

# Professional Learning Cultures: An Evaluation of Collaborative Inquiry in Ontario Elementary Schools

RFS No. 1339

*Final Evaluation Report – Draft*

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## Executive Summary

The following executive summary provides key information and findings from the evaluation of Collaborative Inquiry (CI) in Ontario elementary schools (RFS No. 1339).

### Evaluation Purpose and Questions

- The purpose of the evaluation was to provide Literacy and Numeracy Secretariat (LNS) with evidence on the impact, spread, adaptability, and sustainability of CI as a professional learning model for Ontario elementary schools. The evidence provided through the evaluation serves to inform the LNS as they continue to plan for and implement professional learning initiatives to achieve the government's goals for education, including higher levels of student achievement, reduced gaps in student achievement, and increased public confidence in publicly funded education.
- In accordance with RFS No. 1339, the evaluation was built upon existing knowledge including research and evaluations conducted or commissioned by the LNS on professional learning to address four over-arching evaluation questions:
  1. What is the **systemic impact** of LNS Collaborative Inquiry initiatives in promoting professional learning in Ontario schools and district school boards?
  2. What factors and conditions contribute to and/or hinder the effective **spread** of professional learning through Collaborative Inquiry in Ontario schools and school districts?
  3. How are schools and school districts **adapting and sustaining** Collaborative Inquiry to their local contexts to promote ongoing system transformation in Ontario?
  4. What are the **challenges and opportunities**, and what do we need to learn for future Collaborative Inquiry in Ontario's K-12 education system?

### Evaluation Method

- The evaluation involved a five-phase, mixed-methods design that targeted CI professional learning initiatives across Ontario elementary schools.
- Data for the evaluation were obtained from five general sources: (a) a scoping literature review of CI research; (b) a document analysis of CI policies; (c) interviews with relevant LNS staff and Student Achievement Officers (SAOs); (d) elementary teacher survey; and (e) case studies of selected elementary schools and districts.
- Data were obtained from Anglophone public and Catholic school boards and one Francophone school board across the province to ensure regional representation.

## Key Findings

- Teachers described a broad spectrum of CI experiences. While some teachers experienced CI as a rich, multi-layered process involving collaborative planning, acting, observing, and reflecting, other teachers experienced CI as getting together to discuss classroom practices and issues, or attending presentations suggesting teaching approaches and strategies.
- Teachers identified factors that contribute towards the effectiveness, value, and success of CI as a professional learning model. These factors included:
  - The fundamental premise of CI: that teachers are experts, both in terms of being able to determine and pursue the knowledge they themselves need to learn, and in terms of being able to help their teacher colleagues to develop the knowledge they need to learn.
  - When CI is carried out at the local level, in small rather than large groups
  - Teacher choice of inquiry focus.
  - The acknowledgement that it takes time for CI to really work effectively—one cannot expect to see results right away.
  - Teachers' willingness to admit they don't know it all.
  - Establishing relationships and trust with colleagues.
  - When teachers are able to identify a direct benefit to student achievement—a direct connection from teachers' learning to improved students' learning.
- Teachers identified factors that diminished their experiences of CI as an effective professional learning model. These factors included:
  - Lack of relevance to a teacher's particular classroom.
  - Lack of confidence in out-of-touch 'experts'
  - CI as another labour and time intensive 'add-on' for teachers
  - CI is 'inefficient' (figuring out vs. being taught).
  - Lack of support regarding structuring of CI as professional learning processes.
  - Lack of confidence/ familiarity with CI practices.
  - Fear of exposing personal teaching weaknesses.
  - Difficulty and frustration demonstrating accountability of CI success.
- Teachers identified perceived outcomes of their work with CI. These outcomes included:
  - More teachers are talking.
  - Informal CI.
  - Increased teacher confidence to take risks/ shift practices.
  - Increased recognition of the importance of teacher reflection and ongoing teacher learning.
  - Recognition of the value of CI as personal professional learning.
  - CI mindset trickles down and is adopted by students.

- Teachers identified what they value in their principal and administration to support CI projects. These values included:
  - Hands-on involvement as a co-learner.
  - Instructional expertise.
  - Flexibility and freedom with CI structures.
  
- SAOs and principals had highly convergent perspectives towards CI in Ontario elementary schools. Points of convergence included:
  - CI is considered to be primarily in the ‘emergent phase.’ An ‘emergent phase’ was described not as the initial embarkation with a CI project, but as a phase where knowledge of the process and purpose is understood, and practice is developing.
  - There is an increasing sense of value for teacher ownership for professional learning.
  - Diversity is evident in the conceptualization and operationalization of professional learning practice related to CI.
  - Instructional leadership from principals is viewed as a key goal, need, and professional practice for the purpose of maximizing CI for teachers.
  - Assistance identifying and analyzing appropriate data for monitoring professional learning is requested by both SAOs and principals in order to better facilitate ‘next steps’ and decision-making for professional learning initiatives at school and district levels.
  
- Potential tensions exist in the enactment of CI throughout the province. These tensions may impact spread of this professional learning approach. These tensions are:
  - CI as method for solving dilemmas in teaching and learning and CI as a systems approach to ongoing learning.
  - Teaching a CI approach to problem solving and providing support for quality CI processes.
  - CI as an approach to professional learning and CI as a contributor to student achievement.
  - Mandated Practice (top-down) and Authentic Practice (bottom-Up); and related to that, Structured Practice (Use of protocols) and Contextually Emergent Practice (Teacher-Driven).
  - Conceptualizing CI as evidence-based and conceptualizing CI evidence as stories of teachers’ experiences.
  - Students as a focus for CI and students actually participating in CI?

## Key Findings Arising from our Review

- Systemic impact of CI in the province of Ontario can be understood through a heuristic model with five nested spheres of influence, or levels, that describe the complexity of CI development and diffusion: the CI universe, CI intentions, enacted CI, internalized CI, and CI focus.
- The spread of CI can be best understood not only through the view that regards the conventional traction of the CI intentions in Ontario's schools, but also through a multi-dimensional process whereby: (a) the CI universe moves inwardly from the level of CI intentions to that of enacted CI and to internalized CI; and (b) there is the capacity of CI at any level to influence understandings and behaviours in the other levels within the system.
- Tensions have been found in places where there appear to be contradictions, differing perspectives, or at least uncertainties about the meaning or value in having both of these conditions appearing at the same time. These tensions describe some of the variability in CI processes and outcomes that educators experience while working within the different levels (creating specific CI intentions, enacting CI, internalizing CI or assessing the CI focus).
- The adaptability of CI processes to specific contexts within the local board and school environments was evident through: a) the development of ongoing professional reflection, authentic collaboration, and adaptive learning in schools; b) the increase of professional confidence through participation in CI processes; and c) opportunities for distributed leadership that enabled those involved with CI to serve as leaders in professional learning and subsequent instructional practices.
- Educators involved in CI projects reported an increasingly collaborative and supportive learning culture amongst educators since the introduction of CI. This culture was characterized by ongoing discussions about teaching practices, more distributed models of leadership, and more focused and defined efforts to modify practices to support students' learning.
- The analyses of the data highlighted three primary ways in which CI might be sustained within the province:
  - *Alignment* across professional learning initiatives within a school board
  - *Ownership* over CI focus and process by educators
  - *Resources* that support increased and deeper learning about focal areas

## Introduction

*A focus on student learning drives inquiry. Data generated from student actions and work compel teachers to investigate new, engaging and relevant questions about how and what their students learn. These questions lead to informed actions within the classroom, which in turn serve to refine or initiate new investigations.*  
(Ontario Ministry of Education, 2010, p. 2)

Collaborative Inquiry (CI) in Elementary Schools represents an important series of ongoing efforts from the Literacy and Numeracy Secretariat (LNS) and Ontario educators to promote professional learning cultures. CI seeks to build capacity within schools and within school boards for the purpose of improving students' academic achievement. The focus on collaborative learning cultures and their impact on both school improvement and student achievement has been consistently emphasized in the extant literature. This suggests that collaborative approaches are key features of effective educational practice (Cordingley, Bell, Thomason, & Firth, 2005). CI processes draw from a perspective that recognizes the strengths and the assets of educators. Specifically, CI engages teachers, principals, and school district leaders in a professional co-learning process; educators investigate their professional practice in a collaborative study that takes into consideration students' responses to instruction, leading to new understandings and responsive actions (Lee, 2009). Nelson and Slavit (2008) envision CI as a cyclical process that fosters ongoing dialogue about classroom practices and student achievement.

Research indicates that effective professional learning for educators is embedded within their professional practice. Key aspects of professional learning involve on-going reflection, developing inquiry habits of mind, peer collaboration, and responsiveness to the classroom environment (see Earl & Katz, 2002; Schon, 1983; Timperly, 2010). In Ontario, the Ministry of Education recognizes that professional learning must be coherent, attentive to adult learning styles, goal-orientated, sustainable, and evidence-informed (Ontario Ministry of Education, 2007; Opfer & Pedder, 2011; Webster-Wright, 2009). There is solid evidence that engaging teachers as learners within the contexts of their classrooms and professional practice through collaborative teacher inquiry has the potential to transform conceptions of professional learning (see Hannay, Wideman, & Seller, 2010).

The LNS has supported CI in order to foster the practice of reflective practice in schools. Reflective practices in education are characterized by habits of mind and skills such as an 'inquiry stance', evidence-based instruction, locating student needs through a variety of assessment strategies, fostering student voice, and the exercise of constructive, useful, descriptive feedback. CI is an integral part of the LNS's strategy to achieve the government's three goals for education: improvements in student achievement, the reduction of achievement gaps, and increased confidence in public education. CI supports the growth of professional learning cultures thereby cultivating life-long learning amongst educators and students. Seven characteristics play an important role in cultures where CI flourishes in educational contexts. Education should be: a) relevant (student learning guides inquiry); b) collaborative (teacher inquiry is a shared process); c) reflective (actions are informed by reflection); d) iterative (progressive understanding grows

from cycles of inquiry); e) reasoned (analysis drives deep learning); f) adaptive (inquiry shapes practice and practice shapes inquiry); g) reciprocal (theory and practice connect dynamically) (see Ontario Ministry of Education, Secretariat Special Edition, Capacity Building Series, Collaborative Teacher Inquiry, September 2010).

Elmore (2004) contends that meaningful school reform will only occur if educators have the autonomy and opportunity to work together in their schools to identify their students' needs and, further, to explore teaching practices and methods that will subsequently help meet these identified needs (see also McTighe & Thomas, 2003). The LNS CI models provide educators the autonomy to work as a team to first identify learning goals, then collect, analyze, and summarize data from multiple sources for the purpose of supporting and determining professional learning. Once this has been accomplished, efforts are directed towards identifying and implementing policies and practices that will impact identified educational outcomes, promote continual learning, and raise students' achievement. A CI model assumes educators within schools can effectively use both large-scale and school or classroom-based student assessment information, both formal and informal, to identify priorities, track results, and determine future practices to improve teachers' pedagogical effectiveness. While researchers increasingly believe that initiatives such as the LNS CI initiatives provide strong models for school improvement and reform, these models can be challenging for educators to implement successfully (e.g., Kasian, Klinger, Maggi, & D'Angiulli, 2010; Leithwood, 2006; Onderwijsraad, 2001; Van Hoof & Van Petegem, 2006).

The LNS has made extensive use of the principles and research associated with contemporary professional learning to guide its efforts to initiate and support a series of CI projects. As examples, four key CI initiatives are: Collaborative Inquiry for Learning Mathematics (CIL-M), Early Primary Collaborative Inquiry K-2 (EPCI), System Implementation and Monitoring (SIM), and the Student Work Study Teacher (SWST) initiative. The LNS has previously conducted and commissioned internal and external research and program evaluations on a number of these school- and classroom-based CI initiatives for the purpose of understanding more fully the implementation of initiatives aimed at improving educational outcomes for students. The results have shown the potential of these initiatives, and the identified associations between these initiatives and student achievement are intriguing. Given the LNS's initial research and years of work on promoting CI throughout the province, there was a need to systemically evaluate the impact of their efforts and specifically examine the spread, adaptation, and sustainability of CI as an effective professional learning model in Ontario elementary schools. Accordingly, in March 2013, the LNS established a partnership with members of the Faculty of Education, Queen's University to engage in an evaluation of CI throughout Ontario. Evaluation planning (i.e., development of evaluation questions and methodology) and data collection followed a collaborative model between the Queen's Evaluation Team (QET) and members of the LNS from March 2013 to September 2014.



## Evaluation Purpose and Questions

The purpose of the evaluation was to provide the Literacy and Numeracy Secretariat (LNS) with evidence on the impact, spread, adaptability, and sustainability of CI as a professional learning model for Ontario elementary schools. The evidence provided through the evaluation will serve to inform LNS as they continue to plan for and implement professional learning initiatives to achieve the government's goals for education, which are higher levels of student achievement, reduced gaps in student achievement, and increased public confidence in publicly funded education. Specifically, this evaluation serves to identify how CI as a professional learning model, and the role of the LNS in supporting CI are contributing to achieving these goals. It will also contribute to furthering the body of knowledge on effective professional learning.

In accordance with RFS No. 1339, the evaluation was built upon existing knowledge including research and evaluations conducted or commissioned by the LNS on professional learning to address the following four over-arching evaluation questions:

1. What is the ***systemic impact*** of LNS Collaborative Inquiry initiatives in promoting professional learning in Ontario schools and district school boards?
2. What factors and conditions contribute to and/or hinder the effective ***spread*** of professional learning through Collaborative Inquiry in Ontario schools and school districts?
3. How are schools and school districts ***adapting and sustaining*** Collaborative Inquiry to their local contexts to promote ongoing system transformation in Ontario?
4. What are the ***challenges and opportunities***, and what do we need to learn for future Collaborative Inquiry in Ontario education?

More specifically, our evaluation work addresses the following sub-questions that elaborate on the four overarching evaluation questions identified above:

- What are the *theoretical and structural foundations* for CI and the related programmatic initiatives in Ontario?
- What *supports and structures* does LNS provide school districts to promote professional learning through CI?
- What are *school district leaders', principals', and teachers' experiences* with CI throughout the province?
- What are the *benefits* of CI on teachers' professional learning and student achievement outcomes?
- What are the *conditions that support spread, adaptability, and sustainability* of CI within local contexts? What are the challenges and barriers?
- What *advice* do educators have for promoting CI as a professional learning model in Ontario schools?

## Evaluation Method

This evaluation involved a five-phase, mixed-methods design that targeted CI professional learning initiatives across Ontario elementary schools. In designing the evaluation, Literacy and Numeracy Secretariat (LNS) staff and Queen's Evaluation Team (QET) met to discuss current and historical practices of CI throughout the province. These discussions led to the generation of an initial logic model that described the LNS's perspective on the evolving purpose and structure of CI (see Appendix A). This logic model served as a basis for identifying data collection sources and priorities for the evaluation.

Data for the evaluation were obtained from five general sources: (a) a scoping literature review of CI research; (b) a document analysis of CI policies; (c) interviews with relevant LNS staff and Student Achievement Officers (SAOs); (d) elementary teacher survey; and (e) case studies of selected elementary schools and districts. Data were obtained from Anglophone public and Catholic school boards and one Francophone school board across the province to ensure regional and cultural representation.

### Evaluation Phases

The evaluation method was divided into five phases. These phases were intended to serve a developmental function to provide the LNS with information on CI throughout the duration of the evaluation. While phases generally occurred in sequence, due to the stipulated timelines for evaluation completion, some phases occurred concurrently (e.g., Phases 4 and 5).

#### *Phase 1: Scoping Literature Review (May-July, 2013)*

A scoping literature review was completed to explore the theoretical foundations of CI as a professional learning structure. Relevant contemporary research was searched and analyzed to deduce models, support structures, challenges, and empirical benefits of CI. The majority of research was drawn from Canada, the United States or the United Kingdom. In total, 42 sources were inductively analyzed as part of Phase 1.

#### *Phase 2: Document Analysis of CI Policies (July-November, 2013)*

In Phase 2, CI policies associated with Ministry-directed initiatives currently operating within the province of Ontario were analyzed. The purpose of this phase was to examine the discourse and diversity of formal CI initiatives across the province. Through an inductive method, Ministry-published and school district policy documents were analyzed in this phase of the evaluation.

### *Phase 3: LNS and SAO Data Collection (September 2013)*

In total, 11 focus groups were conducted with LNS staff members and SAOs in September 2013. For SAO focus groups (n=9), 4 were conducted by the QET and 5 were conducted by the LNS staff. The two focus groups with LNS staff members were conducted by the QET. Following a semi-structured design, the focus groups were audio recorded and lasted approximately one hour each. SAOs also completed a brief survey that described CI initiatives within the school boards they worked with. The purpose of these focus groups was to gain an initial understanding of existing CI initiatives operating throughout the province. In addition, these focus groups provided critical insights into the tensions, practices, and support structures that shaped how CI was promoted throughout Ontario schools. Data collected in Phase 3 were inductively analyzed for common themes within the LNS and SAO data sets (see Appendix F for focus group protocols).

### *Phase 4: Teacher Survey (October 2013-June 2014)*

In Phase 4, a survey was developed and administered to elementary teachers in Ontario in order to gain a broad understanding of teachers' perspectives of and experiences with CI as a professional learning model. Survey items were developed in consultation with LNS members and pilot tested with 10 elementary teachers. The survey was administered electronically to teachers in 15 school boards (the same boards selected in Phase 5 of the evaluation). In total, 335 elementary teachers completed the survey. The survey had a total of 20 items, the majority fixed-response. Survey items addressed teachers' professional learning preferences, experiences with CI, and demographic information. Data collected from the survey were analyzed using descriptive and inferential statistics. Qualitative items were inductively analyzed for common response themes. The qualitative survey data were also used to interpret the quantitative findings (see Appendix F for the survey questions).

### *Phase 5: Case Studies and Consulted Boards (April-June 2014)*

In the final phase of the evaluation, in-depth qualitative data were collected from 15 school boards, which were identified and recommended for invitation to participate by the LNS. These 15 boards were divided into two groups: (a) six were considered "consulted boards," and (b) nine were considered "case study boards." Data collection in "consulted boards" consisted of a one-hour, semi-structured interview with a supervisory officer (i.e., school board director or superintendent or consultant responsible for CI in the board). The interview focused on systemic board structures that supported and promoted CI as a professional learning model within the school board. In addition to an interview with a supervisory officer, data collection in the "case study" boards included a one-hour, semi-structured interview with a selected elementary school principal and a one-hour focus group with teachers in the selected elementary school. These elementary schools were selected from a shortlist of elementary schools (one school per board) identified by each of the nine boards' supervisory officers. The interview with principals and teachers focused on their experiences with CI as a model for professional learning. Data collected in Phase 5 were inductively analyzed for common themes across the school boards. Direct participant quotations were used to support theme structures and to elucidate theme meanings (see Appendix F for interview and focus group protocols).

## Ethical Clearance

All data collection in Phases 3-5 received ethical clearance from Queen's University and school board external research review panels. Consent was ascertained from all study participants.

## Deliverables

The evaluation deliverables adhered to the following timeline:

- March 2013 – Draft Evaluation Plan
- February 2013 – Draft Interim Report
- September 2014 – Initial Final Report
- September 2014 – Presentation to Ministry
- October 2014 – Finalized Report submitted to Ministry

# Evaluation Phase 1: Scoping Literature Review of CI Literature

## Introduction

Collaborative Inquiry (CI) has emerged as a dominant structure for educator professional learning in the 21st century (Cordingley, Bell, Thomason, & Firth, 2005; Nelson & Slavit, 2008). CI draws on the strengths and assets of educators by involving teachers, principals, school district leaders, and external partners in shared learning about a common question or topic (Donohoo, 2013). Collaborative inquiries often focus on developing teacher pedagogy and practice with the ultimate aim of improving educational outcomes for students. In Ontario, Collaborative Inquiry in Elementary Schools represents a series of diverse, ongoing efforts initiated or supported by the Literacy and Numeracy Secretariat (LNS) and developed in collaboration with Ontario educators to promote professional learning cultures (Ontario Literacy and Numeracy Secretariat, 2007a, 2010). In this context, CI seeks to build capacity and improve educational practice within schools and school boards. Through these CI initiatives, educators investigate focused aspects of their professional practice in a collaborative study, exploring student responses to instruction and leading to new understandings and responsive actions (Lee, 2009).

Despite the increasing presence of CI in professional learning initiatives within Ontario and other North American educational jurisdictions, research on CI frameworks has yet to be consolidated and synthesized. Rather, literature on CI has been parsed into two general categories: (a) practitioner guides that delineate practical and procedural strategies for engaging in CI, and (b) research-based case studies of CI initiatives supported by university-partnerships. However, there remains a need to consolidate research on CI with its related practitioner literature, in order to fully justify and understand CI processes as well as identify areas for future development and research.

## Purpose

The purpose of this scoping review is to examine literature on the structure, challenges, and benefits of CI as a professional learning structure for educators (i.e., teachers, principals, school district leaders). Our principle aim is to generate a more robust understanding of how CI is characterized, enacted, and empirically supported by analyzing practitioner- and research-based literature. Guiding our scoping review were the following research questions:

- (a) How is CI characterized and operationalized as a professional learning structure for educators?
- (b) What supports and resources are required to enact effective CI?
- (c) What are empirically supported benefits of engaging in CI?
- (d) What are the challenges to enacting CI with educators?

## Methodology

In this paper, we use a scoping review methodology (Arksey & O'Malley, 2005; Gough, Oliver, Thomas, 2012) to review literature related to CI as a professional learning structure for teachers. Mays, Roberts, and Popay (2001, p. 194) state that scoping studies aim to “map the key concepts underpinning a research area and the main sources and types of evidence available, and can be undertaken as stand-alone projects, especially where an area is complex or has not been reviewed comprehensively before.” This review aims to synthesize the frameworks and research on CI with consideration for the empirical benefits, enactment challenges, and required resources and supports of CI as professional learning structure.

### Selecting Sources

The following databases were searched for refereed articles, non-refereed articles, and books on the conceptual, empirical, and practical basis of CI: Education Research Complete, ERIC, Professional Development Collection, and Academic Search Complete. In total there were five iterations of the search. The initial, and broadest, search used *collaborat\** and *inquiry* with no field restrictions; this search returned 26,794 results. The final iteration of the search *collaborative* and *learning* with no field restrictions and *inquiry* restricted to the subject description. This final iteration of the search produced 66 sources.

The 66 sources were further reduced through a content analysis. Six conceptions of CI were deduced from core CI resources and references (i.e., Cordingley et al., 2005; David, 2009; Emihovich & Battaglia, 2000; Nelson, Deuel, Slavit, & Kennedy, 2010; Nelson & Slavit, 2008; Ontario Literacy and Numeracy Secretariat, 2007a, 2010). In a face-to-face meeting between researchers, these conceptions were discussed and refined into the following inclusion criteria themes and related questions:

Theme 1 – Characteristics of CI: What characterizes CI as a research methodology?

Theme 2 – Practices and Structures of CI: What are the practices and structures that support CI?

Theme 3 – Benefits of CI: What are the empirical benefits to CI?

Theme 4 – School-level Supports for CI: How is CI best supported in the schools?

Theme 5 – Leadership for CI: What is the nature and significance of leadership within CI?

Theme 6 – Difficulties and Challenges of CI: What difficulties can be associated with the use of CI as a professional learning approach?

In addition to these themes, only articles that considered CI in the context of *education* (i.e., in relation to teacher, administrator, or school district CI initiatives) were selected for this review. The only exclusion criterion was research that contextualized CI as a pedagogical tool in the classroom (i.e., CI use with students), as our interest was professional learning.

Each researcher read the title, abstract, and keywords for each of the 66 sources and independently determined whether or not articles addressed one of the six themes. To ensure a high degree of inter-rater reliability, the three researchers engaged in a collaborative review and discussion of four randomly selected articles. Two researchers reviewed the remaining sources. Sources in which there was disagreement were brought to the third researcher who decided, through dialogue with the initial reviewers, whether or not to include contested sources. In total, 42 sources were selected

that met the inclusion criteria. When necessary and appropriate, supplementary sources were used to further explicate salient findings. All of the 42 sources were published post-2000 with the majority from the United States.

## *Analyzing Sources*

The 42 sources were deductively analyzed using the guiding research questions. All sources were first classified as addressing aspects of the research questions: (a) characteristics of CI, (b) supports and resources for CI, (c) empirically supported benefits of CI, and (d) enactment challenges. Some sources addressed several of these aspects. See Table 15 in Appendix B for classification and description of each of the selected articles. Articles were then read in full and inductively analyzed to generate themes that responded to each research question. The Table 16 in Appendix B, which organizes these themes by research question. The following sections of this scoping review explain each theme to provide an analysis of how CI is characterized, enacted, and empirically supported

## **Characteristics of CI**

Much of the research on CI describes frameworks—steps or cycles—for engaging in CI processes (Bulter & Schnellert, 2012; Cunningham, 2011; Donohoo, 2013; Langer, Colton, & Goff, 2003; Lee, 2009; Nelson & Slavit, 2008; Ontario Literacy and Numeracy Secretary, 2007, 2010; Robinson, 2010; Wellman & Lipton, 2004). In analyzing these frameworks, it is evident that there is likely not one single way to engage in CI; there are, however, strong commonalities across various frameworks. Specifically, we have identified two commonalities across the literature: (a) CI is most often structured as a cyclical process, (b) the practice of CI is grounded in a “socio-constructivist perspective of teacher learning” (Schnellert, 2011, p.2).

### *CI as a Cyclical Process*

The cyclical process of CI can contain as few as three stages and as many as eleven (see Table 17 in Appendix B). For example, the Ontario Ministry of Education (OME) has developed and promoted a five-stage process: (a) Determining what knowledge and skills students need, (b) Determining what knowledge and skills teachers need, (c) Deepening professional knowledge and skills through focused inquiry, (d) Engaging in new learning experiences, and (e) Reflecting on the consequences of changed practice (Ontario Literacy and Numeracy Secretariat, 2010). As a second example, Nelson and Slavit (2008) envisioned CI as a cyclical process with eleven recursive stages. These stages are intended to promote an ongoing dialogue about classroom practices and student achievement.

Regardless of the number of stages, the literature supporting each cycle acknowledges three core and interconnected structural features of CI: (a) dialogical sharing, (b) taking action, and (c) reflecting. Within the cycles, each of these features provides an opportunity for deeper inquiry prompted by either action-oriented directives or through guiding questions. For example, one of the actions in the initial stage of Nelson’s (2009) inquiry cycle directs teachers to: “develop a common vision for teaching and learning” (p. 553). In contrast, Wellman and Lipton (2004, p. 44) guide teacher



inquiry through questions such as: “With what assumption are we entering the inquiry?” Accordingly, in the CI literature there is an explicit use of either directive statements and/or guiding questions to promote dialogical sharing among CI participants.

### *Dialogical Sharing*

The fundamental action of dialogical sharing within CI cycles is intended to maintain a socio-constructivist orientation to inquiry. Specifically, dialogical sharing has been operationalized through acts of shared participation (Bray, 2000; Clauset & Murphy, 2012; Greenwood & Levin, 2007); shared leadership (Clauset & Murphy); shared responsibility (Clauset & Murphy); the construction of a shared vision (Nelson & Slavit, 2007); and the negotiating of shared values and goals for the inquiry (Carroll, Fulton, & Doerr, 2010). Dialogical sharing also acknowledges the significance of personal and experiential knowledge in the co-construction of meaning (Heron, 1996). Through dialogical sharing, CI participants are able to use individual knowledge as the basis for co-constructing deeper, shared knowledge (Nelson et al., 2010; Nelson, Slavit, & Deuel, 2012).

### *Taking Action*

Taking action, the second core feature of CI cycles, characterizes CI as a practical activity embedded within teaching and learning contexts (Nelson et al., 2012). Action can take on many different forms (Ontario Literacy and Numeracy Secretariat, 2007a). Action can involve collecting student data on the effectiveness of a particular pedagogy, adapting practices to the changing nature of the inquiry, or engaging in authentic self-assessment during the inquiry (Carroll et al, 2010). As such, taking action can occur in two ways. First, action in CI cycles involves teachers changing their classroom pedagogy to try new approaches and determine their effects. Second, action in CI cycles is also understood as teachers working together to engage in the action of inquiry by researching, analyzing, and consolidating their learning. Often this action involves jointly analyzing student data to determine trends and changes in performance as a result of teacher practice. Further, it involves discussing and learning about participants’ beliefs, pedagogical orientations and practices, the emotional and developmental complexities of students, and the written word of the curriculum document (Nelson & Slavit, 2007). The idea of taking action in CI is explicitly linked to the act of dialogical sharing. The value of any action can be quickly lost if the participants do not commit to the single action of open conversation from the very onset of the inquiry: “All teachers must contribute to deep conversations grounded in a cycle of questioning, reflecting on evidence, and taking action” (Nelson et al., 2010, p. 178).

### *Reflecting*

CI cycles are reliant upon connecting areas for professional learning to personal practice and experiences through a process of initial and ongoing reflection (Bray, 2000; Dyer & Loyte-non, 2012; Ermeling, 2010; Forey, Firkins & Sengupta, 2012; Given et al., 2010; Goodnough, 2005; Greenwood & Levin, 2007; Huffman & Kalnin, 2003; Slavit, Nelson, & Kennedy, 2010; Vineyard, 2010; Windschitl, Thompson, & Braaten, 2011). In this way, reflection characterizes CI



as a socio-personal interpretive process. Reflection can occur at individual (Ontario Literacy and Numeracy Secretariat, 2007a) or at group levels (Greenwood & Levin, 2007), and it is viewed as fundamental to provoking learning that will change practice (Lee, 2009; Nelson & Slavit, 2008; Nelson et al., 2012; Ontario Literacy and Numeracy Secretariat, 2007a, 2010; Ontario Ministry of Education, 2007; Robinson, 2010). Individual reflection can involve review of previously established goals at the end of the process (Emihovich & Battaglia, 2000), or the act of continuous reflection during the CI cycle through the use of a journal or other learning log (Lee, 2009). Large group reflection can be accomplished through the use of facilitated meetings (Lee, 2009) or participant surveys (Tichenor & Heins, 2000). Despite providing tools for reflection, the nature of teacher reflection is ambiguous, as if reflection has universal understanding. For instance, it is common for literature to describe the role of reflection as follows: “Reflection was an ongoing part of the project as we attempted to make sense of the experience and what we were learning” (Goodnough, 2005, p. 90).

In summary, dialogical sharing, taking action, and reflection are not stages unto themselves but, rather, three core components of CI that are inextricably linked by discretely articulated stages. While researchers may differ in opinion as to when a component may dominate the cycle, the frequency with which these components manifest themselves in the literature leads us to believe that effective CI takes place at the nexus of dialogical sharing, taking action, and reflecting.

### *Socio-constructivist Perspective of CI*

Context, negotiated meaning, and shared experience surround many discussions on CI (e.g., Bray, 2000; Butler & Schnellert, 2012; Cunningham, 2011; Donohoo, 2013; Langer et al., 2003; Lee, 2009; Nelson & Slavit, 2008; Robinson, 2010; Wellman & Lipton, 2004). However, these aspects of CI have yet to be fully explored in either research or practice. There is little discussion on the complexities of how these aspects help drive CI. As an interpretive process, CI suggests that teaching and learning contexts, classroom settings, student behaviours, and teacher behaviours provide fertile contexts for shared inquiry into teaching (Butler & Schnellert, 2012). As an inquiry approach, CI frameworks generally consider knowledge not as something that cannot be attained and transmitted, but rather as something that is co-constructed through discussion (dialogic interaction):

*Collaborative inquiry involves a stance of “knowledge negotiation” (Nelson, 2005) among group members. Employing dialogue grounded in shared experiences and a shared focus, group members question ideas, actions, and artifacts; examine varying perspectives and beliefs; and work toward a co-construction of understanding about the focus of their collaborative work. (Nelson et al., 2012, p. 1272)*

Nelson et al. (2012) and Nelson et al. (2010) expressly identify dialogue as the vehicle through which knowledge is negotiated and CI is mobilized. As an operationalizing device within CI, these dialogues help frame teachers as researchers of their own practice as they seek to make meaning out of the experiences within their classrooms (Byrne-Jimenez & Orr, 2007) through interactions with other teachers. When teachers engage in dialogue they create a learning space in which socio-constructed knowledge related to specific contexts of learning can be shared and extended (Hulme, Cracknell, & Owens, 2009). The collaboration process ideally promotes:

*A recognized place, in which professionals [can] 'hang the confusion and chaos' of the workplace for a time while they [think] through their practice (Britzman, 2003); as a navigational space, a platform that allow[s] for travel in between and into different discourse communities and associated professional knowledge; and a conversational space, where the cultural, social, and epistemological change takes place as competing knowledges and discourses are translated, contested, and drawn closer together (Hulme et al., 2009, p. 541)*

The literature suggests that although CI is primarily intended to help teachers answer practical questions. It also seems that CI makes teachers more aware of their approach and orientation toward inquiry and their own philosophical foundations and beliefs about teaching (Hulme et al., 2009). Working from a socio-constructivist perspective, CI calls upon participants to acknowledge the beliefs and structures that shape human understanding (Byrne-Jimenez & Orr, 2007) and to use dialogues to explore the impact of these beliefs as the participants focus discretely on core questions aimed at improving student learning.

While some researchers have begun to link CI to theoretical frameworks for professional learning and cognition (i.e., socio-constructivism), these linkages are rather vague (Cunningham, 2011; Langer et al., 2003; Nelson & Slavit, 2008; Robinson, 2010; Wellman & Lipton, 2004). Moreover, CI processes are asserted without further interrogation or explanation. We agree that these processes are intuitively linked to CI; however, the literature is limited in critical—practical and theoretical—articulations of these processes. Accordingly, our analysis of CI characteristics has found that descriptions of CI processes are primarily practical; however, little systematic and large-scale inquiry has been conducted to evaluate the power of and criteria for these processes.

## Supporting Collaborative Inquiry

A lack of theoretical grounding for CI was also observed in our examination of support structures for CI. Specifically, literature focused on (a) supportive leadership, (b) supportive environmental structures, and (c) supportive practices for engaging in CI initiatives.

### *Supportive Leadership*

Facilitators, school leaders (i.e., principals, vice-principals, school board consultants), and teachers can provide various leadership structures to support CI activities. Leadership amongst these groups can be organized using traditional top-down designs wherein school leaders direct CI processes or can occur through distributed leadership models in which leadership is a shared process (Kennedy, Deuel, Nelson, & Slavit, 2011; Ontario Ministry of Education, 2007, 2010). Therefore, leadership for CI initiatives exists on a spectrum from directed to shared leadership.

**Facilitators.** Different facilitation models enable CI initiatives. These models range from school embedded facilitators to partnerships models between schools and universities or government agencies (e.g., Ministries and states). School/university partnerships are dominant structure that

provide external support to schools interested in CI activities (Emihovich & Battaglia, 2000; Tichenor & Heins, 2000). Through these partnerships, universities often provide facilitators—CI experts that support school leaders and teachers in CI processes (Nelson & Slavit, 2008; Vineyard, 2010). Though external to the school, facilitators are internal to the inquiry process (Nelson & Slavit, 2008). Expert facilitators help structure collaborative inquiries by fostering group participation and learning through modelling the necessary inquiry skills and dispositions (Byrne-Jimenez & Orr, 2007). Due to their dual roles as facilitator and co-inquirer, facilitators must be sensitive to the needs of the participant group so as to help create a safe space in which the group can engage in CI design and implementation (Nelson, Slavit, Perkins, & Hathorn, 2008; Nelson & Slavit, 2007).

Facilitators not only help participants develop meeting agendas and protocols to guide discussions, they help participants find resources and identify student-learning data sources (David, 2009; Ermeling, 2010; Nelson et al., 2012; Nelson & Slavit, 2007). Ultimately, through their work, facilitators aim to encourage participants to develop ownership in the CI process whilst pushing inquiries forward toward the construction of new knowledge (Nelson & Slavit, 2007). For example, over a 14-month period, Ermeling (2010) served the dual roles of facilitator and co-inquirer to a group of high school science teachers who had no previous experience with CI. With Ermeling's support, the group was able to work through the various stages of their CI process: (a) articulating focus of learning, (b) designing learning activities, and (c) reflecting and analyzing learning outcomes.

**School Leaders.** Principals and school/board administration can support CI by becoming active participants in CI processes or by providing the resources needed to support the process. As co-learners, school leaders can learn about the structures of CI and contribute to participant groups' collective understanding of the CI process (Ermeling, 2010; Kennedy et al., 2011; Vineyard, 2010). School leaders are integral to the creation of school cultures that promote CI (Kennedy et al., 2011; Nelson et al., 2012). Through their experience as co-learners in CI processes, leaders are able to attend to the learning needs of teachers through an embedded professional development model where learning is laterally shared (Ermeling, 2010). In addition to being co-learners with teachers, school leaders can provide teachers with time, space, resources, encouragement, and professional development activities to support their CI (Emihovich & Battaglia, 2000; Ermeling, 2010; Slavit et al., 2010). School leaders can also support models of shared decision-making and distributed leadership that promote greater teacher participation in and ownership of CI processes (Given et al., 2010; Robinson, 2010; Slavit et al., 2010).

Slavit et al. (2010) described a three year project, Partnership for Reform in Secondary Science and Mathematics (PRiSSM), designed to develop teachers as leaders of CI activities among mathematics and science teachers in middle and high schools across six districts in southwest Washington. Within this project, school leaders participated in the professional development activities, including summer institutes, which were designed to help develop teachers as leaders. Through these professional development activities, school leaders were introduced to the CI process and given suggestions on how to foster, support and sustain CI activities within their schools.

*Teacher-leaders.* Teacher-leaders are teachers who have been identified as possessing subject/content area expertise and skills and who help co-lead, with external facilitators, CI activities (Nelson & Slavit, 2007, 2008; Vineyard, 2010). Teacher-leaders not only help ensure that work is relevant to group members but they can also help to build rapport between their colleagues and external facilitators by encouraging productive discussions amongst group members (Forey et al., 2012; Kennedy et al., 2011). Encouraging teacher-leaders to become teacher-facilitators not only provides teachers with leadership opportunities (Carroll et al., 2010), but also frees up external facilitators to assist in the development of tools and resources to support CI processes (Forey et al., 2012; Kennedy et al., 2011). While previous research has identified the role of teacher leaders in CI processes, few of these studies actually articulate how teachers become CI leaders or the ways in which these teachers distinguish their leadership from school leaders and external facilitators.

### *Supportive Environmental Structures*

Teachers need a supportive environment in which to conduct their CI work (Butler & Schnellert, 2012; Nelson & Slavit, 2008). A supportive environment can be created by ensuring that there is sufficient time and space to conduct collaborative inquiries (Nelson et al., 2008; Robinson, 2010) and when provisions for collaborative inquiries promote a professional learning culture that values shared learning (Ermeling, 2010; Kennedy et al., 2011; Robinson, 2010).

*Time and Space.* Time and space are needed not only for teachers to meet as a group to discuss their ongoing work but also to analyze student work related to their focus of inquiry (Given et al., 2010; Robinson, 2010). School leaders can support teachers by ensuring that the school schedule includes provisions for specific time dedicated to CI (Nelson & Slavit, 2008). Nelson and Slavit (2008) reported that within the Partnership for Reform in Secondary Science and Mathematics (PRiSSM) project, school leaders recognized that time was a key factor to supporting CI processes, especially as CI activities were teacher-led. Consequently, release time was provided to teachers for planning and delivering activities that worked within the school master schedule. In addition, provisions were established that allowed teachers to participate in CI activities, which included peer observation time and early release time for collaborative learning sessions.

*Culture.* Ensuring the provision of time, space, and resources needed for CI is challenging if the school culture does not support collaborative professional learning models (Ermeling, 2010). In CI literature, school culture typically refers to the dispositions, commitment, and view toward professional inquiry and teacher collaboration. When school leaders foster school cultures that support CI, members of school communities become more dedicated to continuous improvement of teaching and learning (Kennedy et al., 2011). School leaders can support CI initiatives by fostering a central vision of student learning and encouraging teachers to engage in school goal-setting processes so that teachers' CI work better aligns with school improvement goals (Robinson, 2010). Robinson (2010) reported on a CI project that was rolled out in New York City schools between 2009 and 2010. Through a purposeful sample of thirteen schools involved in the project, Robinson found that in schools that had cultures that supported CI, school leaders actively shared CI leadership duties with teachers. This form of distributed leadership led to positive and productive relationships between teachers and school leaders and also produced teachers who were more engaged in CI processes.

*Supportive Practices.* The final support structure relates to specific practices that enable CI. These practices involve: (a) using existing teacher groups to facilitate CI group membership, (b) promoting collegial dialogue among members of a collaborative group, and (c) generating and using tools such as protocols and norms to support and guide group discussions and inquiry (Kennedy et al., 2011; Nelson et al., 2010; Nelson & Slavit, 2008; Robinson, 2010). Combined, these practices are viewed as foundational to initiating and sustaining CI initiatives.

*Group Membership.* Researchers and facilitators have found that there is a great likelihood of success when CI groups are formed with teachers who have previously shared professional learning experiences (Nelson & Slavit, 2007; Robinson, 2010). These pre-existing teacher groups may have already developed a sense of professional trust that will help to foster an environment that allows open communication within a previously negotiated structure for group work (Nelson, 2009). Existing teacher groups can be sourced from teachers who teach within the same discipline or who work in job-alike roles (e.g. special education teachers) (Nelson, 2009; Slavit et al., 2010). Within these groups, collaboration may be more easily supported because group members share common interests, which focus CI questions that will help all members of the inquiry group (Ermeling, 2010). For example, Robinson (2010) found that when school leaders used existing teacher groups to develop collaborative inquiries, teachers in these groups reported “feeling invested in the productivity of the inquiry team because their insights enhanced both student learning and teacher professional knowledge” (p. 35).

*Collegial Dialogue.* Collegial dialogue involves teachers taking a conversational shift from purely sharing information to actively inquiring, critiquing, and engaging in each other’s learning and work (Nelson et al., 2010; Nelson, 2009). Through the PRiSSM project, Nelson et al. (2012) developed a conceptual framework to guide analyses of teachers’ actions and interactions during CI processes. In their framework, the nature of teachers’ dialogue can take on four stances: (a) disconnected talk, (b) connected talk, (c) exploratory talk, and (d) inquiry-based talk (i.e. collegial dialogue). Teachers who engage in collegial dialogue “build on other’s ideas within and across meetings to pursue common meaning-making” (Nelson et al., 2012, p. 24). By actively adopting a collegial dialogue stance, teachers learn to probe their understandings of teaching and learning to support collaborative inquiries that ultimately improve student learning (Nelson et al., 2010).

