a Motivational Process and Outcome

Knowles (1978) has noted that adults are motivated to learn as their needs and interests are met. Understanding the possible motivational elements that drive teacher behaviour, as identified in the research literature, could provide some insight into the described beliefs, perceptions, and practices of the leaders within this study. Knowing

that learning and development involve cognitive and motivational processes that lead to a change in knowledge, skills, behaviour, and attitude, leaders need to understand how to influence the emotional engagement of teachers in professional learning opportunities in hopes of improving teacher practice (Katz & Dack, 2013; Knowles, 1980; Merriam, 2010; Rubenson, 2010).

As previously stated, there is limited research literature that illustrates teachers' application of professional learning within their everyday practice. Arising from the adult learning literature review, the nature of human behaviour and the factors that influence change in behaviour seems a logical next step for investigation. Recognizing that adult learners typically self-select the learning they wish to engage in and self-determine the meaning they attach to these experiences, it seems important to delve deeper into what motivates teachers' self-selection and meaning-making (Illeris, 2003; Knowles, 1980; Merriam, 2010). Within a school and classroom context, this adult learning characteristic results in teachers determining the new practices to implement as part of educational improvements, such as (a) clarity of the practice, (b) alignment of the new practice with the familiar, (c) cost of involvement, (d) individual importance placed upon the new practice, and (e) the difficulty of implementation (Guskey, 1988). These are significant decisions, driven by teachers' beliefs and individualized meaning-making that impact the achievement of students, and it is questionable if these decisions should be made in isolation. It is important to understand what motivates individuals when designing collaborative learning experiences that engage and promote teachers' beliefs in the impact they can have on student outcomes through the application of effective practice.

Goal structures as a process of motivation.

Motivational theory suggests that all human behaviour is goal-driven and is influenced by how an individual perceives the situation and his/her own experiences (Dweck & Grant, 2008). Goal structures are practices within an educational setting and impact motivation. According to the research of Dweck and Grant (2008), a teacher's motivation to learn and implement a new practice is influenced by the goals they set for themselves and their beliefs, resulting in an orientation towards mastery or helplessness. This manifests in a person's tendency to believe that they can or cannot achieve success in a situation, that they can impact and change their circumstances or that effort is futile and they have no influence to change the situation, or that some traits are adaptive or fixed (Dweck & Grant, 2008; Dweck & Leggett, 1988). A teacher who holds an orientation towards mastery will believe that obstacles can be overcome, that learning is the valued outcome of an experience, and that new practices are manageable to implement, very important, and require limited work (Dweck & Grant, 2008; Dweck & Leggett, 1988; Guskey, 1988). On the other hand, a teacher who holds a helplessness orientation will believe that performance is the more desired outcome, and will avoid learning and new practices that seem too difficult to implement or too different from current practice, or changes that seem irrelevant (Dweck & Grant, 2008; Dweck & Leggett, 1988; Guskey, 1988).

While goal structures define the motivational response a teacher may exhibit with regards to the implementation of new practice, be it as a learning opportunity or a situation to avoid, the beliefs that motivate the meaning attached to the goal need to be further explored by examining teacher's self-efficacy. More specifically, what can a leader do to foster a teacher's sense of self-efficacy in order to motivate them to

persevere through challenges and respond with a mastery-orientation? The focus on goal structures as a leading predictor of behaviour and as a process of motivation is relevant only when investigated in conjunction with the belief processes that guide teacher behaviour and thinking. Teacher responses to goals are guided by the beliefs they hold regarding their ability (or perceived lack thereof) to learn and change, referred to in the literature as “efficacy” (Dweck & Grant, 2008; Dweck & Leggett, 1988; Tschannen-Moran & McMaster, 2009). In light of the emphasis this study places on teacher learning, efficacy pertains to a teacher’s belief in their ability to positively impact student outcomes, regardless of circumstances. A number of studies (Guskey, 1988; Guskey & Passaro, 1994; Tschannen-Moran & McMaster, 2009; Wolters & Daugherty, 2007) have examined the role of efficacy in the implementation of new teacher practices. The relevance of teacher self-efficacy, in relation to its foundation as a social cognitive construct and motivational factor, will be considered as a critical component in supporting teachers’ challenges in implementing new instructional practices through professional learning opportunities.

Understanding teacher self-efficacy.

Teacher self-efficacy is a complex social cognitive construct that has significant implications for teachers and the students they serve (Bandura, 1977; Tschannen-Moran & Hoy, 2001). Teacher self-efficacy can be defined as a teacher’s belief that s/he can achieve desired outcomes as a result of his/her efforts, experiences, and/or knowledge (Bandura, 1977; Guskey & Passaro, 1994; Leithwood et al., 1998; Tschannen-Moran & Hoy, 2001; Tschannen-Moran & McMaster, 2009, Wolters & Daugherty, 2007). Some of the significant outcomes for teachers may encompass improved persistence with tasks,

enthusiasm, commitment, and more effective instructional behaviours (increased planning and organization, risk-taking, resiliency, servicing at-risk students), as well as student outcomes, such as engagement, motivation, achievement, and students' own sense of self-efficacy (Tschannen-Moran & Hoy, 2001; Tschannen-Moran & McMaster, 2009).

Cognition and goal-setting play significant roles in self-efficacy theory, as these factors account for the decisions an individual makes in pursuing the desired outcome. It is important to consider the implications of teacher efficacy in terms of these outcomes, as studies have shown that teachers possessing high levels of self-efficacy have more effective practices, whereas those who do not possess high levels of self-efficacy do not believe that they can make a difference for students by affecting student achievement, motivation, or by taking proactive steps in meeting the needs of at-risk students as they arise (Dweck & Leggett, 2008; Guskey, 1984; Guskey & Passaro, 1994; Tschannen-Moran & Hoy, 2001).

Bandura (1977) led the charge in defining self-efficacy as a social cognitive model. He argued that behavior is acquired, regulated, and retained through cognitive processes in which an individual incorporates information through verbal persuasion, vicarious experiences, physiological state, and mastery experiences. These sources of information contribute to self-efficacy and have direct correlations to professional learning activities for teachers.

Verbal persuasion can lead a person to have greater confidence in his/her ability to achieve a specific outcome and standard of achievement. Verbal persuasion is dependent upon input from others, such as colleagues, mentors, and supervisors

(Bandura, 1977). Although it can act to bolster belief in oneself, verbal persuasion has limited capacity to create lasting self-efficacy, as it is most often delivered through feedback or professional development activities intended to provide new knowledge and does not allow for teacher input (Bandura, 1977; Bruce et al., 2010; Tschannen-Moran & McMaster, 2009). In essence, verbal persuasion is most effective in encouraging teachers to take the risk to try new practices.

Vicarious experiences involve observing another person performing an activity which one is considering attempting or seeing oneself as similar enough to a colleague that s/he can vicariously summon the belief that s/he is able to implement the same practices due to the likeness with the colleague (Bandura, 1977; Bruce et al., 2010). Vicarious experiences provide teachers with models of instruction; by observing the demonstration and accompanying “think-aloud,” the teacher acquires the skills and strategies for managing a task. Professional development in the form of videos is a readily accessible form of vicarious experience (Bandura, 1977; Guskey, 1988; Tschannen-Moran & McMaster, 2009; Wolters & Daugherty, 2007).

An individual’s physiological reaction to a situation can influence the manner of response (Bandura, 1977). A physiological state, such as stress, can influence an individual’s judgment of her or his own capabilities. As Gregoire (2003) has noted, stress can have enabling or debilitating effects depending upon whether the situation is perceived as a challenge or a threat. For instance, a moderate level of stress can heighten attention and energy for a task and result in improved performance. However, if the individual’s stress level is too high, it can create too great a sense of risk and doubt and interfere with the individual’s ability to respond to the situation (Gregoire, 2003; Guskey,

1988). In professional learning contexts, a new theory or workshop presentation may pique a teacher's interest and although some anxiety may ensue (moderate stress), as long as the new knowledge is presented in a supportive manner and incorporates some verbal persuasion and vicarious experiences, the physiological state can be maintained at a moderate level (Bandura, 1977; Gregoire, 2003; Guskey, 1984; Tschannen-Moran & McMaster, 2009).

Of all the information sources influencing teacher self-efficacy, mastery experiences are of greatest importance (Bandura, 1977). The research (Bandura, 1977; Bruce et al., 2010; Guskey, 1988; Guskey & Passaro, 1994; Timperley & Phillips, 2003; Tschannen-Moran & McMaster, 2009; Tschannen-Moran & Hoy, 2001; Wolters & Daugherty, 2007) has indicated that mastery experiences are the most effective in building teacher self-efficacy, as they provide authentic experiences of success for the individual. Success breeds confidence, which in turn breeds greater self-efficacy, which the reader will recall is defined as belief in one's ability to impact a situation and bring about desired outcomes (Bandura, 1977; Bruce et al., 2010; Guskey & Passaro, 1994; Timperley & Phillips, 2003; Tschannen-Moran & McMaster, 2009; Tschannen-Moran & Hoy, 2001; Wolters & Daugherty, 2007). The acquisition of new knowledge and practices is enacted with a focus on mastery experiences, and it is this application that makes success real to the individual (Bandura, 1977).

Implications of goal structures and self-efficacy for professional development.

In considering the beliefs and perceptions that principals hold regarding professional development practices, the research literature describing the role of goal structures and self-efficacy provides a theoretical foundation for understanding how to

better motivate teachers to learn and implement new teaching practices. Teacher efficacy can be increased by incorporating a variety of strategies that allow for feedback (verbal persuasion), collaborative dialogue about practice with colleagues through shared instructional practice (vicarious experiences), and the application of new practices within their own classrooms (mastery experiences)—with this latter experience being the most effective, particularly when supported by follow-up coaching or conversations (Bruce et al., 2010; Dweck & Leggett, 1988; Guskey, 1988; Guskey & Passaro, 1994; Tschannen-Moran & McMaster, 2009; Wolters & Daugherty, 2007). As a result, teachers take greater risks in their learning, persevering through challenges, and maintaining motivation in their learning. In essence, it would seem as if a teacher's self-efficacy is both a process and a product of motivation that serves the psychological and emotional needs of the adult learner.

As teachers demonstrate an orientation towards mastery and overcome obstacles, they show a growth mindset that enables them to pursue challenging goals and exhibiting motivation to change practice while also becoming more efficacious in their belief that they can be successful in their learning and implementation of new practices. As leaders facilitate learning through professional development opportunities, fostering teacher efficacy will be critical to offer support and guidance to teachers with varying years of experience, and thus varying levels of efficacy, as they navigate new learning and implementation that has the potential to result in heightened anxieties, feelings of helplessness, or perceptions that the learning is too difficult or costly. Using the aforementioned strategies to build increased levels of teacher efficacy should encourage a

greater willingness for teachers to persist with challenges, set higher expectations for themselves and students, and an orientation towards mastery of learning and practice.

Educational literature champions the teacher as one of the most important determinants of whether quality instruction occurs or not; self-efficacy theory suggests that the quality of a teacher's effectiveness is greatly dependent upon a high level of self-efficacy. Steele (2010) states: "teacher quality—knowledge and effectiveness—is the number one school-based factor in student achievement." As both constructs (self-efficacy and goal structures) are grounded upon motivational theory and research, it leads one to argue that with increased self-efficacy, promoted through mastery experiences and supported by verbal persuasion and peer coaching, teachers should be able to persevere in the implementation of new or more effective teaching practices. Although increased self-efficacy is not an inclusive solution, it would provide a positive mindset with which teachers could feel more enthusiastic towards change and persevere more consistently when faced with challenges. Implementing new instructional practices is a complex process, one that depends on cognition and motivation, and the teacher may not always be able to immediately achieve a sense of success (either through their practice or in the achievement of students). This lack of perceived success could lead to lower commitment to strategy implementation or to decreased willingness to believe that the teacher's efforts can indeed have an impact on student achievement.

In light of the research that has been done on self-efficacy and the role it plays in motivating individuals, it seems logical that this would be a necessary construct upon which to develop and modify more effective instructional practices. Based upon the complexity of teaching, it seems self-efficacy is the "missing link" in supporting teachers

when facing the challenge of implementing new instruction strategies. Tschannen-Moran and Hoy (2001) suggest that teacher self-efficacy is a simple idea; however, they further define teacher efficacy as being both context- and subject matter-specific. Their findings may provide some insight into the challenges facing teachers in the implementation of reading comprehension strategy instruction, in that a teacher may feel very confident and competent in one subject area (e.g., history) and less able in other subjects with the same or different students (e.g., content literacy instruction). Teachers need to be able to continue to build self-efficacy, and it is through a supported learning model that this needs to occur (Bruce et al., 2010; Guskey, 1988; Guskey & Passaro, 1994; Wolters & Daugherty, 2007). Professional learning teams need to consider the cognitive and motivational needs of teachers and select methods that are most supportive of content learning while including strategies to foster efficacy in this collegial forum.

As previously noted, there is ample research that describes the importance of having teachers and principals participate in professional development activities and that stipulate the components of learning for these activities. However, the quality of descriptions provided in the literature offers limited guidance regarding how best to implement professional development in a manner that motivates the individuals involved and that results in sustained improvements and coherence across teachers' and principals' practice.