## *Norms, Protocols, and Resources*

Within a CI team, collegial dialogue can be structured and supported through the use of various tools such as norms and protocols (Nelson et al., 2008). These tools, coupled with resources such as facilitators and research-informed materials can be used to increase teachers’ awareness of research-informed materials, data analysis methods and sources of student learning data that they can use to support their CI work (Butler & Schnellert, 2012; Nelson & Slavit, 2008).

*Norms*, on the other hand, serve as guidelines for CI processes (David, 2009; Given et al., 2010). Protocols help to: (a) provide structure for group inquiry work, (b) establish common processes and shared language for inquiry, (c) nurture inquiry skills and reflection, and (d) focus discussions during meetings (Ermeling, 2010). Protocols can be used to promote collegial dialogue by building in practices that encourage group members to elicit ideas and feedback from one another (Nelson et al., 2010). Ermeling (2010) found protocols particularly important in his work as a facilitator



of CI; these not only served as guides for his own work, they helped inform direct teacher-leaders who would become facilitators. For example, one norm for CI might relate to teachers not using evaluative language when judging each other's performance. Protocols may involve specified processes and procedures for engaging in professional learning tasks (e.g., an instructional rounds approach, co-planning, co-data analysis). Ermeling found that in order for teacher-leaders to take over facilitation, they needed protocols that would help them scaffold each stage of the CI process, from identifying and defining a problem through to planning instructional solutions (Ermeling, 2010).

*Resources* refer to the various sources of student data available to support CI work (David, 2009). Potential sources of student data include student work, interviews, questionnaires, checklists, portfolios, classroom observations and standardized test data (David, 2009; Ermeling, 2010; Nelson & Slavit, 2007). The choice and utility of these various resources depends on the question to be answered by CI process and whether the resources are accessible to teachers during their inquiry work (Slavit, Kennedy, Lean, Nelson, & Deuel, 2011).

## Benefits of Collaborative Inquiry

Previous research has demonstrated significant benefits of CI for teachers, students, and schools. By engaging in CI, teachers gain professional knowledge and expertise that helps develop new professional practice and ideas that promote educational improvement and change at both student and school levels (Byrne-Jimenez & Orr, 2007) urban school districts. They examine how to develop and manage collaborative inquiry with principals, the facilitator's role in guiding inquiry, and outcomes that can be expected. Featuring a user-friendly presentation with practical examples, the book: (1. Specifically, benefits have been identified for (a) teachers, (b) students, and (c) schools. However, across the CI literature, these benefits are largely unsubstantiated with empirical data but rather supported with anecdotal evidence. This suggests that any future look at outcomes for CI should involve both the collection of student work that is offered as evidence of improvements in learning and achievement as well as an independent analysis of these artifacts for the complexity of learning that might be present.

## Teachers

Three core benefits were observed for teachers who participate in collaborative inquiries: (a) development of content and pedagogical knowledge and skills to enhance teaching and student learning, (b) development of a learning community amongst teachers, and (c) opportunities for teacher leadership (Galligan, 2011; Nelson, 2009; Robinson, 2010). Galligan (2011) examined how a school-wide CI initiative impacted teachers' development of content and pedagogical knowledge and skills to enhance teaching and student learning. The initiative was started in 2008 to address the school's poor writing achievement on state standard examinations. It included twenty-six teachers who taught writing in the school across the K-8 grade levels. A subset of these teachers was also trained to be facilitators for the various job-alike teams that were formed (i.e., teachers who taught in the same grade level were grouped together).

Focus group and one-on-one interviews were conducted with all participating teachers to examine the impact of the initiative on teaching and student learning. Findings indicated that through participation in the collaborative initiative, teachers: (a) learned better ways of teaching, (b) learned about a variety of tools for teaching, (c) developed greater awareness of instructional practices, and (d) developed effective teaching practices. For example, through the initiative teachers' understanding of writing instruction increased and the feedback provided during the process helped teachers identify specific strategies, such as expanded assessments, that they could adopt in their classes (Galligan, 2011).

Nelson (2009) examined the development of CI learning communities amongst teachers from Washington school districts who participated in a CI project, Partnership for Reform in Secondary Science and Mathematics (PRiSSM). Three CI teams from two middle-sized school districts and one small/rural district were selected for in-depth analysis. Qualitative data for this study were collected from team meetings and classroom observations. The level of development of each learning community was examined along four dimensions: (a) teachers' collective orientation as learners or experts, (b) teachers' dialogic stance as questioning or sharing, (c) teachers' collective actions, and (d) teachers' development of a common vision associated with their inquiry focus (Nelson, 2009).

The CI team in the first middle-sized school district consisted of four ninth-grade physical science teachers. In the second middle-sized school district, the team consisted of six science teachers from two middle schools in the district. Finally, in the small district, the team consisted of eight mathematics and science teachers who taught across grades 6 to 12. The learning communities formed by teams in two of the schools districts—the first middle-sized district and the small district—were poorly developed, while the learning community developed by the team in the second middle school district was well developed. Within the well-developed learning community, the team's collective orientation was that of learners actively engaged in the CI process. Teachers in this team shared their experiences and collaborated to examine student data and make instructional decisions. The team adopted an iterative process, examining student data multiple times, to examine the impact of their instructional decisions. Within this well developed learning community, teachers also developed a shared vision of student learning in relation to specific science-learning goals.

Robinson (2010) highlighted various opportunities for teacher leadership that arose from a CI project that was implemented in New York City schools in starting in 2008. Using data from the 2009-10 school year, Robinson's report focused on the results from a representative sample of thirteen schools at various stages of implementation: five had reached an advanced stage of inquiry (at least 90% of teacher participation in CI); four had reached an emerging stage of inquiry (less than 90% of teachers participating in CI); and four were at the beginning stage of inquiry (low numbers of teachers participating in CI. Interviews were conducted with teachers from across all thirteen schools). Teachers who were actively involved in the CI process associated their engagement in the project to various teacher leadership opportunities. Teacher leadership included opportunities to: (a) develop collective knowledge of current and effective classroom practices, (b) facilitate the learning process of inquiry teams, and (c) advance school improvement goals (Robinson, 2010). The impact of CI on teachers' leadership opportunities within this project is best summarized in the following quote from a participating teacher:

*I think teachers are taking more of an active leadership role through inquiry. They are speaking up about problems that they see with their students and asking others about how to solve some of these problems. Other teachers then can step up and suggest solutions. So those teachers are taking leadership roles too. (Robinson, 2010, p. 24)*

## Students

A primary goal of CI is to improve student learning and achievement. Although this goal is recognised throughout the literature, only two articles within the scoping review literature provided empirical evidence of the impact CI on student learning (e.g. Clauset & Murphy, 2012; Galligan, 2011).

During the 2010-11 school year, Clauset and Murphy (2012) examined the impact of Whole-Faculty Study Groups, a CI design, which was implemented in a number of schools in the United States starting in 1992. In one case, a principal from an Illinois middle school described how the CI team focused on 13 adolescent readers who did not meet or exceed state learning standard for English language arts. Through the various instructional interventions that stemmed from the team's work, 75% of the adolescents increased their reading level, 93% were able to score higher in fluency on their next round of benchmark exams, and 43% met or exceeded their expected progress. In another case that represented the impact of CI on a district-wide level, all K-12 teachers in a Nebraska school district participated in Whole-Faculty Teacher Study Groups from 2007 - 2010. Due to the inquiry work done by these teachers, by 2010, across all grade levels, the percentage of students meeting and exceeding state standards was higher than those from other school districts in the state.

Galligan (2011) described how a school-wide CI initiative had an impact upon student writing achievement at a large, ethnically diverse Arizona elementary school. The initiative was started in 2008 to address the school's poor writing achievement on state standard examinations. Interventions stemming from the teachers' inquiry work ran from 2008-2010. During this period, school level writing data was collected from a random sample of 83 students that represented all grade levels. In comparing students' average pre-writing versus post-writing intervention scores (57.87% versus 80.84%), a substantial improvement in student writing achievement was evident. This improvement in student learning was also evidenced in state standard examination results wherein the percentage of students exceeding state standards continued to increase from year to year (Galligan, 2011).

## Schools

In addition to improved classroom teaching and learning, the reported benefits of CI for schools include: (a) greater curriculum alignment within & across grade levels, (b) introduction of new ideas that can be incorporated into school improvement goals, (c) professional development targeted to teachers' needs, (d) shifts to collaborative school cultures that can support inquiry into student success, and (e) access to universities as sources of knowledge and information (Forey et al., 2012; Langer et al., 2003; Nelson, 2009). Although various articles provided lists of potential benefits of CI over time, only one article within the scoping review literature provided empirical evidence of the impact of CI on a school community (Forey et al., 2012).



Forey et al. (2012) describe the evaluation of a CI project that involved the development of a writing pedagogy to help increase the writing skills of students with learning disabilities in a special-needs school in Hong Kong. The project, a school-university collaboration, involved diverse stakeholders: the school principal, teachers, students, parents and university-based researchers/facilitators. For this project, the principal indicated that raising students' interest and motivation with respect to learning English was more important than increased examination results. Findings from interviews with the various stakeholders showed that as a result of this inquiry project, student interest and motivation to learn English increased. Other benefits of this CI project included: (a) future access to a university as a source of knowledge and information, (b) an increased range of ideas to support school programmes, and (c) increased teacher involvement in mandatory in-service training – the hours spent on CI work counted towards teachers' professional development hours.

## Challenges of CI

For CI to effectively create change in educator thinking and practice, educators need to *buy-in* to the inquiry process and fully participate in dialogical sharing, taking action, and reflection. When educators 'buy-in', they are more empowered to create change (Nelson & Slavit, 2008) and engage in a process of *re-culturing* within a school (Nelson et al., 2008). Nelson and Slavit (2008, p. 102) recognize that "reculturing can only occur if teachers feel empowered to see beyond their immediate responsibilities and have the confidence and ability to attempt to influence, and not just be influenced by, the various forces that shape their immediate work and development." Therefore, challenges associated with CI limit teacher buy-in and empowerment. Specifically, we have identified the following themes that depict core challenges to effective CI: (a) buying into the culture of CI, (b) leadership, (c) temporal constraints, and (d) data literacy.

### *Buying Into the Culture of CI*

Given the recognition that CI involves a culture built on shared values of inquiry (Bray, 2000; Clauset & Murphy, 2012; Forey et al., 2012; Hord, Roussin, & Sommers, 2010; Langer et al., 2003), researchers have acknowledged that successful engagement in CI is dependent upon 'buying in' to that culture of inquiry. In analyzing three explicit CI frameworks (i.e., Forey et al., 2012; Hord et al., 2010; Langer, et al., 2003), there is a clear emphasis on fostering and maintaining a positive peer-to-peer learning culture that involves negotiating purposes, values, and goals for the CI.

In their CI cycle, Nelson et al. (2008) identify the first step of CI as determining the goals and values of the inquiry: "Only through frank discussion of shared values will the nature of the work in CI shift from the individual to the group, and only then is there true collaborative commitment to improving students learning" (Emihovich & Battaglia, 2000, p. 235). Developing a shared understanding of the goals and values for the inquiry takes time and is challenging because in CI learning may require participants to adopt values and practices that move them out of their comfort zone and create tensions amongst group members (Given et al., 2010). As recognized by Nelson et al. (2008), however, engaging in a CI where the values are not agreed upon can effectively turn a

group of teachers engaging in CI into a group of teachers working just to get the job done. Hence, in order for effective CI to occur, teachers need to engage in negotiating goals and values for the inquiry and buy into a shared learning culture.

## *Leadership*

Hord et al. (2010, p. 155-56) identified several “enemies of learning” that may surface during collaborative inquiries that range from “our inability to admit we don’t know” to “ignoring the body as dimension of learning.” Hord et al., assert that it is the responsibility of all group members to be conscious of these enemies of learning; however, it is the primary responsibility of the leader to facilitate resolutions surrounding these debilitating behaviours. Clauset and Murphy (2012) suggest that leading an inquiry group is very similar to gardening: it takes care and constant attention if you want results (p. 32). Emihovich and Battaglia (2000) aptly point out that as models of professional development change so too is there a need for change in the style of leadership. Participants in CI repeatedly acknowledge that the leader needs to also be a participant in learning (Burley & Pomphrey, 2011; Clauset & Murphy, 2012; Emihovich & Battaglia, 2000). In the literature, there is significant research to identify a clear correlation between successful CI and leadership training (David, 2006; Ermeling, 2010; Galligan 2011; Given et al., 2010; von Gnetchen 2011). In his research on tracing the effects of inquiry on classroom practice, Ermeling (2010) specifically noted that:

*Having a trained leader dedicated to the work of guiding the process, moderating discussion, probing for deeper understanding, and providing a balance of support and pressure, helped create a safe and productive environment where participants could focus on the work of improving instruction. (p. 386)*

As schools begin to engage in developing a culture of CI, they will likely have to re-examine their understanding of leadership within their school culture. In their study on creating cultures for CI, Emihovich and Battaglia (2000) draw upon five years of joint research to formulate an understanding of how the very nature of leadership changes in collaborative environments. Those moving forward along a collaborative path will ask:

*How might school leaders support and also engage in CI as authentic members of the school learning community? What policies need to be altered or added to implement a model of CI, and how might educational leadership programs prepare future leaders to renegotiate their roles to enter into this new culture? (Emihovich & Battaglia, 2000, p. 228)*

## *Temporal Constraints*

Protecting sanctioned time for participation in CI has been consistently identified in the literature as a fundamental element of enabling effective CI work (Slavit et al., 2011). It is the responsibility of teachers and school leaders to find adequate time through purposeful timetabling, fiscal resources,

and teacher coverage (Robinson et al., 2010). Time is viewed as fundamental for three reasons: First, CI requires trust amongst participants. Trust is built over time (David 2008; Given et al., 2010; Nelson et al., 2010; Nelson & Slavit, 2007). Building trust through negotiating values and goals is slow process. This slow start should not be construed as detrimental to the process of CI, but as crucial in developing the best possible understanding of the classroom as a lived experience (Laverty, 2008). Little progress will occur until the CI group begins to feel as if they have created their own professional community (Nelson & Slavit, 2007).

Second, teachers engage in learning on two levels. Not only are teachers learning about their questions of inquiry, they are also learning how to effectively use the CI cycle (Kennedy et al., 2011). To assume that learning is only happening around the question of inquiry and to allot time accordingly could drastically reduce the richness of learning that could potentially occur. As a framework for inquiry CI has many challenges and it is important for teachers to be given the time to negotiate those challenges. Lastly, for the very reason that CI is a time-intensive process, when teachers are not given enough time, or feel the stress of time, the first thing that will be dropped in an attempt to move forward at a quicker pace will be “the collaborative dimension of inquiry” (Robinson et al., 2010, p.38).

### *Data Literacy*

Across CI initiatives, using student data to formulate inquiry questions and guide teacher learning is fundamental to the CI process (Huffman & Kalnin, 2003; Kennedy et al., 2011, Robinson et al., 2010; Vineyard, 2010; Wellman & Lipton, 2004). However, an unspoken assumption in the literature is that teachers are fluent in effective data collection and analysis. Primary concerns surrounding teachers’ use of data manifest themselves around the accurate analysis of data, and the use data to engage in meaningful classroom change (Nelson et al., 2008). Currently, there is a dearth of research studies on the effectiveness with which teachers, independent of collaborators trained in the use of data, can analyze data, and use findings to change classroom practices. In looking at how to best support collaboration in middle school mathematics, Nelson et al., (2011), noted that it was not until the end of the third year of working together that teachers were able to understand and use effective data collection and analysis techniques in a way that supported the desired form of socio-constructed knowledge associated with CI. Kennedy et al., (2011) asserted that knowledge of collecting and analyzing data is as critical as knowledge of subject matter and pedagogical skill, if teachers are to be truly effective in conducting CI.

We have identified four dominant challenges that crosscut the literature on CI. To suggest, however, that there are only four challenges would be a misrepresentation of the complexity of CI. Local challenges arise in response to contextual constraints and conditions. To that end CI participants need to be sensitive to the contexts in which they are practicing, with a willingness to anticipate and work through any divergence in ideas and values likely to arise. Evident enablers for addressing local challenges include: (a) strong leadership that supports the reculturing of the norm, (b) time and resources for teachers to build a culture of shared inquiry, and (c) foundational knowledge and skills to interpret and use resources and data that support teacher learning.

## Directions for Future Research

Since 2000, CI has emerged as a dominant structure for educator professional learning throughout North America and other parts of the world (Cordingley, Bell, Thomason, & Firth, 2005; Nelson & Slavit, 2008). Overall, CI is viewed as a learning structure that not only provokes inquiry into teaching effectiveness but also supports the development of cultures of inquiry within and across educator groups (teachers, principals, school-board administrators, university and government partners). Our review of CI literature found that the majority of texts and research in this field are highly practical, describing CI steps or case study examples. Accordingly, current literature serves a how to function; however, CI frameworks and steps generally lack a robust empirical basis or theoretical framework linked to social cognition and educator professional learning (i.e., how professional learning happens and what it looks like when it is happening).

As a result of our scoping review, we have identified the following areas to target in future CI research: (a) clarifying the focus of CI initiatives, (b) articulating what ‘inquiry’ means in CI, and (c) sustaining CI within the profession of teaching. Our intention in identifying these areas is to encourage research that goes beyond practical descriptions of CI and that results in an articulated theoretically and empirically supported framework for CI as contemporary professional learning structure for educators. As such, approaching these areas from diverse methodological stances (i.e., conceptual, case studies, large-scale implementation studies) will provoke a robust body of research that develops the CI framework as a more general structure for learning.

### *Clarifying the Focus of CI Initiatives*

Previous research has largely articulated that the focus of CI initiatives should be on enhancing student learning. While we do not contest this focus, we do see significant room for additional purposes related to CI inquiry. In particular, examining the intersections of CI initiatives with broader professional learning aims such as developing reflective practitioners, supporting the emergence of professional learning cultures, and enhancing teacher learning capabilities, will encourage a broader articulation of potential purposes and foci for CI initiatives. In articulating these purposes, there may be value in drawing on ancillary professional learning frameworks related to adult learning theory (e.g., Cranton, 1994; Meziro, 2000) and socio-constructivist learning, action learning, and reflective practice (Aubusson, Steele, Dinham, & Brady, 2007; Ghaye, 2011; McKernan, 1996; Schön, 1987) to provide substantive theoretical foundations for CI initiatives. Further to exploring broader purposes for CI initiatives, there is also a need to better understand the limitations of this inquiry and foci that would not be well served through this form of inquiry. At present, the CI literatures lacks clarity in articulating aspects of professional practice that may not benefit from a CI approach. Accordingly future research on the foci of CI initiatives should respond to the question: How do educators and educational researchers frame and develop inquiry questions that matter?

## Articulating What ‘Inquiry’ Means in CI

We know now that in implementing all programs, great deviations in predicted direction can occur from the smallest of initial and subsequent actions (Lorenz, 1969). In each school context, CI will be shaped by the starting points of participants (i.e., who they are; as well as their needs, motivations, and values) and the unique social, administrative, and learning conditions that typically shape daily ‘on-the-fly’ decisions. For these reasons, what has initially been learned about conducting CI is both descriptively rich and contextually dependent. However, one aspect of the CI literature without much attention is the articulation of what ‘inquiry’ means for CI participants and how it is different from ‘research’ or ‘evaluation’. Moreover, there is a need to interrogate the value and end-point of inquiry. For example, do CI participants engage in inquiry to arrive at a general truth about their teaching, or do they engage in inquiry because it provokes a stance of reflection and supports continued professional learning into their practice?

In response to these questions, it may be useful to look at previous results from CI inquiries. Typically, CI projects result in having participants report on their CI experience through narrative accounts that support individual and collaborative reflective practice about how student learning occurs *in that context*. Future research, however, would be wise to ask, what does it mean for educators to engage in CI and what are the enduring effects of this practice? More specifically, why do educators volunteer, how do participants go about learning, how do different roles and responsibilities shape this learning, and what kind of evidence do participants use to authenticate their learning. These questions are concerned less with the potential value of the structures and activities of CI. The goal of answering these questions is not a drive for widespread implementation of CI or for isolating ‘best practices’. Rather these questions focus on the way, both as individuals and as members of a working group, participants come to know they are learning through the inquiry and how they make judgments about whether they are engaging in authentic and influential CI. A rich description and credible analysis of a wide variety of CI experiences, guided by multiple case study methods (Stake, 2006), needs to anchor an investigation of this type. With this foundation, it may be possible to more accurately differentiate the kinds of CI processes worth supporting and the types of professional outcomes they might yield.

## Sustaining CI within the Profession of Teaching

If an aim of CI inquiry is to build teacher capacity for continued professional inquiry and support the development of professional learning cultures, then research is required on the structures and mechanisms for sustaining CI learning. Our analysis suggests that existing research has begun to identify systemic challenges to CI initiatives but has yet to provide substantial evidence on the ways to maintain and develop CI as a pervasive professional learning approach within schools and school district cultures. Few studies have explored the benefits of large-scale (i.e., district, province, or state) CI initiatives and still fewer the enduring impact of CI initiatives on the cultivation of professional learning cultures. In particular, there is a need to understand the ways that systems can leverage their resources and prioritize structures to surmount the identified challenges facing CI learning (i.e., cultural buy in, leadership, temporal constraints, and data literacy). Accordingly,

a target area for future CI research is on responding to the question: How can CI become a systemic process for educator learning that contributes to the development of professional cultures of inquiry in classrooms, schools, and districts?

## Conclusion

At present, there is some evidence to suggest CI as a positive structure for teacher learning (Clauset & Murphy, 2012; Forey et al., 2012; Galligan, 2011; Langer et al., 2003; Nelson, 2009; Robinson, 2010). However, research has also identified notable challenges related to both the practicalities of engaging in CI learning as well as its theoretical foundations. As an emerging learning structure for educators, our aim is to support practitioner efforts at CI through continued research and more robust articulations of CI processes, practices, and foundations. This scoping review provides a basis for this research by not only analyzing existing resources and previous studies but also suggesting targeted areas for future research.

## Evaluation Phase 2: Document Analysis of CI Policies

### Introduction

Phase 2 involved a document analysis of the publicly available documents on Collaborative Inquiry (CI) in an effort to better understand the documentary nature of the scope of dissemination of CI in the province. Two guiding questions provided the focus for the analysis: 1) *What is the document base that is used to promote and guide work in CI?* and 2) *What is being said in these documents, and how?* Both questions were formulated with the intent to address concepts such as the spread, consistency, agreement, change, development, and use of the documents. The inclusion of a document analysis as one part of the overall evaluation of CI was intended as a method of supplementary data analysis. It was conducted separately from other components (e.g., focus groups, case studies, surveys) and any themes or findings from the document analysis emerged solely from the documents. Hence findings from this document analysis supplement the data obtained from the other evaluation phases.

We begin by reviewing, in detail, the process we followed to select, analyze, and evaluate the documents. Second, we enumerate the themes and findings that surfaced in our analysis, and how they came together. Third, we discuss three exemplars (“case studies”) from the documents we analyzed, in order to provide a clearer sense of how school boards in the province are documenting their experiences with CI. Finally, we offer our thoughts on the questions, unknowns, challenges, and tensions we are left with after our review of these documents.

### Methodology

To conduct this phase of the evaluation, document analysis was used as a qualitative research method of data collection and analysis (Atkinson & Coffey, 1997; Berg, 2007; Bowen, 2009; Hodder, 2000; Prior, 2003). Although often neglected in methodological research, unobtrusive research methods, of which document analysis is but one example, are increasingly recognized as a particularly interesting and innovative strategy for collecting and assessing data (Berg, 2007). Document analysis is a systematic procedure for reviewing and evaluating documents that entails finding, selecting, appraising (making sense of), and synthesizing data contained within them (Bowen, 2009). Like other qualitative research methods, document analysis requires data to be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge. In addition, documents can be publicly available, cost effective to collect, and suitable for multiple reviews (Bowen, 2009). Based on classic and recent methodological sources on content analysis of documents (Krippendorff, 1980; Lombard, Snyder-Duch, & Bracken, 2010; Mayring, 2000; Neuendorf, 2002; Salminen, Kauppinen, & Lehtovaara, 1997), a rigorous set of steps (domain definition, category construction, sampling, data collection, data analysis, and interpretation) was developed for conducting analysis.



## Data Collection and Analysis

Documents used for evaluation often fall within two broader categories: informal and formal (McMillan & Schumacher, 2010). Informal documents, such as memos, drafts, or proposals, provide an internal perspective of the institution or organization, by describing its functions, norms, values, and understandings. Documents of external communication, such as newsletters, publications, and public statements, represent the official perspective on a topic, issue, or process. Policy documents are typically characterized as documents of external communication while the responses to formal policies by various stakeholders are more aptly characterized as informal documents. The publicly available formal and informal documents were collected and analyzed in a complementary fashion in this study.

Considering the methodological advantages and limitations of document analysis (Bowen, 2009; Caulley, 1983), data analysis was determined by both the research objectives (deductive) and multiple readings and interpretations of the data from the documents (inductive). Given the multitude and variety of documents, thorough reviews were the first step in the analysis. Some documents, although originally selected given their content, title, or possible link, were not appropriate to the inquiry. As a team of individuals analyzing the content of a large number of documents, we followed the guidelines for assessing and reporting inter-coder reliability in content analysis studies (Lombard et al., 2010).

### *Research Sample*

The process undertaken to collect a representative sample of documents on CI was done as systematically as possible in an attempt to accurately portray the types of documents available as well as the ways that CI was discussed across them. The sample focused solely on the English sources of data, and thus does not include French language documents. Our initial search focused on documents that are available to the public and that are readily available online. The inclusion criteria for documents were fairly broad; to be included, documents must either mention CI specifically or must be on the subject of CI. We expected that documents involving professional learning (e.g., PLCs), teachers looking at student work/data, and the professional/teacher aspects of CI were all likely candidates for inclusion.

The initial document search focused on high-level documents. Simultaneously two searchers for relevant documents were undertaken; the first examined the website of the Ontario Ministry of Education, whilst the latter explored the websites of all Anglophone District School Boards. The latter search concentrated on the various Board Improvement Plans for Student Achievement (BIPSAs) published by each District. Before began the respective searches, a list comprising seven specific search terms was developed. These terms served as heuristics to uncover all relevant documents from these two sources. The search terms are as follows: “collaborative inquiry,” collaborative inquiry, CI, C.I., inquiry, “collaborative learning,” and “inquiry learning.”

*Ontario Ministry of Education Documents.* The searches were completed in the following order: “collaborative inquiry,” collaborative inquiry, CI, C.I., “collaborative learning,” and “inquiry learning.” The details of each search are found in Table 1. Note that the maximum



number of hits for any one search on the Ministry’s website was 50 (this was tested by searching for “education” and “school,” each of which returned 50 hits). Although this aspect of the site’s search capabilities is limiting, recall that we were attempting to analyze only a representative sample of documents, not an exhaustive list. Based on the hits from the first two searches, there appeared to be no difference between search strings that used quotations and those that did not (i.e., between “collaborative inquiry” and collaborative inquiry); thus, the final two search strings (“collaborative learning” and “inquiry learning”) were only included as search terms with quotations.

*Table 1: Search results based on the various search strings.*

| Search String            | Total Results | Discrete Results |
|--------------------------|---------------|------------------|
| collaborative inquiry    | 50            | 50               |
| “collaborative inquiry”  | 50            | 0                |
| CI                       | 50            | 1                |
| C.I.                     | 45            | 1                |
| inquiry                  | 50            | 16               |
| “collaborative learning” | 50            | 0                |
| “inquiry learning”       | 50            | 10               |

The initial search results created a basis by which to compare every subsequent search string’s hits; duplicates were discarded (see “discrete results” column in Table 1 for the number of additional sites found by each search string). Some of the searches brought up a number of irrelevant sites (e.g., searching for “CI” triggered references to Collegiate Institute, ci-dessous, and community involvement; “inquiry learning” raised many references to Full Day Kindergarten documents), while others made productive additions to our document list. These searches, however, were not sufficient to determine the documents that would be included in the analysis phase; further examination of their content was necessary.

The full list of potentially appropriate documents from the Ministry website ( $n = 76$ ) was entered into an Excel spreadsheet and organized into tiers based on relevance to our guiding questions (see Table 2). Documents’ categorization into one of the three tiers (22 Tier 1, 28 Tier 2, and 26 Tier 3) would determine the degree to which it would be read and analyzed as the document analysis moved forward. This initial categorization was made without focused attention to the content of the documents. Next, we skimmed all documents in Tiers 1, 2, and 3 to confirm their categorization and inclusion. Following this step, 18 Tier 1 documents and 20 Tier 2 documents remained, while 12 documents were downgraded to Tier 3 for a total of 38 documents.

Table 2: Description of tiers into which documents (n=76) were organized.

| Tier | N      | Definition  | Next Steps   |
|------|--------|---|--|
| 1    | n = 18 | Explicitly mentions collaborative inquiry or is on the subject of CI. Explicit in its dealings with CI, and contributes directly to our research questions. | Entire document will be read deeply and analyzed.  |
| 2    | n = 20 | Does not deal directly with CI as its main focus, but makes mention of it. Supporting documents to Tier 1.  | Only the portion that mentions CI, as well as a brief context, will be read deeply and analyzed. |
| 3    | n = 38 | Surfaced in search but are not actually about collaborative inquiry; instead, may simply mention it in passing.   | Skim if needs be; do not read deeply or analyze.   |

Informally, Tier 2 was also amended to include an “upper Tier 2” categorization for those Tier 2 documents that felt especially relevant as supporting documents (n = 5). Thus 38 documents from the online search of the Ministry of Education’s website were slated for analysis, 18 of which would be included in the deeper analysis.

*Board Improvement Plans for Student Achievement (BIPSAs)*. Because they provide important information about the degree to which CI is discussed in the province and included in official documents, Board Improvement Plans for Student Achievement (BIPSAs) were initially considered Tier 1 documents, even though they did not meet our criteria for this tier (e.g., they may or may not mention CI, and are not strictly on the subject of CI). In the province of Ontario, there are 63 boards: 35 English public, 28 English Catholic. Recall that our searches did not include documents from Francophone boards; the resources available limited our search to English documents. In addition, we did not include hospital-based school authorities. Our search for readily available BIPSAs (that is, available on the school board’s website, searchable using one of three terms: “Board Improvement Plan,” “Board Improvement Plan for Student Achievement,” or “BIPSA”) found 49 documents. If the BIPSA itself was available, that was used; if not, a supporting document (e.g., Strategic Plan) was selected instead.

An Excel spreadsheet was used to organize and code the BIPSAs along several quantitative factors: 1) whether the BIPSA had been made available online, 2) its length (number of pages), 3) its date of publication/relevance, 4) whether or not it mentioned CI and how many times, and 6) any other pertinent details. A selected subset of these results is summarized in Appendix C.

To add meaningfulness to the information above, and to communicate *how* CI was included in BIPSAs, we selected three BIPSAs semi-randomly: one from a large or medium board, one from a public board, and one from a Catholic board. We examined these three in more detail, noting the types of mentions CI received and the context around these mentions. We examined BIPSAs from: Upper Grand District School Board, Huron-Perth Catholic District School Board, and the Toronto District School Board.

Upper Grand DSB's BIPSA was two pages long, spanning 2011-2014. UGDSB mentioned CI only once; on page two, they listed CI under "System Foci (Instruction – Assessment For, As, and Of Learning)" thusly: "*Professional development will support and encourage Capacity Building, Collaborative Inquiry/Planning/Teaching.*"

Huron-Perth CDSB's BIPSA was five pages long, dated December 2012. CI was mentioned 21 times over the five page document: twice under Strategies & Actions, four times under Professional Learning, eight times under Monitoring Implementation, and three times under Monitoring Impact; it was not mentioned in their final category, Evaluation. In addition, at the top of each page, a general Goals/Targets section contained broad IF/THEN statements that were often tied to EQAO targets and board benchmarks; CI was mentioned in these statements four times, once per page/statement. Mentions of CI referred to the creation of a team (teachers, board coordinator, the SWST, and administrators) and to allocation of resources in order to "create a collaborative inquiry community" with "opportunities for co-planning and co-teaching" across subjects. The team's CI process "support[ed] reflection and analysis of the impact of [their] strategies" on student learning.

The Toronto District School Board's BIPSA is dated 2013-2014 and is five pages long. CI was mentioned three times: once under Implementation Strategies ("Professional Learning Teams (PLTs)" are doing "collaborative inquiry in every elementary school and professional learning cycle in every secondary schools [*sic*]") and twice under Monitoring and Tracking, where the board cites the importance of "evidence of consistency of practices and pedagogy related to Collaborative Inquiry/foci/questions/theory of action" at the school level.

*Related Documents on Collaborative Inquiry.* In addition to BIPSAs, online searches of district school board websites produced a variety of relevant board and school documents on CI (n=88). These included board newsletters, news releases, minutes from board and committee meetings, board curriculum or teacher support documents and resources, school newsletters, School Improvement Plans for Student Achievement (SIPSAs), and research papers. The documents were organized into an Excel spreadsheet and categorized as Tier 1 (n=21), Tier 2 (n=40), and Tier 3 (n=23) according to the definitions listed in Table 2. Four of the documents did not meet the criteria and were removed (n=84 total). For a complete list of these documents, see Appendix C. The Tier 1 documents were included for deeper analysis. Further, three "case study" documents from Tier 1 were analyzed in greater detail (see Three Case Studies section below).

It is important to note that not all boards in Ontario even have websites, let alone publish documents related to CI. There is also a huge variance between boards in terms of what is posted publicly and how that information is organized. We have based our analyses on what was readily available online, through our original search criteria and parameters. We did not "dig" further or contact boards directly to obtain additional documents or information.

## Document Analysis Research Findings

Tier 1 documents from the Ministry website search and from the district school board website searches were combined (n=39) for content and thematic analysis. After reviewing a large proportion of these documents, themes began to emerge. In order to organize the work in progress, we decided on a set of six provisional thematic categories, loosely: goals, logistics, evidence, research, mindset, and miscellaneous. After completing our analysis of the Tier 1 documents, these six categories were further refined into five categories; see Table 3 for a listing of the five, including key questions and illustrative examples.

Table 3: Categories for thematic analysis of Tier 1 documents.

| Category   | Key Question                         | Examples   |
|--|--------------------------------------|--|
| <b>Goals of Collaborative Inquiry</b>  | <i>Why CI?</i>                       | STUDENTS<br>Outcomes (academic and engagement); active participant; development of student knowledge, skills, attitudes, behaviours.   |
|  | <i>What do we expect?</i>            | EDUCATORS ( <i>teachers, administrators, ECEs</i> )<br>Teacher as learner; flexible, adaptive teaching; effective questioning; mentorship role; collaboration with colleagues; “deprivatization” of education. |
| <b>Theoretical &amp; Philosophical Underpinnings of CI</b>                     | <i>What is it?</i>                   | Inquiry as a way of thinking & doing; iterative, cyclical, reflective; permeates the curriculum; a way of looking at teaching and learning; a mindset; all are co-learners.                                    |
| <b>Inquiry as Research and Hypothesis Testing</b>                              | <i>What does it mean?</i>            | Teacher as action researcher in the classroom, using the inquiry model; going deeper; questions that beget more questions; strength of combined expertise through collaboration.                               |
| <b>Logistical, Organizational, Structural Issues, &amp; Securing Resources</b> | <i>How will it work?</i>             | People (formation of PLC/inquiry teams; administrative support; membership and representation within/across divisions, schools, and boards) and resources (release time, technology, support).                 |
| <b>Evidence and Use of Data</b>  | <i>How do you know it’s working?</i> | Process, not product; need for a wide variety of evidence; “what student work is telling us,” focus on documentation and formative assessment; impact on goals (teaching, learning) and next steps.            |

## *Goals of Collaborative Inquiry*

First and foremost, a majority of the documents referred to the *Goals of Collaborative Inquiry*, both for educators and for students. The main focus for educators was their changing role, with “teacher as learner.” Documents appeared to emphasize *collaboration* over *inquiry*, encouraging teachers to “becom[e] collaborators and co-learners,” sharing in the ideas and the benefit that comes from the “collective wisdom of the group.” Collaboration is touted as improving not only individual teachers’ practice, but also that of the team of colleagues, and ultimately of the profession. Collaboration “provokes reflection.” The use of “expert knowledge” was also encouraged, whether it came from the team members, the literature, or resources. When teachers look at student work, they are meant to focus on student thinking; and when you are examining their work and their thinking, you do so collaboratively.

The documents speak to a strong connection between educators’ and students’ learning: “both educators and students share the responsibility for learning” and as such are “co-authors of the learning experience.” This shared responsibility promises to allow educators/students to “go deeper” or to “take the learning deeper,” a concept that is never sufficiently defined or explained.

For students, the primary goal of CI began as a goal that was very similar to that of Professional Learning Communities: to “engage in processes of inquiry and learning focused on improving student achievement” with a focus on student data. CI’s goal was to increase student engagement, motivation, and achievement. Emphasis was placed on “21<sup>st</sup> century learning” in an attempt to give students the skills they are seen to need: active learning, creative problem solving, critical thinking and metacognition, communication, collaboration, and the use of technology as a tool. The goal of increasing engagement and achievement quickly expanded – more so as inquiry moved to the student level – to include the “co-construction of knowledge” wherein students are to “construct a shared understanding” as a class in a “personalized, collaborative, inquiry-based learning environment.” The CI model of education is presented as one in which both educators and students are focused on a cycle of continuous, incremental improvement.

## *Theoretical and Philosophical Underpinnings of Collaborative Inquiry*

The common thread across the documents surveyed with respect to the second theme, *Theoretical and Philosophical Underpinnings of CI*, is that of “the cycle of inquiry” (also referred to as “professional learning cycles”). A number of key terms are used again and again to illustrate this: iterative, reciprocal, never finished, reflective, ever-evolving, open-ended, responsive, etc. Establishing a question for inquiry based on a “challenge of practice” (ideally one that has “no easy solution”) is part of the cycle: one document described it as “problem finding and problem solving.” The continuous nature of CI means that the importance of being “flexible and responsive” is frequently included in CI documents; inquiry requires a great deal of flexibility and reflection on the part of the teacher. To support this flexible structure, educators are encouraged to have a “deep knowledge” of the “big ideas” of the curriculum, so that the curriculum can be integrated to support inquiry in the classroom.

## *Inquiry as Research and Hypothesis Testing*

Just as our first category focused on “teacher as learner,” this category involves the “teacher as researcher” component of CI and how the documents describe CI being put into practice. “Education is, in and of itself, inquiry,” states a Ministry document. “Explorations and experiments are a form of research, rooted in the learning experience.” The cycle of inquiry is repeatedly referred to in this way: as research; as purposeful, thoughtful hypothesis testing. Inquiry begins with a problem or question, planned strategies, action, measurement, reflection, and then a return to the beginning with a new or modified question. There is also emphasis on effective questioning practices across the documents, because good questions lead to more and better questions (e.g., higher order questions, deeper and more focused questions).

## *Logistics, Organization, and Structure*

A concern that was raised in the board-level information that was not a major focus of the Ministry-level documents was a concern about the organization and logistics of the people involved in CI. For example: *how* PLCs and inquiry teams were to be formed (e.g., within a grade, within a division, within a family of schools); *how* should CI participants be grouped (e.g., in hubs, networks, families of schools); and aside from teachers, *who* would be part of the team (e.g., LRTs, administrators, board personnel, SAOs, ECEs, outside experts/critical friends). Structural and procedural organization was also a component of the documents. Consistent reminders to be flexible, dynamic, and process-oriented were at odds with concerns over technological support and resource allotment: inquiry benefits from equipment, infrastructure, and release time. Further, the importance of and need for research resources (e.g., Ministry documents, board resources, input from colleagues) is present across the reviewed documents.

## *Evidence and Use of Data*

Our overwhelming sense was that for CI, the focus is on *process*, not *product*. This is evident in several ways. First, both “documentation of student learning” and “pedagogical documentation” describe the importance of broadening the types of measures and methods used to collect evidence about students’ learning, especially when paired with ongoing, specific, and descriptive feedback. The Early Primary Collaborative Inquiry (EPCI) appears to have been particularly influential: use of purposeful and intentional listening, observation, and description replacing the predominance of more traditional paper-and-pencil assessments. Second, the centrality of the IF/THEN statements as a foundation for CI again highlighted the cyclical nature of the inquiry process (i.e., what was planned, whether it was measurable, the outcome, the refinement of the IF/THEN question). Third, mentions of “assessment *for* learning” and “formative assessment” are sprinkled throughout CI documents. The collaborative and reflective aspects of CI were revisited in the examination of evidence and student work as a group with guiding phrases such as *What is the student work telling us?* and *What do we need to do next/differently?* Interestingly, some boards formalized the teacher reflection component of CI with online surveys that they then chose to make available online. The data was collected throughout the inquiry process, and focused on teacher perceptions of CI. One board concluded that participants, at the end of an inquiry, only felt that they were at



an “awareness” stage – however, they were quick to identify next steps. Another board made the realization that they really needed to build teacher efficacy in mathematics.

## Case Studies

The online searches of district school board websites uncovered a number of relevant board and school documents regarding CI. Of the 21 that were included as Tier 1 documents, three were set aside for further examination as exemplars of CI in action in Ontario. (Note that all three focused on the early years, and that two of the three were EPCI projects.) The three documents are: 1) a CI project by Kawartha Pine Ridge District School Board entitled *Assessment for Learning in Full Day Early Learning Kindergarten Classrooms*, 2) an Early Primary CI in the Rainy River District School Board, and 3) an Early Primary inquiry project by the Thames Valley District School Board that focuses on documentation’s influence on student engagement and achievement.

### *KPRDSB: Assessment for learning in full day Kindergarten*

This board CI report begins with an inquiry question: “How does assessment information help us to foster independent and collaborative learners who use feedback to self-assess and set goals?” The team consisted of three teachers and three Early Childhood Educators (ECEs) from two elementary schools, plus two board Instructional Leadership Consultants.

Following a team meeting during which they looked at where they had been and reflected on their next steps, the “team recognized the value of ensuring [that] the theory of action accurately reflected the path they expected to take.” They then refined their theory of action and “distilled [it] into three areas” that made up their “focus of learning”:

1. How can sharing learning goals and success criteria help students to recognize where they are in their learning?
2. How can we design a learning culture that engages educators and students in collaboration while supporting learning and independence?
3. How can we document learning to support student reflection and goal-setting? (p. 1-2)

The team’s observations, reflections and impact on practice were then summarized under three headings.

*Sharing Learning Goals and Success Criteria.* This theme was identified as the team “became much more purposeful about what it was that they were documenting and the learning of the students that they were documenting” as they focused on “process goals,” “knowing the learner,” and “collection of assessment information” (p. 3). “Developing and collecting success criteria over time” allowed teachers to provide “intentional differentiation of student responses,” “increas[e] entry points for students,” “increase[e] engagement and opportunities for success,”

and “allowed for deeper conversations [with students] about their learning” (p. 3). Learning goals “honoured students interests and program expectations” but remained “married to the big ideas of the document;” the team found that “modeling by reflecting on what the [learning] goals meant helped students build a deeper understanding of what learning was occurring” (p. 4). The team felt that when “adults and children are all learners,” and when collaboration showed that “other people [were] learning resources,” students better understood “where they were in their learning” and were better able to be “independent and collaborative learners” (p. 5). The educators created “a culture of learning” by setting up the classroom to “foster conversations” wherein feedback was “descriptive rather than evaluative” and students used their “environment as a tool to foster their learning” (p. 5).

*Designing a Learning Culture.* While the team was gathering evidence, they noted that “it was the process of learning and not the product that they were making the focus of [their] assessment.” Instead of focusing “on the end product,” they saw that “much of the learning happened during the process of its creation” and that it was during the process that “assessment information [was] most impactful in decision-making” (p. 6). The team also employed the “intentional practice of observation” and reflected on “what they noticed and how they might further connect it to children’s interest[s] to provoke... [their] thinking” (p. 6). As noted above, the environment was used as a tool to foster learning: learning materials were made available in the classroom to provide opportunities for students to demonstrate where they were in their learning; pictures and writing all around the classroom and on learning walls were posted, showing learning goals and success criteria; and artifacts that reflected what students were learning. The team felt that the most critical thing that they had done was to “schem[e] time to listen, observe and wonder each week” (p. 6). Another integral part of the project was the use of ongoing, descriptive feedback, focused on learning rather than the end product. “Students were encouraged and questioned about the processes and often challenged to explore further, discover more evidence, and assess their plan of learning; [they] created a language of learning in the class and this language helped to build a common understanding of goals and criteria” (p. 7). The students were “consistently asked where they were in their learning and what they might try next” and received “encouragement to go further or [to] discover a different way to go” (p. 7). The educators continued to model their own thinking (e.g., through think alouds, making errors and questioning them) and asked their students for strategies and ideas to solve their problems. In their learning environment, risk-taking and building trusting relationships was encouraged. Students were encouraged to “see each other as resources for learning” and to use “each other’s strengths and, at times, their areas of need to move their own learning forward” (p. 8). Students effectively played the role of both teacher and learner as they turned to their peers “for guidance and support to enhance their own learning;” this relationship “supported, shared and solidified” students’ learning (p. 8).

*Documenting Learning.* The team asked themselves a number of questions as they considered how to document learning: Who is the documentation for? How might this information be triangulated so the evidence is valid and reliable but accessible quickly? How can I gather evidence in the form of descriptive observations that can be interpreted later in collaboration with my teaching partner to inform next steps? What feedback does the captured learning in the moment provide to us as educators? How could this information explicitly support the student in consolidating learning?



In their focus on documentation, the team felt that “naming the learning” and the timing of the documentation were both important. In order to capture the many ways that learning can make itself known, the team felt that “capturing the moment in a descriptive observation” would best illustrate students’ progress; further, they felt it was important to “collaborate with students to have them name... the learning and... why it is significant” (p. 8). This type of feedback loop is the beginning of a conversation in which educators could “possibly gain further insight into the child’s interpretation of their learning process,” serving “as a guide for next steps, for the students and educators” as well as providing encouragement for both parties to keep trying (p. 9). When assessment is made visible and available to students to support students’ self-assessment and goal-setting, it supports the shift “from the product – learning completed – to instead learning in progress” (p. 10).

The report concludes with some final thoughts on the team’s experiences with Early Primary CI. “What has evolved out of the team’s inquiry question is an increased capacity for reflective observation. The team has emphasized how much they recognize the necessity of preparing for and making time to wonder, question and reflect on what they have seen. ... Descriptive observations that inform assessment help students to self-assess and set goals. ... When [students] are given opportunities to discover, practice and respond to feedback anchored in success criteria, and reflect on and share learning, they [become] active partners in the process of learning” (p. 11).

### *RRDSB: Early Primary Collaborative Inquiry*

This document is linked to Rainy River DSB’s School Support Services. There is a brief description of EPCI and its intention (i.e., to highlight evidence-informed teaching and learning practices that support young learners; to build connections to programming decisions for Early Learning, Grades 1 and 2 and explore the common context between these years; and to provide support for teachers to ‘inquire’ about their teaching and learning practice so that others may learn from their experience). Rainy River became involved with EPCI in 2010 and had expanded from three to six elementary schools (including 16 teachers, 3 Early Childhood Educators and 4 principals). The project’s focus was captured in the main inquiry question (written as an IF/THEN statement): *If students are provided with authentic, meaningful learning opportunities, then student engagement will increase*. However, to support alignment with the Board Improvement Plan for Student Achievement, each individual school inquiry team determined its own inquiry focus within this broader, board-wide inquiry question. Some examples of the IF/THEN statements include:

- “If we provide and share authentic meaningful math learning opportunities (and collaborate with CIL-M teachers), our students and teachers will be more engaged.” (*Robert Moore P.S.*)
- “If students are provided with authentic math experiences, tools and discussion (teacher-student) within play-based centres, then children’s mathematical thinking will improve.” (*J. W. Walker P.S.*)

- “If students are collaboratively engaged in authentic, open-ended centers, then they will extend their thinking/skills to develop deeper understanding.” (*Sturgeon Creek, Nestor Falls School & Sturgeon Creek Alternative Program*)
- “If boys are provided with authentic choices in writing, they will demonstrate increased engagement.” (*Crossroads*)

There was a substantial amount of information available from each of the participating inquiry school teams, so one was selected at random as an exemplar: Sturgeon Creek (and associated schools). The Sturgeon Creek documents are comprised of six parts:

1. The School Inquiry Teams (Presented in video format.)
2. The Planning Map – Each CI team used a planning template that began with the board’s overarching inquiry question. Looking at assessment data for their school, they collaboratively developed a “School Direction/Focus of Inquiry” that aligned with the School Improvement Plan. They then developed a number of “IF/THEN” suppositions that led them to their specific inquiry question. Strategies for achieving the inquiry goal, success criteria, and a rubric to document growth over time were developed. It seems that a number of “marker students” were selected from each classroom, to be observed and tracked more intensely, following the model used by Student Work Study Teachers.
3. Sample Lesson Plan – A generic Valentine’s Day Inquiry Lesson Plan for K-2.
4. Analyzing Student Learning - This form appears to be an educator reflection/summary of their experiences in the EPCI project. It provides a number of questions and “look-fors,” such as: “Describe what the students are doing and learning?” (e.g., asking questions, problem solving while working in inquiry-based learning, sharing with peers); “How do we know what we know?” (e.g., documentation, notes, student work, assessments, observation); “What are the possible reasons that the students responded in the way they did?” (e.g., allowing them to lead, choosing their interests, reluctant vs. dominant children, sufficient time to work through their learning). The team concludes that the project “has made us know our kids so much better” and that they can now “speak about our kids off the cuff without having to look at paper assessments.”
5. Survey Questions for Grade One Teachers – This blank survey is included, although no data is presented. The focus of the survey is on transitioning from Kindergarten to Grade 1 from the perspective of Grade 1 teachers.
6. EPCI Project Overview Chart – A very detailed graphic representation of the board’s EPCI project, depicting the composition of inquiry teams, the overarching board inquiry question, the specific inquiry question for each participating school, “key learnings” in terms of the learning environment, student and teacher, “shifts in practice” (by educators) and “commitment of action” (next steps).

- a. *Key learnings* included the use of open-ended inquiry centres, student thinking being more visible, teachers providing students with more choices, students being encouraged to talk about the learning, teachers encouraging students to learn from one another, and long-range plans shifting according to student interest.
- b. *Shifts in practice* included teachers listening to the voices of students, using varied documentation practices, encouraging self-exploration, providing more opportunity for student sharing, and not being seen as the “knowledge holders.”
- c. *Commitment of action* includes taking an inquiry stance more often, taking the risk to step outside of the box, allowing more time to observe, listening to the students and going with it, and incorporating knowledge building circles.

## TVDSB: Documentation’s Influence on Student Engagement and Achievement (EPCI)

The Thames Valley DSB’s EPCI webpage describes the board project for 2012-13 as “a multidisciplinary team of professionals from the TVDSB engaged in action research related to student oral response.” The inquiry team consisted of 46 members from 6 elementary schools, including Early Years to Grade 2 teachers, ECEs, a speech and language pathologist, reading support teachers, learning support teachers, a child care program coordinator, administrators (principals and vice-principals), a research and assessment associate, a learning coordinator, a learning supervisor, and a superintendent. The team developed an inquiry question “that propelled [their] investigation, focused [their] learning and nudged [their] educators to honestly and openly reflect on their practices to determine the impact on student oral language skills.”

The EPCI site also included many links to supporting documents, such as reports and monographs from previous EPCI projects, slideshows and videos, CI references and web links, teacher surveys and related items. Because the EPCI Project Report monographs from 2010-11 and 2011-12 provide a detailed summary of each project, these were selected for closer analysis.

***EPCI Project Report 2010-11.*** The report begins with the inquiry question for 2010-11: “What is the influence of documentation on student engagement and achievement?” Their focus was on “the use of documentation as a tool for engagement leading to improved student achievement” in Kindergarten, Grade 1, and Grade 2. Team members were said to “embrace” the opportunity to closely examine pedagogical documentation, because “the close examination of documented student work made them aware of their own teaching” (p. 1).

Following a detailed “literature review” that focused on the Ministry’s monograph on *Collaborative Teacher Inquiry* (2010), the use of “pedagogical documentation” in early learning classrooms (e.g., Caldwell, 1997; Dahlberg et al., 2006; Buldu, 2010), and a brief reference to the Reggio Emilia style of pedagogical documentation (Kocher, 2004), the Thames Valley DSB’s report goes on to describe in detail how the project unfolded. Under the *Analyses and Interpretation* section (p. 3), the team discusses some of its key findings (“How do we know if this intervention process

worked?") followed by implications for educator practice, administrator practice, and children's practice, as well as the challenges that the team identified during implementation (p. 4-5). The report concludes with *Future Directions*, outlining a number of next steps, references, and a selection of educator quotes regarding their experiences.

*EPCI Project Report 2011-12*. Building on the previous year's work, the 2011-12 team developed the following inquiry question: "What is the impact of intentional provocations (effective questioning and authentic documentation) on student oral response?"

As with the 2010-11 monograph, this report begins with an extensive summary of the research, beginning with the Ministry's monographs on *Teacher Collaborative Inquiry* (2010), *Effective Questioning* (2011), and *Getting Started with Student Inquiry* (2012). The cycle of inquiry and the need to promote higher levels of thinking and inquiry are then explored. A step-by-step description of the inquiry process is then summarized, based on *Collaborative Inquiry: A Facilitator's Guide* (Learning Forward Ontario, 2011). Under *Analysis and Interpretation* (p. 5-7), the team describes its findings and the practical implications for early educators in terms of improving their teaching practice. Some next steps are then provided for those who had participated directly in the EPCI project, as well as for administrators and others who had not had the opportunity. Finally, a list of references and resources is provided. The TVDSB's EPCI website also included a number of related links:

- *EPCI Educator Surveys* (SurveyMonkey; conducted in November 2012, February 2013, and April 2013). Educators rated the professional development that they had participated in, their knowledge of and involvement in the project, their perceived impact of the project on their teaching and what changes they had made to their teaching practice as a result of the CI project. Anecdotal reflections and comments were also included in an open text field. Participants "reflect[ed] on their journey with EPCI" using prompts such as "My involvement with EPCI has..." and "One question I am left with as the project ends for the school year is..."
- *Visual Art and Oral Language* – Final EPCI Team Reflections, 2012-13
- *Reference List* and related websites
- *Additional EPCI online educator surveys* on Documentation and Effective Questioning
- *A Documentation Task* that includes educators' perceptions and experiences of the impact of photo documentation on their students' oral responses. A graphic summary of their responses is also included.
- *A chart* entitled "Forms of Documentation."

*Board Document Summary.* Based on our scan of the available documents relating to CI, we have come to the conclusion that publicly funded school boards in Ontario have taken very different approaches to implementing CI in elementary schools. The range spans from a) virtually nothing, to b) a few lines referencing the term “collaborative inquiry” or mentioning specific ministry documents or projects (e.g., EPCI, CIL-M) in a BIPSA, to c) a very well thought-out, comprehensive, research-based approach that also documents the goals, strategies, steps taken, observations and findings, challenges that arose, implications for educators and next steps for all stakeholders. This huge spread between boards does not appear to be related to their size or geographical location.

## Document Evaluation

Recall that we had two guiding questions that provided focus for our document analysis: 1) *What is the document base that is used to promote and guide work in CI?* and 2) *What is being said in these documents, and how?* Both questions were formulated with the intent to address concepts such as the spread, consistency, agreement, change, development, and use of the documents. We have attempted to keep these in mind during our evaluation.

Our thematic and content analysis of the Tier 1 documents gave us an overall sense of how CI was being discussed in the province. However, due to the formal nature of the majority of documents we reviewed, we are not confident that they necessarily paint an accurate picture of “how it really is,” especially at the school level. However, we still found some interesting tensions, challenges, and issues across the documents.

First and foremost, the teacher’s role is clearly evolving: the idea of “teacher as learner” and “teacher as co-learner” is changing the relationship between teachers, as well as between teachers and students. Student interest and choice now drive instructional decision making by the teacher. Teachers must remain flexible and adaptive in a less teacher-directed learning environment. This change is not insignificant; it is one that is likely to be very difficult for some teachers, as it requires them to change their whole teaching attitude, philosophy, and approach. The CI focus on “process, not product” emphasizes ongoing conversations and sharing between teachers and between teacher and student, formative assessments, and ongoing descriptive feedback. There is a focus on documenting learning and on examining documentation collaboratively to determine “what the student work is telling” the team. Observation (e.g., deep observation, reflective observation, pedagogical observation) is a key point, especially in the early grades. In terms of documentation and sources of data, EPCI appears to have had an especially strong influence on inquiry in the province. A tension arises in that flexible and adaptive teaching still requires a plan or a goal; the curriculum must still be covered, summative data must be collected for reporting purposes, and students must be prepared for EQAO assessments. Another tension arises from assessment: CI is consistently touted as an approach that will raise both student achievement and student engagement, but the *how* is never sufficiently explained. How do we know that any one inquiry project is leading to higher achievement down the road (especially in terms of report card grades and/or EQAO scores)? How do you make that link? This piece is missing from the documents we reviewed.

The documents emphasize the importance of collaboration and a team approach: “deprivatizing teacher practice” was a particularly loaded phrasing for this, and was used to describe CIL-M as a program that had “laid the foundation for deprivatizing teacher practice and establishing a culture of collaboration.” (This term was used in a promotional/motivational video on the Ministry’s website that touts the benefits of co-teaching/CIL-M and encourages teachers to “stick with” it.) With CI, teaching is supposed have more of an open door approach, with people coming and going all the time and many people coming together to examine student work. This is reflected in the CI documents in many ways, such as through the use of “educators” instead of “teachers” to signal that many other people are involved: the classroom teacher, his/her colleagues, ECEs, EAs, special education teachers, administrators, and so on.

Across the documents, there is an interesting interplay of language that emphasizes both “broadening” and “refining.” Teachers are asked to engage with each other to “broaden their perspectives,” to consider the “big ideas” of the curriculum, to broaden their definition of what they consider documentation/evidence, and to remain open to possibilities; at the same time, educators are told to use expert knowledge in a “strategic and purposeful” way, to narrow the focus of their inquiry questions and IF/THEN statements to a particular “problem of practice,” and to focus on specific student needs. Inquiries are described by the Ministry as beginning either with broad “beliefs about teaching and learning” or “with what students are learning” more narrowly. This may or may not be related to some of the tensions and frustrations reported by teachers (see below), but it was an interesting pattern that surfaced.

There was also a language-related tension in the use of terminology, with confusion between collaboration, inquiry, teacher CI, student CI, inquiry-based learning, CI for both teachers *and* students, and “the inquiry model.” The meaning and application of these terms was muddled, and terms were used seemingly interchangeably. Compounding this problem is the growth and breadth of CI; now, classroom inquiry (i.e., with students) is the focus, and has become difficult to separate it from teacher CI. There may sometimes be a certain “flavour of the month” approach to inquiry, with little authentic buy-in, wherein “collaborative inquiry” is included in documents only superficially. This is reflected, for example, in many of the BIPSAs that mentioned CI only in passing, with little authentic inclusion of *inquiry* in their plan.

Further, there was a typical tension that comes with any new program implementation: if teachers do not fully understand CI, its rationale and how to implement it, they will become frustrated, lose confidence, and not put CI into practice effectively. There seems to be some lingering frustration among educators about too much change too quickly; teachers are reluctant to invest time and energy in a project they believe is just this year’s fad. A quote from a forum on technology that we found illustrative was that “Nothing kills ideas faster than frustration.” Limited resources were also a concern: human resources (support personnel), time and money (e.g., staff release time to meet and collaborate, purchase of learning technologies). A section of the Thames Valley District School Board’s EPCI project on documenting student learning (see Case Studies above) contains a good summary of what their CI team identified as challenges, a list that is likely to be echoed by other board and school teams conducting inquiries. Challenges included:

- Time to document is necessary and time is needed for collaborative analysis of documented work;
- Lack of resources – cameras/printers/audio recorders;
- Confines of long range plans;
- Trust that what you are observing is valid – moving beyond standardized assessment;
- Letting go of the control of the direction of the curriculum; and
- Documentation is easier in classrooms with two staff [members] – more challenging in older grades (p. 5)

Finally, we felt that the Ministry’s documents included an interesting sort of coercive, “guide on the side” language – never “you should” but rather “well all know that” and “all good teachers,” as well as the consistent use of “we” in general. It is obvious that the Ministry knows its audience and is writing carefully to craft the right message. Teachers are encouraged to embrace a CI approach to teaching and learning because it is a sound and effective pedagogical practice, supported by research, rather than to adopt a lukewarm stance on CI as a mandated program in the “thou shalt” Ministry language of the past. A tension here is that this language addresses teachers as a group who are all at a similar point in their practice (“we all know that...”), when in reality they are all at very different stages in their learning.

## Conclusion

Our document analysis of publicly available documents on CI was framed by two purposes. First, we sought to understand the document base used in the province of Ontario to promote and guide work in CI. Second, we undertook to analyze this documentary base with respect to content and medium of communication. Despite the limits of the document base considered (e.g. publicly available Anglophone documents) the document analysis serves as a unique examination of the rhetoric and language of CI in Ontario as well as a complement to the other components of our formal evaluation.

Despite these tensions and challenges identified in the document analysis, our review of the documents suggests that the overall experience with CI has been a positive one, particularly for those who embraced it wholeheartedly. Again, this conclusion is tempered by the fact that we have only reviewed a small subset of the available documents, and that boards/schools who have taken the time and made the effort required to produce a summative inquiry document are likely to have enjoyed the process. The emphasis on documenting learning has not necessarily extended to a thorough documentation of the inquiry cycle that boards and schools have undertaken – and if it has, these documents have not necessarily been made available online. As we noted above, educators are at different stages in their learning; CI continues to be a work in progress in the province for teachers, schools, and boards.



## Evaluation Phase 3: LNS and SAO Data Collection

### Introduction

Focus group interviews were conducted with Literacy and Numeracy Secretariat (LNS) staff members and Student Achievement Officers (SAOs) in September 2013 to gain their perspectives on Collaborative Inquiry (CI) initiatives throughout Ontario schools. In total, 9 focus groups were conducted with SAOs from various schools districts (4 focus groups conducted by the Queen's Evaluation Team; 5 conducted by LNS staff), and 2 focus groups were conducted with LNS staff members. Following a semi-structured design, the focus groups asked questions about: (a) participants' understandings of CI; (b) policies and initiatives of CI (ministry-based and others); and (c) experiences, challenges, and supports for engaging in CI with teachers. Overall, the purpose of these focus groups was to gain an initial understanding of the existing CIs operating throughout the province. Further, these focus groups provided critical insights into tensions, practices, and support structures that shaped how CI was promoted throughout Ontario schools. In addition to focus group data collection, SAOs were also given a short demographic and experience survey to provide insight into their backgrounds.

Data collected in this phase of the evaluation were inductively analyzed for common themes within the SAO and LNS data sets. We began data analysis by collaboratively analyzing the notes from the Queen's-run SAO focus group sessions (i.e., Thunder Bay, Ottawa, Toronto-experienced, and London West). From this analysis, we identified themes related to each of the five focus group questions. We then collaboratively analyzed the notes from Ministry-run SAO focus group sessions (i.e., Sudbury/North Bay, Barrie, Toronto-new, London East, and Francophone); no new themes were identified with the addition of these data. We concluded that both Queen's- and Ministry-run focus groups provided similar data and comparable themes. Next, we listened independently to the Queen's-run SAO focus group recordings (i.e., Thunder Bay, Ottawa, Toronto-experienced, and London West) to identify supporting quotes for each theme. We then met to consolidate our quotes: we examined overlaps and similarities between our sets of quotes, if they were able to provide evidence for the themes we had previously identified, and if we had identified any emergent themes. Alterations were made as needed. Themes without supporting quotes were either deleted or collapsed into broader themes. SAO survey data were used to interpret qualitative focus group data obtained from SAOs. Survey data were entered into SPSS and preliminary descriptive analyses were conducted. SAOs were grouped by years of experience: Novice (0 yrs); Intermediate (1-2 yrs); and Expert (3+ yrs). Descriptive statistics were calculated for the total sample, as well as by years of experience.

After the SAO focus group data were analyzed, we listened to the group interviews conducted with LNS staff members. We used the same template of themes identified from the SAO focus groups to analyze the LNS data; quotes supporting these themes were extracted. In addition, we used these data to provide a deeper understanding of SAO focus group data.

## Student Achievement Officer (SAOs)

### *Characteristics of Effective Collaborative Inquiry*

When describing what effective CI looked like at the classroom, school, and district levels, most SAOs agreed that at its best, CI involves the participation of a multi-disciplinary team (i.e., principals, teachers, support staff, ECEs, students, and even parents) in a focused learning process. However, they also recognized that “it is also, student-focused.” One SAO noted:

*The most exciting place to see CI is when you really do see that the student desk really does inform the teacher desk – and then the teachers goes “oh my gosh, I didn’t know that about them – wow, I need to explore that further.” And then the teacher gets so excited about that – they just feel so motivated. When the inquiry really starts from there – that’s when it really becomes collaborative.*

At a general level, CI is depicted as a “stance or habit of mind.” while the practice itself is described as “co-learning” that is “focused, iterative, responsive, reflective” and “ongoing and supported by safe and supportive spaces.” One SAO stated, “it’s okay to disagree in Collaborative Inquiries. It’s encouraged, I think, to have a different viewpoint and share that. And learning to do that in a socially respectful way.” There was also strong agreement that CI required strong and engaged leadership. “It requires some very skilled leadership in order to keep that flow going because if not, it will quickly deteriorate.” To this end, it appears that many SAOs worked hard to provide leadership to the process by flattening hierarchical power structures that have the potential to shape decision-making in a cross-role team. One SAO put it this way. One SAO stated, “That hierarchical structure is not there, when it’s working well. The minute she thought I was “the boss,” she stopped – you know?”

### *SAOs’ Supporting Behaviours*

In describing the actions they take in supporting CI, SAOs talked a great deal about their role and responsibility for building the inter-personal conditions that can support inquiry and the critique of ideas that CI requires.

*There’s a relationship that has to be built before the CI is going to occur. And for me, it’s the most important piece – because if I’m going to go in and be a provocateur ... – I feel that I have to have some sort of relationship with them. I’m not looking for a friendship; I’m looking for a professional relationship. But by doing that, by building a relationship, that way when I do go in and I ask questions that perhaps might come off a little sharp or edgy, they know that I am... I hope that they do understand that I am presuming that they know that there’s positive intention there. That I’m asking these questions with a purpose. But without building that relationship, I don’t know – it might just be – it’s not truly collaborative.*

In support of this notion, they worked to model their visions of CI for teacher participants. “We actually try to model what it [CI] looks like. In our conversations and our discussions and in our

wonderings, where we push it.” In support of this, they make purposeful efforts to participate as co-learners and critical friends in the projects. One SAO noted, “*So it’s that kind of invitational, open-to, ‘I don’t know this, but let’s do this together.’ As opposed to ‘you need to do this.’*”

## *Conditions that Support Collaborative Inquiry*

In reporting on the conditions that support effective CI, the SAOs identified some of the same conditions identified in the scoping review; specifically, the importance of leadership, particularly the willingness of leadership to support a vision and processes where the outcomes can’t be predicted in advance.

*It’s about vision! It’s about having a vision that this is how we all learn. In addition to that, it’s also that sometimes we make mistakes. So if you’re not willing to be a risk-taker and make a mistake and go “whoops, that tanked” or “part of that tanked...” – so it’s that risk-taking. And I think your senior administrators have to be risk-takers. And have a vision that they’re going to stay the course.*

*Trust! It’s huge [for leadership]. In a relationship between teachers and principal, teacher and consultant, principals and superintendents... there has to be a trust there. There has to be a comfort level with saying “I’m not sure, really what it’s supposed to look like, or if it’s effective,” or just “I’m not sure.” And it has to happen at all levels of the organization.*

The importance of sound environmental structures including adequate time, resources, and space were also a common supports for both the SAOs and for the studies reported in our scoping review. “*Enough time. Time is huge, because you know what, I think sometimes when we first started this, we thought it could be done just like a workshop. Okay, we’re going to do an inquiry!*” In addition, there was discussion about how a structured approach to CI can be very important for some participants while others look to shaping their own processes.

The literature suggests that participants work best if they are volunteers. The SAOs agreed with this condition and added another element: teachers need to be confident that the project is linked to a significant student need. “*When it really is organic and comes from a group of teachers, however they decide to get together, and it’s based on the student’s needs it’s going to be more effective than when it’s top-down.*”

A totally unique supportive factor for CI is the acknowledgment and documentation of the individual professional growth of participants. SAOs viewed themselves as being partly responsible for documenting and monitoring teachers’ learning through CIs.

*Educators are not good at tracking their own progress. They will find everything that they’ve done wrong, or not accomplished. We’re able to chart their journey, and look at it as a continuum – at the beginning of the year you were here, and now where is your team? Okay, you’re here. So we help them see their growth.*

## Barriers to Collaborative Inquiry

In identifying the barriers that limit the potential effectiveness of CI, SAOs reinforced what was learned in the scoping review. Just as leadership was seen as a critical support, the lack of support or participation by leaders or key people was identified as a barrier. *“If the principal’s not at the table, it’s not going to happen.”* Related to leadership is the problem created when the system does not seem ‘in sync’ around the implementation of CI. As one SAO commented:

*Coherence and alignment is a really big barrier; because you know, one of the first conversations that has to be initiated is, “what do we, as a system and then as a school, and then as a classroom team, what do we understand to be “collaborative inquiry”? You have to start there. It’s – that conversation – it has to take place vertically, you know, at the family of schools meetings, and it has to take place horizontally, among principals, on the senior team, among coaches and consultants – groups of teachers. So it’s all these simultaneous conversations that have to go on.*

The most common word that appeared with the discussion of barriers was “time.” In these data, however, time also appeared to be capturing more complex problems for engaging in CI that were also identified in the literature review. For example, time was linked to competing professional demands on teachers. As one SAO indicated,

*Time is a huge, huge barrier for all of us. You only have so many minutes in a day, and there’s always that external pressure – “if I do this, then I won’t cover the curriculum” – all those... it’s really fear.*

Statements such as this emphasized the multiple responsibilities of classroom teachers.

*I think what I experience is almost “initiative fatigue” among teachers. And so – the notion being that CI is just another thing, and some teachers – you can see it. They’re thinking, “I’m going to try to ride this one out.”*

Sorting out these responsibilities and then making good decisions about the best way to use the time that you have as a teacher may be especially difficult for newer teachers:

*For your first couple of years, you’re following every shiny object. But if you allow yourself to focus... to be guided by your eyes and your ears and what the students say and what you see – the answers are right in front of you. Sometimes these responsibilities are daunting pushing teachers to prioritize where they can invest their energies.*

In describing other barriers, one SAO talked about the skill set required to conduct quality CI and the prevailing constraints that might impede quality CI.

*That’s one of the tensions in CI: the tension between being open to experiences and opportunities and the rigor that’s required. We have the curriculum, we have time constraints, and we have all of that. And I think that requires a real balancing act on the part of teachers and principals. Is every CI just a total, open inquiry? I don’t think so. I don’t know.*

This SAO identified the juxtaposition of two uncertainties or two conditions appearing together as a tension. Another SAO was able express this tension another way:

*There's a little bit of confusion around assessment – they're not quite sure how to assess inquiry and often will just default to traditional methods of assessment. ... It's getting different thinking out there, and different structures for thinking, but yet once you've gone through all that wonderful...where do you assess at the end of the day.*

Collectively, the barriers of leadership, time, and skills for CI identified by SAO are not novel concerns. They are reflected in previous research on CI, making these challenges not unique to the Ontario context of professional learning. Hence there is a systemic need to find ways to support teachers, administrators and SAOs in moving through these challenges by building upon supportive conditions for CI.

## Student Achievement Officers' (SAOs) Survey Responses

Almost all SAOs were involved in at least 4 of the 5 formal, Ministry-based CI projects running within school districts. Only the Student Work Sample Study project saw less attention and even then, 44 of 57 SAOs indicated at least some participation.

*Table 4: Student Achievement Officers Engagement in Formal CI Projects.*

| Initiative  | N  | Involvement<br>(1=none; 5=highly) |
|---|----|-----------------------------------|
| Collaborative Inquiry and Learning in Mathematics | 52 | 3.17                              |
| Early Primary Collaborative Inquiry               | 53 | 3.42                              |
| Systems Implementation and Monitoring             | 53 | 3.58                              |
| Student Work Study Teachers                       | 52 | 3.81                              |
| Literacy Leaders Collaborative Inquiry            | 51 | 2.90                              |

One question on the survey, asked SAOs to identify district decisions and actions that have been linked to CI learning. These data did not provide significant insights into how CI might be influencing decision-making at the district, school, network and individual levels. Table 5 implies that SAOs were seeing decision-making behaviours in some contexts and not in others. The distribution of responses was typically between 2 and 4. Data were also analyzed by years of experience in the SAO position. The only finding was that those with 3 years experience or more were less likely to report seeing decision-making behaviours, possibly due to a deeper understanding of what this behaviour would look like and having a more discriminating eye for seeing these behaviours in action.

Table 5: SAO Observations on the Influence of CI.

| Decision-making Actions (1=never occurs; 5 = Always occurs)   | #  | Mean |
|---|----|------|
| District decision-making is grounded in ongoing school-level collaborative work.                          | 56 | 3.34 |
| District decision-making is responsive to CI processes occurring in schools.                              | 56 | 3.20 |
| District decision-making is reflective of on-going school experiences.                                    | 57 | 3.18 |
| District decisions are participatory.   | 56 | 2.98 |
| District decision-making relies on relevant and diverse data sources.                                     | 56 | 3.59 |
| District decision-making relies on external knowledge/research.   | 55 | 3.25 |
| School teams engage in a process to identify a topic of inquiry relevant to teachers' classroom practice. | 56 | 3.43 |
| School teams engage in teaching/co-planning/co-learning.  | 56 | 3.32 |
| Educators observe student learning and thinking, and document what is observed.                           | 56 | 3.36 |
| Collaborative networks are supported both formally and informally within schools.                         | 54 | 3.44 |
| Educators read and reflect upon ideas.  | 57 | 3.30 |
| Educators use practices that are grounded in educational research   | 56 | 3.38 |

## LNS Staff Focus Group Responses

There was significant convergence of ideas between the SAOs and the LNS staff. LNS staff did, however, have some unique and additional perspectives on CI. In addition, their use of language differed slightly from SAOs when describing CI processes and conceptions. In describing the collective goals of CI initiatives there was significant talk around the intention to stimulate a shift in the mindset of provincial educators through participation in provincial CI projects. This shift was to be accomplished in part by renewing the emphasis on reflective practice and expanding the expectations around this behaviour beyond classroom teachers. *“It’s reflective practice in every classroom. It’s reflective practice exercised by every principal. It’s reflective practice exercised by every system leader.”* Reflective practice was also seen as providing both conceptual and procedural grounding for CI. *“So, asking a question—what we’re going to seek out, doing some actions. Then saying how did it live out? What’s my evidence? And that’s just a way of all of us going about our business, including us here.”* Nevertheless, the expectations that LNS staff have for system educators, especially teachers, does not stop at reflective practice.

*Ten years ago it was just: “I’m a teacher,” now “teacher and learner, co-learner,” now the shift to inquiry is to layer on the identity of researcher, so that notion of “teacher, learner, researcher” comes together... any teacher that is being effective in the classroom is being a researcher in every moment of their day.*

Establishing the importance of the teacher as researcher role appeared to be tightly linked to the process of generating knowledge about teaching and learning within the system:

*I think we would have a lot richer engagement of actual folks in the field contributing to knowledge generation. [We could see] richer partnerships between teachers, principals and educational researchers. [We could see] the generation and take-up of a lot more professional teaching journals. These would be written by teachers for teachers, with basically... rigour, and reflections on practice.*

Even with these aspirations, there were some questions about the extent to which expertise needed to be infused into the inquiry, and the extent to which this was necessary to give credibility to both the processes and the products of CI.

*You cannot remove math expertise from the room when it's required or you have people having a long conversation based on ideas that are just wrong. So we're still trying to figure that out. When it comes to math, sometimes people don't even know when they need an expert.*

Currently, it is unclear the extent to which there is support for the notion that credible inquiry into other content or pedagogical areas may also require one or more members with identifiable and verified expertise. In contrast it is clear that at least one aspect of the inquiry requires expertise that lies beyond the membership of the CI process. Inquiry groups are expected to make explicit, for themselves and others, what has been learned through the process. It is possible that for both accountability and knowledge dissemination purposes that LNS staff feel they have taken on the task of “polishing” the learning as their contribution to the CI process.

*A new format needs to be developed, and I think it needs to be driven by teachers. And we're struggling with the monographs, because teachers don't write or think in a report format. But they have knowledge that they've legitimately gained and generated and want to share.*

Two additional issues were raised of interest to this evaluation. The first was related to the degree of structure and compliance that needs to be built into CI projects in order to support the implementation and spread of CI. “*When we first did CI, we provided a lot of protocols to help them move along. We've moved away from a lot of that. We endorse a lot of freedom but I do wonder sometimes what the optimum amount of protocol and support is.*” This stance was consistent with the findings from the scoping review that participants in CI need to be volunteers and that the project itself needs to be collaboratively negotiated, even if the process itself has norms and protocols to be followed. Whether or not it is possible to honour this feature of CI must be considered by the LNS, school districts, and principals as they look to shepherd changes system wide or in school cultures.

The second issue that requires attention was judgments about the quality and impact of CI processes and products. Demonstrating quality and impact at least partially satisfies the obligation to be accountable for the investment of public funds into this professional learning approach. There



was strong agreement among LNS staff that the ultimate goal of pursuing this approach to professional learning was to improve students' learning and achievement. Yet definitive cause and effect relationships between CI projects and commonly used measures of educational outcomes, such as EQAO Assessments, are extremely difficult to establish. Similarly, the desire to clearly demonstrate that a CI project would stimulate changes in a system that produces relatively stable teacher grades and EQAO scores is unrealistic.

*We need to broaden the definition of impact. It could be impact just through increased participation. Also can be through the depth of student learning, the sustainability. It all has to translate at some point in time to some kind of improved student achievement but there are lots of other things that are on the way to that.*

The suggested option was to develop and eventually test a line of reasoning that links this particular format for professional learning with a specified set of intermediary indicators.

## Looking Across the Data: Tensions for Collaborative Inquiry

A tension is found in places where there appear to be contradictions, differing perspectives, or uncertainties about the meaning or value in having both of these conditions appearing at the same time. In synthesizing the scoping review, the responses of SAOs and the ideas of LNS staff, the Queen's Evaluation Team (QET) identified a series of tensions that may be influencing the implementation, adoption, processes, and outcomes of CI in the province. We delineate these identified tensions in Table 6 below.

These tensions may create barriers to implementation or understanding of the goals of CI initiatives. Nevertheless, they may also serve as boundaries for learning, discussion, and revised instructional practices. Within each of the levels, and across levels, these tensions may serve to initiate the professional learning that underlies the CI process. With care and thought, educational leaders and facilitators involved in CI can use these tensions and others they encounter as a method to engage others in CI. Tensions can provide opportunities for a thoughtful and critical stance among those involved in CI initiatives. If the intentions and structures of a CI initiative are sound, then initiatives will be further strengthened by such review. Subsequent revisions will likely result in the enactment of the CI initiative, and this will lead to greater engagement in the process and a more effective CI initiative.

Table 6: *Deliberations Over Possible Tensions in Promoting CI Projects.*

| Tensions   | SAO and Staff Responses (with Quotation)  |
|--|---|
| <b>1. CI as method for solving dilemmas in teaching and learning and CI as a systems approach to ongoing learning</b>  | <ul style="list-style-type: none"> <li>• Having protocols for doing CI can lead to educators feeling comfortable with the approach and having it accepted and adopted more system wide</li> <li>• A top-down approach ‘systems approach’ could easily turn participation into compliance</li> <li>• We want to see how the initiative leads an inquiry stance.</li> </ul>   |
| <b>2. Teaching a CI Approach to Problem Solving and Providing Support for Quality CI Processes</b>   | <ul style="list-style-type: none"> <li>• It is possible to have a process to follow without turning the steps into rules.</li> <li>• CI is a process and each step must be responsive to what is learned in the previous step</li> </ul>  |
| <b>3. CI as an Approach to Professional Learning and CI as a Contributor to Student Achievement</b>  | <ul style="list-style-type: none"> <li>• Improving learning and achievement is the ultimate goal. CI helps us better understand the steps educators might take in pursuing this goal</li> <li>• A student’s need is a proxy for a teacher’s need</li> <li>• Why can’t we do both?</li> </ul>  |
| <b>4. Mandated Practice (top-down) and Authentic practice (bottom-Up); and related to that, Structured practice (Use of protocols) and Contextually emergent practice (Teacher-Driven)</b> | <ul style="list-style-type: none"> <li>• Some school boards set the professional learning agenda for the District, and if teachers are volunteering it’s not top-down</li> <li>• If we think about how new CI is to some, it makes sense for them to use protocols and to scaffold them toward being adaptive</li> <li>• This may be more about recognizing a continuum of learning. Top down can provide support, scaffolding and direction</li> </ul> |
| <b>5. Conceptualizing CI as Evidence-based and Conceptualizing CI evidence as stories of teachers’ experiences</b>   | <ul style="list-style-type: none"> <li>• Stories can be powerful as long as they include sufficient evidence for the claims. We could use some assistance in exploring how to build rigor into story telling i.e., depth, scope use of data</li> <li>• Comes down to not being systemic, from the beginning to the end of the year, not in a way you can articulate, partly because you’re so close to it.</li> </ul>                                   |
| <b>6. Students as a focus for CI and Students actually participating in CI?</b>  | <ul style="list-style-type: none"> <li>• This was addressed by focusing on the expertise needed for CI amongst students versus teacher-centered CI project.</li> <li>• Some boards have a history of engaging students in inquiry</li> <li>• It’s very difficult to move to student inquiry.</li> <li>• Teachers’ processes are our mandate</li> </ul>  |

## Evaluation Phase 4: Teacher Survey Data

### Introduction

In collaboration with the Literacy and Numeracy Secretariat (LNS), the Queen's Evaluation Team (QET) developed, and administered a teacher survey to elementary teachers in Ontario. The survey had a total of 20 items, the majority fixed-response. The intention of the survey was to provide a broader measure of the perspectives of and experiences with CI, and the impact of CI on teachers' attitudes, beliefs and practices. Survey items also measured teachers' professional learning preferences, experiences with CI, along with potentially important demographic information. The survey was administered electronically to teachers in 15 school boards (the same boards selected for Phase 5 of the evaluation). In total, 335 elementary teachers completed the survey. Data collected from the survey were analyzed using descriptive and inferential statistics. Qualitative items were inductively analyzed for common response themes. The qualitative survey data were also used to interpret the quantitative findings (see Appendix F for the survey questions).

### Demographic Information

The initial analyses were used to describe the sample of teachers who completed the survey. Ninety-one percent of participants reported that they had been involved in some type of CI initiative. Eighty-five percent of the teachers were female. In terms of the teaching, just under 33% of the teachers taught in the primary grades, 21.5% taught in the junior grades, 18.1% taught in the intermediate grades, and 8% of the teachers indicated they taught in multiple panels. A further 17.7% of the teachers indicated that their teaching included other responsibilities (e.g., library, Special Education, English Language Learners). The sample consisted of Respondents were 85% female, 14% male, and 2% other. Raw survey responses related to demographic characteristics are presented in Appendix F (i.e., Teacher Survey).

### Valued Methods of Professional Learning

Our CI document analysis reported that a chief theme in the documents around CI was, naturally, an emphasis on collaboration and a shift away from inquiry, with the message that collaboration with colleagues improves instructional practice, as the "collective wisdom of the group" is invoked. This theme was reflected in the teachers' survey responses on the first set of survey questions focused on the value of different forms of professional learning (0=no value; 4=great value; N/E=Not experienced). As presented in Table 7, the forms of professional learning that were ranked most valuable by participating teachers relied heavily on discussion with peers, either informally or in collaborative learning teams based in their school. The experience of the PD leader was also an important factor in determining value. As professional learning formats moved out of teachers' own classrooms and schools, these opportunities were perceived to have less value. The least valued forms of professional learning were graduate programs, online learning and instructional

rounds (typically in others' classrooms), and models of professional learning that included teacher evaluation and professional learning plan development. Instructional rounds was also the least commonly used method, suggesting that there may have been many teachers who were unsure what this process involved, and were thus unable to judge its value.