Chapter 3

Methodology

This study used individual interviews and document analysis to explore the perceptions and beliefs held by elementary school principals regarding the implementation of collaborative inquiry as a technique for professional development in their schools. This study is distinctive in that it documents the voices of school principals working in the field with the purpose of identifying whether the descriptions of the collaborative inquiry process provided by the participating principals reflect the elements of effective professional development presented in the research literature. Offering principals the opportunity to voice their observations and experiences and collecting their testimony means that these viewpoints can be more accurately represented. The information provided by participants contributes to the qualitative research data specifically regarding how collaborative inquiry processes are employed in the professional development of teachers. The findings from this study have informed the recommendations for educators presented in Chapter 5.

As was mentioned in the opening chapter, this study was guided by four key research questions:

1. To what extent do the descriptions and observations provided by Ontario elementary school principals of their perceptions, beliefs, and practices regarding the collaborative inquiry process resemble the research literature?

2. In what ways do Ontario elementary school principals' perceptions of the collaborative inquiry process reflect Guskey's evaluative framework for effective professional development?
3. How is the collaborative inquiry process described by Ontario elementary school principals?
4. How is the collaborative inquiry process documented by Ontario elementary school principals?

This chapter focuses on the methodology used for this study. After some remarks on researcher credibility, the discussion proceeds to describe of how the research was designed and how participants were selected, explains how data were collected and analyzed, and finally addresses the limitations of the design. The overview of the methodology described why interviews and documents were used as the primary data sources and gives a brief overview of the phenomenological framework upon which the research was considered. The sample is described in detail in the participant selection section, clarifying who, why, and how participants were selected. The manner through which the data was collected and analyzed is explained in the data analysis section. As with any study, there are always limitations that impact the design and interpretation of findings. The limitations of the methodological design and the study's findings will be reported in Chapter 5.

Researcher Credibility

The work of Patton (2002) has called attention to the ways in which, when it comes to qualitative research, the effect of one's own experiences, the credibility of the researcher and research process, and the subjectivity of the research can be called into

question at times. This study emerged from my interest in the elements of effective professional development and from a need to better understand the collaborative inquiry process in order to more consistently incorporate it into my personal practices. I had access to all of the participants and the approval of a supervisory officer to conduct the study as part of a focus on leadership at the principal level. During the research process, I recognized that my experiences as an elementary principal, which are very similar to the experiences of those participating in this study, and my interest in this subject could potentially influence the collection, analysis, and interpretation of data. To minimize the potential for bias and to enhance research validity, I incorporated a rigorous and iterative coding process.

Research Design

This study used a qualitative method of inquiry and was based upon a phenomenological theoretical framework. Patton (2002) describes phenomenology as the “focus on exploring how human beings make sense of experience and transform experience into shared meaning” (p. 104). As I interested in establishing which perceptions, beliefs, and practices might be common among elementary school principals, a phenomenological approach seemed an appropriate framework within which to consider the similarities and differences between the descriptions provided by participants.

I conducted one-on-one interviews with six elementary public school principals. The original intention had been to interview eight principals. Two of these principals had initially indicated a willingness to participate; however, I was unable to arrange an interview time with one of these individuals despite several attempts. The second

principal requested that the interview responses and data be removed from the study during the member-checking process. I chose to interview participants individually instead of using focus groups in order to avoid the possibility of participants being influenced by one another's responses. The participants work within a small, rural school board, and my concern was that the closeness of this professional network might produce a tendency for participants to agree with statements that differed from their own perceptions or experiences. In addition to these interviews, I requested that participants share artifacts that they had used in professional development sessions.

Data Collection Methods

Individual interviews.

As a research method, individual interviews allow the researcher to place herself in the context of the participant and construct meaning from the stories that are shared. The "quality of the information obtained during an interview is largely dependent upon the interviewer" (Patton, 2002, p. 341). To ensure that interview sessions would be a rich source of information for this study, I endeavoured to develop questions that would be relevant to the participants and that would enable them to bring their experiences to life through their responses, so to speak. Being a novice researcher, I developed an interview guide and semi-standardized questions so that the same information could be elicited from each interviewee. The interview questions (which are provided in Appendix D) included some probes to encourage depth of responses and to encourage participants to give thorough descriptions of their practices. In addition, it was important to closely monitor the tone of the interview to balance the rigidity of the semi-standardized questions with the need to keep the participants feeling relaxed and open in their

responses. By conducting individual interviews, I was able to provide feedback to the interviewee and make slight adjustments to my approach in order to maintain an open communication channel between myself and the interviewee (Patton, 2002).

Document analysis.

Whereas individual interviews can be useful for eliciting participants' individual perspectives, documents offer a source of information that often provide insights into decisions and processes that may be overlooked through interviews or observations (Patton, 2002). Documents can be used to identify important practices and experiences that support other forms of data collection and stimulate new areas of inquiry. As Patton (2002) notes, it can be challenging to collect documents and understand the purpose and process through which each one was developed. Moreover, documents can often be incomplete and can vary in quality between participants (Patton, 2002). Ideally, it is important to access as many documents as possible in order to minimize these variations.

Qualitative methods design.

Qualitative methods allow the researcher to engage in a process of inquiry within a natural setting or situation, whereby the researcher attempts to make sense of things or interpret situations through interviews, field notes, or documents (Creswell, 2007; Creswell & Plano-Clark, 2007). Qualitative methods enable the researcher to share the stories of participants. This method of exploration allowed me to bring a different perspective to the perceptions and beliefs that were expressed during interviews. It also lent greater validity to the descriptions provided by individual principals and provided another lens through which the interview and document data could be analyzed and interpreted, thus avoiding potential gaps in data collection and analysis. The use of

multiple information sources, such as interviews and documents, provided an opportunity to review all data and make sense of what was presented through an inductive process of coding and creating categories, which led to the emergence of common themes (Creswell, 2007).

Because the principals who participated in the study work in a small school board and in a close professional network, it was not possible to include the document data in the form of captured images due to the strong likelihood that the principal and school in question could be readily identified. To overcome this challenge while still making use of the rich details provided by the documents, frequency tallies were tabulated to provide statistical descriptions of the document data. The quantification of the data in this manner further ensured participants' confidentiality and trustworthiness. In addition, the principals' interview responses were analyzed using a frequency count representation.

Participant selection.

I sought the participation of six to eight elementary school principals from a small, rural, publicly funded school board. The selection process employed purposeful convenience sampling, as there was a small pool of administrators from which to choose participants. The number of principals represents approximately one-fifth of the elementary principals in the participating school board. It was not expected that this purposeful sampling would have negative implications for this study. This type of sampling can be part of an exploratory design where there are limited numbers of participants within the larger population (Patton, 2002).

An email invitation soliciting participation from all elementary principals was sent using the school board's email listserv (this was done with the approval of the school

board). Principals were included in the study on a first-come, first-served basis. Selection criteria were set in order to ensure that the number of participants who had been elementary principals within OFIP 1/2-designated schools was equal to the number of those who had not had any experience within such schools. The reason for this was to collect a broader range of responses regarding the resources available to principals in the delivery of professional development. OFIP (Ontario Focused Intervention Partnership) is a designation that the Ontario Ministry of Education (OME) uses to identify schools where students are significantly underachieving with regards to OME standards for literacy and numeracy. Only three principals from OFIP schools responded to the invitation; these three principals were chosen to participate in the study, along with the first five principals from non-OFIP schools to respond (five of the latter were chosen in order to bring the number of participants to eight).

Once participants had been identified, letters of information were sent through email inviting them to participate in this study (Appendix B). The Letter of Information briefly described the purpose of the study, the research questions, the data collection procedure, and the potential method for reporting data. Participants were informed that participation was voluntary and that withdrawal from the study would be permitted without consequence through a consent form (Appendix C). I ensured confidentiality and anonymity of responses by giving each participant a pseudonym. This was very important, as the sample was drawn from a small population, and participants were thus familiar with one another.

Over the course of the data collection, one principal withdrew from the study due to an inability to schedule an appropriate and convenient time for the interview; a second

participant withdrew during the member-checking process. This resulted in six principals participating in the study, two from OFIP schools and four from non-OFIP schools. Further descriptions of the participants and background information on the school board are reported in Chapter 4.

Data collection.

Data were collected through individual interviews and through document analysis. The timeline and tasks associated with the data collection are shown in Table 1. The individual interviews were audio recorded using a digital recorder, along with hand-jotted notes that I took while the participants were responding to questions. I transcribed the interview responses verbatim. Individual interview questions are detailed in Appendix D. The questions were designed to map onto both the research questions and Guskey's (2000) professional development evaluative framework.

Principals were provided with suggestions for which documents to submit for the document analysis. Specifically, it was suggested that each principal submit his/her school improvement plan for student achievement (SIPSA), agendas and minutes from learning teams, collaborative inquiry proposals, along with the agendas and minutes from staff meetings and professional development days. These suggestions were made in order to obtain consistent types of documents for analysis across school sites. Moreover, principals were invited to submit any additional documents pertaining to the subject. All six principals submitted additional items beyond those in the list of suggestions.

Table 1

Task chart for data collection and analysis process

<u>Task</u>	<u>Task description</u>	<u>Timeframe</u>	<u>Details</u>
Participant Recruitment	Received approval of submitted proposal from school board to conduct research within the board. Sent recruitment email to all elementary principals using school board's listserv.	August 2013	Waiting period of two weeks for school board to review and approve proposal prior to contacting participants.
Individual Interviews	Sent Letter of Information to principals describing participation, including list of suggested documents for submission. Conducted interviews with audio recording of responses.	August 2013– December 2013	Letters of information emailed to selected participants during last week of August and first two weeks of September. Interviews occurred over 4-month period, due to scheduling conflicts. Interviews ranged between 25–58 minutes.
Collection of School-Based Documents	Collected school-based documents from principals at time of interview (from 2 principals) and over email (from 4 participants, after follow-up request and second email reminder).	September 2013– June 2014	Delays in responses to follow-up request for documents and second email reminder resulted in extension of this task into June 2014.
Transcription of Interview Responses	Transcribed individual interview responses and shared each transcript with respective participant for member-checking. After member-checking was complete, created a document that clustered each question by participant prior to coding process.	January 2014– June 2014	Transcription required approximately 30 hours per participant. One participant withdrew responses during member-checking.
Coding of Responses & Documents	Labelled key ideas in interview transcripts and document data using integrative process. Clustered key ideas into codes, codes into emerging categories, and categories based on themes emerging from the data.	October 2014– June 2015	Iterative process used to ensure appropriateness of coding and to identify discrete themes.

Data Analysis

Initially, interview responses were read and reread to find common ideas, which were given labels. These labels were clustered into codes that captured the common ideas between similar labels. As part of an iterative process, the codes were clustered into categories to capture the salient details and descriptions in each participant's responses. Once this process had been completed, the document data was analyzed using the codes and categories that had been identified based on the interview responses. These codes and categories, along with the themes that emerged from the data, are described in detail in Chapter 4. Throughout the analysis, close attention was directed to codes, categories, and themes that were duplicated in both the interview and document data. This helped to identify emerging themes and outlying data. The final phase of analysis involved layering the codes, categories, and themes onto Guskey's (2000) evaluative framework for professional development.

In order to establish the reliability and validity of the findings, the data analysis incorporated the following strategies: (a) unique case orientation; (b) inductive analysis; (c) voice, perspective, and reflexivity analysis; and (d) context sensitivity (Patton, 2002). These analysis strategies were used to mitigate potential generalizations that can often arise from the researcher's particular bias (given that the participants are my professional colleagues). The specific findings are examined in more detail in the next chapter, in which the themes that emerged from the participants' stories will be presented, analyzed, and layered onto Guskey's (2000) evaluative framework for professional development.

Chapter 4

Findings

This chapter describes the data that were obtained during the interviews conducted with each elementary school principal who participated in the study. The chapter begins with an overview of the demographics, with reference to each participant's individual experiences and the context within which each works. Following this, I describe the coding system that was used to capture the recurring themes that emerged from the interview responses and document data. Three major recurring themes were identified: (a) building teacher motivation, (b) supporting improved and consistent teacher practice, and (c) promoting accountability.

Participant and School Board Demographics

The study participants had quickly responded to the email request that had been sent to all elementary school principals in the school board. The participants were chosen based on the order in which they responded to this invitation. Initially, eight participants were selected to be part of the study. However, due to conflicting schedules, one of the original participants was not able to meet for an interview and opted to be removed from the study. A second principal opted to withdraw from the study after reviewing her interview transcript and requested that her data be removed from the analysis. Of the six participating principals, three were male and three were female. The three male participants represent 30% of the male administrator population and 7.5% percent of the total population. The three female participants represent 10% of the female administrator population. This ratio is higher than the ratio of male-to-female principals within the

school board population, as three quarters of the current principals are female. The sample represented 15% of the administrator population and 5/8 of the school board's geographical regions. The study participants also reflected a range in years of experience, both as principals in general and in the specific schools at which they work. The range of experience varied from one to four years as principal for two of the participants, five to nine years for two others, and between ten to fifteen years for the remaining two (Table 2). Three of the principals had been working in their current school context for more than two years. The remaining three principals had been newly assigned to their respective schools during the 2012–2013 school year. The context of each school is an important factor to consider in describing the themes that arose from the analysis of the data, as this context affected the responses to some questions.