*Table 7: The value of different methods of professional learning.*

|  | <b>n</b>   | <b>Mean</b> |
|--|------------|-------------|
| <b>Informal dialogue with teaching peers</b>   | <b>360</b> | <b>3.52</b> |
| <b>PD development session facilitated by others with expertise</b>                             | <b>364</b> | <b>3.40</b> |
| <b>In-school collaborative learning teams</b>  | <b>358</b> | <b>3.29</b> |
| Consultant personalized support (e.g., learning partner, facilitator, coach)                   | 333        | 3.26        |
| PD facilitated by peer teachers  | 354        | 3.25        |
| In-school workshop or PLC  | 367        | 3.21        |
| Unplanned or spontaneous classroom teaching moments connected to a professional learning focus | 348        | 3.17        |
| Collaborative learning networks across my board  | 340        | 3.14        |
| Planned classroom teaching moments connected to a professional learning focus                  | 348        | 3.14        |
| Board level workshop or conference   | 366        | 3.10        |
| Personal action research   | 318        | 3.06        |
| Multiple-board/association workshop or conference  | 324        | 3.03        |
| Additional Qualification courses   | 350        | 2.94        |
| Teacher federation sponsored PD  | 318        | 2.92        |
| Collaborative learning networks across multiple boards   | 263        | 2.86        |
| Professional readings  | 368        | 2.83        |
| PD session facilitated by school administration  | 358        | 2.61        |
| <b>Instructional rounds</b>  | <b>222</b> | <b>2.55</b> |
| <b>Online learning programs (e.g., webinars, MOOCs, etc.)</b>                                  | <b>311</b> | <b>2.55</b> |
| <b>Graduate studies program (e.g., Masters)</b>  | <b>232</b> | <b>2.51</b> |
| <b>Formalized teacher evaluation and professional learning plan development</b>                | <b>358</b> | <b>2.13</b> |

*Note.* Three highest and three lowest rated options highlighted.

## Teachers' Experiences with Collaborative Inquiry

The next set of survey questions focused on teachers' experiences with CI. Teachers were first asked to consider a CI project in which they had participated. After providing a brief description of the project, the teachers were then asked a series of questions about their experiences within that project. It should be noted that not all of the teachers engaged in CI or in each of the activities that could be related to a CI project, and some teachers did not finish the survey. Hence the analyses for each question varied in terms of the number of teachers who responded to that item). The first question focused on the frequency (0 = never to 4 = always) with which teachers engaged in 17 CI related activities (see Table 8). Not surprisingly, teachers engaged in each of the CI related activities to some extent. Nevertheless, there was a significant level of variation in the frequency with which they teachers engaged in these activities. The most common activities were related to gathering evidence student learning (observations and artifacts), and the application of learning gained through CI to instructional practice. While co-planning with teachers was a relatively commonly used strategy, co-teaching was much less commonly used. Similarly, those activities that are generally more external to daily classroom practices were engaged in less frequently (e.g., use of surveys to assess student learning, or teacher reflection through journals).

Next teachers were asked to describe the "helpfulness" (0 = not helpful; 4 = extremely helpful) of 15 different resources commonly associated with CI. Coupled with the high frequency of use, evidence of students' learning (observations, student work) was also considered the most helpful (mean = 3.67, and 3.60 respectively). This was closely followed by release time to collaborate with peers (mean = 3.37). In contrast, activities and resources not directly associated with classroom teaching were considered much less helpful. The least helpful resources were the School Effectiveness Framework (mean = 2.47), data from common assessments (mean = 2.28), and research partners such as Ministry personnel, and professors (mean = 2.20).

The survey then presented a 15 statements in relation to CI around which teachers expressed their agreement or disagreement (0=strongly disagree; 4=strongly agree). Each of the statements were positively worded and addressed the positive effects of having engaged in CI. Table 9 provides a subset of the findings for these 15 statements, highlighting those with the highest and lowest levels of agreement. Similar to the findings above, statements with the strongest agreement were related to interactions with students. As found in other findings across the evaluation, these teachers believe there was insufficient time provided for CI related activities. They also did not strongly support the statement that involvement in CI helped the to become an instructional leader in the school, a goal of many CI projects and a belief of LNS staff, SAOs, administrators we interviewed.

Combined, these initial findings suggest that teachers engaged in professional learning through CI continue to derive the most benefit to their learning through those activities and resources that are most closely associated with their daily instructional practices and work with their students. Such findings are not surprising. Nevertheless, these findings may highlight a need to better illustrate the value of the less commonly used activities and resources, as these often lead to deeper and richer explorations of teachers' skills, knowledge and practices. While teachers engaged in CI projects and activities derive professional benefits from these projects, they are less likely to see themselves as developing school leadership skills through CI. It is likely their focus remains on developing

their own teaching practices rather than focusing on the less defined notions of leadership beyond their classrooms.

*Table 8: Frequency of CI activities.*

| <b>Q4</b>  | <b>n</b>   | <b>Mean</b> |
|--|------------|-------------|
| <b>Gather evidence of student learning through observations.</b>   | <b>283</b> | <b>3.49</b> |
| <b>Gather evidence of student learning through artifacts (e.g., student work).</b>                       | <b>286</b> | <b>3.32</b> |
| <b>Apply learning from the inquiry to your instructional practice.</b>                                   | <b>287</b> | <b>3.32</b> |
| Co-learn about the focus of the inquiry.   | 288        | 3.25        |
| Co-plan next steps for instruction.  | 289        | 3.24        |
| Collectively select your focus of inquiry and identify inquiry questions.                                | 287        | 3.21        |
| Take specific actions related to your collaborative inquiry focus when planning alone.                   | 283        | 3.19        |
| Discuss evidence gathered with your inquiry team.  | 286        | 3.19        |
| Use student data to define the inquiry.  | 287        | 3.16        |
| Take specific actions related to your collaborative inquiry focus during your regular teaching schedule. | 284        | 3.07        |
| Co-analyze evidence gathered to improve practice.  | 287        | 3.00        |
| Collaboratively refine inquiry questions based on evidence.  | 284        | 2.96        |
| Co-analyze evidence gathered to make instructional decisions.  | 286        | 2.93        |
| Collaboratively identify new inquiry questions.  | 284        | 2.82        |
| Repeat the collaborative inquiry cycle.  | 285        | 2.52        |
| Gather evidence of student learning through videos/photos.   | 288        | 2.25        |
| <b>Gather evidence of student learning through written teacher reflection (e.g., journals).</b>          | <b>287</b> | <b>2.22</b> |
| <b>Co-teach lessons.</b>   | <b>288</b> | <b>2.09</b> |
| <b>Gather evidence of student learning through surveys.</b>  | <b>288</b> | <b>1.60</b> |

*Note.* Three highest and three lowest rated options highlighted.

*Table 9: The impacts and perceptions of CI.*

|   | n   | Mean |
|---|-----|------|
| <b>Top 3 statements</b>   |     |      |
| • Collaborative inquiry has influenced me to design instruction to engage students.                         | 269 | 3.35 |
| • Collaborative inquiry has influenced me to incorporate student voice, perspectives, and interests.        | 266 | 3.22 |
| • Collaborative inquiry has influenced me to differentiate instruction for my students.                     | 268 | 3.21 |
| <b>Bottom 3 statements</b>  |     |      |
| • Collaborative inquiry has influenced me to co-learn with school administrators.                           | 269 | 2.72 |
| • I have become an instructional leader in my school as a result of my engagement in collaborative inquiry. | 266 | 2.20 |
| • I had sufficient time to engage meaningfully in collaborative inquiry.                                    | 268 | 2.16 |

While the survey data suggest that teachers have found benefits through their participation in CI, they also highlighted challenges with this involvement. Certainly, it appears that many teachers have found ways to resolve these challenges. Nevertheless, these challenges have the potential to limit the impact of CI. The 10 items used a 5-point scale (0 = significantly to 4 = not at all) to determine the extent to which specific issues challenged teachers involvement in CI. Of particular interest, two of the greatest challenges were teachers' confidence or their students' willingness to try new things (both at 75%). These findings further highlight the importance of building trusting professional and classroom learning cultures to support the implementation of CI projects and new instructional practices that result from these projects. A majority of teachers reported that the ability to identify what counts as "evidence (68%) or the ability to make sense of the evidence that was gathered (69%) also inhibited their participation in CI. While the majority of teachers suggested their participation in CI could result in lost instructional time, they were much less likely to note that the time required while involved in CI has actually impacted their teaching time, and this was the least identified challenge for teachers (52%).

Of interest, we did find that approximately 10% of the teachers thought of CI as the collaboration between teachers to plan student inquiry "projects" in their classes. It is possible that these teachers were involved in CI projects but their focus was much more on developing lessons and activities for students. These findings are particularly interesting because this small group of teachers tended to have the most positive attitudes towards what they believed was CI. In contrast, we have not found systemic significant differences amongst teachers based on their grade levels, teaching experience, or geographic region (e.g., rural, vs. urban).



Table 10: Factors that inhibited participation in CI.

| Q7   | n   | Significantly | Quite a bit |
|--|-----|---------------|-------------|
| Willingness of those I am working with to listen to my ideas.  | 247 | 41.7%         | 23.9%       |
| My confidence in trying something new.   | 257 | 45.9%         | 29.2%       |
| Willingness of my students to try new things.  | 258 | 48.8%         | 26.4%       |
| Ability to identify what counts as “evidence.”   | 258 | 32.2%         | 35.7%       |
| Ability to make sense of the evidence I gather (i.e., analysis of evidence).                           | 261 | 32.6%         | 36.4%       |
| Fear that I might be wasting instructional time.   | 254 | 41.7%         | 24.4%       |
| Ability to assess the impact of the inquiry.   | 259 | 25.5%         | 37.5%       |
| Shifts in school focus, direction, or activity that are introduced during our collaborative inquiry.   | 251 | 26.7%         | 27.5%       |
| Improvement areas that the school or district indicate as important.                                   | 247 | 27.9%         | 30.8%       |
| Amount of time required of me in the collaborative inquiry process and its impact on my teaching time. | 254 | 24.8%         | 27.2%       |

Note. Frequency and percentage for the top two options only. 5 = “significantly” and 4 = “Quite a bit.”

Given the value that teachers place on CI, we were also interested on teachers’ perceptions regarding the impact of CI on students. Across the nine impacts we examined, the majority of teachers reported that CI had impacted their students to either a large or very large extent (51% - 73%) and reported positive impacts to a large or very large extent (see Table 11). The greatest impacts were perceived to be on students’ own collaboration in class and their confidence in their learning. In contrast, the smallest impacts were reported for those activities related to self-assessment and student independence. It also appears that CI has not had a relatively important impact on students’ attendance.

Table 11: Q8. Extent of impact on students of engaging in CI.

| Q8   | n   | Large extent | Very large extent |
|--|-----|--------------|-------------------|
| Working collaboratively on shared tasks                    | 260 | 44%          | 32%               |
| Displaying increased confidence in their learning          | 260 | 48%          | 25%               |
| Demonstrating increased engagement in classroom activities | 261 | 38%          | 30%               |
| Displaying enhanced understanding of key concepts          | 261 | 47%          | 17%               |
| Displaying greater inquiry skills                          | 260 | 40%          | 20%               |
| Demonstrating improved ability to make choices             | 259 | 38%          | 17%               |
| Displaying increased ability to work independently         | 260 | 37%          | 14%               |
| Displaying increased skill at self-assessing               | 262 | 35%          | 15%               |
| Having fewer absences                                      | 261 | 16%          | 10%               |

Our final question asked teachers to rate the impact of CI on their own personal identity. Teachers overwhelmingly endorsed the notion that CI helped them strongly identify as a professional learner (86%) and as a reflective practitioner (83%). A significantly smaller proportion of teachers reported that they strongly identified themselves as a researcher (62%) or instructional leader (62%). Throughout, fewer than 10% of the teachers stated that did not see themselves in these roles at all.

## Evaluation Phase 5: Qualitative Data – Case Studies and Consulted Boards

### Introduction

Our team collected in-depth qualitative data from 15 school boards, which were identified and recommended for invitation to participate by the Literacy and Numeracy Secretariat (LNS). These 15 boards were divided into two groups: (a) six were considered “consulted boards,” and (b) nine were considered “case study boards.” Data collection in “consulted boards” consisted of a one-hour, semi-structured interview with a supervisory officer (i.e., school board director or superintendent or consultant responsible for Collaborative Inquiry [CI] in the board). The interview focused on systemic board structures that supported and promoted CI as a professional learning model within the school board. In addition to an interview with a supervisory officer, data collection in the “case study” boards included a one-hour, semi-structured interview with a selected elementary school principal and a one-hour focus group with teachers in the selected elementary school. Each teacher focus group was conducted at the teachers’ school. Purposefully, the principal was not present. The number of participants in each focus group varied from four to eight teachers. The case study elementary schools were selected from a shortlist of elementary schools (one school per board) identified by each of the nine boards’ supervisory officers. The interview with principals and teachers focused on their experiences with CI as a model for professional learning.

Data collected in Phase 5 were inductively analyzed for common themes across the school boards and schools. Direct participant quotations were used to support theme structures and to elucidate theme meanings. Our analysis was guided by the overarching question: *What are teachers, principals, and supervisory officers telling us about their experiences of CI as professional learning?* We analyzed each perspective (i.e., teachers, principals, and supervisory officers) discretely in relation to four categories: (a) state of CI, (b) sense of CI, (c) existing protocols, and (d) next steps for CI. Within these categories, our data analysis process involved the preliminary creation of an *a priori* coding matrix (see Tables section below) developed from and informed by relevant documents produced by LNS and the Queen’s Evaluation Team (QET). This list of items of potential interest was drawn from the LNS CI logic model, the LNS response to the Queen’s evaluation interim report, the Queen’s evaluation Scoping Review, and the Queen’s evaluation Document Analysis.

We then read and coded the interview transcripts, identifying text segments of interest and coding them with either *a priori* and/or with emergent codes. As we carried out this analytic process, we developed and continually and iteratively re-worked and refined a new ‘emergent’ coding matrix (see Tables section below) that incorporated relevant *a priori* codes and new codes that emerged as significant through the process of working with the data. We represent our findings almost exclusively with the teachers’ words; although it is we who have identified, chosen, organized and presented here the data that we believe are most significant and relevant to this evaluation, we have left the articulation of the issues to the teachers.

## Teacher Focus Groups

Our findings from the teacher focus groups are presented in relation to four organizing categories: (a) state of CI, (b) sense of CI, (c) existing protocols, and (d) next steps for CI.

### *State of CI*

Teachers had very varied experiences of CI as professional learning, both in terms of the processes they went through and the organizational structures they worked within.

*Process Models.* While some teachers experienced CI as a rich, multi-layered process involving collaborative planning, acting, observing, and reflecting, other teachers experienced CI as getting together to discuss classroom practices and issues. Teachers described a broad spectrum of CI experiences. Below we share three contrasting teachers' descriptions of CI experiences.

#### *1) 'Full package' CI:*

- “For MISA [Managing Information for Student Achievement] we chose to look at where the gaps are in math” (*evidence-informed*)
- “...and kind of close in that achievement gap through making the kids' thinking visible.” (*team-decided focus on a specific student learning need*)
- “We met once a month, at least, for a full day to go through and we analyzed some data.” (*analyzing together*)
- “We would go in and do a lesson with the kids and... record what they were saying and doing during math class and then come back and look at it.” (*observing, documenting, analyzing together*)
- “And once we had done that a number of times, we could see where students were capable but weren't sharing, in some way, the information that they had and, and that's where it breaks down, right, because if you don't know why the child got 56, whether they just copied it or whether they actually did the operation.” (*evidence-informed focus on a specific student learning need, determining educator learning*)
- “So then we actually worked and created... a checklist and kind of taught to that.” (*taking action, designing instruction*)
- “Then we all went into the classrooms together and co-taught and documented.” (*taking action, co-teaching, observing, documenting*)
- “And we just kept refining it.” (*refining, iterative*)
- “And, as we were doing that, the kids also started learning that strategy about making their thinking visible, so sharing what they were thinking through this structured process that we kind of taught them.” (*reflection on student learning*)
- “And it was really neat because by the end of it, even the little wee ones were able to share more of what their thinking was. So even if their answer was wrong, you could see they were on the right track, in terms of the math, because they had shown us what they could do.” (*reflection on student learning*)

### 2) CI as teacher choosing a focus topic then having 'program' suggest/model practices:

- “At the beginning of the year, the Full Day Kindergarten educators met. We met as a large group and talked about areas that we felt we needed to be supported in more.” (*determining educator learning*)
- “And then they took that information and made smaller groups and then we met throughout the year. So the one I felt that I needed more support with was inquiry.” (*teacher choice of focus topic*)
- “So my group was a lot smaller. It has 12 to 14 educators from around our area.”
- “And we had three days of doing inquiry practices... the people that were running the hubs, the Student Engagement Teachers (SETS)... they brought a lot of hands-on for us to, like, kind of pretend that we're the children and see how we can take that back to the classroom.” (*'program' suggesting/ modeling practices*)

### 3) CI as meeting for presentations, discussion opportunities and the sharing of experiences and practices:

- “All the grade one teachers from the board gathered together at one site and we kind of just, there was a lot of talk time” (*teachers sharing experiences and practices*)
- “... but presentation time as well as to what might inquiry look like in the Grade 1 classroom.” (*program suggesting practices*)
- “And then, following that, we met with just our family of schools as Grade 1 teachers and principals at another site and it was a smaller group to share.” (*teachers sharing experiences and practices*)
- “And, there's a lot of questions about how might this look and, and there aren't answers. You have to kind of figure it out and go with what works.” (*program suggesting practices*)
- “But it was great to have that collaborative time to share what other people are doing and how they're going about introducing this into the classroom.” (*teachers sharing experiences and practices*)

**Structural Models.** Teachers described a variety of structural models within which they carried out CI. As indicated in the descriptions above, teachers often worked in preliminary large group meetings with teachers from across the board or even beyond their board, then broke out into smaller working groups across a family of schools or within schools, sometimes supported by experts. Two themes emerged concerning the structural models of CI that teachers described: first, that CI is most valuable at the local level, at second, that smaller groups are more conducive to effective CI work.

**CI most valuable at the local level.** While teachers occasionally voiced appreciation for the diversity of experience they encountered as a result of the opportunity to work with teachers from elsewhere, the bulk of our data indicated that teachers most appreciate CI work that was local. Teachers described local CI as more efficient, because the relationships with other teachers and students were already in place.

- “We do a lot on our own [collaborating in-school] and that seems to me almost most valuable, because it’s real life for us. We know what each other are doing. Sometimes we go to the board, more the board type inquiry, PD and it’s, you’re kind of sitting there going: What are we supposed to be getting out of this? You’re thinking: I’ve got a lot to do here. Let’s get on with this!”
- “I know when we go to them—math, junior math, hub—there’s two follow up days that are at your own school with your own people. So those, I find more valuable, because it is actually working in either Joanne’s or my class and we’re at least working with our kids and seeing, you know, what we can do. Because Joanne and I have a relationship too, right? I mean if you’re working with people that you don’t really know and you’re not sure, I mean a lot of the time you’re looking around the classroom to see, what’re they doing?”

*Smaller is better.* With regards to the size of inquiry teams, teachers seemed to find smaller groups more effective.

- “We also have recognized too that the size of the group... does impact the learning... we found that they were very big last year... I think group size is definitely a significant factor... five or something like that was a little bit more manageable.”

## *Sense of CI*

*What Makes CI Work?* In this section we identify and share what teachers have appreciated about their experiences of CI, and what teachers believe is most significant in making CI effective, successful and valuable.

### *Teacher choice of inquiry focus.*

- “This year was great. It was open: ‘What do you guys think?’ I think teachers have to have choice in that big question.”
- “What’s important is deciding as a group what you want to do it on. Not someone walking in and saying ‘Okay, we’re all going to do math’ or ‘We’re all going to do problem-solving.’ People buy into stuff a lot more easily if they actually have a part in it... lots of conversations about your own kids and your own classroom and the things that you think would be beneficial for your group because that’s who you care about. And then you go from there.”
- “It started from a conversation, not from a ‘thou shalt’ or ‘I want to do this. Get on board with me.’ It’s: ‘do we have a similar interest?’ ”
- “It is quite motivating when you get to choose what you want to research, what you want to learn, and the insights that you gain are a lot more valuable in the end.”
- “I’d just say the biggest thing with the CI was that it was our choice and it was based on our need, as opposed to what came down. Before it was like, this is the goal for the school... that choice piece is huge because then you’re involved in it and you see how it’s going to benefit yourself and the learners in your class.”
- “Sometimes admin has an idea of what your CIL needs to look like, but the teachers at the table are like, no, that’s not what it should look like. It has to come from the heart of the teachers or they’re not going to own it.”

### *The acknowledgement that it takes time for CI to really work effectively.*

- “It’s not about throwing it all out at you over a couple of days... it might be a year to get it, to get your head wrapped around what it looks like. Then the following year you start actually making it happen.”
- “It really needs to run its course and evolution—that takes a long time. Anything worth doing takes a while.”
- “Even our group that’s pretty experienced with CI was 3 or 4 months of really hashing out. Be prepared that it’s going to take a little bit of time.”
- “With me being an LTO, I felt I had to prove something. I have to move these kids forward, I have to bring the right evidence. And I kind of like tip-toed. Not that I have anything to hide, but I just felt like: “Oh gosh, I didn’t see what I wanted to see.” But he [the principal] was supportive because he had said that you’re not always going to have some great triumph in a project. There might just be like little pieces that come together in the end.”
- “I think it’s baby steps. I think we’ve been calling it a journey that we’ve been following and I think it’s very easy to try to dive into too quickly and get really overwhelmed and frustrated and discouraged, but if you see that it’s okay to just move slowly and, as far as you’re comfortable with, then giving yourself that permission is really, really key.”

*The acknowledgement that teachers are experts.* Teachers described their appreciation for the fundamental premise of CI: that teachers are experts, both in terms of being able to determine and pursue the knowledge they themselves need to learn, and in terms of being able to help their teacher colleagues to develop the knowledge *they* need to learn.

- “I find it so, so useful when we’re given the time to learn from each other.”
- “I’ve found the most value in CI because it’s something that is evolved from me being in the classroom. Here’s an opportunity for me to talk to probably the most knowledgeable people, my peers, and be able to come up with a solution. It’s not someone telling me from above, who hasn’t been in a classroom potentially for, you know, 6 to 8 years, telling me what to do. It’s somebody else who’s living what I’m living and is giving me probably the best information and us talking together and coming up with solutions and being able to look at the best resources. I think we’ve gotten away from that in this profession, that whole opportunity to talk. It’s now coming back. And I think it’s so critical.”
- “The best part of any collaboration is when it’s teacher driven. So if I look at all the PLCs that we’ve done over the years, this one hands down has been the best because it started with us. And that to me is huge.”

### *Teacher willingness to admit they don’t know it all.*

- “If everybody’s comfortable in their own skin, you can learn...I mean we all are, as teachers, type A and perfect, or most of us... You don’t have to be the best in everything and I think that’s important for us to be able to give up that little bit of pride and say ‘No, I don’t know what I’m doing. Someone has to help me with this.’ Sometimes teachers struggle with that.”
- “Often times it was teaching in isolation and I think part of the problem is as teachers we feel vulnerable... I don’t want to be told that I’m not doing a good job, so, being able to get out and talk to teachers and realize that you’re not the only one going through that is really critical. And I think CI has done that. It’s gotten people to talk.”



### *Establishing relationship and trust with colleagues.*

- “The junior-intermediate wing... we tend to meet on a regular basis but we tend to meet around the coffee table discussion each morning... it’s been more of an informal growth and more recently we have turned the corner to make it a more formal and I think with that background informality we had a comfort level with one another and there wasn’t that fear factor... I think having that background and familiarity with one another has helped tremendously.”
- “We’re comfortable enough to be hard on ourselves in front of each other, which to me is a really big thing.”
- “The comfort level allows for us to challenge each other.”
- “I had a lot of reservations because of the difference in our opinions and our teaching styles and age-gap too. I was a little nervous with working with a senior teacher and I was a first-year teacher. So I didn’t know if my opinions and stuff would be valued, if that makes sense. I think there needs to be a lot of trust and support, like feeling supported, before you can even tackle a project together, like any type of collaboration. I think that partnership needs to be developed first.”

### *When CI work is truly collaborative.*

- “When we started these a number of years ago, it used to kind of feel like an exam that you had no chance to practice for and if you did it wrong, they’d interrupt you in the middle and fix it. Now we do lots of chat. You build a relationship. You get to know each other. You get to know what everybody expects. So when you go in, if I’m talking and I forget something and Nicole adds in, it’s not like: ‘You did it wrong’, it’s ‘Oh, here, I’m helping you, I’m supporting you because Johnny over there is starting to throw something and you got distracted so you forgot to say that vital sentence.’ It completely changed the way that I felt about [CI] because it didn’t feel collaborative when we first did these. It felt extremely top-down. But that’s not this year. This year was great.”
- “When I have other people that can kind of help me and guide me and maybe lead towards some resources, and in the end it’s going to affect my teaching in a positive way. I feel like we’re all on the same page and we’re all working toward the same goal. So you’re not just like individualized when you go to the PLC—we’re all kind of unified.”

*Seeing student success that results from CI.* Teachers explained that they were motivated to engage in CI when they were able to identify a direct benefit to student achievement—a direct connection from teacher learning to improved student learning.

- “I always come back to the kids because if... if they weren’t getting anything out of it, then I wouldn’t find it of any value.”
- “For me, teaching Grade 1, there’s always in your mind: these kids have to be able to read by the end. And with a different approach, my fear was, will they get to where I need them to be? And I was just talking to [the principal] this morning about it and saying, you know, now that I’m seeing the evidence of what’s gone on over the year, it makes sense. So I think part of it is seeing, seeing is believing. Seeing that evidence is what, myself as an educator, what I need to make me push forward.”

- “You actually see that even the child that you didn’t think could do anything other than write their name on the page, is actually learning, because if you look at something from earlier and then something from later, you can see they actually drew three monkeys because the story was about three monkeys. So, even those little tiny incremental steps for those children that have a hard time, you’re seeing that. Whereas before, you just had two blank pieces of paper because they didn’t share their thinking with us.”
- If I look at all my years of teaching, my students now for sure are much more reflective, and much more willing to go back and say: ‘You know what? I can make this better and I’m going to’ as opposed to: ‘Oh good, I’m done’.
- “This year the kids who are in Grade 3 have had us working with them since grade 1...and where the Grades 3s were by Christmas, this year they were so far beyond where we would normally see Grade 3s! And it’s because we’ve been doing this oral work and the feedback and everything for the past few years.”
- “...writing my kids’ final report cards and having a good handful of children who went from Level 1 and 2 in math... at the beginning of the year I felt rather hopeless... like I don’t know how I’m ever going to move them... When I think about what our question was from the beginning, they are [now] doing exactly what I was hoping they would be doing.”

#### *Time.*

- “These [teacher colleagues] are a wonderful group of people and they do collaborate on, on the fly. We’re always trading ideas and supporting each other and ‘This kid’s driving me crazy, so what can I...’ You know, there’s a lot of collaboration that’s happening anyway because people support each other in this school. But that kind of in-depth research [as experienced through CI] is something that requires time and money, and if there’s no time and money, you’re not going to get as much of it... there was a lot of adult talk around very specific topics until we finally came up with the achievement gap, and then moved from there to the whole visible thinking piece. I mean, this isn’t something you’re going to have quickly in a ten-minute conversation.”

*What Gets in the Way?* Teachers described a variety of factors that hindered their appreciation of CI as professional learning—factors of concern that diminished their CI experiences.

#### *Lack of relevance to a teacher’s particular classroom.*

- “It’s hard to collaborate professionally because every special needs kid is different. And this teacher will say: ‘This works for me.’ Well, it’s not going to work. They may have the same disability, but you’re like, ‘I already know that’s not going to work.’”
- “The multi-step, multi-strand part was too much for my SK ones... It was too much to ask for little guys to try doing this.”
- “You don’t want to be negative, but whenever you’re at a professional inquiry, all you can think about is what your class is going to do because that’s all that really matters in the end. We want to learn professionally, but everything is about the classroom.”
- “I think when all the teams came together, because our projects were so different, there was no value in that.”

### *Lack of confidence in out-of-touch ‘experts’*

- “And it’s usually people without a classroom that are telling us that... And who haven’t had one in a really long time... And really are disconnected.”
- “When they’re someone that hasn’t had a classroom in ten years, you sit there and say: ‘Okay, that’s really easy for you to tell me to go and do that, but let’s see you do it.’”

### *CI as another ‘add-on’ for teachers.*

- “We all have very busy lives and, you know, we all have things that we volunteer for outside of school as well, that I think sometimes that when you force it into this timeframe, people start to: ‘I can’t take on one more thing.’ It feels like another job.”
- “Sometimes when you formalize it, it feels like an extra job instead of it being something you’re interested in.”
- “Honestly, I felt it was a lot more work on us than other types of professional development and there wasn’t always the time given. Like, especially for creating the presentation for the end. It just seemed like, I’m in my first year, so it’s already overwhelming with all the things that we’re doing and I didn’t think it was necessarily fair how much work was put on us.”
- “You always have the concern that this is just one more thing that’s been downloaded onto us. Now we’re not going to get professional learning—when we go somewhere and someone’s going to teach us something—oh, [instead] we have to figure it out on our own. And it’s like your plate feels so full as a teacher that it’s like one more thing piled on you. It feels like another layer of responsibility on us.”

### *CI is ‘inefficient’ (figure out vs. being taught).*

- “I feel like they have a notion in their head, an idea what they want, but they’re not going to tell us. We need to figure it out ourselves. And it’s frustrating sometimes. Just tell me what you want me to do and I’ll do it, you know?”
- “Not that we shouldn’t spend money on CI, but we also should spend money teaching teachers.”
- “We were digging for resources and then you think, okay, how can I use this? Where in the stage of our progress will this fit? This all takes time. And I’m not saying, hand me this and I’ll just do it, right? You know, give me the booklet and I’ll do the booklet. But if you had some guidelines as to where the focus should start, you know: ‘Here’s the progress of ideas.’ Give us a framework and then that will give us an idea of where we can fit our ideas in.”

### *Lack of support regarding structuring of CI as professional learning processes.*

- “If we could have a higher order support staff or somebody from the Ministry say: ‘This is what we’re hoping it would look like. If you do this, this is what we would like to see.’ I think that would be helpful.”
- “I think that’s part of the problem is sometimes we’re thrown into these things, but we’re not really guided as to the way we should really go.”
- “It needed to be a little bit more organized from the outset... at the end of the day I kind of wanted to just, like, get to it.”
- “It feels unfocused at times. I think that’s one of the biggest frustrations that people have is that different program people have a different idea [of what CI is all about].”

### *Lack of confidence/familiarity with CI practices.*

- “When we were at sea and the kids were at sea, I don’t think the learning was that great.”
- “And when they first started doing this, it was really hard too because we didn’t know what was expected, but then the kids didn’t know what was expected, and the kids, I mean I was in a room once where a kid started to cry because he was so frustrated because the prompt was so nebulous and, and I felt that was wrong. We shouldn’t be making kids cry.”
- “I think another reservation was on the parents’ side. When you take another approach and you’re not teaching what they would call the ‘normal’ way, the way I was taught. They had a lot of reservations and they were coming forward with questions and we didn’t have all the answers because we were just embarking on this. That was a little bit of a challenge.”

### *Teacher’s time better spent with students than PD outside classroom.*

- “It’s been amazing, but every time we’re out of the classroom, we’re not doing our primary function, which is to teach the children and be with the children that we were hired to look out for... We need to keep learning, but they DEFINITELY need to keep learning.”
- “Our school is not one where you can leave your kids a lot. When I left they were frustrated.”

### *Fear of exposing personal teaching weaknesses.*

- “There’s always a fear of being judged and found wanting. What if my ideas aren’t good enough? What if they don’t match up? What if I can’t be creative today? You know, there was always, that for me was a biggie, just bringing in everyone else. ‘Oh. She stinks.’”
- “There’s always that fear with collaborative learning... that whole idea of you’re putting yourself out there with your peers. So you’re letting people into that place to see, you know, your strengths, your weaknesses...”
- “Like I’m on a stage right now. I better say the right thing.”
- “Everybody’s looking at me.”
- “Some people aren’t comfortable to have that outside person come in, because they feel that there’s going to be a judgement.”
- “You know, when you had three people sitting in the room just watching, and you knew they were coming and you’re like: ‘Oh my goodness.’ You know you’re a good teacher, but you second-guess yourself.”

### *Difficulty and frustration demonstrating accountability of CI success.*

- “They (the board) keep asking for the data. You know, how can you assess that what you’re doing is actually making a difference? And that’s the hard part.”
- “I remember telling one of the walkthroughs, because they were taking pictures of things on my walls, I said: ‘The best things we’re doing are not on my walls. Talk to the kids.’”
- “My fear with it is that we had problems having hard data to back up that we’re doing is making an improvement in the student. We know it is but we haven’t got the numbers to prove it and my fear is that they’re going to scrap it.”
- “We get on these paths and you see progress and you get there and then you get to your last CIL and you’re like, oh, how do we consolidate it? We sit there and look at each other. But the last two years, we’re all kind of, oh, well they learned. Well prove it. And there’s no proof.”

- “If you don’t get the responses you want, does that mean you’ve not done it well? What is it? I mean, is that a true, a complete indicator of it? I say not necessarily so. I think we’ve done, you know, we’ve done our best, I should say, but, yeah, it would be great if every child could give you an inference. That would be terrific, but that’s never going to happen. So, so what’s the qualifier? What’s the qualifier to tell me, yeah, my [CI work] is successful?”
- “Every time we met, they had a new plan or a new paper; I felt like: ‘I want to do what we’re doing and what we’re working on, but I don’t want to spend my time filling out a new template because you didn’t like the one we did last time!’ That wasn’t helping us. That was helping maybe the Ministry know what we’re doing.”
- “I would like a less formal inquiry, because there was that big report at the end...big report, big, and I understand that evidence and providing evidence to the Ministry and all that, but that was not valuable to me. That was more stress and more busy work that I didn’t need.”

*Outcomes of CI.* Teachers described various shifts within their professional contexts that they attribute to CI.

#### *More teachers are talking.*

- “More teachers are talking. You see it. And I think it has a lot to do with the fact that it’s so self-directed, that we’re passionate about it and motivated about it. Basically with the CI, we meet as a group. We discuss what we’re going to do. We take it back to our classroom. We collect whatever data it is that we have and bring it back to discussion, to the table and we decide our next step. So, it’s an ongoing process and I think in that way it’s good for us as PD, and it’s good for kids.”
- “I’ve noticed teachers have come out of their classroom and it’s not that isolated ‘I’m an entity all to myself’. We’ve started to talk with one another a lot more, on a professional level, outside of even our collaborative [teams], like, you know, even discussing with other groups what they’re doing and how that can impact what we’re doing in our classroom. So, I’ve seen teachers talking more, which I think is huge.”
- “Having that opportunity just to talk. I think we’ve gotten away from that in this profession, is that whole opportunity to talk. It’s now coming back. And I think it’s so critical.”
- “You’re not alone. We, we can network. We can do this.”

#### *Informal CI.*

- “When there’s a little problem you just chat about it instead. You’re not always waiting for a PLC.”
- “The professional discussion between peers, like on a casual level: even though I wasn’t necessarily in that group, just from talking to peers I gained from their knowledge and then started to put that into my practice as well.”
- “I hope people don’t think that CI has a timeframe. So it should be something that can be ongoing because if you’re truly in it, the inquiry, it doesn’t really end, because as you go on with it, you’re going to figure out something else... go sideways or deeper... So I would just caution people presenting it as ‘Okay, do this CI for a year.’ I think giving that feeling of it’s just, it’s just something you do. It’s a habit.”

### *Increased teacher confidence to take risks/shift practices.*

- “You become, I guess, more of a risk-taker in the classroom. You get that confidence in your classroom that you might not have tried something on your own, whereas if you do this as a group, you know, there’s strength in numbers, right? So if we’re all going to fail, I’m okay with that, right?”
- “That’s what I got most out of the CI, that I was trying something new and that I wasn’t doing it in isolation and that it was very focused on what was the biggest need for our students... These things that we’ve picked up this year that we’ve tried are absolutely things that I am continuing in my practice, without a doubt.”

### *Increased recognition of the importance of teacher reflection and ongoing teacher learning.*

- “Learning goals are up. They’re good. They should all know what they’re doing. They’re going to really do well on their quiz? But then you start noticing it’s the changes I need to make and my needs right now that have the biggest impact on student learning. So I think when we first started it was what’s wrong with the students? Now it’s what teacher learning do we need to dictate changes in student learning? Now we’re looking at us.”
- “We can’t just teach anymore and hope that’s going to make a difference. This is actually getting us to look and measure what we’re doing.”
- “It really makes me question my practice and look at what I’m doing, so makes me more of a reflective practitioner.”
- “This process makes you really look at your teaching and really evaluate it and are you doing the best practices with the kids? I wouldn’t have evaluated my teaching as much, and I think that’s something that we continually have to do. Are you really making an impact? Are you really hooking, engaging the children? All of those things that we want to do. And I think this process made me really do a lot of self-reflection on my teaching.”
- “Our position as teachers is changing. We’re no longer the all-knowing. We’re now the facilitators, the guide on the side. We’re the ones that are creating the format, the structure that they’re going to gain that content in. We’re changing, we’re evolving as teachers.”

### *Recognition of the value of CI as personal professional learning.*

- “I felt last year’s CI made me grow a lot as a teacher.”
- “I think it’s been such a good process and evolution. I mean I’ve been teaching for a long time as well. Twenty-five years. And it was kind of getting stale. The changes I have seen in my own practice I think have made me a much better teacher. And I apologize to my first year class.”
- “Part of being a teacher is that you’re a lifelong learner. You can’t necessarily, you know, grow in isolation.”



## *Other Things Teachers Notice*

### *CI is student-driven.*

- “You’re the little engine that’s the wheel, but it’s their responses, their thinking and their needs that are driving it.”
- “[The students] have the input. And they really are... THEY are part of their learning.”
- “The students are now at the center, so we need to make sure that we’re equipped with the knowledge and the skills to make sure that we’re doing a good job and keeping them at the center of, of everything.”
- “Their [the students’] needs are driving our professional practice.”

### *CI mindset trickles down and is adopted by students.*

- “The confidence that the kids have: ‘I will go find that out!’ ... ‘Oh, I know how to do that. I’ll show you.’”
- “I think too when, as teachers, you become risk-takers with each other, which we have, then they absolutely are risk-takers in the classroom.”
- “And I think that’s also translated to the students. They get it from each other and they get it from me. So we’re evolving, but they’re also evolving at the same time as well.”
- “They’re helping each other along the way, just like we are.”

### *Teachers and students as co-learners.*

- “At the same time, it’s great to say: ‘I’m learning with you.’”
- “We realize that we need to be where the students are. Kids are actually teaching you too.”

### *Students are empowered by being involved in the CI as professional learning process.*

- “So, for me, I think this work is valuable because I’ve seen all sorts of kids in our school embrace sharing their thinking with the adults and that’s the big thing. They feel empowered.”

## *Existing Supports*

### *What Teachers Value in Principals/Administration*

#### *Hands-on involvement.*

- “It was a real team approach too, with four of us and [the principal] and some other board people.”
- “She’s very knowledgeable. And I think that it’s also very collaborative, having her come into our classrooms and see what we’re doing and we can discuss it and so on. She’s great that way.”
- “And that comes from working, from them being a part of our conversations. They know our conversations. They know what we’re doing.”
- “They’re in our classrooms, you know, giving feedback.”



- “They sit in on several of the teams, so they know, so they’re always aware of what’s going on and they really speak to it at staff meetings.”
- “I think we had the natural interest but she was, she was also interested. So she got involved in it, into a conversation about it as much as, as passionate as you were... she was the one who said, ‘Hey, we can apply for this, or you can apply for this.’ ”
- “So when we had the MISA application to put in, she sat with us and did it and gave her input. When I did the TLLP application, which was quite lengthy, I said ‘Can you help?’ ‘Yup.’ So she was, her support was big.”

#### *Instructional expertise.*

- “And our principal was very, like, math-focused and he was a math resource teacher for the board, so he, I feel like he was a great person for bouncing those ideas off and knowledge of the research to do with math so that we didn’t have to necessarily go and make that what we were doing was the right thing. He could kind of tell us.”

#### *Flexibility/freedom with CI structures.*

- “Like he’s given us that permission to get deeper, to kind of do what we need to do and if your administrator has a model that they’re following and you have to fit into that. We’re an example of how that doesn’t work... it’s our learning and they have to support our learning instead of us supporting the board’s initiative.”
- “And to be able to change our [inquiry] focus.”
- “And it goes back to admin though being supportive and open to the fact that, you know, to allow people to have choice.”
- “Teams have evolved and teams have split apart. Some teams have morphed into different questions and different inquiry because we realized that what we were working on initially, there was a limit to our learning in there. And so it’s now changed. Interests change.”

#### *Flexibility/freedom with curriculum.*

- “I give kudos to him for being an administrator that allows the messiness, because that’s my problem with the curriculum is: ‘But I’ve got this curriculum for grade 3 EQAO’ and he’s going: ‘Forget the curriculum.’ ”

#### *Recognition of the value of mistakes.*

- “If you’re comfortable with your administrator that I can, I can, not fail, but I can have a problem and I can admit this isn’t working for me—that’s when the learning happens. And we have one superintendent...he said we have the best job in the world because we can fail one day and go back and try it the next day. I think that’s a sense that administrators can bring to a building and I think that’s huge.”

### *Provision of release time.*

- “And it’s time. I think we’re lucky here at the school, but not all schools are, to have that time to collaborate with each other and to build that trust, to build that comfort zone that we have. Not all administrators do that, not all dig deep into the budget for that. What an administrator needs to look at too is to give people some time.”
- “And they’re always very supportive. I mean, if we need time, if we feel comfortable enough that we’ll go to them and, and tell them what our needs are.”
- “And there was support. There was support from administration. The time and resources... We weren’t on our own trying to do this. We had the support.”

### *What Teachers Value in Experts/Outsiders*

#### *Constructive external perspective.*

- “One of the biggest things was having the SWS [Student Work Study Teacher] this year because she was somebody from outside. She came in and she showed me things in my class, my own classroom, and about myself, that there’s no way I would have identified on my own. It was an eye-opener to me. I thought, ‘Wow. That’s what we’re doing? That’s what they’re saying? It was very constructive, having someone come in, who isn’t right next door to you.”
- “It’s about being honest? But not critical.”
- “We struggle in the primary division with formal protocols that we have to follow. We are welcoming to new people. We are open to new ideas. We are constructive in our conversations. It’s more of a sharing, as opposed to a criticism kind of thing. And we find the formality of the protocol more stifling than if we could just talk and share our issues.”

#### *Relationship/trust.*

- “When we started these a number of years ago, it used to kind of feel like an exam that you had no chance to practice for and if you did it wrong, they’d interrupt you in the middle and fix it. Now we do lots of chat. You build a relationship. You get to know each other. You get to know what everybody expects. It completely changed the way that I felt about [CI] because it didn’t feel collaborative when we first did these. It felt extremely top-down. But that’s not this year. This year was great.”
- “I think the more you build a relationship with someone who’s supporting you, it becomes much more relaxed and natural. We are so comfortable with what we’re doing [now] that we go in there and like: ‘Okay, let’s do this’ and we hand out the markers and there’s no tears, there’s no stress. The kids just go with it and they enjoy it... they’re not stressed the way it used to be.”
- “It didn’t take long but it wasn’t immediate, that the comfort level was there, that you can walk into my classroom. You can join in. And now, I don’t even think we stop now when somebody walks in.”
- “So she has been in my classroom many times. There’s a comfort level there, that when she comes in it’s... she just joins in. It’s not like I’m on show, that this is a judgement thing. It’s not like that.”

### *Classroom demonstrations.*

- “I think teachers respect [experts] the most when [they] are willing to put their necks out and show you how to do it. That’s the best PD that you could have because you could actually see it and see what they do and see the steps that they take and [you could hear them] saying “Okay, I’m not perfect at this. Let’s just give this a try and...” Yeah. Because it shows that relationship and the trust. Someone who says: “This is what I want you to do, but I’m going to show you first.”
- “The program person that we had was willing to take the lead, be the teacher that day, not tell us to do it and we’ll watch, you know, he did it and we watched. And he did it all. Like he let us sit back and watch for once, instead of feeling the responsibility. And that was really beneficial because we weren’t stressed out about this guy watching us. You’re not really learning a lot when that’s going on.”
- “He, he took all the onus of the teaching part and took it on himself, and I mean he is a high school teacher, so it’s not exactly his comfort zone either. And I, I really respected him for that and I thought, that’s why I bought into it more this year than I have in the last few years because I felt they were just: ‘Okay, you guys go and do that.’ And I didn’t feel a lot of people bought into it.”
- “Teachers are interested in seeing other, like, what is happening, not, not just being told about it...so we actually want to see it. We want see and we want to hear from people actually doing it.”

### *Ongoing guiding and care.*

- “... and then: ‘I’ll be here all along. Like, when we do another one next month, I’ll release the responsibility to you, but I’m still going to be there and guide you through it. If you’re not using the right language or you can refine your questions in this way or that way, I’ll be there to support you with it.’ And with that, I think it just builds a real relationship of trust. It’s not the stranger coming in and, and dictating what you need to do and not really telling you how to do it. You’ve got to figure it out and that gives a lot of anxiety. It’s like you become the same, on the same playing field and you’re more apt to be more relaxed and more successful, I think, at learning it.”
- “... to still be there on occasion to repeat it and support all the way through, especially the first year. It’s, to have somebody that knows more than you to be there and just guide you because it’s a learning support.”

## *Next Steps*

### *Teacher Suggestions*

#### *Sharing the wealth: Connecting collaborative Inquirers.*

- “One of the most valuable things we’ve taken away from that is networking at the other boards. We’ve, we have not done a good job of that as a board, is getting out there and learning what other people are doing. We don’t have to reinvent the wheel. So let’s go see what other people are and how far they are and piggyback on what they’re doing. I think that’s so critical. We need to have more connections.”
- “I went to the board’s big CI meeting. A teacher and a principal from every school in our board met. And I got there and I looked around the room and I thought, wow, all these people are doing the CIL. Okay. And we sat at random tables, so we’d start at one, there was four questions and we travelled to different tables, so at the end we had actually sat with everybody in the whole room, and as I went around that room, I thought, all these people are doing inferencing and I didn’t know it until today. It’s like May 15th. I thought, all these people are in our own board, that we can email, if nothing else, but we’re just finding out about it. And I think, it’s too late now. So we were talking about, like, a hub on the website or something that you can go, okay, this school’s doing this for their CIL and at least you can peruse down and be like, okay, I’m going to send a random email out. So it was just sad to me, a little bit, that all this great stuff was going on and we had no idea.”

#### *More parental involvement.*

- “One area that I would have liked to have seen go a little bit differently in that way is the parent community. I don’t think the parent community had a good sense of just what we were doing.”

## Principal Interview Data

Following our analytic approach for teacher responses to CI, data from principals in case study boards were also analyzed in relation to four categories: (a) state of CI, (b) sense of CI, (c) existing protocols, and (d) next steps for CI.

### *State of CI*

*To give it a key term, it's very embedded here. It's just part of the culture.*

Of the case study boards, all but one of the principals believed they were in an emergent stage of CI. In contrast, one principal believed his school was at an experienced stage of CI. Principals who described their schools' use of CI as emerging generally acknowledged that they were new to the CI process. Their CI processes tended to be more directed and controlled by the Board. As one principal stated, we "look at our board plan and look at our school plan in line with that, and start talking about the needs of the school because we have to speak to all of that." CI efforts were tailored to align with the Board Improvement Plan (BIP) and principals identified 'data' as motivating elements to their CI work; 'data' were generally described in broad terms but often consisted of components such as school-based qualitative data, and EQAO data.

The principal who described his school's use of CI as experienced expressed a more clear sense of ownership over the school's CI processes and practices.

As this principal offered, "now they're constantly coming up with, not just collaborative inquiries with the kids in their classrooms and where they're going, but also collaborative inquiries with each other about where do we go next." This principal described how he/she could take such motivating aspects as BIPs and school and board data and leverage these data in a more holistic sense for informing CI efforts rather than focusing on each individual piece of datum.

*I'm really trying to use data to support whether we've actually achieved our goal...*

*...I really feel qualitative and current data is the really the key.*

In all cases, principals considered their role as a facilitator for the development of CI practices in their schools or districts; in a sense, a 'conduit' for information flow in the middle of a large entity such as a school board. Not only were principals working to create the necessary conditions for teacher success, for one principal in particular, "for me it's about being the best facilitator I can be, and asking real good questions at the right times." Principals felt there was an importance to being responsive and responsible to both Board administrators above them in the board hierarchy, and teachers below them in the board hierarchy. "As administrators, we are accountable. So we have to make sure the expected practices and the PD is happening around all of that, and also be able to support them in their inquiry."

## Sense of CI

Principals described CI as having some momentum or gaining momentum within their school or district. Some principals hoped to have momentum, and others felt the process was becoming less intimidating. As one principal commented, “it was a bit mucky, I think, for us this year...” There was a sense of uncertainty as they worked to align CI processes with their School Improvement Plan (SIP) and BIP, and CI was moving from the realm of principal responsibility to teacher

*They won't go backwards...they won't back up because they, they're so entrenched in the process that it would drive them crazy to back up.*

responsibility. One principal stated that for “some teams, basically we just tried to stay out of their way...others...needed some hand-holding.” Ownership of action was identified as a key component for building momentum. This ownership came from collaboration that was flexible, re-assuring, responsive, and focused on shared learning. Principals identified pockets of growth of ability with CI. “The board is moving forward. It's definitely in pockets. There's pockets of the board where it's slower than others.” They expressed a sense of growth through various bumps and barriers such as difficulty getting people

together and the importance of board support for CI efforts. One principal in particular believed that uncertainty about the future of current inquiries caused momentum to fizzle out in some areas.

For most principals, whether the initiative for CI initially came from teachers or was mandated from above was less important than ensuring that needs were aligned and accountability was felt from both sides. Mutual respect, responsibility, and responsiveness needed to be demonstrated by all the stakeholders in the CI implementation process. Some principals considered successful CI to respond to diverse school needs; “the top-down things... rarely do they work because it's usually based on district data and district mandates, and it doesn't really equate, to what's really going on in a specific school because all schools have different needs.” If the initial direction for the inquiry came from the Board, teachers needed to be awarded the respect and flexibility to adapt the Board's CI framework to suit unique school needs. However, having some direction from the Ministry and Board was identified as important at this stage in the implementation of CI to provide a push for teachers to get the process started. As one principal stated, “they have to be invested in, in what they're wondering about in their kids. But sometimes you don't get that wondering unless you kind of push it forward a little bit to start.”

*It's making a difference because people are having a conversation.*

For CI processes and practices to be successful – to make a difference in the quality of teaching and learning – principals felt there needed to be a focus on students within the context of the classroom. Students' input and seeing changes and improvement in students' work were identified as important. As one principal emphasized, it comes from “the classroom component to it. Like we were actually going in and looking at what the students were doing in the moment and capturing it and taking it back and reflect[ing].” The success of CI also relied on teachers talking and sharing with each other and fellow CI participants. An apparent necessary condition for successful CI processes and practices was the ability to draw on existing and previous experience. A sense of a knowledge-base – about CI or the topic of the inquiry – from people with current and/or previous experience was described.

Evidence of the effects of CI could be seen in changes in the classroom regarding students and in changes with teachers outside the classroom. Inside the classroom, teachers appeared to be listening to and valuing their students' input. Students appeared to be talking differently about their learning and classroom work, and appeared more engaged. One could see "much more of a learning space versus a teaching space." Outside the classroom, teachers appeared to be demonstrating a strong sense of ownership and perseverance with their CI efforts. Teachers appeared to be more of a critical friend by questioning themselves and each other through increased professional conversations.

*A sense of never giving up and persevering through the bumps and bruises and just embracing the experience for the good and bad of it all has been really good.*

### *Existing Protocols*

For the initiation of a CI project, principals' descriptions aligned with one of two groups; "no protocols" or "some protocols." In the situation where the Principal believed there were no distinct protocols for the initiation and implementation of a CI project, (s)he explained that teachers would come to the principal with their professional dilemma and the principal would assume control of the CI process. As one principal stated, "we don't just say 'Sure, go ahead' and I really give them some questions." In the situation where the principal felt there were some protocols to follow, they generally described a) a team would be established, b) CI ideas would be discussed, and c) a decision would be made about how to proceed with the CI project. "We literally start with a simple phrase here called 'I have an idea', and we all become just one voice at that table."

In either situation, principals said they would obtain supports for the CI project as needed. Additionally, the principal attempted to not assume a top-down leadership role with the CI project but to provide teachers with the autonomy to structure their own inquiry processes.

*I like to empower staff, that we can find some resources and we can have a more professional dialogue about student learning.*

### *Next Steps*

Moving forward, principals expressed a hope for continued funding for all aspects of CI, along with continued funding for release time. A principal summarized, "I think, more than anything, is that it's something that they care about doing. If people are doing things that they care about doing, you know, that's a huge element of what this sort of process is all about." Principals expressed a desire to know more about the 'big picture' of CI in the board and in the profession. Lastly, there was a desire to have a coordinated systemic approach to CI that provides cohesion and coherence to professional learning across the board, for example, a consistency for who is responsible for the initiation of a CI project.



## School Board Supervisory Officers (SOs) Interview Data

Following our analytic approach used for teacher responses to CI, data from supervisory officers (SOs) in case study and consulted boards were also analyzed in relation to four categories: (a) state of CI, (b) sense of CI, (c) existing protocols, and (d) next steps for CI.

### *State of CI*

*We've become a responsive system, so no longer do we tell people what you need to do. They tell us and we respond to them in whatever capacity and, and way that we can.*

Supervisory Officers in school boards (SO) perceive themselves in two, often distinct, ways, a) involved at the board level, and b) involved at the school level. At the board level, the SOs tended to describe their primary role as a facilitator for the development and distribution of resources for CI projects. The SO decides on protocols, manages human resources, and monitors the CI process/learning model. SOs also described work with individuals at the system/board level to reflect on the progress and manage the state of CI. At the board level, an SO describes this work as “work with system principals who work directly with our consultants and our coordinators around the professional learning strategies that we design for the following school year.” At the school level, SOs often described being responsible for working with school Principals to develop CI processes and to ensure that the CI projects occurring in schools align with the BIP. “I inform them of what all the CI practices are and we integrate them in the guidance that we provide to the school.”

### *Sense of CI*

Two distinct descriptions of momentum related to CI were described by SOs; there was “a little” momentum, or there was “a lot” of momentum in their district. For those who saw “a little” momentum, the CI process was described as board-centric. The school board set the CI goals and focus, and maintained control with the overall process. As one SO stated, “we’re struggling to identify what those needs are for the principals in order to be able to continue to support them,” felt responsible for ensuring the CI projects were tied to the school board goals. For those who saw “a lot” of momentum, the CI process appeared much more “school-centric.” These SOs described a process that encouraged and experienced more teacher ownership of CI projects. They described a mindset where CI was seen as part of the practices of teachers and school administrators; a continuous process of shared leadership where everyone involved recognized the value of learning and sharing with others. In particular, the SIPs were used to inform the BIP as teachers managed ownership over developing their own inquiry questions.

*It's become just a way of doing business.*

For SOs, whether a CI is mandated from a system level, or ‘bubbles up’ from the teachers and schools, it is the extent of the rules and definitions of the parameters of CI in the Board that are important. As one SO noted, “we just create the conditions....”

An analogy of a sandbox may be used to describe this sense of parameters. Three notions of a sandbox provide the sense of a professional space for CI to exist; a sandbox with boards surrounding the sand, sand in a loosely defined space of ground without boards, and no sand – just a space of ground. Two findings emerged from the SOs perspectives: 1) whether there is a sandbox or not, there is value for teacher input into CI, “we need to give them the foundation to know the framework and the protocols to make that happen”, and 2) with a sandbox and its defined space, the Board sets policy for CI, that there exist system and systemic priorities that direct CI efforts, “we’ve set up the format and we’ve asked everybody to participate, but the work comes from them.” The diagrams in Figure 1 below illustrate the various notions of input, ownership, and control for CI projects. Lines drawn in the graphics may provide a visual graphic that represents the sandbox analogy.

From the SOs we talked to, it appears that the structures to support CI initiatives ranged from being quite informal, enabling the teachers and administrators to create their own structures to best support their efforts, to much more formal structures imposed by the school board. Another explanatory analogy may be that of playing hockey; 1) street hockey with hats and coats marking goal posts, and everyone agrees upon the ‘out of bounds’ as curb, or grass, or sidewalk, 2) hockey in a park on grass with erected boards, or 3) hockey played in an ice arena with a referee enforcing the rules and monitoring the game’s progress.

For CI processes and practices to be successful – to make a difference in the quality of teaching and learning – SOs highlighted the importance of the principal’s role as an instructional leader, the participation of experts, and the nature of the teachers’ sense of a professional relationship. As an instructional leader, in the principal is a co-learner, participating and supporting the sharing of knowledge and collaboration. One SO spoke at length about the role of the principal, and noted that the role of co-leader meant that the principal “is at every one of their PLCs. She supports them in the usual ways with resources, with time to get together, but she’s also there. She’s at the table. She’s learning all the time.”

*It’s not an  
administrator  
in charge...  
they’re learning  
alongside.*

SOs recognized the importance of experts, from both within and outside the Board. Experts could be in the form and role of SAOs or university faculty who hold a particular knowledge-base for the CI process or the content and specific topic of the CI project. The nature and amount of this support would differ depending on the experience and needs of individual boards. SOs also noted the importance of teachers feeling as though they were developing positive professional relationships by taking part in the CI process. As one SO stated, “at the end of the day, it all comes down to relationships, right? Trust? It’s about co-learning and it allows me to support educators with their inquiry process in a very different way.” The formation of these relationships made teachers more willing and eager to volunteer their time to CI. Working on an inquiry that was relevant to them, with people they trusted and who made them feel valued, contributed to feelings of ownership that continued to propel the CI process forward. “And just giving them that latitude to shift gears when they needed to. I think that, that, all of a sudden they felt valued.” The result of these efforts could be heard by the SOs as they found that the participants in CI projects were excited to talk about what was happening and they would engage in “deeper conversations” about their learning and professional practice.

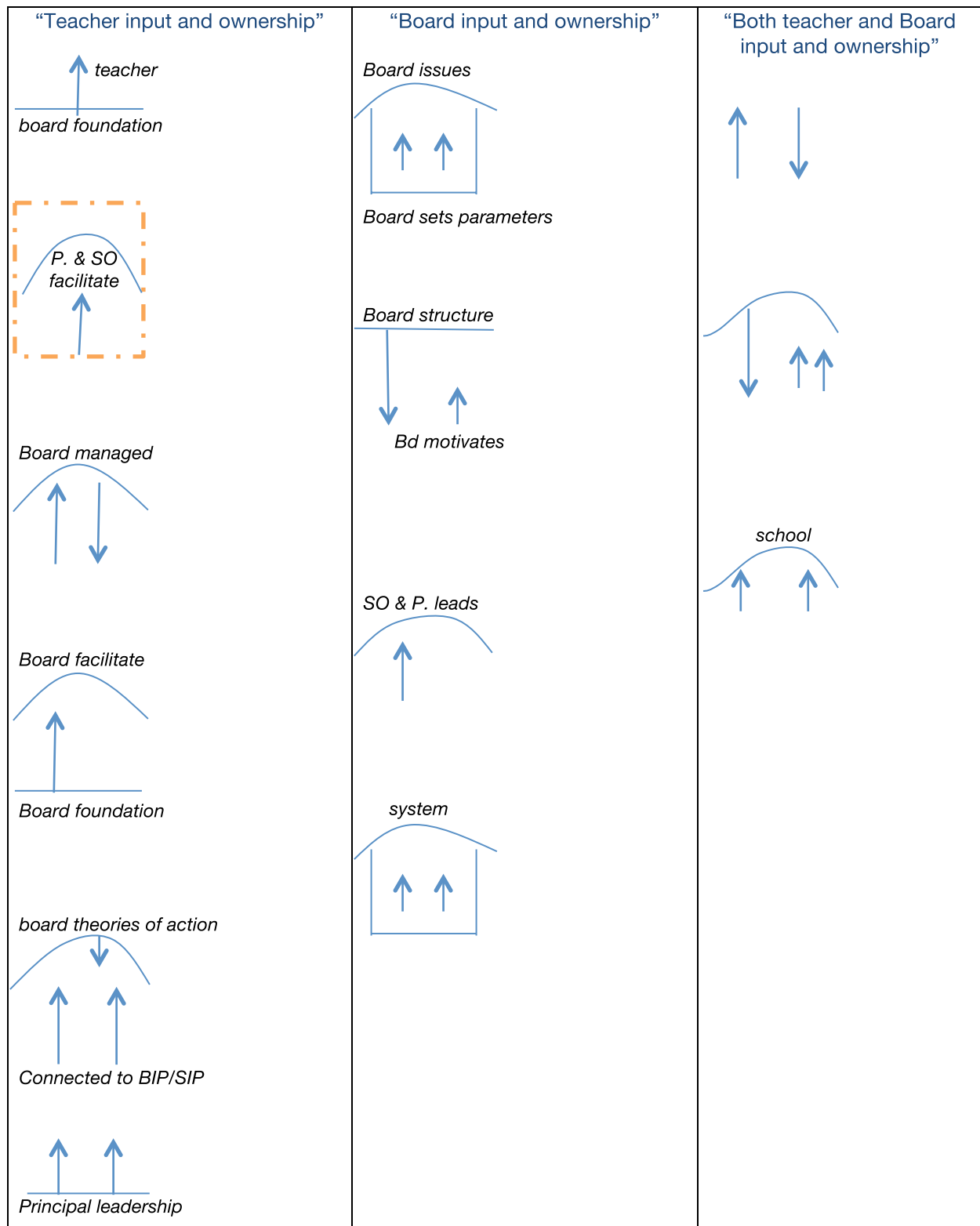
While there was no consistent evidence gathering method, evidence of the effects of CI could be seen in the positive affective sense that developed and how the CI process was being made a personal endeavour. “People feel comfortable enough to say what they think”, and “suddenly principals are saying ‘maybe I am holding some biases about teaching and learning that I need to question’” are representative of the sentiment being heard by SOs. Similarly, the senior board administrators were learning from the CI initiatives, and were identifying needs and directions for their work. As one SO described, summarizing a common sentiment, “one of our key learnings as a senior admin team...was the more resources we were able to provide them the better, and more enhanced the student learning will become.” Evidence of this sense was gathered from apparent SIP trends, SO and principal reports, principals’ feedback, surveys, report card trends, interviews with those involved in CI projects, district reviews, regular monitoring protocols with Principals, and anecdotal observations.

### *Existing Protocols*

Two levels of protocols emerged from the conversations with SOs; some had a formal process, and some had an informal process (a further example of the hockey analogy above). An equal number of SOs appeared in each group. Formal protocols progressed from a request at the school-level, to a presentation to a team, to the SO and the necessary allocation of resources and support for the CI project. As one SO stated, once the project is identified, “whenever they do get a successful project, we support it with central staff so that they work together to help develop it. Teachers who begin projects don’t always necessarily have all of the frameworks or the ways to go about implementing it. So we connect it with, always with somebody who that’s their job to do that.” Informal protocols appeared as system or school requests for a CI project, and then an allocation of resources and support for the project. SOs in these boards offered “lots of freedom.... we [just] set literacy and numeracy in terms of school improvement planning.”

*We always have central supports that are available to administrators as they help teachers facilitate any kind of inquiry*

Figure 1: Diagrams showing sense of CI control (arches and horizontal lines), and the direction of a CI request or initiation of a CI project (arrows up and down – size represents relative control and ownership.)



## Next Steps

*My hope would be that the Ministry continues to allocate funds to support professional learning because without those funds, we would not nearly have the growth that we have had.*

Moving forward, the SOs expressed a hope for continued and/or increased funding for release time and program support. Program support was described as board-level program department consultants and professional development days for the board. Funding was identified “to continue to support having our own consultants at the board level to support this work.” SOs felt “we really need to fuel, and invest, and provide support for our administrators to understand deeply what the work is.”

SOs also had a desire to have more flexibility in determining how to use available funding in order to accomplish what their board felt was necessary to further their CI projects. One SO mentioned a feeling of already experiencing this kind of flexibility; “if I want to connect with somebody about an inquiry, I can do it. I don’t need permission to do it. And if it’s in the best interests of the school improvement plan, then why wouldn’t I want to be doing it?”

*Even though we have a certain autonomy in the path that we follow, we always benefit from the guidance that the Ministry gives us in terms of specific training related to the inquiry.*

Instructional leadership support from the Ministry of Education for SOs themselves was also mentioned. As one SO stated, “the last thing I wanted to do was spread something we didn’t even know what it was and whether or not it would be successful. That’s just a waste of money and that’s not what we want to do.” They were interested in support that would increase their knowledge of CI, and their abilities to be instructional leaders at the system level to align with the similar stance Principals are taking at the school level. Reiterated and emphasized themes of continued Ministry support for professional learning through CI were common from many of the SOs interviewed. The comment from one SO captured a common sentiment, “sometimes even if we try to be the most explicit possible... sometimes, it isn’t always evident for the participants to be able to say what it is.” This emphasis was for support and assistance to increase SO capacity for knowledge of CI and instructional leadership for the benefit of all educators, “that there’s a common understanding of the term.”

*Mobilize the knowledge that you’re generating and creating and that you’re gathering so that we can all share in it.*

## Implications for Policy and Practice for Collaborative Inquiry in Ontario Elementary Schools

This section addresses the questions that shaped our review and evaluation of Collaborative Inquiry (CI) initiatives in Ontario. The information provided in this section spurred discussion amongst the Literacy and Numeracy Secretariat (LNS) and the Queen's Evaluation Team (QET) members during our joint meeting on September 17, 2014.

### Evaluation Question #1: *What is the systemic impact of LNS Collaborative Inquiry initiatives in promoting professional learning in Ontario schools and district school boards?*

*Systemic Impact of CI.* In coming to understand CI, we discovered that it is equally understood as broad ranging educational policy and as a system-wide curriculum for professional learning. We acknowledge that CI in Ontario is not a policy but rather a set of related initiatives to support professional learning and enhanced teacher practice. Nonetheless, policy related research provides a foundation for examining the impact of CI across the province. The field of public policy helps to make sense of the complexity around the creation, translation and diffusion of policies and initiatives in an educational context. The curriculum framework is useful for understanding the logic of how CI is intended to influence the educational system and its key stakeholders.

Howlett, Ramesh, and Perl (2009) differentiated the broadest space of policymaking that houses all policy actors as the *policy universe*, and any subset of the policy universe that is involved in discussing options to resolve a specific policy issue as *policy subsystem*. An important distinction policy makers use in framing their work is between *policy as stated* and *policy in use* (Sergiovanni et al., 2009). Policy as stated is the policy that is created and mandated by policymakers, whereas policy in use refers to policy that is created where guidelines are interpreted, mandated characteristics are weighed, differential priorities are assigned, action theories are applied, and ideas come to life in the form of implementing decisions and professional practices. The methods of data collection in our study vividly describe how policy statements are interpreted and felt by stakeholders that are directly affected by them. Moreover, the policy effect tends to lose its strength as policy guidelines move deeper into the institutional structures. Thus institutional factors, contextualized by local board and school realities and circumstances, have the ability to not only hinder coherent implementation of CI but also contribute to purposeful adaptation of the policy and the authentic learning, understanding, and internalization of the practices. Therefore, we envision the presence of another level of *policy as internalized*. It is at this level that policy as stated and used get the most traction with the targeted population of policy implementation – educators and students.

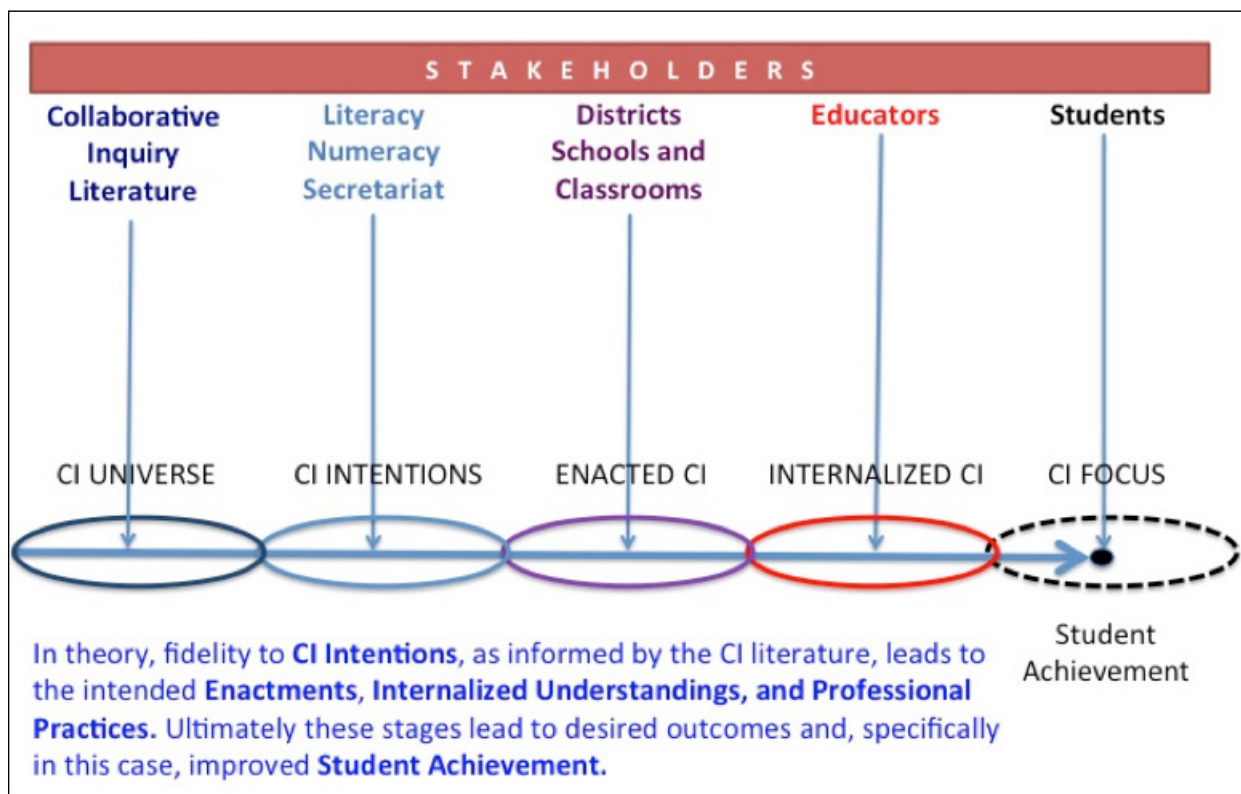
Within the curriculum literature, historians and sociologists of education also acknowledge that curriculum operates at various levels. The success or failure of curriculum is often framed in light of its ability to migrate across the various educational structures, especially when considering



educational reform initiatives and efforts to effect widespread change in schooling. Elmore and McLaughlin (1988) identified three interconnected levels of curriculum practice: policy developers, school administrators, and practitioners. Labaree (2007) refined the categories to a greater extent, identifying four levels of school reform and developing a nested model for conceptualizing educational reforms. Each space has its own stakeholders, purposes, and discursive community. Labaree referred to the place where most reform efforts begin and typically end, as the level of *rhetoric* or conceptual discussion. The curriculum becomes *formal* through the use of policy documents and protocols. The methods and means of instruction serve to define the *curriculum in use*. At its core, Labaree identifies the curriculum as it is *received*, i.e., as it was learned and interpreted by students. In expanding upon this nested model, Labaree (2007b) argued that the activities at play in each level, or space of curriculum typically tell us little about curriculum reform, implementation, or focus at other levels. A similar framework curriculum reform is presented by Cuban (1992), who drew attention to the *rhetorical, intended, taught, and learned* aspects of curricula.

*The Systemic Impact of CI in Ontario.* Our analysis first integrated Labaree's and Cuban's framework and we developed a graphic representation that might portray the systemic impact of the CI universe in Ontario. Conventional thinking would have us situate the various policy or curriculum regions above in a linear relationship with directionality in the dissemination of CI and an implied hierarchy in the authority for decision making (see Figure 2).

Figure 2: A conventional representation of the Systemic Impact of CI in Ontario.

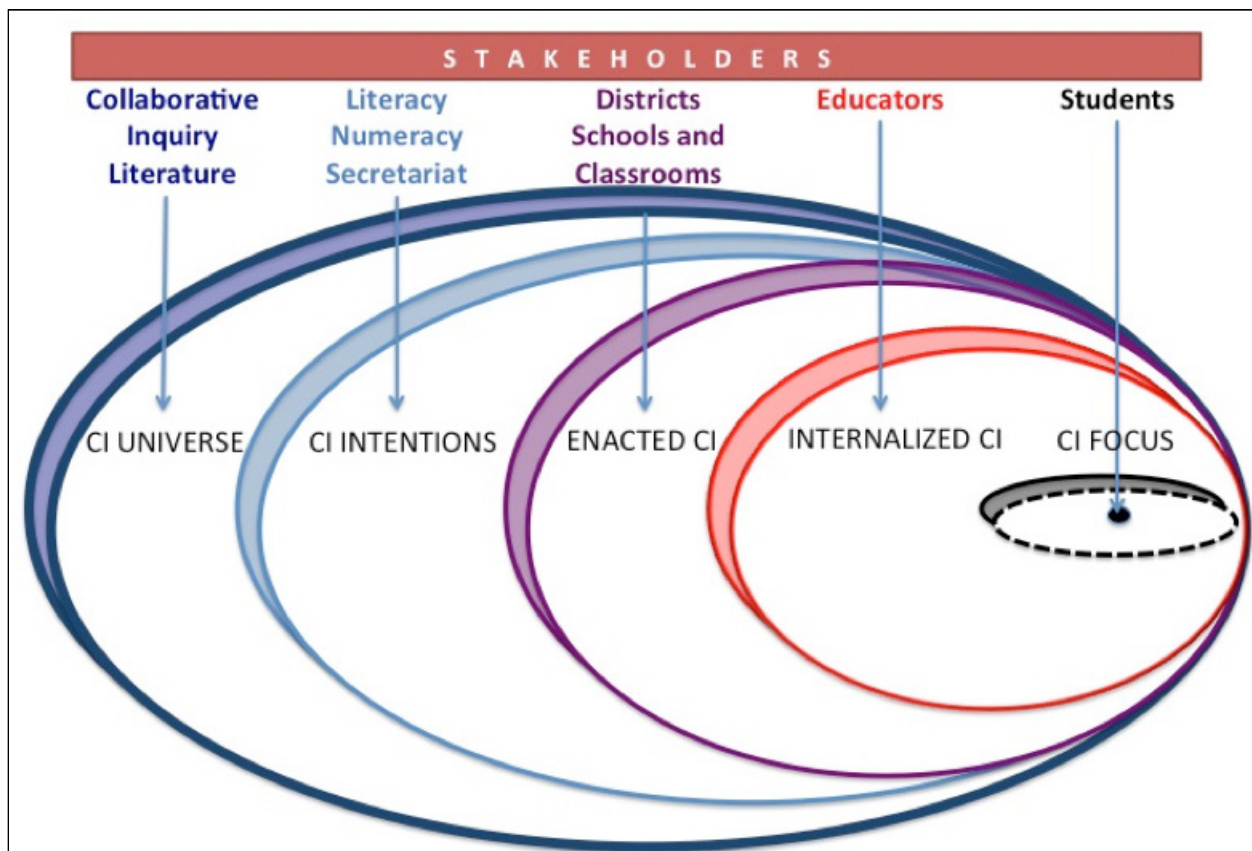




We see significant limitations in this model primarily because of the indicators of success verbalized by LNS staff during a logic model exercise conducted in August 2013. At that time the staff fleshed out a coherent connection between program goals, activities, outcomes and indicators (see Appendix A). The indicators of success expressed at that time included among others that, “There is evidence of adaptation in educators’ thinking about CI processes” (Desired Indicators of Program Quality, *Interim Report*, March 2014, p. 6).

Consequently, we have used all of these frameworks (i.e., Labaree, Cuban, and logic model) to construct a model with five *nested* spheres of influence, or *levels*, where CI can be understood as existing in the province. As a heuristic, Figure 3 more accurately describes the complexity of CI development and its diffusion. Specifically, this model enables each level to influence the others and demonstrates the potential room for adaptation within each level. This less linear and less *siloed* representation of systemic impact is also more congruent with the intentions of LNS staff as documented in the logic model for the initiative (see Appendix A). “Educational staff grapple with the limitations of conventional role expectations and develop strategies that help everyone to support mutual professional learning” (*Logic Model*, August 2013).

Figure 3: A nested representation of the Systemic Impact of CI in Ontario.



The first, and outermost, level of this nested model is labeled the *CI Universe*; it represents how CI is practiced and understood in the broadest of educational contexts. The second level, along with

each level within it, relates explicitly to the Ontario context within the scope of our evaluation. *CI Intentions* involves the LNS and the SAOs as principle stakeholders, which concerns the explicit discourse surrounding collaborative inquiry in the province. The third level is labeled *Enacted CI*, implicating the practices supported within school boards, schools and in classrooms. The fourth level termed *Internalized CI* relates directly to the beliefs, practices, and understandings of educators with respect to CI. Nested at the heart of the framework is the *CI Focus*, which has as its core the students. Although student's experiences and relationship to CI were not directly explored as a dimension of this formal evaluation, student learning is omnipresent in each of the initiatives explored by our team. In order to better understand each of these levels, we relied on data collected at various time points throughout the evaluation to present each stakeholder's perspective. Figure 4 illustrates how data were used to understand each level. Figures 5 to 9 provide descriptions of each of the levels in which CI exists in the province.

*Figure 4: Methods for acquiring stakeholders' perspectives.*

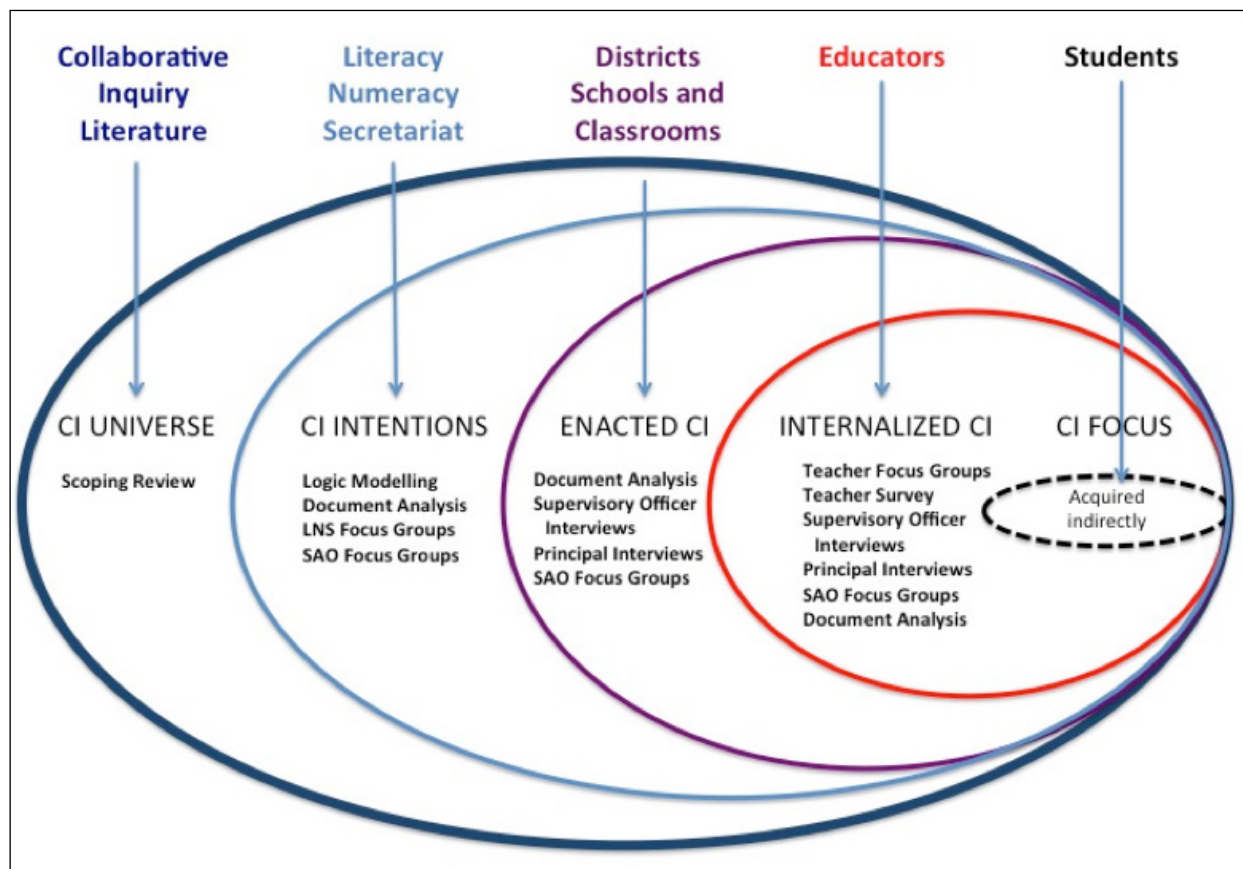


Figure 5: The CI Universe.

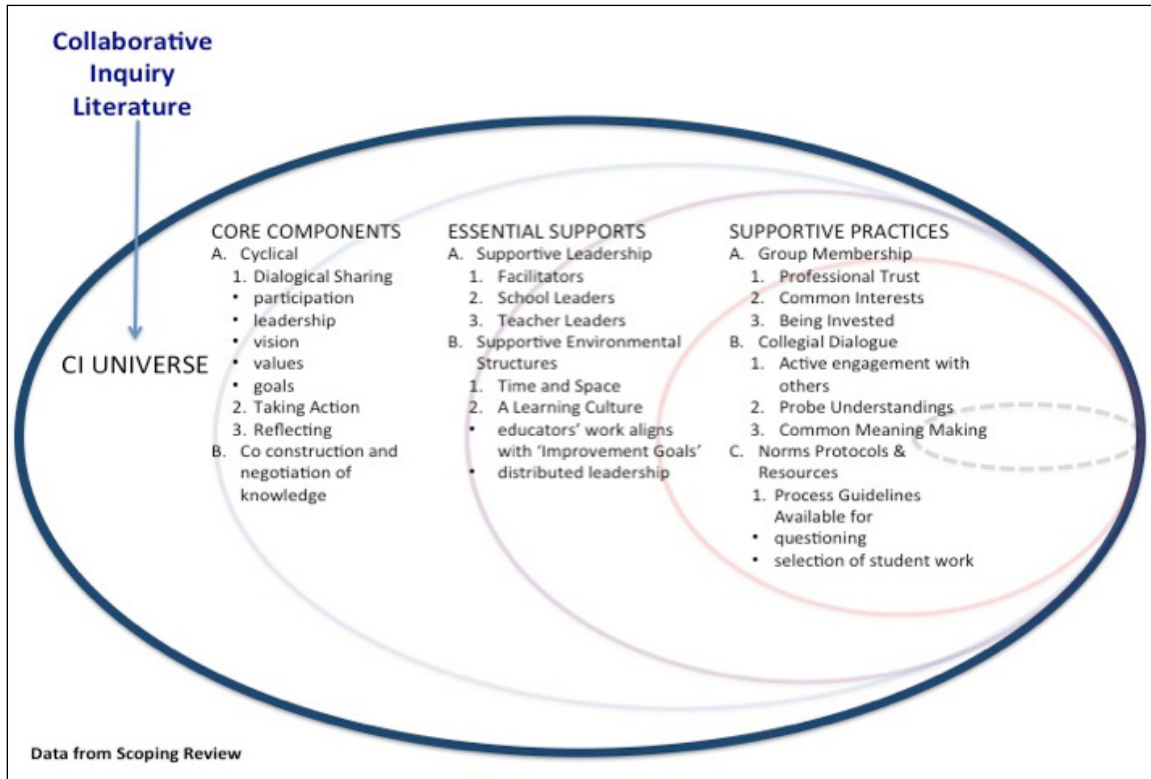


Figure 6: CI Intentions.