Table 2

Demographic information for participants and schools

<u>Participant #</u>	<u>Gender (M/F)</u>	<u>Years of experience as principal</u>	<u>School population (K-8)</u>	<u>OFIP School Experience? (yes/no)</u>
1	M	0-4	101-200	yes
2	F	5-9	> 301	yes
3	M	0-4	201-300	yes
4	F	> 10	201-300	yes
5	F	5-9	101-200	no
6	M	> 10	> 301	yes

Of the participating principals, the majority had had experience working in an Ontario Focused Intervention Partnership (OFIP) school. Two of the six participating

principals in the study were principals of OFIP-designated schools. Although Table 2 indicates the participants who had OFIP experience, the identity of the two principals currently working in OFIP designated schools was purposefully not disclosed to ensure the confidentiality of participants and school documents. At the time of the study, the school board had five OFIP-designated schools; the school and participant demographic data would have made it possible to identify the participating principals and schools. OFIP-designated schools receive additional funds to support release time for teachers and have access to increased involvement and support through school board consultants and through the appointment of a student achievement officer (SAO) by the OME. These schools are monitored more closely by the school board and the OME to determine whether the school's focus on school improvement goals and actions is resulting in higher student achievement. It was important to include this intervention as part of the school context when considering principals' perceptions and beliefs about the collaborative inquiry process to determine whether there was an effect on the type of learning activities, levels of support, perceived teacher motivation, and the potential impact of external accountability. This information was considered to be a variable that may or may not impact principals' perceptions, beliefs, and practices.

The principals participating in this study work in a small school board in eastern Ontario that is identified by the OME as an eastern rural school board. The school board covers a wide geographic area of 7,221 square kilometres, employs approximately 1,700 teaching and support staff, and serves approximately 15,300 students at forty-two elementary and eight secondary schools. During the 2012-2013 school year, the school board's elementary student enrolment was approximately 9300 students. The school

board is divided into eight school groups, based upon geographic boundaries. These clusters of schools tend to share similarities in terms of geographic area and socio-economic context. Each school group generally has one high school and five to six feeder elementary schools.

Data Sources

The depth of information gained through personal interviews and artifacts means that qualitative data can be a rich source of information. This study adopted a constructivist phenomenological approach and involved a purposeful sampling technique to obtain detailed, descriptive information about collaborative inquiry as a process for professional development from those engaged working in the field. In developing the interview questions, a deliberate effort was made to phrase questions in a manner that would allow respondents to incorporate material that could relate to the three research questions into their answers. This intentionality of connection between interview questions and research questions is illustrated in Table 3. To further elicit connections between the research questions, interview questions, and Guskey's evaluative framework, Table 4 identifies the potential of each research question to connect with one or more of Guskey's five levels of evaluation of professional development (2000).

Table 3

Potential for participant responses to elicit connections between interview and research questions.

<u>Interview question</u>	<u>Research question #1 (yes/no)</u>	<u>Research question #2 (Guskey's levels)</u>	<u>Research question #3 (yes/no)</u>	<u>Research question #4 (yes/no)</u>
#1	yes	1, 2, 3, 4, 5	yes	yes
#2	yes	1 & 2	yes	no
#3	no	1 & 2	yes	yes
#4	yes	1 & 3	yes	no
#5	yes	1 & 3	yes	no
#6	yes	1, 2, 3	yes	yes
#7	yes	3, 4, 5	yes	yes
#8	yes	3, 4, 5	yes	no
#9	yes	3	yes	no
#10	yes	1, 2, 3, 4, 5	yes	yes

Table 4

Potential for connection between research questions and Guskey's evaluation levels.

<u>Guskey's level</u>	<u>Research question #1 (yes/no)</u>	<u>Research question #2 (yes/no)</u>	<u>Research question #3 (yes/no)</u>	<u>Research question #4 (yes/no)</u>
Level 1	yes	yes	yes	yes
Level 2	yes	yes	yes	yes
Level 3	yes	yes	yes	yes
Level 4	yes	yes	yes	yes
Level 5	no	yes	yes	yes

The data sources for this study included informal, semi-structured interviews along with school documents, which were selected by each participating principal as evidence of the professional development and collaborative learning taking place in their individual schools. LeCompte (2000) describes data at this point as “having no intrinsic organizational structure or meaning by which to explain the events under study” and points out that the researcher must “create a structure and impose it on the data” (p. 147). Analysis of the data in this study employed an iterative process of reading and rereading interview transcripts as well as reviewing the submitted artifacts and documents.

Individual interviews.

Once each principal had confirmed willingness to participate in this study, a Letter of Information was sent (Appendix B). An email communication was then sent to individual respondents to confirm a date, time and location for each interview. During the interviews, participants were afforded the opportunity to consult artifacts and documents to facilitate their responses to the semi-structured questions. Although the participants had been provided the questions as reference during the interview, the flow of the interview was conversational in nature, with questions and probes following the responses given by each principal. Using semi-structured interview questions to guide the conversation had the advantage of generating more standardized data, which facilitated collection and analysis (Patton, 2002). Digital recordings were made during each of the individual interviews. These recordings were saved in separate computerized files. To protect participants’ confidentiality, each file was assigned a numerical code (chronologically, according to the date of the interview), and was password protected.

Transcripts for each interview were printed, read and reread in order to generate a more holistic perspective for analyzing, leading to a more detailed analysis.

Document data.

Each principal was asked to submit artifacts and documents that s/he had used in professional development activities. This request was initially identified in the letter of information sent to all principals and was re-iterated in the email sent to confirm the interview. As was previously stated, each principal was made aware that s/he could refer to professional development artifacts and documents during the interview itself. Only one of the six principals made reference to artifacts and documents during the interview. Of the six principals, three shared their compilation of documents upon the completion of the interview. The remaining three principals indicated they would provide the documents at a later time; email reminders were required to obtain documents from these participants. Principals were given a list of suggested documents to submit: (a) P.A. Day agendas/minutes; (b) professional learning team agendas/minutes; (c) staff meeting agendas/minutes; and (d) School Improvement Plans for Student Achievement (SIPSA). Participants were given the flexibility to choose what they submitted for analysis and the quantity of documents to submit. Table 5 identifies the number of documents submitted by each participant according to document type, including those types not included on the list of suggested documents. These additional documents have been arranged into three categories: (a) inquiry proposals (which generally include one or more inquiry questions within a framework, along with an accompanying statement of teacher release time and anticipated financial expenses), (b) teacher reflections and frameworks, and (c) instructional/assessment planning templates. In total, fifty-six documents were submitted

by the principals involved in the study. Teacher reflection and framework documents were the most frequently submitted, with a total of 14; the second most common type were agendas (11 submissions). The least frequently submitted were documents relating to instructional or assessment planning templates, of which four were submitted in total.

Table 5

Number of professional development support documents submitted by study participants (by document type).

<u>Participant</u>	<u>Staff meeting agendas/minutes</u>	<u>P.A. Day agendas/minutes</u>	<u>Collaborative inquiry team agendas/minutes</u>	<u>School improvement plans</u>	<u>Inquiry proposals</u>	<u>Teacher reflections & frameworks</u>	<u>Instruction or assessment planning</u>
#1	2	2	2	1	1	0	0
#2	0	2	2	1	1	3	0
#3	0	0	0	1	2	2	0
#4	1	1	5	1	0	6	2
#5	1	1	1	2	0	3	0
#6	1	2	1	2	2	0	2
Total	5	8	11	8	6	14	4

Data Analyses

Step 1: Developing codes through unique case orientation.

The first phase of data analysis involved transcribing the responses given by each of the six participating principals to the ten interview questions (Appendix D). Each participant's set of interview responses was analyzed as a separate case (Patton, 2002) to capture key words and phrases used to describe the experience of employing a collaborative inquiry process to promote teacher professional development. Each principal's response to the individual questions was coded for key words that captured the concepts underlying each description. This resulted in 8 to 15 labels for each interview transcript. Similar labels were grouped into codes (for example, voice, teacher involvement, empowerment, engagement). Given the intentional creation of potential connections between the interview questions on the one hand and the research questions on the other (as shown in Table 3), the codes were described by drawing upon the terminology located in the research literature. For example, "engagement" was a common element used in discussing teachers' motivation, and the literature on professional development makes frequent reference to "resource supports." These codes were collapsed into five categories by grouping them according to similarity. The codes that emerged from the analysis of the interview data were used as a starting point for the document analysis. The same process was undertaken to analyze the documents and artifacts submitted by each principal: each document was analyzed and coded, first separately by participant, and then across all participants by type of document.

Step 2: Reviewing codes through inductive analysis.

Upon completion of the initial phase of analysis, the usefulness of the codes in describing the data was reviewed and assessed. An iterative process was employed to develop a frequency tally for each code within each transcript; the codes were noted as they appeared in the descriptions of processes and events by each participant, and in the responses for each question across all participants. This comprehensive attention paid to the data validated the relevance of the codes that had been chosen, and facilitated the inductive process of confirming labels, codes, and categories (Patton, 2002). The process was replicated during the document analysis; the final codes and categories reflect both the analysis of the interview transcripts and of the document data.

Step 3: Merging codes into categories, incorporating voice, perspective, and reflexivity.

Once the coding process had been carefully completed, I reread the transcripts and documents to identify patterns and interrelationships. Similarities between concepts and the eleven codes consistently emerged; these similarities were then grouped together to form five categories. The five categories that emerged from the similarities and relationships between the eleven codes were (a) teacher motivation, (b) resource supports, (c) promoting improved teacher practice, (d) evidence of learning, and (e) accountability. One unexpected code, “classroom management,” also emerged from the interview data. Three of the principals frequently made statements in the interviews that had been coded as examples of classroom management.

Throughout this process, I was conscious of the proximity of my experiences to those of the study participants and, therefore, of the need to identify my partiality in the development of categories and themes. To maintain neutrality and credibility, I

repeatedly reread and reflected upon my analysis to ensure the perspectives being described were reflective of the data and separate from my own voice and perspective (Patton, 2002).

Step 4: Theme analysis.

Three dominant themes emerged from the data analysis: (a) building teacher motivation, (b) supporting improved and consistent teacher practice, and (c) promoting principal accountability.

Building Teacher Motivation

The first theme that emerged from the data analysis was “building teacher motivation.” All respondents made multiple references to collaborative inquiry being a process that “honoured teachers’ voices” (P5), which “came from what they wanted to know and learn more about” (P3) and that “allowed them to work together on something they believed in” (P4). This theme arose frequently in the statements made during the interviews, as reflected in a tally of 64 coded entries in the document data (Table 6). Principals described collaborative inquiry as a “self-motivating process for getting teachers involved” (P2) in this model of professional development, which is similar to the descriptions provided in the research literature. Setting goals and outcomes for learning were also identified as elements of the collaborative inquiry processes that helped to support and sustain teacher motivation. The following sections discuss these elements in greater detail.

Table 6

Frequency of appearance of themes, categories, and codes in school documents submitted by each participant.

Participant	Building teacher motivation			Supporting improved & consistent teacher practice				Promoting accountability			
	Self-motivating process	Resource supports		Modeling teaching and assessment concepts & content		Evidence of learning		Meeting OME & system responsibilities			
	Engagement/voice	OME professional learning resources	System resource support (personnel and/or financial)	Developing teachers' knowledge & teaching strategies	Applying teachers' knowledge of instruction & assessment	Classroom management	Teacher sharing (artifacts or reflections)	Evidence of student growth/student work samples	OME curriculum expectations	SIPSA	Inquiry proposals
#1	2	3	1	3	3	0	1	2	1	0	2
#2	5	4	2	4	3	0	2	6	3	1	6
#3	5	2	4	5	4	0	1	2	1	2	1
#4	4	4	3	3	3	1	2	0	3	2	4
#5	10	1	2	8	4	0	6	8	1	4	6
#6	2	1	9	4	11	0	3	6	3	5	2
Total	28	15	21	27	28	1	15	24	12	14	21

Collaborative inquiry as a self-motivating process for professional development.