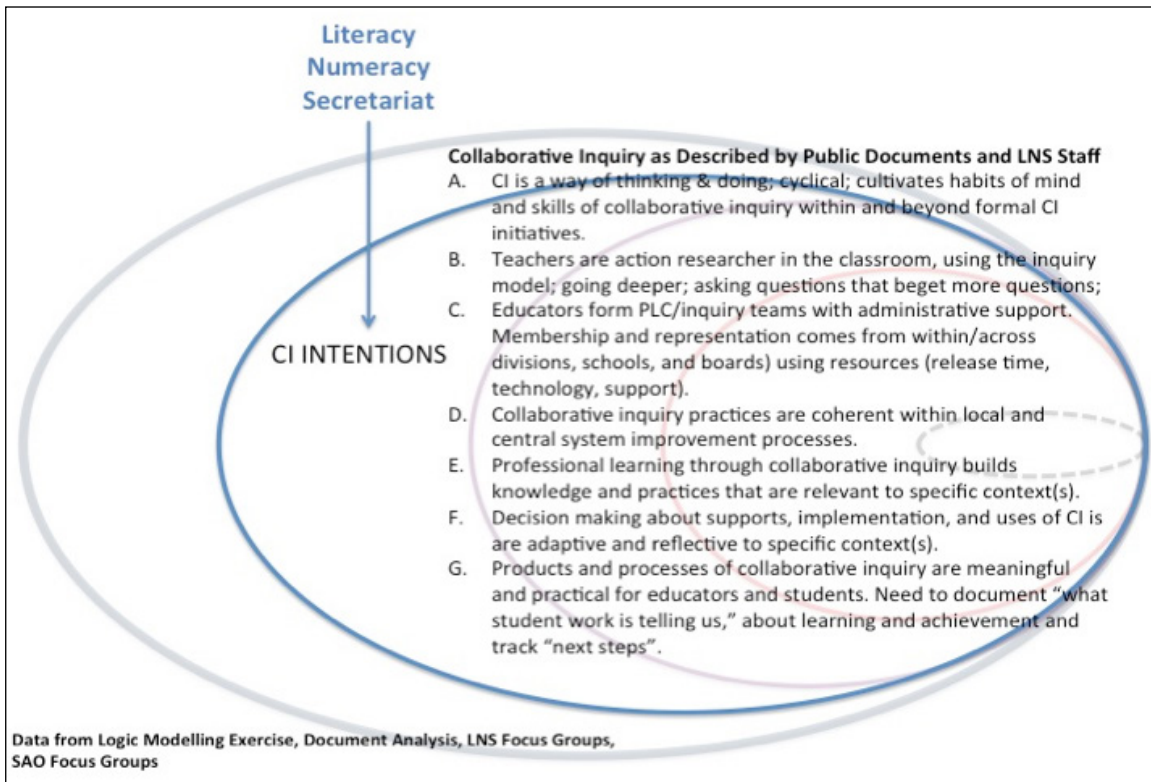




Figure 7: Enacted CI.

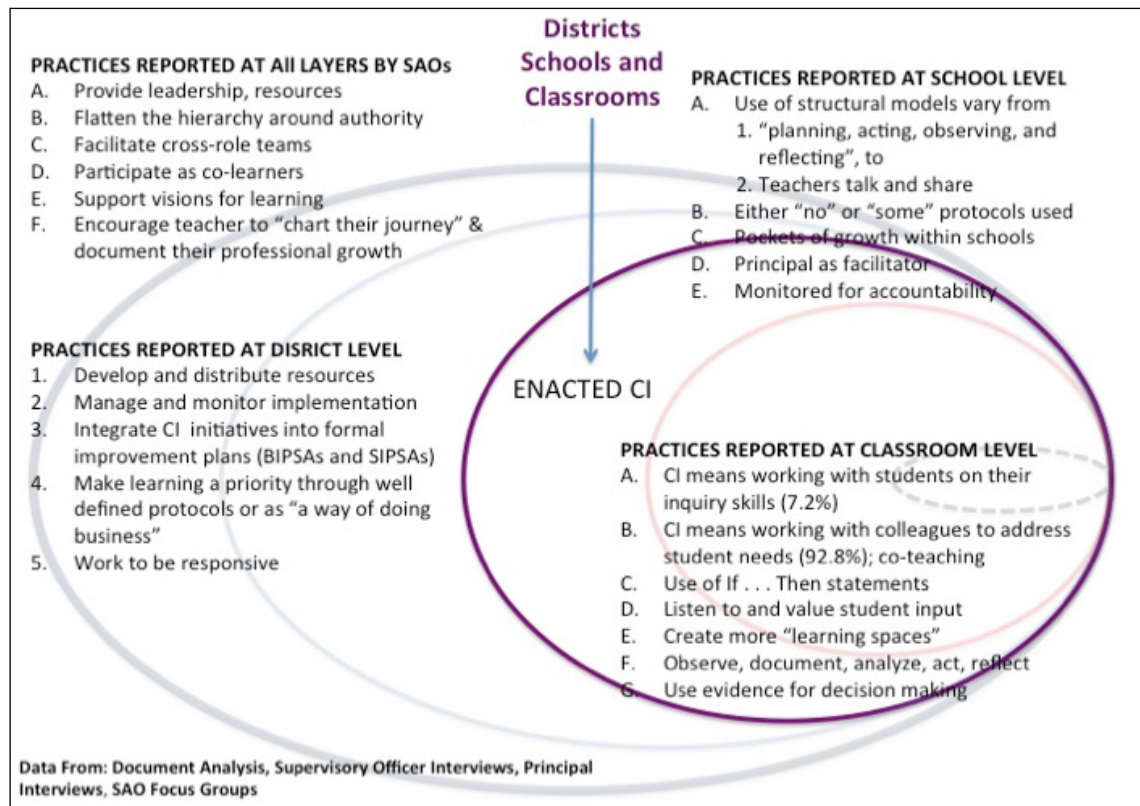


Figure 8: Internalized CI.

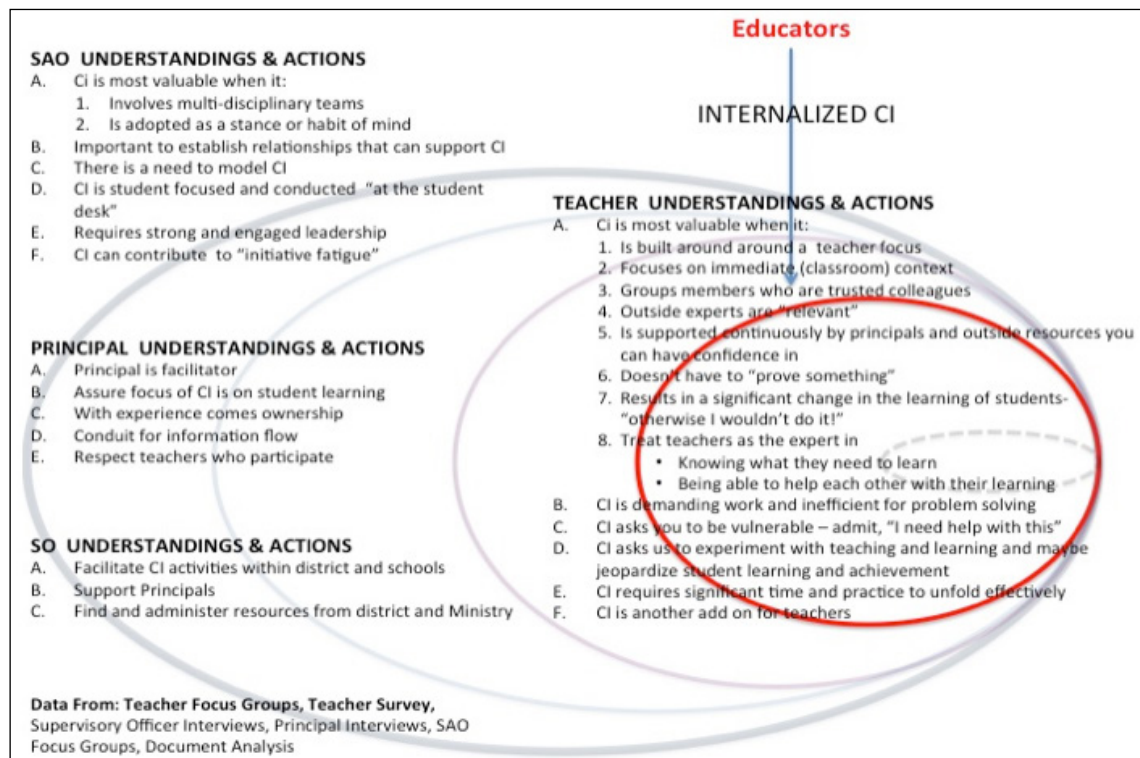
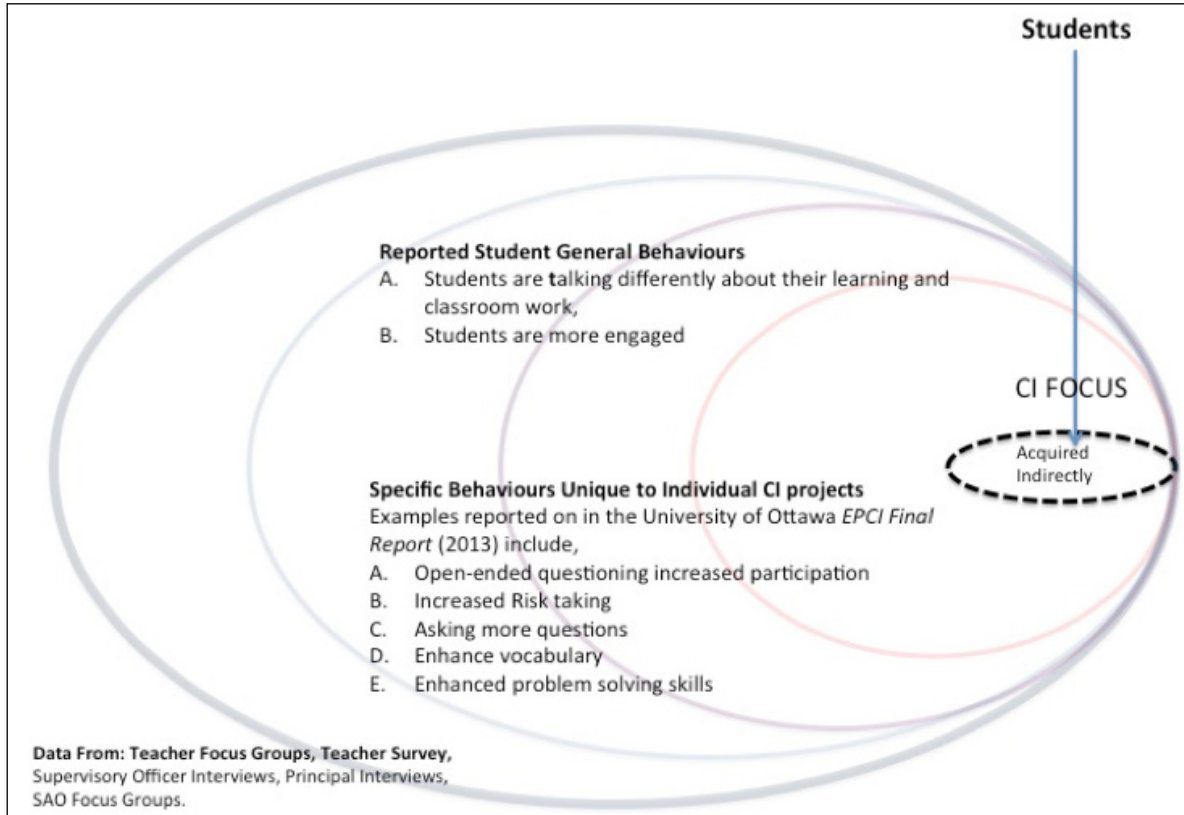


Figure 9: CI Focus.



In completing the analysis of systematic impact, there are several observations that are worthy of discussion because of their potential to influence future CI implementation.

- Student Achievement Officers are the most common *Border Crossers* in the diffusion of initiatives from the intentions to the enactment, and perhaps even to the internalizing of CI.
- Principals, supervisory officers and, to some extent, SAOs see themselves primarily as leaders and facilitators of CI processes; i.e. CI itself is seen as primarily a teacher activity.
- SAOs look to support multi-disciplinary CI teams, while teachers report that *teacher teams* examining students' needs in the classroom are the most relevant form of CI.
- Principals, supervisory officers and, to a certain extent, SAOs see value in having teachers' CI work aligning with school and board improvement plans. The priority of teachers is to identify CI projects that address pressing or emergent learning problems.
- A small but significant number of teachers responding to the survey (7.2%) defined the CI initiative in the province as a particular learning strategy meant to be taught by them to their students in an effort to raise student achievement.

## Evaluation Question #2: *What factors and conditions contribute to and/or hinder the effective spread of professional learning through Collaborative Inquiry in Ontario schools and school districts?*

*The Spread of Collaborative Inquiry.* The spread of CI, conventionally conveyed, is evident across the province. Everyone we spoke to had some conception of CI and LNS initiatives at various levels. Hence there is strong evidence that schools and educators across the province are engaging in CI related initiatives. While some SOs recommended schools that they felt were *advancing* in their use of CI, most principals identified their schools as *emerging*. This identification implies that schools continue to either wrestle with the means of implementing CI in their schools or they are unsure what successful implementation looks like in comparison to others. Within the nested framework that we developed to conceptualize CI in Ontario, we conceptualized a second definition of spread, which seeks to describe the dissemination of CI across the system and among its stakeholders. Consequently, we describe spread as a multi-dimensional process whereby: (a) CI policy moves inwardly from the level of *CI Intentions* to that of *Enacted CI* and to *Internalized CI*; and (b) there is the capacity of CI at any level to influence understandings and behaviours in the other levels within the system.

*Re-Introducing Tensions Influencing the Spread of Collaborative Inquiry.* In examining the borders in the diffusion process, we were able to situate the tensions originally drawn from interviews with SAOs and LNS staff (*Interim Report*, March, 2014). We defined them at that time as, “A tension is found in places where there appear to be contradictions, or at least uncertainties about the meaning or value in having both of these conditions appearing at the same time” (p 16). In retrospect, it is not surprising that SAOs would be key informants about such tensions given that their work crosses all of the system borders, thus enabling them to interact with any of the stakeholders working with CI. The SAOs help to clarify CI intentions, facilitate the enactment of CI, support educators in the process of internalizing CI, and experience the application of CI in schools and classrooms with administrators, teachers students. In revisiting these *tensions* against the backdrop of our framework for systematic impact, we were better able to label them (see Table 12).

Table 12: *Aspects of CI where tensions arise.*

| Tension Number | Tension Name                |
|----------------|-----------------------------|
| 1              | Choosing to conduct CI      |
| 2              | Determining the goal for CI |
| 3              | Selecting a focus for CI    |
| 4              | Experiencing CI             |
| 5              | Taking ownership of CI      |
| 6              | Collecting evidence of CI   |

Having located and named the tensions, the final challenge was to analyze the evaluation data for factors that might facilitate or hinder the diffusion of CI across borders (see Table 13). Drawing on the data we collected from the various aspects of our evaluation, we used Column 1 of the table to re-introduce each tension and then identify its primary point of contact in the CI system of CI diffusion. The second column identifies factors that ease tensions, or, appear to facilitate spread across borders and among stakeholders. The third column lists factors that intensify tensions and, consequently, may inhibit the spread of the *CI Intentions* to other levels and to the stakeholders working in those levels.

*Working with the Tensions Table.* The tensions table (Table 13) is presented as a tool for explaining some of the variability in CI processes and outcomes that educators across the system experience while working within each level. It is important to acknowledge that these tensions are not negative aspects of CI and its implementation. In fact, these tensions can serve as opportunities for deeper learning and understanding of the impact and operationalization of CI. The table serves as a roadmap to help navigate the challenges inherent in each level for those working on a specific CI project. Given that SAOs are the most frequent border crossers, and have primarily leadership and facilitator roles, the descriptions in this table may be most immediately relevant to their work.

Table 13 reveals a constellation of data around two tensions, in particular: Tension 2 (Determining the Goals of CI) and Tension 5 (Taking Ownership of CI). This reveals that there are particular potentialities and challenges at these points. Overall, there are more factors that ease spread than the converse, yet there are a greater degree of contradictions and conceptual misunderstandings about the purposes and means of CI with respect to Goals and Ownership. Time is mentioned as a particular factor in multiple sources of data and across boundaries. Making time, having time, and lending time are themes that repeat as aspects that ease and intensify tensions. Further, there is a repeated strain regarding the meanings, language, and purposes of CI as various stakeholders attempt to make sense of their roles within a particular level. An additional factor that educators are faced with is attending to the intentions and goals of CI amongst a full menu of educational initiatives across multiple contexts, which in these levels may have competing concerns.

It is important at this point to reinforce that the tensions outlined in Table 13 do not appear at all times in all contexts. It is even possible that there are districts, schools or classrooms where CI, up to now, has been relatively unaffected by these tensions. However, educational systems are fluid and experience fluctuations in resources and priorities along with continuous changes in personnel. As a consequence, the supports necessary for CI as a professional learning strategy may change to impact the receptiveness to, the adoption of, and the continuation of CI intentions. The tensions chart may act to support educators in any role to help understand and address potential tensions as they endeavor to enact CI in their contexts. The chart presents aspects of each tension that either intensifies or eases the tension. Working with this information, educators may be able to identify tensions and related actions or structures that limit CI from moving forward.



Table 13: Understanding the Tensions Influencing the Spread of CI.

| Tension and Location  | Easing Tensions (data source)  | Intensify Tensions (data source)   |
|---|--|--|
| <p><i>1. CHOOSING TO CONDUCT CI:</i></p> <p><b><i>CI as method for solving dilemmas in teaching and learning and CI as a systems approach to ongoing learning</i></b></p> | <ul style="list-style-type: none"> <li>• Having protocols for doing CI can lead to educators feeling comfortable with the approach and having it accepted and adopted more system wide (SAO FG)</li> <li>• Offering specific initiatives that can promote the CI stance (SAO FG)</li> <li>• Developing and distributing CI resources, e.g., protocols for schools in board, at the board level (SO interview)</li> <li>• Reflecting on CI process and manage state of CI at the board level (SO interview)</li> <li>• Working with principals to develop and monitor CIs in schools (SO interview)</li> </ul>  | <ul style="list-style-type: none"> <li>• Using only a top-down ‘systems approach’ could easily turn participation into compliance (SAO FG)</li> <li>• Not having the “big picture” of CI and a coordinated, systemic approach with cohesion and coherence across the board (Principal interview)</li> </ul>  |
| <p><i>2. DETERMINING THE GOAL FOR CI:</i></p> <p><b><i>CI as an Approach to Professional Learning and CI as a Contributor to Student Achievement</i></b></p>              | <ul style="list-style-type: none"> <li>• Providing SAOs with specific strategies that support other educators’ efforts to improve student achievement (SAO FG)</li> <li>• Providing a network of support that is available to teachers who are trying to step out of their comfort zone and allow students to be active learners that think and question the world around them (teacher survey)</li> <li>• Engaging principals as instructional leaders is critical to successful CI process and practices (SO interview, teacher FG)</li> <li>• Engaging experts within and outside of the board to support CI and provide constructive external perspectives (SO interview, teacher FG)</li> <li>• Cultivating “positive” professional relationships among educators (SO interview)</li> <li>• Fostering teacher interest in transforming practice (teacher survey)</li> </ul> | <ul style="list-style-type: none"> <li>• Trying to meet all teacher and student learning needs through CI (SAO FG)</li> <li>• Balancing demands of meaningful CI with curriculum implementation and time constraints (SAO FG)</li> <li>• Sacrificing student contact time to work with colleagues outside the classroom (teacher FG)</li> <li>• Having to use a specific language to describe CI (teacher survey)</li> <li>• Lacking support for the structuring of CI as a professional learning process (teacher FG)</li> <li>• Requiring opportunities to co-teach (teacher survey)</li> <li>• Not seeing the value of SEF, EQAO data, and research partners (Ministry, professors) as supports of their CI (teacher survey)</li> </ul> |

| Tension and Location  | Easing Tensions (data source)   | Intensify Tensions (data source)  |
|---|---|---|
|   | <ul style="list-style-type: none"> <li>• Allowing time for informal dialogue with peers, PD with experts, and in-school collaborative teams (teacher survey)</li> <li>• Providing release time to meet in groups and have collaborative discussions with peers (teacher survey, &amp; FG)</li> <li>• Gathering evidence of student learning through observations and artifacts (teacher survey)</li> <li>• Applying learning from inquiry to instructional practice (teacher survey)</li> <li>• Modelling the inquiry mindset for students (teacher FG)</li> <li>• Observing student success motivates participation in CI (teacher FG)</li> <li>• Grounding CI in student data (teacher FG-quotes)</li> <li>• Being a co-learner with students (teacher FG)</li> </ul> | <ul style="list-style-type: none"> <li>• Rarely having co-learning opportunities with administration (teacher survey)</li> <li>• Not seeing selves as instructional leaders in their schools (teacher survey)</li> <li>• Lacking confidence to try new things (teacher survey, teacher FG)</li> <li>• Feeling that others aren't willing to listen to their ideas (teacher survey)</li> <li>• Fear of exposing personal teaching weaknesses (teacher FG quotes)</li> <li>• Not informing parents of rationale for CI (teacher FG quotes)</li> </ul>   |
| <p><i>3. SELECTING A FOCUS FOR CI</i></p> <p><i>Students as a focus for CI and Students actually participating in CI?</i></p> | <ul style="list-style-type: none"> <li>• Acknowledging that some boards have a long history of engaging students in inquiry (SAO FG)</li> <li>• Focusing on the expertise needed for CI and understanding of how learning happens. (SAO FG)</li> <li>• Seeing students in the classroom context as a measure for the success of CI (principal interview)</li> <li>• Observing an increase in student confidence (teacher survey)</li> <li>• Working collaboratively and self-assessing (teacher survey)</li> <li>• Focusing on student inquiry regardless of whether CI is mandatory or not (teacher survey Q6)</li> </ul>  | <ul style="list-style-type: none"> <li>• Blurring the lines between CI as a form of professional learning and CI as a collaborative form of engaging in instruction (teacher survey)</li> <li>• Lacking clarity about the ends of CI (teacher survey)</li> <li>• Struggling to address both personal inquiry and student inquiry (SAO FG)</li> <li>• Lacking confidence with respect to students' willingness to try new things (teacher survey)</li> <li>• Seeing barriers between teacher inquiry and student inquiry, which provoke mixed conceptions and priorities (teacher survey)</li> </ul> |

| Tension and Location  | Easing Tensions (data source)   | Intensify Tensions (data source)   |
|---|---|--|
| <p>4. <i>EXPERIENCING CI:</i></p> <p><i>Teaching a CI Approach to Problem Solving (procedure) and Providing Support for Quality CI Processes (stance)</i></p> | <ul style="list-style-type: none"> <li>• Making each step responsive to what is learned in the previous step (SAO FG)</li> <li>• Developing school-centric CI processes with teacher ownership to create momentum, making it “just a way of doing business” (SO interviews)</li> </ul>  | <ul style="list-style-type: none"> <li>• Reducing the process of CI to a set of rules that must be followed (SAO FG)</li> <li>• Relying on board-centric processes to create momentum (SO interviews)</li> <li>• Experiencing CI as an inefficient problem-solving mechanism (teacher FG quotes)</li> <li>• Expecting educators inexperienced in CI processes to create or find both appropriate structures and resources for their inquiry (teacher FG quotes)</li> </ul>   |
| <p>5. <i>TAKING OWNERSHIP OF CI:</i></p> <p><i>Mandated Practice (top-down) and Authentic practice (bottom-up)</i></p>  | <ul style="list-style-type: none"> <li>• Volunteering to participate (SAO FG)</li> <li>• Setting a professional learning agenda for the District to support teacher volunteers (SAO FG)</li> <li>• Recognizing a continuum of learning and having administration provide support, scaffolding and direction (SAO FG)</li> <li>• Using protocols to scaffold new initiatives and supporting their adaptation (SAO FG)</li> <li>• Recognizing CI as a developmental process in schools, which entails support for schools new to CI and greater autonomy to schools with experience (Principal interview)</li> <li>• Allowing time for CI to work effectively and to develop in the local context (teacher FG)</li> <li>• Ongoing guidance and support for teachers (teacher FG)</li> <li>• Encouraging the local use and adoption of CI language and frameworks: monographs, BIPSAs (document analysis)</li> <li>• Acknowledging the iterative structure and the reciprocal, ongoing nature of reflective practice (teacher FG)</li> </ul> | <ul style="list-style-type: none"> <li>• Failing to synchronize stakeholders with respect to coherence of purposes and alignment of understandings (SAO FG).</li> <li>• Not having the support and buy in of the school administration (SAO FG)</li> <li>• Lacking clarity of the roles and responsibilities of individual stakeholders in different contexts (document analysis)</li> <li>• Perceiving CI as a superficial exercise or as a “flavour of the month (document analysis)</li> <li>• Ignoring literature/research that may inform CI (teacher survey)</li> <li>• Engaging in CI that does not appear relevant to a teacher’s classroom/students (teacher FG)</li> <li>• Struggling to demonstrate personal accountability or success with CI (teacher FG)</li> <li>• Perceiving that the CI may interfere with long range plans or with teaching the curriculum (teacher FG)</li> </ul> |

| Tension and Location | Easing Tensions (data source)  | Intensify Tensions (data source)  |
|----------------------|--|---|
|                      | <ul style="list-style-type: none"> <li>• Ensuring that participants' needs were aligned and that accountability was maintained regardless of the impetus for CI (principal interview)</li> <li>• Maintaining mutual respect, responsibility, and responsiveness for stakeholders involved in the CI (principal interview)</li> <li>• Acknowledging that teachers are experts (teacher FG-quotes)</li> <li>• Preserving small-sized inquiry teams (teacher FG)</li> <li>• Establishing trust and relationships with colleagues (teacher FG)</li> <li>• Allowing teachers the autonomy and flexibility to adapt CI to meet their needs (principal interview, teacher FG)</li> <li>• Including teacher input, ownership, and control in CI (SO interview, teacher survey, teacher FG)</li> <li>• Opening doors between administration and teachers to engage with "problems of practice" and supporting collaboration (principal interview)</li> <li>• Making it possible for individuals to admit that they are unsure (teacher FG-quotes)</li> <li>• Using student needs to inform (teacher survey)</li> <li>• Acknowledging that CI is most valuable at local level for teachers (teacher FG)</li> </ul> | <ul style="list-style-type: none"> <li>• Lacking confidence in the experts who come from outside of the system (teacher FG)</li> <li>• Seeing CI as an "add-on" rather than as an inherent part of practice (teacher FG)</li> </ul> |

| Tension and Location   | Easing Tensions (data source)  | Intensify Tensions (data source)  |
|--|--|---|
| <p><i>6. COLLECTING EVIDENCE OF CI:</i></p> <p><i>Conceptualizing CI as Evidence-based and Conceptualizing CI evidence as stories of teachers' experiences</i></p> | <ul style="list-style-type: none"> <li>• Being systemic, from the beginning to the end of the year (SAO FG)</li> <li>• Disseminating data, which may come from SIP trends, SO and Principal reports, principals' feedback, surveys, report card trends, interviews with CI participants, monitoring, and anecdotal observations (SO interview)</li> <li>• Documenting one's own growth and learning (SAO FG)</li> <li>• Fostering excitement about conversation by concentrating on next steps and on progress (SO interview)</li> </ul> | <ul style="list-style-type: none"> <li>• Telling stories that have no evidentiary base, and struggling to build greater rigour into story telling by using data and other warrants (SAO FG)</li> <li>• Gathering evidence using inconsistent means and an inconsistent schedule (SO interview)</li> <li>• Having a limited sense of what constitutes data or limited understanding regarding how change in teacher learning/practice can support student learning (teacher survey)</li> <li>• Maintaining a limited conception of what counts as evidence, but also how to identify and analyze evidence beyond pre- and post-tests/diagnostics (teacher survey)</li> <li>• Failing to systematically collect evidence of one's own perceptions and change with respect to practice (teacher survey)</li> </ul> |

### Evaluation Question #3: *How are schools and school districts adapting and sustaining Collaborative Inquiry to their local contexts to promote ongoing system transformation in Ontario?*

One of the foci of our evaluation was to uncover how CI has been adapted and sustained since its introduction in Ontario's K-12 educational system. We define *adaptability* as an ability of a system or a policy to modify its processes, practices, and guidelines to cope with expected or unexpected changes or fit to specific contexts within the local board and school environments. *Sustainability* refers to the ability of the system or a policy to create long-lasting strategies, ethos or culture, and mechanisms to preserve and improve the desired changes or intended outcomes once they are established.

*Adaptability.* Educators reported evidence of involvement in both formal Ministry CI initiatives (e.g., CIL-M and EPCI) and informal, school-centric CI initiatives. Our findings revealed that overall, educators valued CI as personal professional learning. Throughout, these educators recognized the importance of CI for developing ongoing professional reflection, collaboration, and learning in schools. While teachers reported the value of CI as a professional learning method, it is important to note that teachers appear to have internalized CI policy in at least three different ways. Survey results pointed out the following perspectives:

*CI is...*

*an iterative process based on student need that leads staff to form questions, collect data, collectively analyze results, and then decide on next steps and required professional learning*

*a process of working with other teachers in order to find the learning needs of students*

*student-directed learning with the teacher as the facilitator and guide. The teacher may provide the original question or focus but it is then left to the student to proceed with the area of inquiry.*

Despite the differences in perceptions about CI processes and practices, the data suggest that many educators in Ontario are not only gaining a better understanding of the CI process, but have also developed and increased their professional confidence and competence through participation in CI processes.

Teacher focus group and survey data revealed that teachers have increasingly adapted CI to meet the learning needs appearing in their classrooms and schools, demonstrating greater teacher ownership in CI. In their survey responses, teachers described CI as a more authentic and organic form of professional learning that was readily integrated into practice. Furthermore, teachers identified that one key strength of engaging in CI was that the teachers were now more precise in focus and less broad in orientation.

*When we started these a number of years ago, it used to kind of feel like an exam that you had no chance to practice for and if you did it wrong, they'd interrupt you in the middle and fix it. Now we do lots of chat. You build a relationship. You get to know each other. You get to know what everybody expects. So when you go in, if I'm talking and I forget something and [my colleague] adds in, it's not like: 'You did it wrong', it's 'Oh, here, I'm helping you, I'm supporting you because Johnny over there is starting to throw something and you got distracted so you forgot to say that vital sentence.' It completely changed the way that I felt about [collaborative inquiry] because it didn't feel collaborative when we first did these. It felt extremely top-down. But that's not this year. This year was great. (Teacher focus group)*

Similar sentiments were voiced in the LNS and SAO focus groups, in which participants elaborated on how the *degree of structure and compliance* associated with CI has been adapted over time to support the spread within the province. *"When we first did CI, we provided a lot of protocols to help them move along... We've moved away from a lot of that. We endorse a lot of freedom but I do wonder sometimes what the optimum amount of protocol and support is."* This stance is consistent with the findings from the scoping review that participants in CI need to be volunteers and the project itself needs to be collaboratively negotiated, even if the process itself has norms and protocols to be followed. Whether it is possible to honour this feature, however, must be considered as the LNS, school districts and principals look to shepherd changes in system-wide or school culture. As noted by one of the participants, *"Mandated CI is artificial... but maybe you need that level of artificiality to engage in CI. It's good if people know there's an expectation."*

Our data suggest that the presence of authentic CI within a school, where behaviours are congruent with those identified in the CI universe (see Figure 5) opens up opportunities for distributed leadership. Participation in CI gives the opportunity for educators to assume leadership roles in the school by building teams, focusing on teaching and learning, recognizing priorities, contributing to the school's growth and leading the implementation of new ideas that are the product of the inquiry process (Lee, 2009). Similarly, Bennett (2003) stated, "Drawing many people into the potential leadership group make it possible for initiatives to be developed from all over the organization and then adopted, adapted and improved by others in a culture of support and trust" (p. 3).

**Sustainability.** Educators reported an increasingly collaborative culture among educators and more collaborative school cultures since the introduction of CI. The analyses of the data highlighted three primary ways in which CI might be sustained within the province: *alignment, ownership, and resources*. Educators representing all roles reported the importance of aligning CI with other board, school, and classroom priorities. More specifically, responses indicated a number of areas in which alignment needs to happen. First, alignment between the work of supervisory officers and principals in developing authentic instructional leadership structures was identified as critical to sustaining CI. A key component of such efforts encompassed SOs working with principals in schools to develop, integrate, clarify, and monitor CI processes that are aligned with BIPSA and



SIPSAAs. This was due to some uncertainty at the school level about how to align CI processes with board or school improvement plans. In addition, ensuring that needs were aligned and accountability was felt from both sides was more important than the origin of the CI (i.e., whether it was grassroots and authentic vs. mandated CI initiatives).

Principals and teachers also cited the importance of educator *ownership* in CI. Principals identified that ownership is a key component for building momentum. Ownership can be derived from collaboration that is flexible, re-assuring, responsive, and focused on shared learning. Teachers also elaborated on the importance of sharing ownership and leadership within CI: *“it became a continuous process of shared leadership where everyone involved recognized the value of learning and sharing with others.”* All stakeholders pointed to the importance of *resources* for supporting and sustaining CI. SOs and principals spoke about the importance of funding for release time, as well as flexibility in how their board and schools allocated funding. SOs highlighted the need for continued support from the Ministry of Education to increase their knowledge of CI and further develop their abilities as instructional leaders. Finally, teachers indicated that ongoing support to increase educators’ confidence and engagement in CI may help with sustainability of CI work.

LNS and SAO focus groups also discussed the notion of sustainability. They did so from the perspective of what the *quality and impact of CI processes and product* would look like if implementation of CI in the province was self-sustaining. Demonstrating quality and impact at least partially satisfies the obligation to be accountable for the investment of public funds into the approach. There is strong agreement among LNS staff that the ultimate goal of pursuing this approach to professional learning is to improve student learning and achievement. Yet, the creation of a clear cause and effect path between the implementation of one program and the province’s most relied upon measure of performance (EQAO Assessments) is unrealistic. So too is the expectation that one program would be able to stimulate changes in a system that produces relatively stable teacher grades and EQAO scores.

*We need to broaden the definition of impact. It could be impact just through increased participation. Also can be through the depth of student learning, the sustainability. It all has to translate at some point in time to some kind of improved student achievement but there are lots of other things that are on the way to that. (SAO focus group)*

Given that *“informal dialogue with teaching peers”* and *“in-school collaborative learning teams”* rank first and third as preferred modes of professional learning for teachers (Survey Findings), it appears that CI is at least tapping into a strategy that teachers are ready to sustain.

## Evaluation Question #4: *What are the challenges and opportunities, and what do we need to learn for future Collaborative Inquiry in Ontario education?*

This question is best answered through the recommendations that have resulted through our review and evaluation. Our initial approach to this task was to re-visit the individual and system level behaviours that LNS staff identified in August 2013 as optimal outcomes for the CI strategy. Subsequently, the findings from the evaluation itself were used to begin to formulate recommendations. The final recommendations were determined through an interactive process with senior LNS staff and the Queen's University evaluation team. First, the report was shared with LNS staff. Once the LNS staff reviewed the finding of the evaluation, they met with the Queen's University evaluation team. The two groups worked together to identify and provide recommendations that would further develop and improve subsequent CI initiatives.

### Recommendations

Based on the findings from the evaluation of CI initiatives in Ontario, we provide a set of recommendations that we believe are a reflection of our findings. Further these recommendations represent actions that the LNS can either enact or support to further refine or improve CI initiatives.

1. *Demonstrate an ongoing commitment to Collaborative methods of professional learning as a permanent system-wide expectation for professional learning to ensure the confidence and ongoing participation of educators.*

One of the challenges of externally implemented initiatives is the potential for the initiative to be viewed as a single event or new “bandwagon.” Educators become increasingly wary of the plethora of methods of professional learning that they witness throughout their career. In order to garner ongoing and subsequent support for these professional learning initiatives, the LNS must:

- Demonstrate a long-term commitment to collaborative methods of professional learning.
- Communicate to educators that CI requires a long-term shift in mindset for professional learning, and that the LNS will continue to support that shift..

2. *Continue to define and refine the evolving roles of participants and stakeholders within CI initiatives.*

Educators understand that their professional roles vary across contexts. These roles are largely defined by pre-defined expectations. CI has the potential to extend educators' roles. Hence the LNS must continue to:

- Facilitate and guide educators to redefine and expand educators' evolving roles as participants and stakeholders related to CI initiatives.
- Empower educators to recognize themselves as emerging experts and leaders in developing the knowledge germane to their practice.

3. *Explicitly inform SAOs of their changing roles over time and across contexts.*

As one of the primary sources of information and support for provincial initiatives, the SAOs play a critical role in the pathway from intended implementation to the enacted implementation of CI initiatives. The leadership of the LNS needs to continue to:

- Build capacity across SAOs to meet their changing roles over time and across contexts.

4. *Continue to create safe and trusting environments for open discussions among those participating in CI initiatives.*

The identified tensions may be misinterpreted and viewed as roadblocks in creating safe and trusting environments. These tensions should be presented transparently as shared focal points for understanding various stakeholders/participants' perspectives" and considered as potential sources for learning across the system. In response, the LNS should continue to and increasingly:

- Acknowledge their appreciation to educators who commit their time to participating in CI projects and evaluations. Current communication structures within the LNS and school boards provide a sound structure for such communications and acknowledgements. .
- Use current communication methods to highlight the evolution of their CI initiatives based on educator feedback. Such transparency will help to illustrate the responsive nature of CI initiative and those responsible for leading such initiatives.

5. *Continue to make research accessible to support teachers' CI learning and subsequent instructional practices.*

There continues to be much debate about the role of CI to develop educators as researchers. Nevertheless, there is agreement that educators must be thoughtful consumers and users of research to inform their learning and practice. CI provides an ideal platform to access and critically review emerging and existing research as it applies to their teaching contexts. In order to meet this recommendation:

- Build on current knowledge mobilization strategies to support teachers' capacity to be critical consumers of research and information that informs their learning.
- Encourage educators to seek out and consider research that not only confirms but also challenges their learning.

6. *Establish structures and strategies to share educators' learning from CI projects.*

Our evaluation accompanied with the findings from the LNS itself highlight that current and previous CI initiatives can provide important examples of how CI initiatives have resulted in new knowledge, emerging and innovative ways to support professional learning and new instructional practices. With the emergence of such knowledge, it becomes increasingly important to develop structure and methods to document and communicate the positive impacts of such initiatives at the school, the board, and the provincial levels. Along with current structure in place, the LNS should:

- Support the developmental and use of research databases, executive summaries, monographs, websites, etc.

7. *Create mechanisms to identify and communicate CI impacts on student learning outcomes.*

One of the greatest challenges for demonstrating the impact of current CI initiatives is the lack of supporting evidence with respect to the impact on student achievement. Currently, much of the evidence is based on anecdotes or testimonials of those committed to the initiative. A more focused effort is required to obtain stronger evidence of the impact of CI initiatives and other related professional learning efforts. To meet these challenges, the LNS is advised to:

- Work with SAOs, school board staffs and educators to identify educational outcomes for students that would be reasonably impacted by CI initiatives, and the forms of student evidence that could likely be collected to demonstrate the impact of specific initiatives. Use logic models and theories of action to direct these efforts.
- Work with educators to develop strategies and materials to collect concrete evidence concerning the impact of CI on these outcomes. Where possible, these strategies and resources should be aligned with current school and instructional practices. These strategies will more likely be adopted if they are seen as part of the instructional and learning process that support teaching and learning rather than something that serves external “evaluation” needs.
- Articulate an understanding that the LNS has reasonable expectations about the scope of these impacts and the range of evidence that may be valuable to collect.
- Work to enable educators to collect “concrete and systematic evidence in an annual and ongoing manner” related to the impact of professional learning efforts on educational outcomes for students.
- Help educators to separate evidence regarding changes in their practice from evidence of the impact of their changing practices on student outcomes. More evidence is needed regarding the impact on student outcomes.
- Obtain permission and share these findings about CI impacts with the broader educational community.

8. *Provide sufficient time and resources to further implement CI initiatives that will help to engage those educators who are not currently aware of CI initiatives or have not yet shown a propensity to engage in CI.*

The spread of CI is likely to require more intense resources and supports for educators who are currently not engaged in this form of professional learning. While this evaluation identifies that many educators are committed to and productively engaged in CI work, it also identifies that there are many educators who remain, for a variety of reasons, disengaged.

- Recognize that deeper implementation and spread will likely require more resources rather than a reduction in the current structures and supports. Without such commitments, it is unlikely that CI initiatives will spread much beyond those already engaged in the process.
- A continued commitment to supporting those educators who are currently engaged in CI initiatives is critical. The supports required for these educators will change over time, and the LNS should work to monitor and support these evolving professional learning needs.

9. *Recognize that alternative structures and initiatives for professional learning exist throughout Ontario, and these also contribute to teachers' professional, co-learning activities.*

In response to the variety of professional learning opportunities that have been implemented through the LNS, school boards and other provincial initiatives, there is an increasing confluence in the manner in which professional learning occurs in Ontario.

In response, the LNS should:

- Consider their role in promoting these various professional learning structures to support teachers' co-learning activities.
- Enact procedures that are aligned with the role of the LNS in relation to these various professional learning structures that exist and will continue to exist.