Throughout the interviews and within the documents, these Ontario elementary principals frequently identified collaborative inquiry as a highly motivating form of professional development. The principals described the magnitude of staff buy-in as significant because the teachers, having generated the focus for inquiry, were self-motivated:

The collaborative inquiry approach to me means that we are all working together towards a common goal that we have all decided upon as a staff. ... [A]s we work through these processes, they are processes that we believe in and we're all looking for the same desired outcome. (P5)

This statement demonstrates the principals' perceived importance of honouring teachers' voices as part of the collaborative inquiry process. As part of the interview portion principals were asked to "explain what the collaborative inquiry approach to professional development means to you?" One described collaborative inquiry as "a process for identifying areas of need in your school and working collectively with your staff to look at current research and implement strategies to hopefully improve areas of weakness" (P3). In other words, both teachers and principals are partners who collectively determine the most urgent learning needs for students and themselves; by developing an inquiry focus grounded on staff input, teachers become self-directed (and thereby empowered) in their professional development. Principals described a process whereby staff directed the focus, identified a systemic learning problem via data analysis of student work and EQAO results, and shared anecdotal observations gleaned through teachers' experience

working with students. The descriptions of the collaborative inquiry process (as a model for professional development) illustrated an attempt by principals to empower teachers to be the driving force behind the process:

I think first you talk to staff and figure out what their needs are, what their concerns about their students are and, from that, develop a question about what they want to learn more about from their students... it comes from the teachers understanding of the student need within their classroom. (P2)

All but one of the principals interviewed articulated the importance of having teachers identify the focus of the collaborative learning. This principal spoke of collaborative inquiry as propelling the school improvement plan, a process in which the teachers were involved in talks about the direction of learning. These discussions were undertaken in a casual manner, and were coordinated by the principal based on the information gleaned from student data. The collaborative inquiry process, as described by principals, presents a model whereby teachers have a great deal of influence in determining the collaborative inquiry focus. Principals described the learning within the collaborative inquiry focus as “maybe not the most important student need, but the student need they’re most interested in learning about “(P2). Furthermore, it “creates initial satisfaction by having the process driven by [teacher-student] interests” (P5), making it a transparent, teacher-driven process. Another principal offered this opinion:

Seeing as it was staff generated and they came up with the inquiry... I didn’t really need to motivate them. It was self-motivating; it was a desire that they wanted, and they saw that by previous learning in collaborative inquiries... (P1)

Yet another principal concurred that the learning focus was “important to the teachers and arose from their interests or concerns, making the collaborative inquiry process self-motivating” (P3). These statements capture the principals’ perceived influence and importance of involving teachers in establishing the discourse for their own professional development; in doing so, professional development becomes more relevant and self-activated.

Observing the benefit of their learning through improved student outcomes was one of the strongest motivating factors to emerge from the collaborative inquiry study. One principal shared that “staff saw improvement and things happening and were willing to give back” (P3), while another principal shared “we saw unbelievable results and so that was something we started that spread through the school” (P4). These descriptions encapsulate the recurrent theme of self-propelled teacher motivation evident in the changes noted in teacher practice—a change substantiated following the collaborative inquiry process. This change in teacher behaviour and attitude was described as promoting increased teacher buy-in, making them more willing to take risks and work in partnership with the principal and their colleagues.

Collaborative inquiry resource supports to build teacher motivation.

OME and educational literature support.

The analysis of interview data describes the promotion of improved teacher practice being implemented through a variety of resources, often chosen in partnership by the school principal and other human resource personnel. Whereas the use of educational literature and the focus being selected (with input from the principal) was a common trend, the topics of educational literature advocated by the principals varied greatly

between schools. Two of the six principals describe using the Curriculum Documents as part of the collaborative inquiry process. Six of the six school principals reported using resources developed by the OME. These resources included the use of webcasts, monographs, and the Adolescent Literacy Guide. Principals describe using the monographs from the Capacity Building Series, developed by the Literacy and Numeracy Secretariat (LNS) branch of the OME. The Capacity Building Series of educational literature includes a vast range of topics and the principals did not reference the specific monographs used to build teacher knowledge in their collaborative inquiries. Although the focus of the monographs was variegated amongst principals and schools, one participant's statement—"we all set a learning piece around a strategy, an LNS article or monograph, [and] there was always a learning piece around current research-based strategies" (P3)—captured the consistent use of OME resources as a common tool for building collective teacher knowledge and coherence. Building knowledge and working toward common goals and outcomes were identified within the literature review as key motivators for adult learning.

In addition to the resources developed by the OME, all of the principals described using additional educational literature developed by well-known practitioners in the pedagogy profession. One of the schools focusing on mathematics referenced using resources developed by Dr. Marian Small, whereas two other principals described using a recently published text called *Classroom Discussions in Mathematics*. Additionally, resources developed by Jeffrey Wilhelm were identified as a resource for one school that was "promoting improved teacher practice in relation to student engagement."

Human resource supports.

As part of the principals' descriptions of the collaborative inquiry process vis-à-vis professional development, there were numerous responses praising the dialogical and collegial aspects. In addition to teachers engaging in critical discourse, the principal participants described a pertinent response to the question: "Who was involved?" These colloquies led to the establishment of school board personnel as a critical component of the collaborative inquiry process.

In analyzing the principals' descriptions of the participants in the collaborative inquiry process, six of the six referenced the important role a learning partner assumed in the process. A learning partner is a centralized school board position that is allotted to each school group within the school board. The learning partner is considered to be an expert teacher who has interviewed and been successfully appointed to work as a coach to support teachers in improving their instructional practice and to advise principals in supporting the needs of teachers. With the exception of one school, the learning partners associated with each principals' school site was involved in all of the inquiries at each school.

Learning partners acted as personnel support to the principals within the study by facilitating the identification and selection of educational literature to promote improved teacher practice. The following excerpt offers a synopsis of the process:

The leadership team of the learning partner, myself, or the curriculum person were determining what [promotion of] improved teacher practice we were going to do for the session. ... We brought the promoting improved teacher practice stuff to support staff learning. (P2)

The involvement of learning partners and curriculum coordinators was also described as supporting the selection of resources for promoting improved teacher practice:

In a school like mine, I could have been an elementary expert, but just having that other person... [as well as] learning partners and that expertise—and people freed up to pay attention and support your team—really helps. (P4)

The learning partner, as implied above, further endorsed the instructional leadership of the principal during the collaborative inquiry sessions.

Lastly, the six principals also describe the learning partner as a key support for the implementation of inquiry-based learning strategies into their own instructional practice once teachers were back in the classroom.

A good structural piece was our learning partner who played a critical role in follow-up in co-teaching and co-planning in the classroom with staff. ... She would go into the classrooms and meet the teacher at that just-right level for him or her. Having the learning partner follow up so that they could advance the learning for the teacher really played a critical role in moving stuff forward. (P3)

Providing individualized support to teachers upon exiting a collaborative inquiry session, as described above, was reiterated in collaboration with the six principals. Ultimately, the principals played an advisory role in influencing change as “the learning partners were in classes when they did the teaching so that information about what was successful in the teaching was also brought back to the table” (P2) and “continued to move the collaborative inquiry process forward” (P6).

Additionally, one principal reported that she “brought in an outside consultant who spoke on engagement.” This consultant, who was not an employee of the school

board, worked extensively with the teaching staff and the principal to “review their school climate data” and then introduced a “celebratory message that focused upon the positive traits of students instead of the negative issues and bullying.” The consultant worked with the school team and students to promote understanding that “students need to create a positive influence on one another, on building positive relationships, and that every student was a leader within the school.” This principal describes this collaborative inquiry process as one that was “decided upon by staff as an area that was needed to focus on with our kids.” Furthermore, the principal stated that the “staff was very self-motivated to do this [and] as we started to work through the process we saw the level of student intolerance with each other decreasing.” This principal’s description of the process and the teachers’ self-motivation reflects the research literature: the collaborative inquiry model for professional development emerged from the supportive leadership of the principal and the teachers’ belief that they could make a difference for students. As a result, the principal described teachers demonstrating greater self-efficacy in “working towards something that was familiar to them but in a more focused manner.” This “enabled the inquiry team to see positive outcomes for students as a result of their learning and effort.” The evolution of the professional development process illustrates how the collaborative inquiry system developed, enhanced, and capitalized on teacher motivation by creating mastery experiences that supported an open mindset to overcome potential barriers (Bandura, 1977; Dweck & Grant, 2008).

Financial resource supports.

The research literature describes the importance of creating opportunities for adults to learn in a social context, whereby there are opportunities for dialogue,

interaction, and communication (Illeris, 2003; Merriam, 2010; Merriam & Clark, 2006; Rubenson, 2010). The principals described occasions when staff came together for professional development at staff meetings, OME-designated professional activity learning days, and collaborative inquiry learning team opportunities. Although professional development can occur outside of the school day, the principals' descriptions of consistent professional development in this study always involved teachers being released from their regular classroom duties. For this to happen, financial support is required to enable teachers to come together for learning opportunities (which took the form of collaborative inquiry at participating schools). Within the interview responses and document data, the principals outlined multiple financial supports that were used to access professional development for teachers. The school board used a collaborative inquiry proposal form as the tool for schools to apply for and receive confirmation of funding. As seen in Table 6, there were six examples of inquiry proposals submitted by principals that were approved by the school board and resulted in schools receiving funding provisions of various amounts, ranging from \$3500 to \$30,000. Although there were only six submitted proposals, all principals submitted documents that contained elements referencing the school board inquiry proposal, resulting in a tally of 21 coded entries (Table 6).

One of the challenges principals encountered during the period of data collection was the obstruction caused by teacher job action. The frequency and continuity of releasing teachers was impeded in some cases by the political context of the 2012-2013 school year in which the union job action encouraged teachers to refrain from participating in professional development and collaborative inquiries. Despite this

obstacle, four of the six principals spoke specifically about the importance of the “opportunity for teachers to have the time to learn with and from one another” (P6) as a significant motivating influence. Through the use of release time (an organizational structure decision determined by the principal), teachers were able to gather intermittently to engage in collaborative inquiry and, most importantly, to have the time to learn from each other:

Part of the motivation is just being released and having a full day to learn with each other. They motivate each other. When we came back together, we’d share the work samples... and then they’d start asking questions to each other. (P4)

As exemplified by the above statement, release time was identified as one of the organizational structures that best facilitated teacher participation and engagement within the collaborative inquiry process. The frequency of release time varied among the participants, but one principal summed up the collective sentiment by stating that “I gave them the opportunity... [and] when they needed meeting time I provided the time and the staff and resources that they needed” (P1). As expressed in the documents, and as stated in the interviews, the release time involved “staff meeting for full days, three to four times from December to June” (P1, P3, P4, P5), and other teams met “six to eight times for half-day sessions” to allow staff to meet more regularly. These regular meetings mitigated having to “spend full days out of the classroom only to return to the classroom and clean up any issues with students and supply staff” (P2, P6).

Although the details of the release time varied slightly amongst principals’ descriptions, the document data provided more information to illustrate that all principals frequently scheduled professional development for teachers an average of a full day

during each session of inquiry, sometimes occurring during one school day and other times occurring over a span of two days. Principal interview responses described the similarities and differences in the duration of professional development activities; these descriptions were derived from teacher input during the collaborative inquiry process.

Supporting Improved and Consistent Teacher Practice

The frequent reference to promoting improved and consistent teacher practice emerged in all principals' interview statements and through the document data. The categories derived from the data aggregated around various teaching and assessment concepts, content, and evidence of learning by connecting the codes of (a) developing teachers' content knowledge and teaching strategies; (b) applying teachers' knowledge of instruction and assessment; (c) classroom management; and (d) teacher sharing (artifacts or reflections). The tally of coded entries produced 71 references to the theme of improved/consistent teacher practice within the document data (Table 6). Similar to the research literature, the emphasis on this theme through interview responses and document data describe the collaborative inquiry process as a model of professional development that determines the focus of teachers' learning needs based upon students' learning needs (Katz & Dack, 2013), and attempts to establish coherence (Earl & Katz, 2006; Katz & Dack, 2013; Leithwood et al., 1998; Sharratt & Fullan, 2012; Timperley & Phillips, 2003) by building methodical teacher knowledge about a specific topic of investigation.

Modeling teaching and assessment content.

Developing and applying teachers' content and strategies knowledge.

When asked to describe the specific learning focus of the collaborative inquiries within their schools, principals' responses varied but tended to be generalized questions of inquiry.

We had a reading, writing, and we had a math. Math was around a problem... a very specific problem-solving approach and it was interesting because it was a visual approach as well as tied in with an instructional approach. ... Writing again was a specific focus on two specific pieces, the gradual release of responsibility and kind of personal ownership and actually the writing was fascinating because it shifted mid-project. (P4)

All of the schools had multiple inquiry teams and the focus was often different amongst the school teams. "Our early primary team worked on formative feedback, guided instruction, and critical literacy... juniors worked on authentic tasks that impact learning skills and work habits" (P6). While this principal and the school staff blended areas of inquiry within the collaborative inquiry process for professional development, another principal at School 1 described the professional development for teachers.

[We had] two inquiries towards the end of the school year... [in which] one was a junior math [inquiry] about improving math vocabulary to improve math knowledge, and the early primary inquiry was on how to use the inquiry model in learning centres because they wanted to get students to be grouped together. (P1)

While School 1 staff had distinctly separate collaborative inquiry foci, the principal at School 2 stated "while we couldn't come to agreement on one inquiry question for all grades...[T]he early primary team's focus was oral language and the grade 7/8 looked at the adolescent literacy guide strategies...[T]he common connection was they all linked

back to student engagement.” (P2). Likewise to School 2, School 3 maintained a consistent professional development focus on school climate during the collaborative inquiry process for all school teams, despite each one having a different inquiry question.

We were able to identify through a variety of soft data that school climate was a major area of concern. The other area or need we were addressing was numeracy and that was based on our school data including EQAO and report card marks (P3).

Through the interview responses and the document data, principals described literacy, numeracy and/or school climate as the common areas of professional development through the collaborative inquiry process. The literacy foci varied between sites, as was distributed among categories of oral communication, writing, and adolescent engagement in literacy. The math foci varied between problem solving and proportional reasoning while the school climate foci concentrated on increased levels of student engagement.

In addition to providing an overview of the collaborative inquiry questions that guided teacher learning, principals also included descriptions of instructional strategies that were part of the professional development. One noted:

We used the professional learning cycle of plan, act, observe, and reflect as an important part of the collaborative inquiry so we always followed that cycle and we always ensured that we built knowledge through the cycle because I think it is really important to build knowledge so that you can change practice in your classroom. (P2)

All of the principals described using this cycle in interview responses, with some providing more specific explanations of a “co-planning piece where we tried to

incorporate those strategies connected to our students' needs into a lesson" (P3). This integration tactic emerged from "a common learning focus around current research-based strategies often around a LNS monograph or capacity building series" (P6). Once this learning and lesson design had occurred, principals describe "going into a classroom to co-teach the lesson while others observed our practices and student work, and then we debriefed at the end to talk about what we learned and where to go from there" (P4). It was not surprising that all principals described this debriefing procedure because the school board provides links to this process on the website; it was moreover referenced as a system document by two of the principals.

A similarly high frequency of reference to developing teachers' content knowledge and teaching strategies emerged from the document analysis. A tally of frequency identified 27 coded references to promoting improved and consistent teacher practice. These references were found in PA Day agendas and minutes, collaborative inquiry team agendas and minutes, teacher reflections and frameworks, and other documents related to instruction or assessment planning. Within the documents, reference to developing teachers' content knowledge and classroom strategies, as well as the application of content knowledge and strategies, were coded separately. This variegated coding was intentional, as the latter emerged as a distinct element in the document data, resulting in a tally of 28 coded entries.

Contrary to the interview data, which described the content of collaborative inquiry within each school's professional development foci in relation to the initial staff questions and SIPSA goals, the document data reflected limited content description. This was consistent across the majority of documents submitted by all principals. A surprising

finding within the documents was an explicit description, not of what was being learned (or of subject content), but of how to deliver instruction. In essence, the majority of documents submitted from professional learning teams as part of the collaborative inquiry process described how to teach, and incorporated strategies for presenting new learning to recipients. Many of these documents modelled tripartite lesson design: identifying the intended learning, incorporating specific teaching strategies (e.g., think-pair-share, KWL organizers, exit reflection cards, scaffolding), and concluding with a description of consolidation or reflection. It is a bit enigmatic that these narratives of building teacher knowledge incorporated this extent of rudimentary teacher practice and foundational skills.

Classroom management.

Interestingly enough, three of the six principals' interview responses describe classroom management challenges that emerged from the implementation of learning acquired from the collaborative inquiry process. All of the collaborative inquiries involved developing a plan of action to take back the classroom learning environment, many times requiring students to work collaboratively. "Taking the risk to incorporate more collaborative learning within instructional practice was a perceived change in teacher practice" (P5) was noted by four of the six principals. However, these principals describe teachers "sharing struggles they had in getting students to be able to work in groups and in how to plan and organize students into groups" (P2).

The area we identified as an area of weakness within that (gradual release of responsibility) was having students work collaboratively and that was a real change in practice and that was connected to climate because our teachers didn't

fell they could have students working collaboratively because it would be too out of control. (P3)

While this quotation captures the challenge of developing teacher confidence in students' abilities to work in groups, two of the other principals describe an increased awareness of how to plan for and organize students into groups to support learning.

Through trial and error, through discussion, and through research they found that there are definite ways to have learning centres going through the room; certainly they found that a training model has to be established for the students on how they rotate, how they choose centres—is it going to be self-directed or more teacher directed? (P1)

Although this citation represents a surprising finding, it illustrates the effort of teachers to transfer learning acquired through professional development into daily practice.

The first time we did it we had them do accountable talk and we had them in groups of threes and then we talked about maybe they should be doing accountable talk in twos and that might create more conversation. (P2)

This principal's statement provides further evidence of the challenges faced by teachers during their professional development; it highlights that building content knowledge (theory) is almost wholly removed from its implementation (praxis).

The above statements provide examples of the need to model improved and consistent teacher practice during the collaborative inquiry process. According to the principals' testimony, as teachers worked to apply their learning they needed additional opportunities to work through emerging classroom management challenges and "figure out how best to group students based on the type of learning and strategy being

implemented” (P4). This is a most surprising discovery as classroom management techniques are a foundational teaching skill—one with which experienced teaching staff would not be expected to struggle.

Promoting Accountability

As depicted in Table 6, these totals act as counterpoints to other themes, such as teacher sharing, reference to OME curriculum expectations, and SIPSA, which all fall below a frequency tally of fifteen. The depth of information to garner from each category is minimal; however, when clustered and analyzed as an emerging theme, they offer an extrapolation of the principals’ investment in collaborative inquiry as a viable model of professional development. The distinction of OFIP and non-OFIP designated Ontario elementary principals rendered itself moot as there were not any notable differences between the descriptions principals provided in relation to student learning outcomes, available financial and personnel resources, collaborative learning activities, nor in terms of principal accountability.

Evidence of learning.

Evidence of growth and use of student work samples.

This category was separated between the themes of supporting improved and consistent teacher practice and promoting accountability. The reason for this dual focus materialized from the various principals’ descriptions of teacher reflections as evidence of learning as weighed against student work samples. The descriptions of student work samples, primarily identified within the document data, reflected a much greater focus on ensuring actions were taken versus describing the impact of the actions. Promoting accountability was the central idea that continually surfaced from the coded data,

providing evidence of student growth corroborated by student work samples. Through the analysis and coding process of document data, a tally frequency of 24 references to student work samples were located. Most of these codes were found in components of the inquiry proposals, which contained a required column requesting anticipated student outcomes and collaborating inquiry agendas.

The high frequency of reference to using student work as evidence of achieved outcomes through the inquiry proposals and SIPSAW templates was in stark contrast to the limited reference to student work samples in documents capturing the CI learning and conversations (e.g., CI learning team minutes). Likewise, only two of the principals of OFIP-designated schools made reference to student work samples “always being at the table to talk about what was successful and what wasn’t” as part of the collaborative inquiry process (P2). As another principal expressed:

When you can actually see the production of work from the kids while implementing a strategy, and you see the students producing and learning and achieving, then we’d come back and say look what they’ve done. ... [W]hen we came back together, we’d share the work samples and all of that and then they’d [teachers] start asking questions to each other and before we knew it, we were going down the road again. (P4)

While these two principals spoke clearly of the importance of having student work at the table to monitor success and determine subsequent steps, the limited specificity of the references within the document data further illustrate the challenge of providing professional development at a level that results in improved student outcomes (Guskey, 2000). This could also represent one of the unique qualities of OFIP-designated schools,

as they measure according to higher expectations of improving student outcomes by the school board and OME.

Meeting OME and system responsibilities.

In light of the aforementioned lack of content description within the documents, it must be noted that the palpable lack of reference to OME curriculum expectations in the interview data and documents was quite baffling. According to the frequency tally describing the reference to themes by participant (Table 6), there were only twelve documents out of the entire collection that identified OME curriculum expectations. The tally counted each time OME expectations were referenced in separate documents, rather than counting the number of times referenced within each document. Similarly, there was only one principal that spoke about using curriculum expectations as a “starting point for the learning as this is what teachers have to evaluate students on at the end of the day” (P3). OME curriculum guidelines are policy documents that state the required teaching content and provide the criteria and levels for assessing student achievement. Because these are documents through which consistent teacher practice can be promoted, and for which teacher and student learning can be measured, the lack of reference poses more questions than it answers.

Inquiry proposals.

All principals described completing collaborative inquiry proposals for professional development. The principal at School 3 stated:

...we needed some dollars to support our learning so we applied for schools of inquiry learning grants from the system. We were able to access over \$30 000

worth of funding and that also came with support from our curriculum services team.” (P3)

Other principals included more specific descriptions of the inquiry proposal by submitting these documents for analysis. This category resulted in 21 tallied references through the document analysis. Consistent through the interview descriptions and document data was a prediction of the anticipated outcomes of the collaborative inquiry, and a written account to personnel requesting each inquiry team’s plan. Within the inquiry proposal framework, principals were asked to provide (a) summary descriptions of the activity, (b) a link to SIPSA (School Improvement Plan for Student Achievement), (c) expected outcome, and (d) anticipated costs (categorized by resources, supply coverage, *et cetera*).

The system inquiry proposal framework was a requirement for accessing any system monetary allocation for both principals working in OFIP-designated schools and those in non-OFIP schools. Schools designated as OFIP had very low scores of achievement in literacy and numeracy, as measured by Grades 3 and 6 EQAO tests, and are identified for intensive partnership with the school board and OME. OFIP schools are identified to receive intensified human, financial, and resource support to work towards improving student achievement. Furthermore, in designing the methodology for this investigation, I felt that it would be important to capture principals’ descriptions of the professional learning opportunities provided to teaching staff; this necessitated inquiring about the financial implications of providing school-based collaborative inquiry opportunities.

I purposely selected principals who represented schools that were designated by the OME as OFIP sites and balanced that with the same number of principals who were not currently working at OFIP sites. The reason for incorporating this range of principal experiences was to represent comprehensively the similarities and differences between OFIP and non-OFIP schools, particularly in terms of professional learning foci, resource support, and funding for collaborative learning inquiries. The principals' descriptions of human resource and financial support did not differ significantly between OFIP-designated schools and non-OFIP schools in most of the interview questions. The opposite trend emerged upon analysis of the document data, as two of the non-OFIP schools received over \$25,000 in funding supports through the system's collaborative inquiry learning grant proposal from. In contrast, one of the OFIP-designated school's inquiry proposal reveals a request of "\$6720 for primary and junior collaborative inquiry" professional development opportunities (P2). It is important to consider that there may have been other funds, as reference to an adolescent literacy collaborative inquiry was made, but the financial statements were not provided in the documents. Nevertheless, there exists a substantial difference in the allocation of funding support received for the two non-OFIP schools in comparison to this OFIP school.

When describing resource support, all principals referenced accessing that support from learning partners and curriculum consultants for a variety of professional learning collaborations; these individuals aided the process by disseminating current educational literature, analyzing student data, and providing an external perspective. Moreover, the level of accountability did not differ within principals' interview responses, nor within the document data. What *did* emerge from the similarities in resource support and the

promotion of professional development was a range of principal responses to the impact of being designated an OFIP school. One OFIP principal stated that “I was so fortunate to get OFIP funding and I have all kinds of money. You have funding and partners, Ministry and learning partners, and extra support from senior admin” (P4). In contrast, the other OFIP principal stated, “teachers can feel they don’t have an impact and can’t make a difference. It can be a challenge to change this thinking” (P2). One of the principals working at a non-OFIP school added, “We know an OFIP school has greater needs than perhaps others, so this would give an opportunity for whole staffs to engage in a learning environment where there could be a commonality of goals” (P3). Perhaps the impact of being designated an OFIP school is best summed up by the following account:

Schools feel a lot more pressure when they’re an OFIP school. I’m not sure if the pressure is a good thing or not. I think recognizing people as professionals and moving them forward, whether they’re from a high achieving school or not, is the purpose of collaborative inquiry. It’s about where you’re at and where you need to go to help students be successful, so I’m not sure that the identification of OFIP has a positive effect. I’m not sure it has a negative effect. The best thing about OFIP is you get the money so you can do more learning, so in that case, it’s wonderful. I’m not sure I think it’s harder to build a trusting relationship when you’re identified that way because I think people feel that others are looking down on them and that they have been wronged. I’m not sure if it is a good thing or not... money is a good thing. (P3)

Mapping Codes, Categories and Themes onto Guskey's Evaluative Framework

As the final step in the process of analyzing interview and document data, the codes, categories, and themes were superimposed onto Guskey's five levels of effective professional development (Table 7). This process of analysis provided a contextualized framework through which to describe the phenomenon of collaborative inquiry as a model of professional development. It also allowed for the potential to understand principals' perceptions more deeply, and to interrogate collaborative inquiry in relation to neutral, research-based frameworks. As illustrated in the table, the frequency tally of codes, categories, and themes fell mostly within the first three levels of Guskey's evaluative framework. This coincides with Guskey's findings (1998, 2000) in which most professional development attempts struggle to promote change in teacher practice and improved student outcomes.

The findings presented within this chapter offer a detailed description of principals' perceptions, beliefs and practices related to collaborative inquiry as a process for professional development. Capturing the principals' descriptions through interview data and document analyses provides a review of the phenomenon not thoroughly documented in the research literature. By exploring these experiences through direct conversation with principals and meticulous review of their document submissions, these unique insights can embolden inquiry-based methodologies. In the following chapter, a more thorough discussion and interpretation of these findings will follow with explicit links to relevant literature.

Table 7

Relationship of codes to Guskey's levels of evaluation of professional development.