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## Appendix A – Logic Model for CI

### *Professional Learning Cultures – Professional Collaborative Inquiry – Elementary*

*This logic model describes the logic behind CI. While it is not initiative specific, it builds upon external evaluations of initiatives such as CIL\_M, EPCI, SIM, SWST, LNL\_CI, SWSS.\**

| PLC & PCI Overall Goals   | Behaviours Intended to Reflect Initiatives & Achieve the Goals   | Potential Outcomes   | Quality Indicators   |
|---|--|--|--|
| 1. Professional learning through collaborative inquiry builds knowledge and practices that are relevant to specific context(s). | <ul style="list-style-type: none"> <li>• Educational staff grapple with the limitations of conventional role expectations and develop strategies that help everyone to support mutual professional learning</li> <li>• School, district, provincial decisions about supports, implementation and uses are: <ul style="list-style-type: none"> <li>- grounded in ongoing local educator collaborative work</li> <li>- conditional and reciprocal throughout CI processes</li> <li>- reflective and participatory</li> <li>- use relevant and varied data</li> <li>- are informed by external knowledge</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• A safe &amp; trusting environment is created to allow open discussions among collaborators.</li> <li>• Participants are able to define and clarify the roles that each has, and how these can support the collaboration.</li> <li>• Student outcomes include engagement, self-efficacy, and learning</li> <li>• The enactment of roles and responsibilities is reconsidered and renegotiated over time.</li> <li>• Teachers see themselves as co-learners and co-researchers</li> </ul> | <ul style="list-style-type: none"> <li>• There is effective “Situational engagement”; that is, individuals at different levels are “effectively” engaged in the collaborative inquiry projects.</li> <li>• Participants feel that they have been active in negotiating the scope of collaborative inquiry projects.</li> <li>• There is evidence of ongoing focused collaboration among participants beyond the scope of a single Ministry initiative.</li> <li>• There are multiple sources of evidence that the quality of student learning has progressed or improved.</li> </ul> |
| 2. Decision making about supports, implementation, and uses of CI is adaptive and reflective to specific context(s).            |  |  |  |
| 3. Products and processes of collaborative inquiry are meaningful and practical for educators and students.                     |  |  |  |
| 4. Collaborative inquiry practices are coherent within local and central system improvement processes.                          |  |  |  |
| 5. Cultivating the habits and skills of collaborative inquiry within and beyond CI initiatives.                                 |  |  |  |

| PLC & PCI Overall Goals | Behaviours Intended to Reflect Initiatives & Achieve the Goals  | Potential Outcomes   | Quality Indicators   |
|-------------------------|---|--|--|
|                         | <ul style="list-style-type: none"> <li>Teams engage in a process to identify a topic of inquiry relevant to each teacher's class-room practice.</li> <li>Educators observe and document student learning and thinking.</li> <li>Collaborative networks are supported both formally and informally within schools.</li> <li>Educators engage in (i.e. read and reflect upon) new ideas and practices that are grounded in educational research.</li> <li>Educational staff develop expertise in collaboration, planning-for-change and reflection-for-action.</li> </ul> | <ul style="list-style-type: none"> <li>Educators challenge their own thinking by being readers of current research and critical consumers of educational practices.</li> <li>Educational staff express an enhanced individual and collective self-efficacy due to participation in collaborative inquiry projects.</li> <li>Teachers are better able to articulate what is reasonable to change in the classroom or in their practice and how such changes might influence student learning and achievement.</li> <li>At each level of educational expertise, there is a commitment to sustaining professional collaborative inquiry.</li> </ul> | <ul style="list-style-type: none"> <li>There are multiple sources of evidence that engaging in collaborative inquiry has shifted/ impacted practice across different roles.</li> <li>Educators are able to articulate their own learning, and what aspects of CI have helped them to move learning forward (habits of inquiry).</li> <li>Educators are able to clearly identify student outcomes that have resulted from their collaborative inquiry efforts.</li> <li>Educators are able to articulate the facets of collaborative inquiry that have been most powerful in supporting their professional learning.</li> <li>There is evidence of deep professional dialogue, embracing dissonance and controversy.</li> </ul> |

| PLC & PCI Overall Goals | Behaviours Intended to Reflect Initiatives & Achieve the Goals | Potential Outcomes   | Quality Indicators   |
|-------------------------|--|--|--|
|                         |  | <ul style="list-style-type: none"> <li>• Purposes, processes and outcomes of educator collaborative inquiry will adapt to new challenges.</li> <li>• Collaborative inquiry is considered to be an integrated aspect of ongoing initiatives rather than a fragmented or separate initiative.</li> </ul> | <ul style="list-style-type: none"> <li>• The knowledge that educators co-construct is linked to broader knowledge bases (e.g., educational research and publications linking theory to practice such as LNS monographs).</li> <li>• The knowledge that has been generated is “owned” by the educators in the project. They see its value and are able to use it.</li> <li>• There is evidence of adaptation in educators’ thinking about collaborative inquiry processes.</li> <li>• Involvement in collaborative inquiry has spread to other educators not initially involved in the specific Ministry initiatives.</li> <li>• Educators acknowledge the value of monographs and monographs are used to move thinking forward.</li> <li>• (need to add quality indicators for school and system support)</li> </ul> |

## Appendix B: Scoping Review Tables

Table 15: Initial classification of references based on their articulation of (a) characteristics of CI, (b) supports and resources for CI, (c) empirically supported benefits of CI, (d) enactment challenges, (e) type of reference (i.e., empirical, conceptual, practical guide), and (f) context for research (i.e., location and participants).

| Reference   | Classification of Article |                        |                    |            | Type of Reference                 | Context Description                                  |
|---|---------------------------|------------------------|--------------------|------------|-----------------------------------|--|
|   | Characteristics           | Supports and Resources | Empirical Benefits | Challenges |                                   |  |
| Bray, J. N. (2000). <i>Collaborative inquiry in practice: Action, reflection, and making meaning</i> . Thousand Oaks, CA: Sage Publications   | X                         | X                      | X                  | X          | - Conceptual<br>- Practical Guide | - Teachers, Administrators                           |
| Burley, S., & Pomphrey, C. (2011). <i>Mentoring and coaching in schools: Professional learning through collaborative inquiry</i> . New York, NY: Routledge, Taylor & Francis Group  | X                         | X                      | X                  |            | - Conceptual<br>- Practical Guide | - Elementary, Middle, High School Teachers           |
| Butler, D. L., & Schnellert, L. (2012). Collaborative inquiry in teacher professional development. <i>Teaching and Teacher Education</i> , 28(8), 1206–1220. doi:10.1016/j.tate.2012.07.009   |                           | X                      | X                  |            | - Conceptual                      | - Teachers   |
| Byrne-Jimenez, M., & Orr, M. T. (2007). <i>Developing effective Principals through collaborative inquiry</i> . New York, NY: Teachers College Press   |                           | X                      |                    |            | - Practical Guide                 | - Administrators                                     |
| Carroll, T. G., Fulton, K., & Doerr, H. (2010). <i>Team up for 21st century teaching and learning: What research and practice reveal about professional learning</i> . Washington, DC: National Commission on Teaching and America's Future | X                         | X                      | X                  |            | - Empirical<br>- Conceptual       | - Elementary, Middle, High School Teachers           |
| Clauset, K. H., & Murphy, C. U. (2012). Creating synergy: Cycle of inquiry shifts learning teams into high gear. <i>Journal of Staff Development</i> , 33(5), 30–33   |                           | X                      | X                  | X          | - Empirical                       | - Elementary, Middle, High School Teacher            |
| Cunningham, D. (2011). <i>Improving teaching with collaborative action research</i> . Alexandria, VA: ASCD  | X                         | X                      |                    |            | - Practical Guide                 | - Elementary, Middle, High School Teacher, Principal |
| David, J. L. (2009). Collaborative inquiry. <i>Educational Leadership</i> , 66(4), 87-88  | X                         | X                      | X                  | X          | - Practical Guide                 | - Elementary, Middle, High School Teacher, Principal |

| Reference   | Classification of Article |                        |                    |            | Type of Reference | Context Description  |
|---|---------------------------|------------------------|--------------------|------------|-------------------|--|
|   | Characteristics           | Supports and Resources | Empirical Benefits | Challenges |                   |  |
| Donohoo, J. (2013). <i>Collaborative Inquiry for Educators: A Facilitator's Guide to School Improvement</i> . Thousand Oaks, CA: Corwin   | X                         | X                      | X                  | X          | - Practical Guide | - Elementary, Middle, High School<br>- Teacher, Principal  |
| Dyer, B., & Loytonen, T. (2012). Engaging dialogue: Co-creating communities of collaborative inquiry. <i>Research in Dance Education</i> , 13(1), 121-147   |                           | X                      |                    | X          | - Conceptual      | - Teachers   |
| Emihovich, C., & Battaglia, C. (2000). Creating cultures for collaborative inquiry: new challenges for school leaders. <i>International Journal of Leadership in Education</i> , 3(3), 225–238. doi:10.1080/13603120050083918               |                           | X                      |                    |            | - Empirical       | - Elementary, Middle, High School<br>- Teacher, Principals |
| Ermeling, B. A. (2010). Tracing the effects of teacher inquiry on classroom practice. <i>Teaching and Teacher Education: An International Journal of Research and Studies</i> , 26(3), 377-388. doi:10.1016/j.tate.2009.02.019              |                           | X                      | X                  |            | - Empirical       | - High School<br>- Teacher                                 |
| Forey, G., Firkins, A. S., & Sengupta, S. (2012). Full circle: Stakeholders' evaluation of a collaborative enquiry action research literacy project. <i>English Teaching: Practice and Critique</i> , 11(4), 70-87                          |                           | X                      |                    |            | - Empirical       | - Elementary, Middle, High School<br>- Teacher, Other      |
| Galligan, G. (2011). <i>Collaborative inquiry, teacher efficacy, and writing achievement at lake shore elementary school</i> . (Doctoral dissertation). Available from ProQuest Dissertations & Theses database. (UMI No. 3449832)          |                           | X                      | X                  |            | - Empirical       | - Elementary, Middle<br>- Teacher                          |
| Given, H., Kuh, L., LeeKeenan, D., Mardell, B., Redditt, S., & Twombly, S. (2010). Changing school culture: Using documentation to support collaborative inquiry. <i>Theory Into Practice</i> , 49(1), 36–46. doi:10.1080/00405840903435733 |                           | X                      | X                  | X          | - Conceptual      | - ECE, Elementary, Middle<br>- Teacher                     |
| Goodnough, K. (2005). Fostering teacher learning through collaborative inquiry. <i>The Clearing House</i> , 79(2), 88–92. doi:10.3200/TCHS.79.2.88-93   | X                         | X                      | X                  | X          | - Empirical       | - High School<br>- Teachers                                |



| Reference  | Classification of Article |                        |                    |            | Type of Reference                 | Context Description   |
|--|---------------------------|------------------------|--------------------|------------|-----------------------------------|---|
|  | Characteristics           | Supports and Resources | Empirical Benefits | Challenges |                                   |   |
| Hord, S. M., Roussin, J. L., & Sommers, W. A. (2010). <i>Guiding professional learning communities: Inspiration, challenge, surprise, and meaning</i> . Thousand Oaks, CA: Corwin Press  |                           | X                      |                    |            | - Practical Guide                 | - Elementary, Middle, High School<br>- Administrators         |
| Huffman, D., & Kalnin, J. (2003). Collaborative inquiry to make data-based decisions in schools. <i>Teaching and Teacher Education</i> , 19(6), 569-80   |                           | X                      | X                  |            | - Empirical                       | - Teachers, Principals, School Boards, Parents                |
| Kennedy, A., Deuel, A., Nelson, T. H., & Slavit, D. (2011). Requiring collaboration or distributing leadership? <i>Phi Delta Kappan</i> , 92(8), 20-24   |                           | X                      |                    |            | - Empirical                       | - Middle School<br>- Teacher, Administrator                   |
| Langer, G. M., Colton, A. B., & Goff, L. S. (2003). <i>Collaborative analysis of student work: Improving teaching and learning</i> . Alexandria, VA: Association for Supervision and Curriculum Development  | X                         | X                      |                    |            | - Practical Guide                 | - Elementary<br>- Teacher, Administrator                      |
| Lee, T. (2009). <i>Educational leadership for the 21<sup>st</sup> century: leading school improvement through collaborative enquiry</i> . Paper presented at the Canadian Association for Studies in Educational Administration, Ottawa, ON          | X                         | X                      | X                  | X          | - Empirical                       | - Elementary, Middle, High School<br>- Teacher, Administrator |
| Nelson, T. H. (2009). Teachers' collaborative inquiry and professional growth: Should we be optimistic? <i>Science Education</i> , 93(3), 548–580. doi:10.1002/sce.20302   | X                         | X                      |                    | X          | - Conceptual<br>- Practical Guide | - Elementary, Middle, High School<br>- Teacher, Administrator |
| Nelson, T. H., Deuel, A., Slavit, D., & Kennedy, A. (2010). Leading deep conversations in collaborative inquiry groups. <i>The Clearing House</i> , 83(5), 175-179   | X                         | X                      |                    | X          | - Conceptual                      | - Elementary, Middle, High School<br>- Teacher, Administrator |
| Nelson, T. H., & Slavit, D. (2007). Collaborative inquiry among science and mathematics teachers in the USA: Professional learning experiences through cross-grade, cross-discipline dialogue. <i>Journal of In-service Education</i> , 33(1), 23–39 |                           |                        | X                  | X          | - Empirical                       | - Middle School<br>- Teacher                                  |
| Nelson, T. H., & Slavit, D. (2008). Supported teacher collaborative inquiry. <i>Teacher Education Quarterly</i> , 35(1), 99–116  | X                         |                        |                    | X          | - Conceptual                      | - Middle, High School<br>- Teachers                           |

| Reference   | Classification of Article |                        |                    |            | Type of Reference                 | Context Description   |
|---|---------------------------|------------------------|--------------------|------------|-----------------------------------|---|
|   | Characteristics           | Supports and Resources | Empirical Benefits | Challenges |                                   |   |
| Nelson, T. H., Slavit, D., & Deuel, A. (2012). Two dimensions of an inquiry stance toward student-learning data. <i>Teachers College Record</i> , 114(8), 1–42  | X                         | X                      |                    |            | - Empirical                       | - High School<br>- Teacher                                      |
| Nelson, T. H., Slavit, D., Perkins, M., & Hathorn, T. (2008). A culture of collaborative inquiry: Learning to develop and support professional learning communities. <i>Teachers College Record</i> , 110(6), 1269-1303   | X                         | X                      |                    | X          | - Empirical                       | - Middle, High School<br>- Teachers                             |
| Ontario Literacy and Numeracy Secretariat. (2007a). <i>Capacity building series. Professional learning communities: A model for Ontario schools</i> . Toronto, ON: Author.  | X                         | X                      |                    |            | - Conceptual                      | - Elementary, Middle, High School<br>- Teachers, Administrators |
| Ontario Literacy and Numeracy Secretariat. (2007b). <i>The school effectiveness framework: A collegial process for continued growth in the effectiveness of Ontario elementary schools. Implementation pilot: September 2007-June 2008</i> . Toronto: ON: Author                                  | X                         | X                      |                    |            | - Conceptual                      | - Elementary, Middle, High School                               |
| Ontario Literacy and Numeracy Secretariat. (2010). <i>Capacity building series. Collaborative teacher inquiry</i> . Toronto, ON: Author.  | X                         | X                      |                    |            | - Practical Guide                 | - Elementary, Middle, High School<br>- Teachers, Administrators |
| Ontario Ministry of Education. (2007). <i>Report to the partnership table on teacher professional learning</i> . Toronto, ON: Author.   | X                         |                        |                    |            | - Practical guide                 | - Elementary, Middle, High School<br>- Teachers, Administrators |
| Ontario Ministry of Education. (2010). <i>Exploring five core leadership capacities. Promoting collaborative learning cultures. Putting the promise into practice</i> . Toronto, ON: Author   | X                         |                        | X                  | X          | - Conceptual<br>- Practical guide | - Elementary, Middle, High School<br>- Teachers, Administrators |
| Robinson, M. A. (2010). <i>School perspectives on collaborative inquiry: Lessons learned from New York City, 2009-2010</i> . Philadelphia, PA: Consortium for Policy Research in Education  | X                         | X                      |                    | X          | - Empirical                       | - Elementary, Middle, High School<br>- Teachers, Administrators |
| Schnellert, L. M. (2011). <i>Collaborative inquiry: Teacher professional development as situated, responsive co-construction of practice and learning</i> . (Doctoral dissertation). Retrieved from <a href="https://circle.ubc.ca/handle/2429/38245">https://circle.ubc.ca/handle/2429/38245</a> | X                         | X                      |                    |            | - Conceptual                      | - Elementary, Middle, High School<br>- Teachers, Administrators |

| Reference  | Classification of Article |                        |                    |            | Type of Reference | Context Description   |
|--|---------------------------|------------------------|--------------------|------------|-------------------|---|
|  | Characteristics           | Supports and Resources | Empirical Benefits | Challenges |                   |   |
| Slavit, D., Kennedy, A., Lean, Z., Nelson, T. H., & Deuel, A. (2011). Support for professional collaboration in middle school mathematics: A complex web. <i>Teacher Education Quarterly</i> , 38(3), 113-131  |                           | X                      | X                  | X          | - Empirical       | - Middle, High School<br>- Teachers, Administrators             |
| Slavit, D., & Nelson, T. H. (2010). Collaborative teacher inquiry as a tool for building theory on the development and use of rich mathematical tasks. <i>Journal of Mathematics Teacher Education</i> , 13(3), 201-221  |                           | X                      | X                  | X          | - Empirical       | - Middle, High School<br>- Teachers                             |
| Slavit, D., Nelson, T. H., & Kennedy, A. (2010). Laser Focus on Content Strengthens Teacher Teams. <i>Journal of Staff Development</i> , 31(5), 18-22  | X                         | X                      | X                  |            | - Practical guide | - Middle, High School<br>- Teachers, Administrators             |
| Tichenor, M., & Heins, E. (2000). Study groups: An inquiry-based approach to improving schools. <i>The Clearing House</i> , 73(6), 316-319. Retrieved from <a href="http://www.tandfonline.com/doi/pdf/10.1080/00098650009599434">http://www.tandfonline.com/doi/pdf/10.1080/00098650009599434</a> |                           | X                      | X                  |            | - Practical guide | - Elementary<br>- Teachers, Administrators                      |
| Vineyard, L. (2010). <i>Collaborative inquiry: A strategy for assessing Response to Instruction and Intervention (RtI<sup>2</sup>) for English learner students</i> . (Doctoral dissertation). Available from ProQuest Dissertations & Theses database. (UMI No. 3446801)                          |                           | X                      | X                  |            | - Empirical       | - Elementary<br>- Teachers                                      |
| von Gnechten, M. P. (2011). <i>Collaborative practitioner inquiry: Providing leadership and action research for teacher professional development</i> . (Doctoral dissertation). Available from ProQuest Dissertations & Theses database. (UMI No. 3449959)   | X                         | X                      | X                  |            | - Empirical       | - Middle, High School<br>- Teachers                             |
| Wellman, B. M., & Lipton, L. (2004). <i>Data-driven dialogue: A facilitator's guide to collaborative inquiry</i> . Sherman, CT: Mira Via, LLC  | X                         | X                      |                    |            | - Practical guide | - Elementary, Middle, High School<br>- Teachers, Administrators |
| Windschitl, M., Thompson, J., & Braaten, M. (2011). Ambitious pedagogy by novice teachers: Who benefits from tool-supported collaborative inquiry into practice and why? <i>Teachers College Record</i> , 113(7), 1311-1360  |                           | X                      | X                  |            | - Empirical       | - Middle, High School<br>- Teachers                             |

Table 16: Thematic and code scheme based on research questions.

| Research Questions   | Themes                           | Codes   |
|--|----------------------------------|---|
| <b>How is CI characterized and operationalized as a professional learning structure for educators?</b> | CI Cycles                        | <ul style="list-style-type: none"> <li>- Dialogical Sharing</li> <li>- Taking Action</li> <li>- Reflection</li> </ul>   |
|  | Socio-constructivist perspective | <ul style="list-style-type: none"> <li>- Context</li> <li>- Negotiated Meaning</li> <li>- Shared Experience</li> </ul>  |
|  | Supportive Leadership            | <ul style="list-style-type: none"> <li>- School Embedded</li> <li>- School Partnership</li> <li>- Facilitators</li> <li>- School/Board Leaders</li> <li>- Teacher Leaders</li> </ul>                    |
| <b>What supports and resources are required to enact effective CI?</b>                                 | Supportive Environment           | <ul style="list-style-type: none"> <li>- Time and Space</li> <li>- Culture</li> </ul>   |
|  | Supportive Practice              | <ul style="list-style-type: none"> <li>- Group Membership</li> <li>- Collegial Dialogue</li> <li>- Norms</li> <li>- Protocols</li> <li>- Resources</li> </ul>   |
| <b>What are empirically supported benefits of engaging in CI?</b>                                      | Teachers                         | <ul style="list-style-type: none"> <li>- Pedagogical Knowledge</li> <li>- Fostering Community</li> <li>- Teacher Leaders</li> </ul>   |
|  | Students                         | <ul style="list-style-type: none"> <li>- Student Learning</li> <li>- Achievement</li> </ul>   |
|  | Schools                          | <ul style="list-style-type: none"> <li>- Curricular Alignment</li> <li>- Initiating Improvement</li> <li>- Targeted Teacher PD</li> <li>- Shift in Culture</li> <li>- Access to Universities</li> </ul> |
| <b>What are the challenges to enacting CI with educators?</b>  | Cultural <i>Buy in</i>           | <ul style="list-style-type: none"> <li>- Shared Value System</li> </ul>   |
|  | Leadership                       | <ul style="list-style-type: none"> <li>- Change</li> <li>- Style</li> </ul>   |
|  | Temporal Constraints             | <ul style="list-style-type: none"> <li>- Sanctioned Time</li> </ul>   |
|  | Data Literacy                    | <ul style="list-style-type: none"> <li>- Meaningful Analysis</li> <li>- Classroom Change</li> </ul>   |

Table 17: Stages within CI cycles by reference.

| Reference   | CI Cycle*   |
|---|---|
| <b>Ontario Literacy and Numeracy Secretariat (2007)</b> | <ol style="list-style-type: none"> <li>1. What knowledge skills do our students need?</li> <li>2. What knowledge skills do our teachers need?</li> <li>3. Deepen professional knowledge and refine skills</li> <li>4. Engage students in new learning experiences</li> <li>5. What has been the impact of our changed experiences?</li> </ol>   |
| <b>Robinson (2010)</b>                                  | <ol style="list-style-type: none"> <li>1. Examine student work/data</li> <li>2. Examine teacher work, engage external resources</li> <li>3. Define instructional strategy and set goals</li> <li>4. Take action: implement instructional strategy, monitor student progress with common assessments,</li> <li>5. Revise and repeat inquiry cycle</li> </ol>   |
| <b>Bulter &amp; Schnellert (2012)</b>                   | <ol style="list-style-type: none"> <li>1. Teacher learning/development goals: framing problems from new perspectives, considering research and evidence to generate solutions</li> <li>2. Planning: goal setting</li> <li>3. Enacting learning strategies: selecting and inventing task appropriate strategies</li> <li>4. Monitoring: self-monitoring outcomes</li> <li>5. Adjusting: revising goals to better achieve desired outcomes</li> </ol>   |
| <b>Wellman &amp; Lipton (2004)</b>                      | <ol style="list-style-type: none"> <li>1. Activating and engaging: surfacing experiences and expectations</li> <li>2. Exploring and discovering: analyzing data</li> <li>3. Organizing and integrating: generating theory</li> </ol>  |
| <b>Cunningham (2011)</b>                                | <ol style="list-style-type: none"> <li>1. Planning: establish focus, generate research question</li> <li>2. Implementation: taking action, collecting data</li> <li>3. Analysis and reflection: Analysis of data and reflection on future practice</li> </ol>   |
| <b>Nelson &amp; Slavit (2008)</b>                       | <ol style="list-style-type: none"> <li>1. Focus: develop a common vision for teaching and learning, compare current practice to vision, formulate inquiry question</li> <li>2. Implementation: study inquiry strategies to adopt, develop implementation plan</li> <li>3. Evaluation: implement plan, collect and analyze data, derive implantation for changing practice, disseminate findings</li> </ol>  |
| <b>Langer, Colton, &amp; Goff (2003)</b>                | <ol style="list-style-type: none"> <li>1. Observe and gather information: collection of classroom artifacts</li> <li>2. Analyze and interpret: framing the problem of practice through critical analysis, analysis of learning and co-construction of meaning through dialogue</li> <li>3. Plan: what actions might be the most helpful in promoting desired learning</li> <li>4. Act and experiment: the implementation of an experimental course of action that is designed to improve student learning.</li> </ol> |
| <b>Donohoo (2013)</b>                                   | <ol style="list-style-type: none"> <li>1. Framing the problem: determine meaningful focus, link professional practice with student results, formulate an action plan</li> <li>2. Collecting Evidence: determine the kind of evidence, when where, and how it will be collected</li> <li>3. Analyze Evidence: make meaning from data, and revisit theory of action accordingly</li> <li>4. Celebrating and Sharing: document, share, celebrate new understanding</li> </ol>  |

\* The stages of each CI cycle were depicted in circular format in original texts

## Appendix C: Document Analysis of CI Policies – Tables

Table 18: Summary of English provincial BIPSA documents.

| School Board                               | BIPSA Date     | Number of Pages | Number of CI Mentions |
|--|----------------|-----------------|-----------------------|
| Algoma DSB                                 | 2012-2013      | 16              | 6                     |
| Algonquin and Lakeshore Catholic DSB       | “by June 2011” | 3               | 6                     |
| <i>Avon Maitland DSB</i>                   | -              | -               | -                     |
| Bluewater DSB                              | June 2013      | 1               | 2                     |
| Brant-Haldimand-Norfolk Catholic DSB       | 2012-2015      | 11              | 6                     |
| Bruce-Grey Catholic District School Board  | 2011-2012      | 5               | 8                     |
| Catholic DSB of Eastern Ontario            | 2010-2013      | 16              | 3                     |
| District School Board of Niagara           | 2012-2013      | 17              | 15                    |
| District School Board Ontario North East   | 2013-2018      | 17              | 9                     |
| <i>Dufferin-Peel Catholic DSB</i>          | -              | -               | -                     |
| <i>Durham Catholic DSB</i>                 | -              | -               | -                     |
| Durham DSB                                 | 2013-2014      | 9               | 17                    |
| Grand Erie DSB                             | 2013-2014      | 10              | 21                    |
| Greater Essex County DSB                   | 2012-2013      | 8               | 0                     |
| Halton Catholic DSB                        | August 2013    | 6               | 4                     |
| Halton DSB                                 | 2013-2014      | 18              | 19                    |
| Hamilton-Wentworth Catholic DSB            | October 2013   | 30              | 5                     |
| <i>Hamilton-Wentworth DSB</i>              | -              | -               | -                     |
| Hastings & Prince Edward DSB               | 2012           | 1               | 1                     |
| Huron-Perth Catholic DSB                   | December 2012  | 5               | 21                    |
| <i>Huron-Superior Catholic DSB</i>         | -              | -               | -                     |
| <i>James Bay Lowlands Secondary SB</i>     | -              | -               | -                     |
| Kawartha Pine Ridge DSB                    | 2013-2014      | 5               | 7                     |
| Keewatin-Patricia DSB                      | 2013-2018      | 2               | 0                     |
| Kenora Catholic DSB                        | 2013-2014      | 4               | 3                     |
| Lakehead DSB                               | 2013-2014      | 8               | 0                     |
| Lambton Kent DSB                           | 2011-2012      | 8               | 1                     |
| Limestone DSB                              | August 2013    | 30              | 18                    |
| London District Catholic School Board      | 2013-2014      | 2               | 4                     |
| <i>Moose Factory Island DSAB</i>           | -              | -               | -                     |
| <i>Moononee District School Area Board</i> | -              | -               | -                     |

| <b>School Board</b>   | <b>BIPSA Date</b>                       | <b>Number of Pages</b> | <b>Number of CI Mentions</b> |
|---|---|------------------------|------------------------------|
| <i>Near North DSB</i>   | <i>BIPSA requires password to view.</i> |                        |                              |
| <b>Niagara Catholic DSB</b>   | 2013-2014                               | 6                      | 12                           |
| <b>Nippissing-Parry Sound Catholic DSB</b>                                | 2012-2015                               | 21                     | 9                            |
| <b>Northeastern Catholic DSB</b>  | No date.                                | 4                      | 2                            |
| <b>Northwest Catholic DSB</b>   | January 2013                            | 9                      | 4                            |
| <i>Ottawa Catholic DSB</i>  | -                                       | -                      | -                            |
| <b>Ottawa-Carleton DSB</b>  | 2010-2011                               | 19                     | 26                           |
| <i>Peel DSB</i>   | -                                       | -                      | -                            |
| <b>Peterborough Victoria Northumberland &amp; Clarington Catholic DSB</b> | December 2010                           | 14                     | 4                            |
| <i>Rainbow DSB</i>  | -                                       | -                      | -                            |
| <b>Rainy River DSB</b>  | 2012-2013                               | 5                      | 2                            |
| <b>Renfrew County Catholic DSB</b>  | 2013-2014                               | 2                      | 5                            |
| <b>Renfrew County DSB</b>   | 2013-2014                               | 13                     | 12                           |
| <b>Simcoe County DSB</b>  | No date.                                | 1                      | 1                            |
| <b>Simcoe Muskoka Catholic DSB</b>  | 2012-2017                               | 20                     | 0                            |
| <b>St. Clair Catholic DSB</b>   | 2012-2013                               | 2                      | 8                            |
| <b>Sudbury Catholic DSB</b>   | 2012-2013                               | 8                      | 6                            |
| <i>Superior North Catholic DSB</i>  | -                                       | -                      | -                            |
| <b>Superior-Greenstone DSB</b>  | 2013-2014                               | 7                      | 28                           |
| <b>Thames Valley DSB</b>  | 2013-2014                               | 6                      | 0                            |
| <i>Thunder Bay Catholic DSB</i>   | -                                       | -                      | -                            |
| <b>Toronto Catholic DSB</b>   | 2011-2014                               | 21                     | 6                            |
| <b>Toronto DSB</b>  | 2013-2014                               | 6                      | 3                            |
| <b>Trillium Lakelands DSB</b>   | 2013-2014                               | 1                      | 9                            |
| <b>Upper Canada DSB</b>   | 2013-2016                               | 54                     | 8                            |
| <b>Upper Grand DSB</b>  | 2011-2014                               | 2                      | 1                            |
| <b>Waterloo Catholic DSB</b>  | 2013-2016                               | 12                     | 4                            |
| <b>Waterloo Region DSB</b>  | 2013-2014                               | 1                      | 0                            |
| <b>Wellington Catholic DSB</b>  | 2013-2014                               | 24                     | 28                           |
| <b>Windsor-Essex Catholic DSB</b>   | 2013-2014                               | 13                     | 0                            |
| <b>York Catholic DSB</b>  | November 2013                           | 20                     | 10                           |
| <b>York Region DSB</b>  | 2013-2014                               | 13                     | 14                           |

*Note.* Shaded boards' BIPSAs were not readily available online.



Table 19: Summary of related documents on CI from BIPSA search.

| Board   | Document Title  | Date              | Document Description   | Comments                    |
|---|---|-------------------|--|-----------------------------|
| <b>Algoma DSB</b>                             | Literacy K-3, Our Commitment to the Development of Literacy           |                   | Outlines board's comprehensive literacy program                              | No reference to C.I.        |
| <b>Algonquin &amp; Lakeshore Catholic DSB</b> | Board Highlights  | October 2010      | Highlights system Kindergarten Capacity Building Inquiry Project             |                             |
| <b>Avon Maitland DSB</b>                      | Board Highlights  | November 13, 2012 | Avon Maitland Student Achievement Plan - C.I. as board priority              |                             |
| <b>Bluewater DSB</b>                          | Learning From Each Other - a Tri-Board Approach                       |                   | Brief ref. to Katz and Earl, 2007, on importance of C.I.                     |                             |
|   | Multi-Year Str. Plan Priority - Quality Instr. & Learning Experiences |                   | Board EQAO targets and board initiatives re C.I.                             | Brief ref. to EPCI and CILM |
|   | Elementary School Organization & Instructional Framework              |                   | Comprehensive board Standards of Practice based on S.E.F. - Oct. 2010        |                             |
| <b>Dufferin-Peel Catholic DSB</b>             | News Release re Catholic Global Learning Centre                       | January 7, 2013   | Re opening of new elementary school - to use inquiry-based learning          |                             |
| <b>Durham Catholic DSB</b>                    | News Release - St. Thomas Aquinas Cath. Sch. Greening Project         |                   | No reference to C.I.   |                             |
|   | News Release - Numeracy   |                   | Ref. Continuum Based Math tool and use of CIL-M project with Durham DSB      |                             |
| <b>Edugains</b>                               | <i>Collaborative Inquiry Project – Grades 1-12</i>                    |                   | <i>multi-board, multi-year C.I. project with SAOs re student assessment</i>  | REMOVED                     |
| <b>ETFO</b>                                   | Paper: Capacity Building in Collaborative Action Research             | 2011              | from: <i>Canadian Journal of Action Research</i> , 12(3), 1-5                |                             |
| <b>Halton Catholic DSB</b>                    | Outcome Monitoring Report - 21st Century Learning Environ.            |                   | Stats. re: board's C.I. Innovation Projects as part of 21st Century Learning |                             |
|   | Holy Family Elementary School School Improvement Plan                 | 2013-14           |  |                             |
|   | St. Ignatius of Loyola Catholic S.S. EQAO Assessment Report           | 2013              |  | Secondary                   |
| <b>Hamilton-Wentworth Catholic DSB</b>        | Student Work Study Teacher Inquiry Report                             | 2012-13           | Comprehensive report of SWS teachers' work in the schools                    |                             |

| Board                                   | Document Title   | Date              | Document Description  | Comments                        |
|---|--|-------------------|---|---------------------------------|
| <b>Hamilton-Wentworth DSB</b>           | Allan A. Greenleaf School - Snapshots                                |                   | Excerpt from Schools on the Move Lighthouse Program                       | C.I.M. and Collab. in general   |
|   | Release - School Libraries Evolving 21st Century Learning Spaces     |                   | Learning Commons approach: technology, emphasis on collaborative learning |                                 |
|   | Education for the 21st Century: Here, Now and Into the Future        |                   | Secondary focus   |                                 |
|   | Changing the Learning Environment in HWDSB                           |                   | Broad visioning plan - 21st Century Learning, tech. and collaboration     |                                 |
|   | Implementing our Annual Operating Plan                               |                   | “Our Lead. & Learn. Dept. will support C.I. happening in each school...”  |                                 |
|   | Parent and Community Engagement Early Learning Strategy              |                   | Information Session for Parents, April 22, 2013.                          | Various board initiatives & AOP |
|   | Self-Directed Learning, February                                     | 2009              | BLAM (Bottom Line Actionable Message)                                     | Resource for teachers re: SDL   |
|   | Student Achievement Report   | November 18, 2013 | Report and Info. Session - overview of stud. achieve. and initiatives     | Brief ref. to C.I.              |
|   | Consultation of Good to Great Staff Engage. Report                   | October 2013      | Information Session; focus on staff engagement at HWDSB                   |                                 |
| <b>Hastings &amp; Prince Edward DSB</b> | Summarizing Ministry Resources - Curriculum Services Team            |                   | Listing by subject and title of Ministry resources - linked to SEF        |                                 |
| <b>Huron Superior Catholic DSB</b>      | News: Collaborative Problem Solving                                  |                   | Presentation by Dr. Ross Greene on collaborative problem solving          | Included First Nations rep.     |
| <b>Kawartha Pine Ridge DSB</b>          | CI 2012-2013: Assessment for Learning FDK                            | July 2013         | Comprehensive report of inquiry team on assessment in FDK                 |                                 |
|   | Programs by Lead. & Staff Dev. supporting ‘instructional leadership’ |                   | focused on leadership   |                                 |
|   | Leadership & Staff Development Program Calendar                      | 2011-2012         | board leadership development program and upcoming P.D. events             |                                 |
|   | Leadership & Staff Development Program Calendar                      | 2013-2014         | board leadership development program and upcoming P.D. events             |                                 |
|   | Living, Learning & Leading... Areas of Emphasis Update               | March 2013        | Part of board Strategic Directions  | 3-year priorities plan          |

| Board   | Document Title  | Date                 | Document Description   | Comments                       |
|---|---|----------------------|--|--------------------------------|
|   | KPR Self-Assessment Tool for Leaders  |                      | Self-evaluation, checklists for school leaders                                     |                                |
| <b>Keewatin-Patricia DSB</b>                    | Priority Areas - Board Strategic Improvement Plan                           | 2013-2014            | “CI focused on student and ‘adult’ thinking”; 21st Century                         |                                |
|   | Cycles of Inquiry and Professional Learning Cycle of Inquiry                |                      | link under Board Strategic Improvement Plan  | Brief description of the cycle |
|   | Common Acronyms and Terminology   |                      |  |                                |
| <b>Kenora Catholic DSB</b>                      | Curriculum News   | November 30, 2010    | lists board curriculum initiatives incl. CIL-M, CIL-L & Pri. C.I. Action Research  |                                |
| <b>Limestone DSB</b>                            | Strategic Plan: Year 5 of 6 Year Plan - Key Initiatives For 2013-14         |                      | Broad board strategic plan - CI referred to  |                                |
|   | Success For All: Limestone DSB Strategic Plan: Year 2 of 5 Year Plan        |                      | Broad board strategic plan - CI referred to  |                                |
| <b>London District Catholic S.B.</b>            | P.D. Session at Holy Cross Catholic Secondary School                        |                      | Produced document on C.I. - student needs, strategies, etc.                        | Secondary                      |
| <b>MISA - London Region Profess. Network</b>    | <i>Collaborative Inquiry - A Facilitator's Guide</i>                        | 2011                 | <i>Comprehensive guide designed for school teams implementing CI (51 pages)</i>    | REMOVED                        |
| <b>Near North DSB</b>                           | Mapleridge Public School - Mapleridge Collaborative Inquiry                 | 2013                 | “What is Collaborative Inquiry?” video link  |                                |
| <b>Northeastern Catholic DSB</b>                | News Release - Students Learning to Express Themselves... Critical Thinking |                      | Re outcomes of EPCI at two elementary schools, incl. French Immersion              |                                |
| <b>Northwest Catholic DSB</b>                   | Recognizing Learning Styles of Students & Teachers...21st Century           |                      | The need for 21st C. skills and knowledge, especially technology and collaboration |                                |
| <b>OME (LNS - Student Achievement Division)</b> | <i>Math in Motion Newsletter</i>  | <i>December 2013</i> |  | REMOVED                        |
| <b>Ottawa Carleton DSB</b>                      | Nurturing Thinking in Our Children  | May 2012             | PowerPoint Presentation by Garfield Gini-Newman (OISE)                             |                                |
| <b>Ottawa Carleton DSB</b>                      | The Kindergarten Program  | 2013                 | Nothing specifically on C.I.   |                                |
| <b>Ottawa Catholic S.B.</b>                     | Achieving Student Success (from “Spotlight”)                                | January 2013         | Brief description of board’s SIM Team and implementation of BIPSA                  |                                |
|   | Learning in Field - Thinking Made Visible (from “Spotlight”)                | March 2013           |  |                                |

| Board  | Document Title   | Date              | Document Description  | Comments |
|--|--|-------------------|---|----------|
| <b>Peel DSB</b>                                    | Minutes of Meeting of Instruct. Progr. / Curric. Comm                  | November 28, 2012 | refers to “4 Cs”, including collaborative inquiry                         |          |
| <b>Peterborough, Victoria, N &amp; C Cath. DSB</b> | Vision for Learning and Instructional Technology Plan                  | March 2012        | board plan for integrating instruction and technology; 21st C. learning   |          |
|  | “Miracles”   | 2011-12           | celebrates board’s programs, initiatives and successes                    |          |
| <b>Rainbow District School Board</b>               | Overview - Action Research Projects Focused on Assessment For Learning | 2009-2010         | Board research related to Assessment for Learning (AFL)                   |          |
|  | An Early Learning Journey: A Social Constructivist Approach            | 2010              | relates to EPCI project, grades one and Kindergarten in 2009              |          |
|  | School Profile for Redwood Acres Public School                         |                   |   |          |
| <b>Rainy River DSB</b>                             | Early Primary Collaborative Inquiry                                    | 2012-2013         | account of board’s experience with EPCI at four schools - with links      |          |
|  | Overview - Early Primary Collaborative Inquiry                         | 2012-2013         | Detailed summary chart of results of EPCI projects                        |          |
|  | RMS Analyzing Student Learning   |                   |   |          |
|  | Early Primary Collaborative Inquiry Thinking Map                       | 2012-2013         |   |          |
|  | Grade One Teacher Survey   |                   |   |          |
|  | Teachers - Continued Learning  |                   | Website links for teachers; teacher resources, LNS documents, etc.        |          |
| <b>Simcoe County D.S.B</b>                         | Program Dept. Teaching and Learning Multi-Year Plan, 2012-15           | 2012-2015         | Very detailed outline of professional learning and teaching, including CI |          |
| <b>Thames Valley DSB</b>                           | EPCI: Early Primary Collab. Inquiry - Main Page & Links                | 2012-2013         | Board Action Research Collab. Inquiry Project on children’s art creations |          |
|  | EPCI: Early Primary Collab. Inquiry – Monograph                        | 2010-2011         | Very detailed description of board EPCI project.                          |          |
|  | EPCI: Early Primary Collab. Inquiry – Monograph                        | 2011-2012         | Very detailed description of board EPCI project.                          |          |
|  | EPCI Final Team Reflections  | 2012-2013         |   |          |
|  | EPCI Teacher Survey  | November 2012     |   |          |
|  | EPCI Teacher Survey  | February 2013     |   |          |
|  | EPCI Teacher Survey  | April 2013        |   |          |

| Board                       | Document Title  | Date          | Document Description  | Comments       |
|-----------------------------|---|---------------|---|----------------|
|                             | EPCI Reference List   |               |   |                |
|                             | EPCI Survey on Documentation  |               |   |                |
|                             | EPCI Survey on Effective Questioning                                |               |   |                |
|                             | EPCI Survey - general   |               |   |                |
|                             | Educator's Perceptions and Experiences re Documentation             |               |   |                |
|                             | Documentation Task  |               |   |                |
|                             | EPCI Overview Chart   | 2010-2011     |   |                |
| <b>Toronto Catholic DSB</b> | Inquiry Based Learning - An Annotated Bibliography                  | December 2011 | B. Grymek-Nowinowski  |                |
|                             | Precious Blood Catholic School - Leading Student Achievement (LSA)  |               | Outlines LSA: Networks for Learning Project, including CI                             |                |
|                             | St. Henry Catholic School - A Self-Directed Learning Journey        |               | School's experience with inquiry and self-directed learning                           |                |
|                             | Teacher Professional Learning from the 'Inside Out': Studying...    | July 26, 2011 | David Cameron et al. – paper submitted for peer review                                | on TCDSB page  |
| <b>Upper Canada DSB</b>     | Board Posting for Student Engagement Teachers (K-12)                | February 2013 | Ref. to “collaborative inquiry networks (hubs)”                                       |                |
| <b>(Unknown)</b>            | <i>Inquiry-Based Learning website</i>                               |               | <i>Originally supported by TEACHER LEARNING &amp; LEADERSHIP PROGRAM (TLLP) - OME</i> | <i>REMOVED</i> |
| <b>York Region DSB</b>      | Early Years Strategy: Birth to Grade 3                              |               | Board vision/information sheet  |                |
|                             | Implementation of Ontario First Nation, Métis & Inuit Policy Frame. |               | Ref. to “Early Years & First Nation, Métis & Inuit Lit. Through C.I.” Project         |                |
|                             | Refreshed Literacy Framework  | April 2012    | Report to Board - detailed plan for 21st Century learning, including inquiry          |                |
|                             | Profess. Learning vs. Profess. Practice: Bridging Gap... Math Ed.   |               | Trisha Nelson - research paper  |                |
|                             | Teacher Leadership in Prof. Learning Communities... Networks        |               | Clelia Della Rovere - research paper  |                |
|                             | A Road of Reform Well Traveled                                      |               | Beate Plance - research paper   |                |
|                             | Action Research... Collaborative School Improvement                 |               | Pamela Adams - research paper   |                |

*Note.* 4 documents that surfaced in this search were not board documents and were removed; these documents are in italics above.