<u>Code</u>	<u>Applicable levels from Guskey</u>
Self-motivating process	
Engagement/voice	1, 2, 3
Resource supports	
OME professional learning resources	1, 2, 3
System resource support (personnel and/or financial)	1, 2, 3
Modeling teaching and assessment concepts & content	
Developing teachers' content knowledge & teaching strategies	1, 2, 3
Applying teachers' knowledge of instruction & assessment	1, 2, 3, 4
Classroom management	1, 2, 3
Evidence of learning	
Teacher sharing (artifacts or reflections)	2, 3, 4, 5
Evidence of student growth/student work samples	3, 4, 5
Meeting OME & system responsibilities	
OME curriculum expectations	1, 2, 3, 4, 5
SIPSA	3, 4, 5
Inquiry proposals	1, 2, 3

Chapter 5

Discussion of Results

The purpose of this research study was to explore Ontario elementary principals' perceptions, beliefs and practices vis-à-vis collaborative inquiry as a viable professional development tool. The findings from Chapter 4 will be interpreted in this chapter in the context of the three questions that guided this study. The three themes that emerged from the data analysis were teacher motivation, teacher learning, and principals' accountability to promote and facilitate the process of collaborative inquiry. These themes will be discussed as they pertain to: (a) the research literature; (b) Guskey's evaluative model of professional development; and, (c) principals' descriptions of the collaborative inquiry model. Limitations of the methodological design and the research study will be explicated in this chapter. Additionally, further recommendations for the implementation of collaborative inquiry as a professional development schematic and future research studies will be presented.

Linking Principals' Description of Collaborative Inquiry to the Research Literature

Teacher motivating professional development model.

Engaging teachers in a collaborative learning process that enables them to be actively involved in determining the learning focus recurred as a key concept throughout the literature review. The exploration of this small group of Ontario elementary principals' descriptions of collaborative inquiry captured many of the adult learning elements stated in the literature. Principals described a greater willingness of teachers to adopt the professional development method if they were involved from the onset with

deciding what the inquiry question would be. Teachers worked closely with principals to review data and identify the areas of greatest learning need for students and, in doing so, articulating what they felt were their own greatest learning needs. This process of co-determining student-based, teacher learning needs reflects the findings reported by Katz (2013). The ability to participate in devising the learning agenda for their own professional development fostered more interest in professional development and gave teachers a greater voice in the process of learning (Early, 2010; Illeris, 2003; Knowles, 1978; Merriam, 2010).

Principals' descriptions provided an overview of a self-directed, adult learning process that affirmed the teachers' desires to be in control of the inquiry and the manner in which they would go about it (Bolden et al., 2014; Merriam, 2010; Merriam & Clark, 2006; Rubenson, 2010; Taylor, 2010). By being able to co-develop the question, principals' perceived that teachers were more aware of, and committed to, the learning goals of the collaborative inquiry. This is in keeping with the research literature on adult learning: studies have indicated the greatest learning arises from meaningful opportunities that build upon individuals' currently held knowledge, skills, and work experiences (Early, 2010; Fullan, 1997; Illeris, 2003; Katz & Dack, 2013; Knowles, 1980; Merriam, 2010). Engaging teachers in a co-designed learning plan and process facilitated increased teacher autonomy and created a highly motivational climate for professional development. In light of the research literature and the principals' descriptions of a collaborative inquiry process that promoted teachers' self-direction, it would have been quite surprising had teacher motivation failed to emerge as a strong theme in this study.

This small group of Ontario elementary principals described perceiving and observing increased teacher risk-taking and openness to modify elements of their practice as a result of the collaborative inquiry model. Principals reported that this had a self- and peer-motivating influence on teachers during professional development activities and upon returning to the classroom. This receptiveness reflects the research literature, which champions the motivational importance of a person's tendency to believe they can achieve success or mastery as a result of his or her effort, experiences, or knowledge (Bandura, 1977; Dweck & Grant, 2008; Dweck & Leggett, 1988; Guskey & Passaro, 1994; Tschannen-Moran & Hoy, 2001; Tschannen-Moran & McMaster, 2009; Wolters & Daugherty, 2007). Professional development experiences that foster teachers' sense of efficacy were achieved by facilitating collaborative processes that schematized levels of support for setting goals, implementing changes in practice, and ensuring low-risk opportunities for reflection. These motivational elements were commonly reported through principals' descriptions of implementing professional development through the collaborative inquiry process.

In keeping with the literature on adult learning and motivational theory, the principals described a highly social, co-learning environment wherein teachers shared their applications of the collaborative inquiry model. Principals perceived the collaborative dialogue as indispensable to increasing teachers' confidence and motivation to implement new classroom strategies. The research literature, moreover, clearly documents the importance for adult learners to be part of a social network in which they have opportunities to engage in dialogue, questioning, and reflection as a means of maintaining self-efficacy (Bandura, 1977; Bruce et al., 2010; Guskey, 1988; Guskey

&Passaro, 1994; Tschannen-Moran & Hoy, 2001; Tschannen-Moran & McMaster, 2009; Wolters & Daugherty, 2007).

While the data closely reflected the research literature on adult learning and motivation, it is important to note that there is very limited literature specific to either describing effective professional development or extrapolating collaborative inquiry as a template for professional development. Furthermore, there are limited studies on the implementation, from principals' perspectives, of professional development-based collaborative inquiry in elementary schools. The Ontario Ministry of Education (OME) also provides limited policy descriptions of professional development (PD) and collaborative inquiry as a PD model. The OME describes professional development as a collaborative practice in which the principal is a co-learner and engages teachers in the process from the outset.

The Literacy and Numeracy Secretariat (LNS) (2010, 2014) has produced monographs from collective experiences of teachers in the field to provide an overview of the collaborative inquiry process as one that is iterative, reflective, collaborative, relevant, and adaptive. While this literature offers broad pedagogical statements and recommendations of effective practice, it does not present explicit depictions of how to put collaborative inquiry into practice (Bolden et al., 2014). This absence of unequivocal guidance provides insight into the limited scrutiny of iterative and adaptive elements incorporated within collaborative inquiry practices (as reported by the principals in this study). In light of this, it would seem quite possible for principals to find it challenging to incorporate the cyclical elements of collaborative inquiry that may lead to adaptive

teacher behaviour, beyond initiating a high level of teacher motivation amongst participants.

Teacher learning challenges inherent in collaborative inquiry as a model of professional development.

The research literature provided limited studies describing professional development processes or content resulting in improved teacher learning. The majority of the literature highlighted the process for promoting teacher participation in professional development but fell short of reporting changes in teacher learning or practices. For the purpose of this study, the theme of teacher learning emerged through principals' descriptions of activities that promoted new learning and practices for teachers in instruction and assessment. It also incorporated teachers' implementation of new knowledge and strategies.

These Ontario elementary principals believed teachers were open to learning new strategies in the area of reading, writing, mathematics, and school climate. OME resources and other educational publications were used to promote teacher learning during collaborative inquiry sessions. Principals reported teachers learning in collaboration with one another through the co-planning and co-teaching of common lessons that were based upon these key resources. This is similar to the research literature promoting the importance of verbal persuasion and vicarious experience as two components leading to a sense of efficacy and willingness to implement new techniques practiced by colleagues (Bandura, 1978; Bruce et al., 2010; Guskey, 2000; Guskey & Passaro, 1994; Tschannen-Moran & McMaster, 2009; Wolters & Daugherty, 2007).

Despite repeated reference to co-planning and co-teaching as a byproduct of the collaborative inquiry process, principals' descriptions did not specifically identify the

elements of modified teacher practice. Surprisingly, principals were unable to clearly describe the specific practices that teachers had begun to use within their classroom practice beyond incorporating more collaborative learning situations for students. Principals reported teachers appearing more comfortable having students work in group situations. Interestingly, five of the six principals did not describe this as a learning focus within the collaborative inquiry process. This calls into question the level of teacher learning that results from the PD-based collaborative inquiry model. Moreover, principals' practices reflected a greater emphasis on teaching strategies than on specific content knowledge.

Although the principals' documents reflect a continuous focus on specific teaching strategies, there was a lack of description illustrating teachers' implementation of strategies into practice on a recurring basis. The iterative and adaptive elements of collaborative inquiry as described by the OME (2010) and research literature (Bolden et al., 2014) seemed to be lacking in principals' accounts of teacher learning emerging from the professional development sessions. The findings of Chapter 4 represent the inability to determine if teacher learning occurred as part of the collaborative inquiry model. There were insufficient reports of improved and consistently implemented instructional and assessment practices that enhanced student achievement. I would argue that the lack of descriptions documenting mastery experiences represent that teacher efficacy had not been fully achieved and that the lack of application had hindered the implementation of new practices on an individual basis (Bandura, 1978; Bruce et al., 2010; Dweck & Leggett, 1988; Guskey, 1988, Guskey & Passaro, 1994; Tschannen-Moran & McMaster, 2009).

As previously mentioned, the principals' imprecise descriptions of the collaborative inquiry questions that guided professional development experiences for teachers within their schools were a surprise. This seemed at odds with the repeated emphasis principals placed on the collaboration between teachers and administrators as they reviewed school data to determine the greatest area of need for professional development. The principals' accounts of the data analysis process were similar to the research literature, which emphasized the importance of using data to determine the areas of teacher learning need (Bolden et al., 2014; Earl & Katz, 2003; Katz & Dack, 2013; Leithwood et al., 1998; Sharratt & Fullan, 2012; Timperley & Parr, 2007; Timperley & Phillips, 2003). Similarly, the OME literature (2010, 2014) described collaborative inquiry processes that were determined by teachers, principals, and other staff selecting relevant areas of need based on the analysis of student achievement information.

The emphasis on using data to select the collaborative inquiry foci seems to be the common element amongst the research and educational literature. The surprising generality of the collaborative inquiry questions shared by the principals reflect a lack of research to guide the data analysis process and illustrates a possible lack of data literacy. The majority of the questions did not specify a specific area in reading, writing, mathematics, or school climate that could be clearly monitored for improvement. Based on the research literature and principals' articulated perceptions, beliefs, and practices of collaborative inquiry, the lack of specificity was not intentional; nor was it due to deficiency in data analysis. The rational interpretation is that there may be limited data literacy skills among the collaborative inquiry team members, skills required to understand the data at more than a superficial level.

Although one of the elementary principals acknowledged that the collaborative inquiry team focused on a question of interest versus an area of student or teacher need, I would have anticipated the data analysis could lead to the development of a precise collaborative inquiry question. However, the literature fails to describe a consistent process for analyzing relevant data and determining a meaningful collaborative inquiry focus. In light of the breadth of data available to teachers and principals, it seems unlikely that they possess the expertise to wade through a profusion of information to select pertinent figures. This, in turn, impedes the ability of the collaborative inquiry team members to self-determine a relevant inquiry question to guide the teacher learning. Promoting teacher learning and change in practice is significantly obstructed by the inability to determine an accurate area of need prior to identifying the content knowledge to be developed. Katz (2013) argues that a student learning need is a proxy for a teacher learning need. If a team is unable to accurately recognize the student learning need through a critical analysis of data, then determining the teacher need becomes a moot point.

The limited research examining how to engage a school team in data analysis in order to implement a collaborative inquiry focus is a shortcoming of the research and pedagogical literature. Moreover, this lack of reference further frustrates the principals' facilitation of relevant teacher learning that would result in sustained changes in practice; the limited ability to monitor the impact that new knowledge has for teachers and students is a hindrance to educational management.

Principals' Descriptions of Collaborative Inquiry as Mapped onto Guskey's Evaluative Framework

Teacher motivation as a common component of professional development.

In an effort to provide an evaluative context for collaborative inquiry as a model of professional development, Guskey's (2000) evaluation of effective professional development was mapped onto the findings. As stated in the literature review, Guskey (2000) found that most professional development activities commonly met the criteria in his first three levels of evaluation. In this study, narratives regarding teacher motivation vis-à-vis the collaborative inquiry model reflected some of the criteria outlined in Guskey's (2000) first three levels of evaluation of effective professional development. In keeping with Guskey's (2000) Level 1 of evaluation, teachers were motivated to participate in the PD activity because they had a positive reaction to the learning outcome. Principals described teachers co-directing the focus and understanding that they were coming together in a safe setting to improve their program and delivery. This, in turn, afforded a greater sense of utility and time well spent—a motivating factor to sustain the teachers' involvement in the activity.

Moreover, teachers were perceived as being motivated by the collaborative inquiry process as it provided opportunities for all participants to share in learning new knowledge and skills. Guskey's (2000) Level 2 criterion was met when teachers and other learners co-designed lessons to simulate in the classroom. Principals facilitated by modelling teaching techniques—such as the three-part lesson structure and think-pair-share strategies—within the professional development agenda. Teachers were able to observe how these strategies could be implemented through their own learning

experiences prior to application in the classroom. Testing these strategies prior to implementation decreased the risk of putting them into practice, and provided an empathetic (vicarious) learning experience. The opportunities for participant reflections within the collaborative inquiry model, as illustrated through the principals' articulations of practice, also provided increased motivation to sustain participants' interest in the PD module.

The enthusiasm described of teachers' willingness to adopt these models reflected the third level of Guskey's (2000) evaluative professional development framework. Guskey (2000) identified organizational support and change as the third indicator of effective professional development. The augmented teacher confidence and propensity for risk-taking reflected a change in the organizational climate, as indicated by the principals. The recognition of teachers' practices and effort represented a significant level of advocacy and support from principals and system staff. The additional support of the learning partners to assist teachers in the implementation of new classroom practices was encouraging to teachers and helped create a change in the organizational climate by making teachers' practices less isolated. This supportive role was also instrumental in developing risk-taking attributes, as personnel were available to address problems quickly to sustain teachers' receptiveness to the process.

Lastly, the financial resources that were provided by the OME, the school board, and the principal enabled regular professional development opportunities. The regular collaborative inquiry opportunities appear to have improved the organizational climate and promoted and sustained teacher motivation by: (a) advocating for the acquisition of new learning co-determined by the teachers; (b) supporting the implementation of new

learning into teacher practice; and (c) facilitating less isolation and more risk-taking through dialogic opportunities amongst peers within the organization.

Applied teacher learning as a rare component of professional development.

The research literature documenting teacher learning within a professional development context is limited. This shortcoming is acknowledged by Guskey (2000) in his description of Levels 4 and 5 of his evaluative framework. Guskey (2000) reported that the majority of professional development activities fail to move beyond providing positive participant learning situations that result in supportive learning climates. (In other words, PD sessions can be more about patting ourselves on the back as pedagogues and less about learning practical strategies that benefit students.) This is similar to the findings reported in Chapter 4. Although principals offered estimations of collaborative inquiry sessions that incorporated learning new strategies, the missing component was the documentation to illustrate the influence this professional development had on teachers' daily classroom practices.

Furthermore, there arose some discontinuity between the intended collaborative inquiry focus and reported changes in observed teacher practice. This discrepancy could be partially attributed to the broadly described collaborative inquiry foci for professional development. In light of the breadth of teacher learning attempted, it may have been easy to lose sight of the intended teacher learning outcome and celebrate any change in instructional practice. In addition to a lack of documentation pertaining to teachers' application of new strategies, there was very limited principal reference to the level of effectiveness observed or reported. In essence, there was a lack of description to indicate

that the collaborative inquiry process resulted in anything further than participants having the opportunity to learn about content or teaching strategies.

Level 5 of Guskey's (2000) evaluation of effective professional development examines the impact on student learning outcomes. Principals described having student work at the table in determining the initial collaborative inquiry focus and during collaborative learning sessions. Absent from principals' depictions of the collaborative inquiry team was the analysis of what student outcomes *had* and *had not* been achieved, and what the next steps for learning and application should be with respect to the original inquiry questions. There were very few references to using criteria to determine the levels of improvement in student outcomes. Most descriptions of student work reflected anecdotal teacher observations that were brought forward during teacher reflection and sharing activities embedded within the collaborative inquiry learning agenda. Interestingly, principals did not explicitly describe how student work samples were selected. The findings from the document analysis within Chapter 4 illustrate that teachers had considerable autonomy when deciding what to select when student work was required for the reflective and adaptive elements of collaborative inquiry sessions. Although this is one of the motivating, self-directing aspects of the PD sessions, it does not measure teacher learning as the findings illustrated limited documented improvements in student achievement resulting from any change in teachers' practices.

Based on the substantial financial resources directed towards the collaborative inquiry process, this model of professional development seems to be a costly endeavour that does not guarantee change in practice or improved student outcomes, regardless of the number of times the team gathers or learning application is facilitated though human

resource supports. Collaborative inquiry as a model of professional development, as expounded by the principals, seems to be aligned with other forms of professional development within Guskey's (2000) findings; by failing to move conclusively beyond a self-gratifying learning experience, the benefits of collaborative inquiry become difficult to gauge.

Collaborative Inquiry as Described by Elementary School Principals

Principals' accountability in facilitating the collaborative inquiry process.

The participating Ontario elementary principals described the collaborative inquiry process in great detail, presenting this model of professional learning as one that capitalizes upon teacher self-motivation. This was largely secured by involving teachers in the process of setting the learning focus, which at times included the analysis of EQAO data, student data, and at other times, teachers' perceived areas of student needs. The principals' accounts of collaborative inquiry depicted a process that involved establishing inquiry questions based on the educators' (e.g., principal, teachers, curriculum consultants, learning partner) perceptions, beliefs, and analysis of students' learning needs for improved achievement. Detailed is a process that brought teachers together on multiple occasions to participate in learning that involved reviewing OME resources, sharing classroom practices and student work samples, identifying teaching and learning strategies to apply, and co-developing lessons in the classroom. However, a clearly identified collaborative learning question developed by the school learning team—and a consistent reference to this question from one professional learning session to the next—was conspicuously absent in the interview transcripts and other documents. Moreover, there was limited reference to student outcomes, both anticipated and achieved.

The meticulousness of the collaborative learning question was limited in comparison to the descriptions of the processes that were implemented through the course of this professional learning. More specifically, the collaborative inquiry question guiding the professional learning at each school was not explicitly stated at any point during the interviews; nor was the collaborative inquiry question referenced as a key component within the documents, except for within the inquiry proposals submitted for financial support from the central office. This begs the question: What are the implications of a process being described in detail for professional learning in contrast to the learning being acquired?

As a process that is intended to promote improved teacher practice, collaborative inquiry may not secure the level of professional learning desired by participants—nor the intended student outcomes—because of diluted (general) questions and actions that appeal to multiple teachers, grades, students, and content. The limited descriptions of the collaborative inquiry questions provided across all principal participants may speak to the need for more skill building in data analysis. Furthermore, ensuring that the questions posed are the most relevant, grounded in data, and consistent with the scope of the process is an appropriate course of action. In essence, the principals' contributions show a high level of process implementation, yet the starting point seemed vague and, thus, obfuscated tangible results regarding improved teaching knowledge and student outcomes.

Effective professional learning resulting in improved teacher practice cannot be assured through participation in a process of collaborative inquiry. Conversely, improved teacher motivation to participate in professional learning was referenced as a consistent

outcome by all principals. Throughout the principals' interview responses and documents provided, multiple motivation-enhancing measures were taken. These included: (a) frequent meetings involving all teachers (at their own discretion); (b) the representation of teachers from all grade levels involved in collaborative inquiry at each school; (c) the multiple activities structured into the professional learning that proved low-risk for teacher application; and, (d) the open-ended provision for teachers to choose the student samples used for reflection at subsequent collaborative inquiry learning sessions. Such language was abundant in the interview narratives; they provide insight into the collaborative culture created as a part of the inquiry process.

On the other hand, there was substantially less data to confidently describe collaborative inquiry as a model for effective professional development. The descriptions of changes to teachers' practices and improved student outcomes were very limited in both the interview responses and the provided documents by all participants. They were markedly generalized in nature across all participants, and were often unrelated to the intended collaborative inquiry question. This can be illustrated by a particular learning scenario: the principal discussed a change in teacher practice that promoted student group work while the collaborative inquiry focus was on the implementation of the three-part math lesson to improved students' mathematical content knowledge. This focus on the three-part math lesson further illustrates the emphasis placed on processes versus content within the collaborative inquiries. Although processes are important, the outcomes of processes must be rooted in more concrete learning objectives (Dweck & Grant, 2008; Dweck & Leggett, 1988). This over-emphasis on how to deliver learning experiences—

be it in the classroom or within professional development situations—seems to be the shortcoming of the collaborative inquiry process.

If outcomes are to change for teachers and students, professional development must distribute attention equally over the content of what is to be learned. These outcomes need to be clearly defined with criteria linked explicitly to the goals of learning (Dweck & Grant, 2008; Guskey, 2000). By delineating these goals and outcome criteria, the actions will follow. Principals' summaries of the collaborative inquiry questions shed light on the disconnect that emerged through the course of the professional development opportunities afforded to their staff. There was limited continuity demonstrated among schools with respect to the documents detailing the learning outcomes of the collaborative processes. Surprisingly, there were no marked differences in terms of accountability described or documented by this small group of Ontario elementary principals between OFIP and non-OFIP schools. I would have expected more accountability for improved student outcomes to be embedded within the collaborative inquiry process for OFIP schools. Principals described the collaborative inquiries arising from students' and teachers' needs as outlined within the school improvement plan for student achievement (SIPSA); OFIP and non-OFIP schools shared the same SIPSA templates for documenting goals, professional learning actions, intended student outcomes, and monitoring measures. However, the collaborative inquiry questions were not stated in the provided SIPSA documents, there was no reference to the SIPSA within collaborative inquiry agendas and minutes; and there was no documentation capturing improved student learning outcomes specific to the inquiry question in any documents.

The lack of descriptions linking these system expectations represents a disjunction among the plans for promoting improved student and teacher learning. The role of the principal to facilitate these actions and be accountable for ensuring improvements would be ever more challenging, as there seems to be numerous plans with different goals, a variety of differing actions, and a range of generally stated measures. In light of all these competing interests, it is no wonder that a disparity emerges and that there is little improvement in teacher practice that can be linked to specific goals within the collaborative inquiry modules. Perusing principals' accounts of PD-based collaborative inquiry from an outsider's perspective, I would recommend that greater emphasis should be placed on all stakeholders earnestly considering these questions: (a) what is the intended learning; (b) how will this learning influence change in teacher practice; (c) how will this improve learning conditions for students; (d) what actions are needed during the professional development to activate this learning; (e) what supports are required to assist teachers in implementing and sustaining the change in practice; and (f) what criteria will be used to measure achievement?

These six guiding questions would help to ensure the iterative intent of collaborative inquiry by providing a foundation of reflection and coherence at the start of each professional development session. Initiating each collaborative inquiry with a review of the question and desired outcomes would minimize the potential for this model to stagnate as a rote collaboration exercise (versus collaboration with the intent of learning). This could still be a motivating experience for teachers and others involved in the professional development as each session would build on its antecedent, and there would be concrete learning to share within and between each session.

Limitations

The limitations in the design of this study included the small sample size, the convenience sampling chosen for the study, my experience as a novice researcher, and the protracted time period for data collection and analysis. Qualitative research is intended to pursue a deeper understanding of a phenomenon and the experiences of participants; such research methodology allows for a smaller sample size to be used rather than generalizing a larger population. I was looking for participants who would provide meticulous data to be explored in greater depth (Patton, 2002); this sampling method was directly linked to the purpose of my study. The smaller sample size allowed me to analyze the data in greater depth, through the experiences described in the interviews and the practices reflected in the many documents submitted by participants. A larger sample size may have proven overwhelming when interactively analyzing the data through the emergent qualitative methods design.

The convenience sampling technique I employed allowed me to access the school board listserv to recruit participants in a very short period of time. Although the invitation was open to all elementary principals within the school board, the sampling resulted in participants who were close colleagues responding to the opportunity. This did not pose a significant challenge to the study but made me aware of potential biases and parochial thinking; therefore, I was more rigorous when interpreting the data to neutralize partiality. This group-oriented response, however, was an unexpected limitation as criteria stipulated to accept participants on a first come, first served basis. That said, the criteria was categorized by OFIP school principals and non-OFIP school principals and provided equal opportunity to the full population. If I were to change the design, I would

stratify the population (e.g., size of elementary school) and then use a systematic sampling to select a randomly numbered person out of a list of all elementary principals from each of the subgroups. Although this sampling would potentially exclude some of the population, it would be a way to ensure that the sample represents the population in a more equitable manner, could be gathered with some ease, and could possibly minimize the close connections between the researcher and the individuals within the study.

I would have preferred conducting the data collection and analysis over a shorter period of time. Qualitative research is meant to explore and understand the meaning behind people's narratives—and this type of analysis can be laborious (Creswell, 2008; Creswell & Plano-Clark, 2007). Knowing that qualitative research takes time, I anticipated that the study might extend beyond the year I had projected. However, I had not planned for the significant delays in data collection and analysis that emerged from the unanticipated teacher job action. This resulted in disruptions in my ability to collect and analyze data due to increased work demands. Additionally, it created the same challenge for principals' ability to meet for interviews, and in providing documents in a timely manner.

Due to the evolving nature of the teacher job action that impacted participation in professional development, principals sometimes provided descriptions based on memory. Interview responses were drawing upon the memory of principals, which may have been altered by time that had passed between when the study had been initiated and when principals were able to participate. This may have contributed to some of the overly general descriptions offered by some principals during the interview process. Additionally, my limited experience as a researcher may have contributed to generalized

descriptions and a novice ability to probe and extend participants' responses. Documents provided greater specificity in describing the nature of collaborative inquiry processes as a PD model. Having to conduct my analysis over such an extended period was both a disadvantage and an advantage. It was a disadvantage because there were long stretches where little progress was made in the study. This made me continuously feel as though my study was losing momentum and interfered with my capacity to recognize emerging themes. The unwavering guidance and experience of my supervisor was invaluable in helping me see that this is part of the research process and the reality of the job I occupy.

In the end, the extended time period for data collection and analysis was equally advantageous because it necessitated rereading the data several times—with a fresh perspective on each occasion—than would have occurred if I had adhered to my original timelines. This led to a much deeper understanding of the principals' beliefs, perceptions, and practices of collaborative inquiry as a model of professional development.

Recommendations for Policy and the Profession

Collaborative inquiry (CI) quickly arose as a process for providing professional development to teachers within the province of Ontario. The small sample of Ontario elementary principals and schools involved in this study reveal the emergent nature of CI, reflected through a variety of approaches to developing the teams, setting the CI focus, structuring the learning, and monitoring the changes in teachers' practice and student learning. These diverse approaches illustrate a need for policies to be developed pertaining to CI in order to provide guidelines for team development, learning processes, and organizational and structural resources that best maximize and bring coherence to

this form of professional development that has motivated teachers to examine their practices.