## Appendix D: Qualitative Data – Case Study and Consulted Board – Tables

*Table 20: A Priori Coding Matrix: Items of potential interest drawn from LNS CI continuum rubric, the LNS response to the Queen’s Evaluation Interim Report, the Queen’s Evaluation Scoping Review, and the Queen’s Evaluation Document Analysis.*

| Topics                            | Sub-topics                                    | Codes  | Sub-codes   |
|-----------------------------------|---|--|---|
| <b>Process Framework</b>          | Cyclical process featuring Dialogical Sharing | - Planning the inquiry   | - student data/evidence informs inquiry focus   |
|                                   |   | - targeting learning for teachers                                  | - designing classroom instruction   |
|                                   |   | - Taking Action  | - Shifts in practice  |
|                                   |   | - Observing  | - open door approach  |
|                                   |   | - Reflection   | - Analyzing   |
|                                   |   | - Determining next steps   |   |
|                                   | Socio-constructivist perspective              | - Negotiated Meaning   |   |
|                                   |   | - Shared Experience  |   |
| <b>Structure and Organization</b> |   | - Groupings  | - by grade, division, family of schools, hubs, networks                               |
|                                   |   | - People aside from teachers                                       | - LRTs, administrators, board personnel, SAOs, ECEs, outside experts/critical friends |
| <b>Evidence and Use of Data</b>   |   | - Process, not product   |   |
|                                   |   | - “what student work is telling us”                                |   |
|                                   |   | - IF/THEN statements   |   |
|                                   |   | - focus on formative assessment                                    |   |
| <b>CI Focus topics</b>            |   | - student thinking   |   |
|                                   |   | - classroom inquiry  |   |
|                                   |   | - active learning  |   |
|                                   |   | - communication  |   |
|                                   |   | - creative problem solving   |   |
|                                   |   | - critical thinking  |   |
|                                   |   | - metacognition,   |   |
|                                   |   | - use of technology  |   |
| <b>Supports</b>                   | Supportive Leadership                         | - Facilitators   |   |
|                                   |   | - School/Board Leaders   |   |
|                                   |   | - Teacher Leaders  |   |
|                                   |   | - Promoting CI as ‘habit’ of working in schools                    |   |
|                                   | Supportive Environment/ system conditions     | - Time and Space   |   |
|                                   |   | - School/ board Culture  |   |
|                                   |   | - Alignment (CI work connects to goals of division, school, board) |   |

| Topics                               | Sub-topics           | Codes   | Sub-codes   |
|--------------------------------------|----------------------|---|---|
|                                      | Supportive Practices | <ul style="list-style-type: none"> <li>- Using existing groups</li> <li>- Inquiry-oriented talk</li> <li>- Norms</li> <li>- Protocols</li> <li>- Resources</li> </ul>   | <ul style="list-style-type: none"> <li>- critical questioning</li> <li>- building on ideas</li> <li>- trust, openness</li> <li>- all are co-learners (students, teachers, admin)</li> <li>- going deeper</li> <li>- flexibility, responsiveness</li> <li>- making time to wonder</li> </ul>                             |
| <b>Benefits</b>                      | Teachers             | <ul style="list-style-type: none"> <li>- Pedagogical Knowledge</li> <li>- Collaboration amongst teachers</li> <li>- Fostering a Learning Community</li> <li>- Teacher Leaders</li> <li>- Teacher Empowerment</li> </ul>   |   |
|                                      | Students             | <ul style="list-style-type: none"> <li>- Student Learning</li> <li>- Achievement</li> </ul>   |   |
|                                      | Schools              | <ul style="list-style-type: none"> <li>- Curricular Alignment</li> <li>- Targeted Teacher PD</li> <li>- Shift to collaborative Culture</li> <li>- Access to Universities</li> </ul>   |   |
| <b>Challenges</b>                    | Cultural Buy in      | <ul style="list-style-type: none"> <li>- Shared Value System</li> </ul>   |   |
|                                      | Evolving Roles       | <ul style="list-style-type: none"> <li>- Teacher</li> <li>- Leadership</li> </ul>   | <ul style="list-style-type: none"> <li>- Teacher as learner and co-learner</li> <li>- Teacher as researcher/inquirer</li> <li>- Shift in relationship with student</li> <li>- Less teacher-directed</li> <li>- Relationship with curriculum</li> <li>- Constant guiding/care</li> <li>- Leader as co-learner</li> </ul> |
|                                      | Temporal Constraints | <ul style="list-style-type: none"> <li>- Sanctioned Time</li> </ul>   |   |
|                                      | Data Literacy        | <ul style="list-style-type: none"> <li>- Meaningful Analysis</li> </ul>   |   |
| <b>Opportunities Spread Tensions</b> |                      | <ul style="list-style-type: none"> <li>- CI at classroom level vs. CI within larger systems e.g. board</li> <li>- Mandated CI practices/processes vs. contextually emergent</li> <li>- Approach to professional learning vs. contributor to student achievement</li> <li>- Teachers participating in inquiry learning vs. students participating in inquiry learning</li> <li>- Blurring of CI process and CI focus (classroom inquiry is often the focus of teacher CI); the medium becomes the message</li> </ul> |   |



*Table 21: Emergent Coding Matrix: What are teachers telling us about their experiences of collaborative inquiry as professional learning?*

| Topics      | Sub-topics          | Codes  | Sub-codes  |
|-------------|---------------------|--|--|
| STATE OF CI | Process models      | - Broad range of CI experiences  | <ul style="list-style-type: none"> <li>- team-decided focus</li> <li>- choice of focus</li> <li>- imposed focus</li> <li>- flexible focus</li> <li>- student data informs CI</li> <li>- analyzing together</li> <li>- determining educator learning</li> <li>- co-planning</li> <li>- taking action</li> <li>- designing instruction</li> <li>- co-teaching</li> <li>- observing</li> <li>- documenting</li> <li>- refining/iterative</li> <li>- program suggesting/ modeling practices</li> <li>- teachers sharing practices</li> <li>- shifting practices</li> <li>- reflection on student learning</li> </ul> |
|             | Structural models   | - Groupings (board wide, family of schools, within-school)   | <ul style="list-style-type: none"> <li>- CI most valuable at the local level</li> <li>- Smaller is better</li> </ul>   |
| SENSE OF CI | What makes it work? | <ul style="list-style-type: none"> <li>- Teacher choice of inquiry focus</li> <li>- Acknowledgement that it takes time for CI to really work effectively</li> <li>- Acknowledgement that teachers are experts</li> <li>- Teacher willingness to admit they don't know it all</li> <li>- Establishing relationship and trust with colleagues</li> <li>- When CI work is truly collaborative</li> <li>- Seeing student success that results from CI</li> <li>- Time</li> </ul> |  |

| Topics                   | Sub-topics   | Codes   | Sub-codes |
|--------------------------|--|---|-----------|
|                          | <b>What Gets in the Way?</b>                               | <ul style="list-style-type: none"> <li>- Lack of relevance to a teacher's particular classroom</li> <li>- Lack of confidence in out-of-touch 'experts'</li> <li>- CI as another 'add-on' for teachers</li> <li>- CI is 'inefficient' (figuring out vs. being told)</li> <li>- Lack of support regarding structuring of CI as professional learning processes</li> <li>- Lack of confidence/ familiarity with CI practices</li> <li>- Teacher's time better spent with students than PD outside classroom</li> <li>- Fear of exposing personal teaching weaknesses</li> <li>- Difficulty and frustration demonstrating accountability of CI success</li> </ul> |           |
|                          | <b>Outcomes of CI</b>                                      | <ul style="list-style-type: none"> <li>- More teachers are talking</li> <li>- Informal CI</li> <li>- Increased teacher confidence to take risks/ shift practices</li> <li>- Increased recognition of the importance of teacher reflection and ongoing teacher learning</li> <li>- Recognition of the value of CI as personal professional learning</li> </ul>   |           |
|                          | <b>Other things teachers notice</b>                        | <ul style="list-style-type: none"> <li>- CI is student-driven.</li> <li>- CI mindset trickles down and is adopted by students</li> <li>- Teachers and students as co-learners</li> <li>- Students become empowered by being involved in the CI as PL process</li> </ul>   |           |
| <b>EXISTING SUPPORTS</b> | <b>What teachers value in principal/ admin</b>             | <ul style="list-style-type: none"> <li>- Hands-on involvement</li> <li>- Instructional expertise</li> <li>- Flexibility/ freedom with curriculum</li> <li>- Flexibility/ freedom with CI structures</li> <li>- Recognition of the value of mistakes</li> <li>- Provision of release time</li> </ul>   |           |
|                          | <b>What teachers value in outsider / expert assistance</b> | <ul style="list-style-type: none"> <li>- Constructive external perspective</li> <li>- Relationship/ trust</li> <li>- Classroom demonstrations</li> <li>- Ongoing guiding and care</li> </ul>  |           |
| <b>NEXT STEPS</b>        | <b>Teacher suggestions</b>                                 | <ul style="list-style-type: none"> <li>- Sharing the wealth: Connecting collaborative inquirers</li> <li>- More parent involvement</li> </ul>   |           |

## Appendix E: Recruitment Scripts

### Survey Recruitment Email

Dear Supervisory Officer:

Thank you for agreeing to participate in our study that explores collaborative inquiry in Ontario elementary schools. As part of this study, we would like to distribute a survey to elementary teachers in your school board. We ask that you distribute the below email invitation to teachers in at least 5 elementary schools in your board. However, wider distribution would enhance study findings and would provide more robust information about your teachers' use of collaborative inquiry. If we receive 50 or more responses to the survey from your district we will provide you with a summary of findings specific to your school board.

Please feel free to personalize the below email invitation to teachers. Should you have any questions or concerns, do not hesitate to contact me.

Sincerely,  
Christopher DeLuca, PhD  
Assistant Professor, Faculty of Education  
Queen's University

#### EMAIL INVITATION FOR TEACHERS

Dear Educator:

A team of researchers from Queen's University has been commissioned by the Literacy and Numeracy Secretariat (LNS) to describe, explore, and examine the practices of collaborative inquiry in elementary schools in Ontario.

As part of this research, we are inviting you to share your experiences of professional learning. The survey will take approximately 15 minutes to complete and is comprised of 20 questions. Broad participation in this survey will help us to learn more about the nature of collaborative inquiry in our Board. The survey can be accessed via the following link:

<http://queensu.fluidsurveys.com/s/collaborativeinquiry/teachersurvey/>

Your participation and completion of this survey is voluntary and there are no adverse consequence should you choose not to participate. The information you provide will not in any way identify you or your school. Additional information about this research and how it will be used is provided on the first page of the survey.

If you have any questions or concerns about this survey, please do not hesitate to contact the Queen's University research team: Christopher DeLuca ([cdeluca@queensu.ca](mailto:cdeluca@queensu.ca), 613-533-6000 x. 77675) OR Don Klinger ([don.klinger@queensu.ca](mailto:don.klinger@queensu.ca), 613-533-3028).

We believe your participation will help provide valuable information to the education community in Ontario. Thank you for considering this request.

Sincerely,

[School board officer]

## Protocol/Recruitment Script for Director of Education (Case-study)

Dear [Director of Education]

As you are already aware, a team of researchers from Queen's University has been commissioned by the Literacy and Numeracy Secretariat (LNS) to describe, explore and examine the practices of collaborative inquiry in elementary schools in Ontario. Our goal is to provide developmental information to assist in supporting collaborative inquiry initiatives that influence student learning. This work will contribute to building a better understanding of how collaborative inquiry is implemented and sustained within schools and school districts, and identify supports and challenges associated with the collaborative inquiry process.

We are inviting your school board to participate in this research. Your participation will help provide valuable information to the education community in Ontario. We also believe that your participation will directly benefit your school board. We are requesting your permission to collect data at district and school levels through the following processes:

### **District Level Participation**

***Supervisory Officer Interviews:*** We are requesting up to 60 minutes of time from one supervisory officer to answer questions about collaborative inquiry efforts in your board. We would like to speak with the supervisory officer who has been most involved with collaborative inquiry initiatives and who would have important insights and beliefs to share with our team. We are requesting your suggestion about which supervisory officer we should contact for the interview. We will also ask that supervisory officer to identify five school contexts in which collaborative inquiry is happening in order to collect school level information.

### **School Level Participation**

Based on the Supervisory Officer's recommendation of schools, one school will be selected for case study work, which includes a teacher focus group and a principal interview. The additional four schools will be provided with a teacher survey.

***Case Study Focus Groups:*** We are requesting 60 minutes of time from 3-8 teachers who have been engaged in collaborative inquiry. Focus group questions will address teachers' experiences and processes of engaging in collaborative inquiry.

***Principal Interview:*** We are requesting up to 60 minutes of time from one principal in the selected case study school. The interview will address the rewards and challenges of providing leadership in contexts where collaborative inquiry is occurring.

***Teacher Survey:*** We are requesting approximately 15 minutes of time from teachers within at least five schools (as identified by the supervisory officer) to fill out a survey about teacher experiences with professional learning through collaborative inquiry.

Your interest in participating in this investigation is greatly appreciated. Copies of the final report will be available through the LNS. Provincial associations and federations have been contacted to inform them about this Collaborative Inquiry study.

For further information or clarifications regarding this evaluation study, please contact:

Don Klinger Ph.D.  
[don.klinger@queensu.ca](mailto:don.klinger@queensu.ca)  
Queen's University

Christopher DeLuca Ph.D.  
[cdeluca@queensu.ca](mailto:cdeluca@queensu.ca)  
Queen's University

We look forward to your continued partnership in this joint endeavour to document our journey to improve student achievement.

## Protocol/Recruitment Script for Director of Education (Consulted)

Dear [Director of Education]

As you are already aware, a team of researchers from Queen's University has been commissioned by the Literacy and Numeracy Secretariat (LNS) to describe, explore and examine the practices of collaborative inquiry in elementary schools in Ontario. Our goal is to provide developmental information to assist in supporting collaborative inquiry initiatives that influence student learning. This work will contribute to building a better understanding of how collaborative inquiry is implemented and sustained within schools and school districts, and identify supports and challenges associated with the collaborative inquiry process.

We are inviting your school board to participate in this research. Your participation will help provide valuable information to the education community in Ontario. We also believe that your participation will directly benefit your school board.

We are requesting your permission to collect data at district and school levels through the following processes:

### **District Level Participation**

***Supervisory Officer Interviews:*** We are requesting up to 60 minutes of time from one supervisory officer to answer questions about collaborative inquiry efforts in your board. We would like to speak with the supervisory officer who has been most involved with collaborative inquiry initiatives and who would have important insights and beliefs to share with our team. We are requesting your suggestion about which supervisory officer we should contact for the interview.

### **School Level Participation**

***Teacher Survey:*** We are requesting approximately 15 minutes of time from teachers within at least five schools (as identified by the supervisory officer) to fill out a survey about teacher experiences with professional learning through collaborative inquiry.

Your interest in participating in this investigation is greatly appreciated. Copies of the final report will be available through the LNS. Provincial associations and federations have been contacted to inform them about this Collaborative Inquiry study.

For further information or clarifications regarding this evaluation study, please contact:

Don Klinger Ph.D.  
[don.klinger@queensu.ca](mailto:don.klinger@queensu.ca)  
Faculty of Education  
Queen's University

Christopher DeLuca Ph.D.  
[cdeluca@queensu.ca](mailto:cdeluca@queensu.ca)  
Faculty of Education  
Queen's University

We look forward to your continued partnership in this joint endeavour to document our journey to improve student achievement.

## Protocol/Recruitment Script for Director of Education

Dear [Director of Education]

As you are already aware, a team of researchers from Queen's University has been commissioned by the Literacy and Numeracy Secretariat (LNS) to describe, explore and examine the practices of collaborative inquiry in elementary schools in Ontario. Our goal is to provide developmental information to assist in supporting collaborative inquiry initiatives that influence student learning. This work will contribute to building a better understanding of how collaborative inquiry is implemented and sustained within schools and school districts, and identify supports and challenges associated with the collaborative inquiry process.

We are inviting your school board to participate in this research. Your participation will help provide valuable information to the education community in Ontario. We also believe that your participation will directly benefit your school board.

We are requesting your permission to collect data from teachers in your board through a teacher survey process. Specifically, we are requesting approximately 15 minutes of time from teachers within participating schools to fill out an online survey about teacher experiences with professional learning through collaborative inquiry. The survey will be electronically distributed and confidentiality will be maintained to the extent possible.

If at least 50 teachers from your board complete the survey, we will prepare a summary of finding for your district. This summary will provide you with information on how teachers are engaging with collaborative inquiry in your board including its benefits and structures that support its success.

Your interest in participating in this investigation is greatly appreciated. Copies of the final provincial report will be available through the LNS. Provincial associations and federations have been contacted to inform them about this Collaborative Inquiry study.

For further information or clarifications regarding this evaluation study, please contact:

Don Klinger Ph.D.  
[don.klinger@queensu.ca](mailto:don.klinger@queensu.ca)  
Faculty of Education  
Queen's University

Christopher DeLuca Ph.D.  
[cdeluca@queensu.ca](mailto:cdeluca@queensu.ca)  
Faculty of Education  
Queen's University

We look forward to your continued partnership in this joint endeavour to document our journey to improve student achievement.

## Appendix F: Data Collection Protocols and Instruments

### Supervisory Officer Interview Introductory Script (for both Case Study and Consulting Board Interviews)

Hello \_\_\_\_*insert name*\_\_\_\_. First, I want to thank you for taking the time today to help us to learn more about the processes and practices of collaborative inquiry. The fact that you were nominated by your director to speak with me indicates that you have important insights into the workings of collaborative inquiry, especially in how it may or may not be serving a professional learning purpose for teachers and other educators within your Board.

I will watch the time and try to keep our conversation to about 30 minutes.

I'd like to start by giving you some background on the purpose for our call. I am one of 8 researchers/evaluators at the Queen's, Faculty of Education who are in partnership with a team from the Literacy Numeracy Secretariat. Our goal in working together is to learn more about the spread, adaptability and impact, if any, of collaborative inquiry as a professional learning process or practice. As well, we are interested in the challenges that educators experience in engaging in collaborative inquiry. The information you share today will help the Literacy Numeracy Secretariat chart a way forward that is in the best interests of provincial educators.

In order for our team to bring authentic information to deliberations with our Ministry partners it is critical that you feel comfortable in talking openly about what you are learning given your experiences with collaborative inquiry. I want to assure you that nothing you share with me today will be connected to you personally or to your school district. What you tell me today will be aggregated with information from 15 other interviews to better understand the meaning and scope of collaborative inquiry as it is currently being practised.

Do you have any questions before we begin?



## Supervisory Officer Interview Questions (for both Case Study and Consulting Board Interviews)

- 1) What is your role in developing collaborative inquiry practices in your district?
- 2) Do you see collaborative inquiry—as an approach to professional learning—building momentum within your district? Why? (or why not?)
- 3) If educators within the board wanted to initiate an informal collaborative inquiry related to a professional dilemma, what protocols would these educators need to follow and what board supports, if any, are available?
  - a. What would determine how much freedom you would allow them in structuring their inquiry processes?
- 4) Do you think it matters where the initiative for collaborative inquiry comes from—whether it's mandated from above or bubbles up from educators? *Why* does it matter? (or not?)
- 5) Could you tell us about one school in your District that has been able to use collaborative inquiry (either formal or informal) to make a difference in the quality of teaching and learning there?
  - a. What do you think it was about their collaborative inquiry process that made it so successful?
- 6) What evidence, if any, does your district have more broadly (beyond this one school) about the effects of educators participating in collaborative inquiry?
- 7) Moving forward, what do you hope for from your Board or the Ministry in terms of support for professional learning?
- 8) Is there anything else about the use of collaborative inquiry in your district that would be important for us to consider—for example how it is structured, how it is experienced and how it is valued?

## Collaborative Inquiry Teacher Survey

(<http://queensu.fluidsurveys.com/s/collaborativeinquiry/teachersurvey/>)

The purpose of this survey is to learn about your professional learning experience through collaborative inquiry. The Ontario Ministry of Education (2010) describes collaborative inquiry as follows:

*A focus on student learning drives inquiry. Data generated from student actions and work compels teachers to investigate new, engaging and relevant questions about how and what their students learn. These questions lead to informed actions within the classroom, which in turn serve to refine or initiate new investigations.*

Please respond to each question based on your experiences, past and present. There are 20 questions on this survey. The survey will take approximately 15 minutes to complete.

Your participation and completion of this survey is voluntary and there are no adverse consequences should you choose not to participate. Further, you are free to choose, without reason or consequence, to refuse to answer any questions. You may withdraw from the survey at any point while completing it by simply closing your browser window. Once you have submitted your responses, you may not withdraw your data as identifiable information will not be collected.

We will protect your confidentiality to the extent possible. Personal and identifiable information will not be collected, unless of your own disclosure. Data may be presented or published in aggregate form and individual names will not be used in these dissemination activities. All data will be stored on a secure, password-protected computer.

If you have any questions or concerns about this survey, please do not hesitate to contact the Queen's University research team: Christopher DeLuca (cdeluca@queensu.ca, 613-533-6000 x. 77675) or Don Klinger (don.klinger@queensu.ca, 613-533-3028).

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.

**If you consent to participate in this research, please click the “next” button below to begin the survey.**

**If you do not wish to participate in this research, please close your browser.**

*Thank you for sharing your insights about collaborative inquiry.*

## Collaborative Inquiry Teacher Survey (response rates have been inserted)

### Part 1: My Professional Learning

1. Indicate the extent to which you value each of the following methods of professional learning.  
(0=no value; 4=great value; N/E=Not experienced)

|  | 0  | 1  | 2   | 3   | 4   | N/E<br>(missing) |
|--|----|----|-----|-----|-----|------------------|
| Multiple-board/association workshop or conference  | 7  | 25 | 50  | 112 | 130 | 49               |
| Board level workshop or conference   | 5  | 21 | 51  | 145 | 144 | 7                |
| In-school workshop or PLC (professional learning community)                                    | 6  | 23 | 36  | 124 | 178 | 6                |
| Teacher federation sponsored professional development  | 8  | 20 | 63  | 127 | 100 | 55               |
| Professional development session facilitated by peer teachers                                  | 1  | 13 | 46  | 131 | 163 | 19               |
| Professional development session facilitated by others with expertise                          | 2  | 8  | 28  | 132 | 194 | 9                |
| Professional development session facilitated by school administration                          | 21 | 41 | 73  | 146 | 77  | 15               |
| Collaborative learning networks across multiple boards   | 9  | 23 | 53  | 89  | 89  | 110              |
| Collaborative learning networks across my board  | 6  | 18 | 48  | 117 | 151 | 33               |
| In-school collaborative learning teams   | 8  | 15 | 37  | 104 | 194 | 15               |
| Personal action research   | 5  | 18 | 59  | 107 | 129 | 55               |
| Consultant personalized support (e.g., learning partner, facilitator, coach)                   | 5  | 17 | 36  | 105 | 170 | 40               |
| Formalized teacher evaluation and professional learning plan development                       | 38 | 67 | 103 | 110 | 40  | 15               |
| Planned classroom teaching moments connected to a professional learning focus                  | 3  | 20 | 46  | 135 | 144 | 25               |
| Unplanned or spontaneous classroom teaching moments connected to a professional learning focus | 4  | 24 | 45  | 111 | 164 | 25               |
| Instructional rounds   | 11 | 30 | 49  | 90  | 42  | 151              |
| Informal dialogue with teaching peers  | 2  | 3  | 27  | 103 | 225 | 13               |
| Graduate studies program (e.g., Masters)   | 16 | 30 | 59  | 74  | 53  | 141              |
| Additional qualification courses   | 8  | 28 | 59  | 138 | 117 | 23               |
| Online learning programs (e.g., webinars, MOOCs, forums, etc.)                                 | 15 | 34 | 87  | 116 | 59  | 62               |
| Professional readings  | 7  | 39 | 75  | 136 | 111 | 5                |
| Other (specify in box below)   |    |    |     |     |     |                  |

Other (specify in box below)

If you selected “other”, explain any other professional learning methods/strategies you use.

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2. Have you been involved in collaborative inquiry learning?

334 Yes

38 No

3. Think of a collaborative inquiry you have experienced. Briefly describe (a) the focus of the inquiry, and (b) the role you played in this inquiry.

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For the following eight questions (Questions 4-11), please respond in relation to the collaborative inquiry you described in Question 3 above.

4. Please characterize your collaborative inquiry. To what extent did you: (0=never; 4=always)

|  | 0  | 1  | 2  | 3   | 4   | N/E<br>(missing) |
|--|----|----|----|-----|-----|------------------|
| Collectively select your focus of inquiry and identify inquiry questions.                                | 6  | 11 | 32 | 107 | 131 | 86               |
| Use student data to define the inquiry.  | 2  | 14 | 47 | 96  | 128 | 86               |
| Co-learn about the focus of the inquiry.   | 3  | 11 | 36 | 99  | 139 | 85               |
| Co-plan next steps for instruction.  | 8  | 10 | 33 | 91  | 147 | 84               |
| Co-teach lessons.  | 62 | 41 | 58 | 62  | 65  | 85               |
| Take specific actions related to your collaborative inquiry focus when planning alone.                   | 6  | 9  | 39 | 100 | 129 | 90               |
| Take specific actions related to your collaborative inquiry focus during your regular teaching schedule. | 10 | 10 | 45 | 103 | 116 | 89               |
| Gather evidence of student learning through observations.  | 4  | 7  | 17 | 74  | 181 | 90               |
| Gather evidence of student learning through videos/photos.   | 59 | 33 | 46 | 77  | 73  | 85               |
| Gather evidence of student learning through surveys.   | 91 | 45 | 72 | 49  | 31  | 85               |
| Gather evidence of student learning through artifacts (e.g., student work).                              | 9  | 6  | 27 | 87  | 157 | 87               |
| Gather evidence of student learning through written teacher reflection (e.g., journals).                 | 51 | 33 | 62 | 83  | 58  | 86               |
| Discuss evidence gathered with your inquiry team.  | 10 | 9  | 32 | 102 | 133 | 87               |
| Co-analyze evidence gathered to make instructional decisions.  | 15 | 21 | 47 | 90  | 113 | 87               |
| Co-analyze evidence gathered to improve practice.  | 10 | 19 | 48 | 94  | 116 | 86               |

|   | 0  | 1  | 2  | 3   | 4   | N/E<br>(missing) |
|---|----|----|----|-----|-----|------------------|
| Apply learning from the inquiry to your instructional practice. | 2  | 6  | 35 | 100 | 144 | 86               |
| Collaboratively refine inquiry questions based on evidence.     | 6  | 26 | 46 | 101 | 105 | 89               |
| Collaboratively identify new inquiry questions.                 | 14 | 26 | 50 | 100 | 94  | 89               |
| Repeat the collaborative inquiry cycle.                         | 40 | 29 | 50 | 74  | 92  | 88               |

5. Identify the helpfulness of the following resources in supporting your collaborative inquiry. If a resource was not used, please select “N/A”. (0=not helpful; 4=extremely helpful; N/A=not applicable/did not use)

|   | 0  | 1  | 2  | 3   | 4   | N/E<br>(missing) |
|---|----|----|----|-----|-----|------------------|
| Board consultants (e.g., learning partners, coaches)  | 14 | 14 | 23 | 75  | 109 | 138              |
| External consultants (e.g., experts)  | 22 | 14 | 34 | 44  | 44  | 215              |
| Research partners (e.g., professors, Ministry personnel)  | 30 | 14 | 29 | 35  | 34  | 231              |
| Release time to collaborate with peers (across multiple schools)  | 15 | 10 | 16 | 38  | 121 | 173              |
| Release time to collaborate with peers (within your school)   | 8  | 11 | 16 | 56  | 153 | 129              |
| Ministry resources that describe collaborative inquiry (e.g., literature, research, documents and videos) | 11 | 24 | 48 | 84  | 77  | 129              |
| Non-ministry resources that describe collaborative inquiry  | 16 | 21 | 43 | 88  | 70  | 135              |
| Ministry resources related to focus of inquiry (i.e., teaching, curriculum, learning)                     | 13 | 19 | 37 | 88  | 105 | 111              |
| Non-ministry resources related to focus of inquiry (i.e., teaching, curriculum, learning)                 | 8  | 19 | 36 | 103 | 87  | 120              |
| The School Effectiveness Framework  | 25 | 34 | 54 | 78  | 57  | 125              |
| Data from common assessments (e.g., EQAO)   | 35 | 30 | 48 | 63  | 50  | 147              |
| Student work samples  | 2  | 6  | 10 | 59  | 187 | 109              |
| Evidence collected from observations of students during lessons   | 2  | 7  | 3  | 53  | 198 | 110              |
| Academic research related to inquiry focus  | 12 | 27 | 48 | 77  | 73  | 136              |
| Resources focused on data collection and analysis   | 16 | 31 | 49 | 70  | 60  | 147              |
| Other (please specify below):   |    |    |    |     |     |                  |

If you selected “Other”, indicate any other resources that have supported your collaborative inquiry.

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6. Please indicate the extent to which you agree with the following statements in relation to your collaborative inquiry. (0=strongly disagree; 4=strongly agree)

|   | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>N/E<br/>(missing)</b> |
|---|----------|----------|----------|----------|----------|--------------------------|
| Collaborative inquiry has influenced me to increase precision and personalization in teaching and learning. | 5        | 11       | 37       | 104      | 112      | 104                      |
| Collaborative inquiry has influenced me to develop learning tasks based on curriculum expectations.         | 8        | 18       | 32       | 95       | 116      | 104                      |
| Collaborative inquiry has influenced me to design instruction to engage students.                           | 6        | 9        | 25       | 74       | 155      | 104                      |
| Collaborative inquiry has influenced me to differentiate instruction for my students.                       | 10       | 9        | 29       | 87       | 133      | 105                      |
| Collaborative inquiry has influenced me to incorporate student voice, perspectives, and interests.          | 7        | 14       | 29       | 79       | 137      | 107                      |
| Collaborative inquiry has influenced me to provide students with descriptive feedback.                      | 6        | 11       | 36       | 93       | 121      | 106                      |
| Collaborative inquiry has influenced me to co-learn with teachers in my school.                             | 11       | 16       | 36       | 85       | 120      | 105                      |
| Collaborative inquiry has influenced me to co-learn with school administrators.                             | 20       | 22       | 57       | 83       | 87       | 104                      |
| Collaborative inquiry is now a priority in my professional learning.  | 11       | 20       | 43       | 82       | 112      | 105                      |
| I would engage in collaborative inquiry whether it was required or not.                                     | 5        | 12       | 46       | 76       | 128      | 106                      |
| I have become an instructional leader in my school as a result of my engagement in collaborative inquiry.   | 47       | 42       | 56       | 52       | 69       | 107                      |
| I had sufficient time to engage meaningfully in collaborative inquiry.                                      | 36       | 49       | 67       | 68       | 48       | 105                      |
| I would recommend collaborative inquiry to a colleague interested in professional learning.                 | 4        | 24       | 36       | 76       | 129      | 104                      |
| I felt personally engaged in my professional learning through collaborative inquiry.                        | 7        | 17       | 38       | 81       | 126      | 104                      |
| I can now better support my own learning and teaching practice as a result of my collaborative inquiry.     | 9        | 20       | 42       | 83       | 114      | 105                      |

7. Rate the extent to which the following factors have inhibited your participation in collaborative inquiry. (0=significantly; 4=not at all; N/A=not applicable)

|   | 0  | 1  | 2  | 3  | 4   | N/E<br>(missing) |
|---|----|----|----|----|-----|------------------|
| Willingness of those I am working with to listen to my ideas  | 20 | 27 | 38 | 59 | 103 | 126              |
| My confidence in trying something new   | 24 | 17 | 23 | 75 | 118 | 116              |
| Willingness of my students to try new things  | 16 | 14 | 34 | 68 | 126 | 115              |
| Ability to identify what counts as “evidence”   | 12 | 31 | 40 | 92 | 83  | 115              |
| Ability to make sense of the evidence I gather (i.e., analysis of evidence)                           | 14 | 26 | 41 | 95 | 85  | 112              |
| Fear that I might be wasting instructional time   | 20 | 31 | 35 | 62 | 106 | 119              |
| Ability to assess the impact of the inquiry   | 13 | 26 | 57 | 97 | 66  | 114              |
| Shifts in school focus, direction, or activity that are introduced during our collaborative inquiry   | 22 | 28 | 65 | 69 | 67  | 122              |
| Improvement areas that the school or district indicate as important                                   | 20 | 25 | 57 | 76 | 69  | 126              |
| Amount of time required of me in the collaborative inquiry process and its impact on my teaching time | 33 | 37 | 52 | 69 | 63  | 119              |
| Other (please specify below):   |    |    |    |    |     |                  |

If you selected “other”, indicate any other challenge to your participation in the collaborative inquiry.

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8. As a result of engaging in the collaborative inquiry, I have observed my students... (0=no extent; 4=very large extent).

|  | 0   | 1  | 2  | 3   | 4  | missing |
|--|-----|----|----|-----|----|---------|
| Displaying increased confidence in their learning          | 15  | 13 | 41 | 125 | 66 | 113     |
| Working collaboratively on shared tasks                    | 9   | 14 | 39 | 115 | 83 | 113     |
| Displaying increased skill at self-assessing               | 16  | 26 | 89 | 91  | 40 | 111     |
| Demonstrating improved ability to make choices             | 14  | 22 | 81 | 99  | 43 | 114     |
| Displaying increased ability to work independently         | 20  | 21 | 87 | 97  | 35 | 113     |
| Having fewer absences                                      | 117 | 23 | 54 | 41  | 26 | 112     |
| Demonstrating increased engagement in classroom activities | 15  | 17 | 54 | 98  | 77 | 112     |
| Displaying enhanced understanding of key concepts          | 9   | 20 | 65 | 122 | 45 | 112     |
| Displaying greater inquiry skills                          | 18  | 19 | 67 | 105 | 51 | 113     |



9. How has collaborative inquiry changed in your school since it was first introduced?

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10. How would you describe the process of collaborative inquiry in your school to a colleague who was unfamiliar with this approach to professional learning?

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11. Collaborative Inquiry has helped me see myself as a/an... (0=do not identify; 4=strongly identify)

|                                   | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>Missing</b> |
|-----------------------------------|----------|----------|----------|----------|----------|----------------|
| Professional learner              | 11       | 8        | 18       | 76       | 145      | 115            |
| Researcher                        | 24       | 21       | 52       | 81       | 78       | 117            |
| Instructional leader for my peers | 21       | 27       | 49       | 80       | 80       | 116            |
| Reflective practitioner           | 7        | 15       | 21       | 82       | 133      | 115            |

## Part 2: Demographic Information

12. I work for the following school board (select 'other' if not listed):

- Algoma District School Board
- Conseil scolaire catholique Providence District School Board
- Conseil scolaire public de l'Est de l'Ontario
- Dufferin Peel Catholic District School Board
- Greater Essex County District School Board
- Hamilton Wentworth Catholic District School Board
- Huron Perth Catholic District School Board
- Lakehead District School Board
- London District Catholic School Board
- OTHER
- Ottawa Catholic District School Board
- Peel District School Board
- Rainbow District School Board
- Simcoe County District School Board
- Toronto Catholic District School Board
- Trillium Lakelands District School Board
- Upper Canada District School Board
- Waterloo Region District School Board

13. If you selected "Other" in Question 12, type in the name of your school district below.

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14. This year I teach in the: (Check all that apply)

- 116 Primary Division
- 88 Junior Division
- 68 Intermediate Division
- 61 Other (library, special education, ELL, etc.)

15. My gender is:

- 243 Female
- 41 Male
- 2 Other

16. I have taught the following years...

- In total 13.53 years (mean)
- At the current grade 4.88 years (mean)
- At the current school 6.54 years (mean)
- As a board consultant or coordinator 0.32 years (mean)
- As a resource teacher/SST 1.49 years (mean)

17. How many years have you been involved in collaborative inquiry?

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18. Indicate your participation in each of the following structured programs of collaborative inquiry. (0 = no participation; 4 = high degree of participation)

|   | 0   | 1  | 2  | 3  | 4  | Missing |
|---|-----|----|----|----|----|---------|
| Early Primary Collaborative Inquiry (EPCI)            | 184 | 7  | 10 | 20 | 21 | 131     |
| Collaborative Inquiry for Learning Mathematics (CILM) | 120 | 10 | 20 | 45 | 59 | 119     |
| Student Work Study Teachers' Initiative (SWSTI)       | 179 | 13 | 10 | 21 | 24 | 126     |
| System Implementation and Monitoring (SIM)            | 197 | 9  | 12 | 12 | 11 | 132     |
| Other (please specify below):                         |     |    |    |    |    |         |

If you selected "other", identify any other collaborative inquiry in the school or board where you work

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19. I have completed the following: (select all that apply)

- 260 Additional Qualification Courses (AQs)
- 163 Additional Qualification Specialist
- 48 Masters Degree (MEd, MSc, MA, etc.)
- 0 Doctorate Degree (PhD or EdD)
- 0 Other relevant education or training

20. My school is best described as located in a:

- 80 Large City (e.g., London, Ottawa, Toronto)
- 50 Small City (e.g., Kingston, Windsor, Thunder Bay)
- 76 Suburban City (e.g., Kanata, Mississauga)
- 39 Town (e.g., Napanee, Prescott, Cochrane)
- 48 Rural community

THANK YOU FOR COMPLETING THE SURVEY

## Principal Interview Introductory Script

Hello \_\_\_\_ *insert name* \_\_\_\_\_. First, we want to thank you for taking the time today to help us to learn more about the processes and practices of collaborative inquiry. The fact that your school was nominated by \_\_\_\_name of supervisory officer\_\_\_\_ to participate in our case studies indicates that you have important insights into the workings of collaborative inquiry, especially in how it may or may not be serving a professional learning purpose for you, your teachers and other educators within your school.

I will watch the time and try to keep our conversation to about 30 minutes.

We'd like to start by giving you some background on the purpose for our visit. We are only 2 of 14 researchers and graduate research assistants at the Queen's, Faculty of Education who are in partnership with a team from the Literacy Numeracy Secretariat. Our goal in working together is to learn more about the spread, adaptability and impact, if any, of collaborative inquiry as a professional learning process or practice. As well, we are interested in the challenges that educators experience in engaging in collaborative inquiry. The information you share today will help the Literacy Numeracy Secretariat chart a way forward that is in the best interests of provincial educators.

In order for our team to bring authentic information to deliberations with our Ministry partners it is critical that you feel comfortable in talking openly about what you are learning given your experiences with collaborative inquiry. We want to assure you that nothing you share with us today will be connected to you personally or to your school. There will be no judgments made about you or your school based on what you say. What you tell me today will be aggregated with information we collect from 6 other case studies to better understand the meaning and scope of collaborative inquiry as it is currently being practised.

Do you have any questions before we begin?

## Principal Interview Questions

- 1) If you had to choose a description of your school's use of collaborative inquiry would you say it is *emerging* or *experienced* in the processes and practices? Why?  
EMERGING ☐ EXPERIENCED ☐
- 2) How do you see your role in developing collaborative inquiry practices in your school or district?
- 3) As an approach to professional learning, do you see collaborative inquiry building momentum within your school or district? Why? (or why not?)
- 4) If teachers within your school wanted to initiate a collaborative inquiry related to a professional dilemma, what protocols would they need to follow and what supports, if any, are available to them?
  - a. What would determine how much autonomy you would allow them in structuring their inquiry processes?
- 5) Do you think it matters where the initiative for collaborative inquiry comes from—whether it's mandated from above or bubbles up from teachers?
  - a. *Why* does it matter? (or not?)
- 6) Could you tell me about one example of collaborative inquiry where the processes or practices were able to make a difference in the quality of teaching and learning?
  - a. What do you think it was about their collaborative inquiry process that made it so successful?
- 7) What evidence, if any, do you have about the effects of you or your staff participating in collaborative inquiry?
- 8) Moving forward, what do you hope for from either your Board or the Ministry in terms of support for continued professional learning?
- 9) Is there anything else about the use of collaborative inquiry in your school or district that would be important for us to consider—for example how it is structured, how it is experienced and how it is valued?

## Focus Group Interview Introductory Script - Teachers

Hello Everyone . . .

<Researcher introduces self and a sentence about their work>

<Graduate RA introduces self and a sentence about their work>

We'd like to start by giving you some background on the purpose for our visit. We are only 2 of 14 researchers and graduate research assistants at the Queen's, Faculty of Education who are in partnership with a team from the Literacy Numeracy Secretariat. Our goal in working together is to learn more about the spread, adaptability and impact, if any, of collaborative inquiry as a professional learning process or practice. As well, we are interested in the challenges that educators experience in engaging in collaborative inquiry. The information you share today will help the Literacy Numeracy Secretariat chart a way forward that is in the best interests of provincial educators.

In order for our team to bring authentic information to deliberations with our Ministry partners it is critical that you feel comfortable in talking openly about what you are learning given your experiences with collaborative inquiry. We want to assure you that nothing you share with us today will be connected to you personally or to your school. There will be no judgments made about you or your school based on what you say. What you tell me today will be aggregated with information we collect from 6 other case studies to better understand the meaning and scope of collaborative inquiry as it is currently being practised.

### **The Focus Group Process**

- a. We have been given \_\_\_\_# of minutes (60-75?)\_\_\_\_ to work together today.
- b. We will be recording our conversation for accuracy but also taking notes so we can confirm some of the key points that are brought out in your discussion. Do you have any questions or reservations about this process? YOU DO NOT HAVE TO CONTRIBUTE SOMETHING TO EACH QUESTION. IT MAY BE ENOUGH TO AGREE WITH WHAT HAS BEEN SAID; OR, YOU MAY NOT HAVE AN OPINION.
- c. We are expecting to hear differing perspectives on the questions we pose today. Please know that there is no "better" or "correct" ways to respond to these questions. We are not looking for consensus in opinion. Let your authentic experiences guide your contributions.

## Focus Group Interview Questions - Teachers

**Do not put your name or any identifying mark on this handout**

- 1. Describe your collaborative inquiry practices and the contribution, if any, you think these practices are making to your professional learning.**

Teachers' days are filled with addressing needs and solving problems. Some can be handled immediately and quite easily (for example, if students are losing interest, one might shift activities). Other issues require both time and considerable thought to work through (for example, how to improve the group dynamics of a class)

- 2. What are some of the bigger and more complex problems teachers are facing in classrooms and schools?**
- 3. Which of these problems do you think might be appropriate for a collaborative inquiry approach? Why?**

We are interested in what led you to begin using collaborative inquiry practices and whether you are encouraged to continue using these practices.

- 4. What, expectations, ideas, reservations, if any, did you bring forward into your initial collaborative inquiry work?**
- 5. In a collaborative inquiry in which you have been recently involved, what feedback or indication have you received that your participation or work has been valuable and meaningful as professional learning?**

Imagine you are at a new school where none of the teachers have ever been involved in a collaborative inquiry. The principal approaches you to ask if you would assist in initiating collaborative inquiry practices.

- 6. Is this a project that would interest you? Why/why not?**
- 7. How might you start and then support collaborative inquiry practices in that school?**

Collaborative inquiry processes and practices offer a unique form of professional learning.

- 8. As you work with your colleagues, such as those around this table, what resources and support do you feel are vital to the success of collaborative inquiry? What would be nice to have? What gets in the way?**
- 9. Is there a role for students in your collaborative inquiry practices?**

**If there is any other feedback you would like to contribute to this process, please write it on the back of this page and hand it in as you leave. *Thank You!***