Educational policy are the principles, rules, and laws that govern decision-making and actions in education. The curriculum content to be taught, the manner in which student achievement is to be assessed and evaluated, teacher practices, financial resource allocation, and teacher training are all elements of CI that have foundations in educational policy. Nonetheless, to my knowledge there is limited current policy pertaining to the evolving nature of these elements in relation to CI. Teachers' roles in professional development have undergone a significant shift from historical practices; evolving from teachers being recipients of learning determined by school board or provincial requirements to that of a bottom-up model in which teachers are driving the CI learning focus. There seemed to be a variety of financial resources available to principals to support CI and yet there was not a clear set of policies to guide how the money would be allocated; how much of the money needed to be directed to resource acquisition versus teacher release time or to other costs and whether there was autonomy for CI teams and school principals to make these decisions on their own. The emergence of CI as a process for professional development has presented a change in the dialogue teachers are expected to engage in with colleagues and administration. Moving away from a more traditional practice of isolation, CI engages teachers in dialogue that is supposed to be reflective, adaptive, iterative, relevant, and open. While the descriptions provided in this study reflect more opportunities for teachers to come together and learn in an open and reflective format, the shift to discourse that prompts adaptive practices seemed to be lacking and may be an area for further policy development pertaining to the nature in

which teachers will engage in professional development and practice. Lastly, the principals in the study offered limited reference to curriculum and evaluation policies in descriptions of resources that were used to guide the CI learning teams. Curriculum expectations and assessment and evaluation are already embedded in educational policy leading me to recommend that CI processes relating to the resources included in the learning need to be developed into policy to ensure that there is coherence between policy and teachers' professional development and classroom teaching practices.

While there is ample support from the participants in this study to argue that CI is a motivating form of professional development for teachers, there appears to be a gap in the way in which it is described, implemented, and monitored amongst this small sample of Ontario elementary principals. I would recommend that this gap is an area for further consideration and would recommend that some of the discrepancies that were described and documented in the data need to be addressed through policy development to bring coherence between policy and practice.

Future Research

The principals of this study were open and willing to share their practices throughout the interview process and in providing documents pertaining to collaborative inquiry as a model of professional development. Through the exploration of principals' descriptions of their perceptions, beliefs, and practices of collaborative inquiry, this research study has contributed additional research literature describing professional development through a process of collaborative inquiry. Additional research is needed to further our understandings of the following: (a) how to shape collaborative inquiry to take this model of professional development beyond a motivational learning process; (b)

how to design professional development that facilitates deep learning, resulting in a change of behaviour that can be monitored through the sustained application of new knowledge; (c) how to quantify whether teachers' perceptions, beliefs, and practices of collaborative inquiry as a PD model are similar to those of the principals; (d) how system and provincial levels of education can develop policies to guide principals in their roles as facilitators of professional development; and (e) how to instill data literacy skills in principals and teachers to determine relevant areas of inquiry.

Inquiry by its definition means to investigate, question, and examine, with the goal being a deeper understanding of the problem. Knowing this, collaborative inquiry for professional development must include very specific learning goals that have clearly defined targets. Further research is needed to determine how to shift the focus of collaborative inquiry to encompass a balance of teacher motivation and applied teacher learning. Research studies of this nature would help to provide additional understanding on how to shape collaborative inquiry to move beyond promoting teacher motivation into deeper teacher learning, as exhibited through the application of new knowledge.

Throughout this study, principals' descriptions of their perceptions, beliefs, and practices reflected a process wherein teachers need to collaborate in new learning situations. The inquiry component of this model of professional development seemed to get lost in the effort to motivate staff to engage in collaboration, group dialogue, and reflection. The iterative element of revisiting the collaborative inquiry question and adapting learning and practice to address emerging successes and barriers needs to be consistently adhered to throughout the professional development process. Such a scenario would likely involve creating a process that placed more emphasis on application with

students along with the ample support described by principals in this research study. This, in turn, may require studies into how best to enhance principals' knowledge and ability to work towards the improvement of teacher and student outcomes. Research is needed on: (a) supports and incentives required to maintain the risk-taking nature of teachers when their practice is under increased scrutiny to produce student outcomes; (b) principals' repertoire of strategies to influence and support changes in teachers' application of new knowledge and skills, while maintaining teacher motivational levels; and (c) system and provincial supports to assist principals in helping teachers become accountable for the professional development emerging from collaborative inquiry processes.

Finally, an additional recommendation for the collaborative inquiry process would be to stress the importance of all members of the inquiry team, and to focus professional development on areas of need linked explicitly to the OME curriculum expectations. This could lead to the increased intervention of curriculum consultants, working in collaboration with principals, to facilitate the process of collaboration. It is very challenging to expect principals to be experts in relationship-building, process facilitation and curriculum content and delivery. Additional research studies exploring principals' and teachers' perceptions, beliefs, and practices vis-à-vis a two-tiered professional development model—involving curriculum consultants facilitating job-embedded knowledge, with principals assuming a coaching role between sessions—may help to address some of the gaps that exist in teacher motivation and classroom practice.

To conclude, this study was intended to capture principals' voices from the field of education. Principals' perceptions, beliefs, and practices of collaborative inquiry as a model of professional development offer personal accounts of the potential successes and

challenges. The personal stories of these principals represent the qualitative value of experiences within this method of research. This research study provides additional insights into the experiences of collaborative inquiry participants—through the voices of principals—to the field of professional development research literature.

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Appendix A

Guskey's Professional Development Evaluation Framework

Evaluation Level	What Questions Are Addressed?	How Will Information Be Gathered?	What Is Measured or Assessed?	How Will Information Be Used?
1. Participants' Reactions	<ul style="list-style-type: none"> • Did they like it? • Was their time well spent? • Did the material make sense? • Will it be useful? • Was the leader knowledgeable and helpful? • Were the refreshments fresh and high quality? • Was the room the right temperature? • Were the chairs comfortable? 	<ul style="list-style-type: none"> • Questionnaires administered at the end of the session 	<ul style="list-style-type: none"> • Initial satisfaction with the experience 	<ul style="list-style-type: none"> • To improve program design and delivery
2. Participants' Learning	<ul style="list-style-type: none"> • Did participants acquire the intended knowledge and skills? 	<ul style="list-style-type: none"> • Paper-and-pencil instruments • Simulations • Demonstrations • Participant reflections (oral and/or written) 	<ul style="list-style-type: none"> • New knowledge and skills of participants 	<ul style="list-style-type: none"> • To improve program content, format, and organization

		<ul style="list-style-type: none"> • Participant portfolios 		
3. Organization Support and Change	<ul style="list-style-type: none"> • What was the impact on the organization? • Did it affect organizational climate and procedures? • Was implementation advocated, facilitated, and supported? • Was the support public and overt? • Were problems addressed quickly and efficiently? • Were sufficient resources made available? • Were successes recognized and shared? 	<ul style="list-style-type: none"> • District and school records • Minutes from follow-up meetings • Questionnaires • Structured interviews with participants and district or school administrators • Participant portfolios 	<ul style="list-style-type: none"> • The organization's advocacy, support, accommodation, facilitation, and recognition 	<ul style="list-style-type: none"> • To document and improve organizational support • To inform future change efforts
4. Participants' Use of New Knowledge and Skills	<ul style="list-style-type: none"> • Did participants effectively apply the new knowledge and skills? 	<ul style="list-style-type: none"> • Questionnaires • Structured interviews with participants and their supervisors • Participant reflections (oral and/or written) 	<ul style="list-style-type: none"> • Degree and quality of implementation 	<ul style="list-style-type: none"> • To document and improve the implementation of program content

		<ul style="list-style-type: none"> • Participant portfolios • Direct observations • Video or audio tapes 		
5. Student Learning Outcomes	<ul style="list-style-type: none"> • What was the impact on students? • Did it affect student performance or achievement? • Did it influence students' physical or emotional well-being? • Are students more confident as learners? • Is student attendance improving? • Are dropouts decreasing? 	<ul style="list-style-type: none"> • Student records • School records • Questionnaires • Structured interviews with students, parents, teachers, and/or administrators • Participant portfolios 	<ul style="list-style-type: none"> • Student learning outcomes: <ul style="list-style-type: none"> - Cognitive (Performance & Achievement) - Affective (Attitudes & Dispositions) - Psychomotor (Skills & Behaviors) 	<ul style="list-style-type: none"> • To focus and improve all aspects of program design, implementation, and follow-up • To demonstrate the overall impact of professional development

Adapted from Guskey, T. R. (2000). *Evaluating Professional Development*. Thousand Oaks, CA: Corwin Press.

Appendix B

Letter of Information

“EXPLORING PRINCIPALS’ PERCEPTIONS, BELIEFS, AND PRACTICES OF PROFESSIONAL DEVELOPMENT AS IMPLEMENTED THROUGH A COLLABORATIVE INQUIRY PROCESS”

This research is being conducted by Tina Elliott under the supervision of Dr. Elizabeth Lee in the Faculty of Education at Queen’s University in Kingston, Ontario.

What is this study about? The purpose of this research is to explore principals’ perceptions of professional development and solicit commentary on their beliefs and practices specific to the implementation of a collaborative inquiry process. The study will require a minimum of one individual interview with principals for a duration of 60 minutes, accompanied by the sharing of relevant school documents that highlight professional development activities. There are no known physical, psychological, economic, or social risks associated with this study.

Is my participation voluntary? Yes. Although it would be greatly appreciated if you would answer all material as frankly as possible, you should not feel obliged to answer any material that you find objectionable or that makes you feel uncomfortable. You may also withdraw at any time.

What will happen to my responses? We will keep your responses confidential. Only my supervisory committee and I will have access to this information. To help us ensure confidentiality, please do not put your name or school references on any of the research study documents. The data may also be published in professional journals or presented at education conferences, but any such presentations will be of general findings and will

never breach individual confidentiality. Should you be interested, you are entitled to a copy of the findings.

Will I be compensated for my participation? No.

What if I have concerns? Any questions about study participation may be directed to Tina Elliott at telliott@hpedsb.on.ca. Any ethical concerns about the study may be directed to the Chair of the General Research Ethics Board at chair.GREB@queensu.ca or 613-533-6081.

Again, thank you. Your interest in participating in this research study is greatly appreciated.

This study has been granted clearance according to the recommended principles of Canadian ethics guidelines, and Queen's policies.

Appendix C

Consent Form

“EXPLORING PRINCIPALS’ PERCEPTIONS, BELIEFS, AND PRACTICES OF PROFESSIONAL DEVELOPMENT AS IMPLEMENTED THROUGH A COLLABORATIVE INQUIRY PROCESS”

Name (please print clearly): _____

1. I have read the Letter of Information and have had any questions answered to my satisfaction.
2. I understand that I will be participating in the study called “EXPLORING PRINCIPALS’ PERCEPTIONS, BELIEFS, AND PRACTICES OF PROFESSIONAL DEVELOPMENT AS IMPLEMENTED THROUGH A COLLABORATIVE INQUIRY PROCESS.” I understand that this means that I will be asked to participate in interviews and share documents that are part of my role and experiences as a participant in professional development.
3. I understand that my participation in this study is voluntary and I may withdraw at any time.
4. I understand that every effort will be made to maintain the confidentiality of the data now and in the future. The data may also be published in professional journals or presented at educational conferences, but any such presentations will be of general

findings and will never breach individual confidentiality. Should you be interested, you are entitled to a copy of the findings.

5. I am aware that if I have any questions, concerns, or complaints, I may contact Tina Elliott (telliott@hpedsb.on.ca); project supervisor, Dr. Elizabeth Lee, by phone (613-533-6000-77409) or by email (elizabeth.lee@queensu.ca); or the Chair of the General Research Ethics Board (533-6081) at Queen's University.

I have read the above statements and freely consent to participate in this research:

Signature: _____ Date: _____

Appendix D

Interview Guide

The individual interview will last approximately 60 minutes. I will audio record your responses to ensure that I capture your thoughts accurately. Once transcribed, the audio recording will be destroyed. You may wish to refer to some of the artifacts you have in response to the questions.

1. In one or two sentences, can you explain what the collaborative inquiry approach to professional development means to you?
2. What was the focus of collaborative inquiry within your staff?
 - i. How was this selected as the focus for the inquiry?

How do you motivate and sustain staff commitment to the focus of the collaborative inquiry?
3. What were the resources used to support the inquiry? How were they selected?
4. What organizational structures were established to support the school staff during the collaborative inquiry?
5. How many times did you meet during your collaborative inquiry process?

Probe: For how long? Who was involved?
6. Which, if any, of the Ministry of Education resources were used as part of the collaborative inquiry process?

Probe: Who chose the resources to be used?
7. Thinking about the collaborative inquiry process, can you describe any changes you observed in terms of teacher practice?

Probe: What did you observe in terms of teachers' instructional practice within the classroom with students?

8. What has been the greatest challenge in implementing collaborative inquiry?
9. Do you think that it made a difference in engaging staff in a collaborative inquiry process if identified as an OFIP school?
10. Is there anything further you would like to share?