Lacking Critical Support?: Exploring Avenues of Teacher Support for the Successful Implementation of Critical Thinking in Ontario’s Elementary English Classrooms

By

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Abstract

With the recognition of the importance of teaching critical inquiry within the Ontario Elementary school language curriculum, this study explores how teachers put these expectations into practice. How do educators obtain the guidance, direction and support for incorporating critical inquiry as a major lens for their teacher practice? The goal of this research study was to learn how teachers obtain support implementing critical thinking into their lessons. Scholarship examined definitions of critical thinking, the history of the influence of critical thinking on Language/English curriculum in Canada, and avenues of support for teachers. This study brings together strategies for fostering critical thinking skills through an examination of research scholarship, curriculum documents, and includes interviews from practicing teachers. The findings suggest that critical thinking often appears in the classroom as a critical analysis of media or historical documents for evidence of bias. This focus, it could be argued, does not lead to the personal deconstruction and reconstruction of ideas, a main focus of some definitions of critical thinking.

Key words: Critical Thinking, Language, English, Elementary, Ontario Curriculum
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Chapter 1: Introduction

1.0 Research Context

Critical thinking is a central emphasis of the Ontario Public School Language Curriculum; the goal of the Language curriculum, hereto referred to as the English curriculum for the remainder of the project because “English” is the colloquially accepted term for Language classes, is to have all students “use… higher-level thinking skills, including critical literacy skills, to enable [them] not only to understand, appreciate, and evaluate what they read and view at a deeper level, but also to help them become reflective, critical, and independent learners and, eventually, responsible citizens” (Ontario Ministry of Education, 2006, p. 5). Critical thinking is a vital skill for living in the 21st century (Case, 2005; Ontario Ministry of Education, 2016) and is thought by many to be the only skill that will best prepare students for an unknowable future (Craft, 1999; Pang & Plucker, 2012; Robinson, 2008; Shakeen, 2010 as cited in Pang, 2015).

1.1 Research Problem

Despite the widespread belief in its importance, not all teachers are effectively teaching critical thinking in their classrooms (Case, 2005; Geahigan, 1998, p. 293; Lipman, 2003). Some scholars believe this failing is a result of conflicting and muddied definitions of critical thinking. Critical thinking is commonly lumped with a long list of other higher level thinking skills (Case, 2005), which only adds to the confusion as to what critical thinking actually is.

Those teachers who do undertake teaching critical thinking in their classrooms mistake teaching critical thinking for teaching about critical thinking or teaching about thinking (Case, 2005). Noted critical thinking scholars Roland Case, Richard Paul and John Dewey view critical thinking as a method of teaching involving the problematization of assignments (Case, 2005; Thayer-Bacon, 1991, p. 9-10). Only Case (2005) continues a step further and has students
creating criteria to evaluate solutions to problems. Unfortunately, the attitude of teachers towards critical thinking complicates how the skills are brought into the classroom; some see critical thinking as a separate, additional thing to be tacked on at the end after covering the curriculum, if there is time (Case, 2005). Another common complaint is that despite it being a curriculum focus, the school boards and Ministry of Education are not properly supporting teachers; It then becomes the teacher’s individual responsibility to find a way to teach critical thinking effectively (Aoki-Barret, et al, 2001, p. 9). Online databases have replaced former library support systems once available to Ontario teachers (Fine-Meyer, 2012). Is this new digital system effective in supporting teacher needs to effectively implement critical thinking in English lessons? Through interviews with three teacher participants, I explored if this is the case in Ontario classrooms.

1.2 Purpose of the study

The goal of my research was to learn how teachers get support when implementing critical thinking into their lessons. I wanted to learn how the internet has shaped the channels of communication and support from education institutions (ministries of education, teachers’ unions, etc) to classroom teachers. I aim to share these findings with the educational research community in order to start the discussion about how the internet has changed the way teachers access resources and obtain support to successfully implement critical thinking skills into all of their lessons, as is called for by the Ontario Elementary School Language Curriculum.

For the sake of the small scope allotted in the Masters of Teaching Research Project (MTRP) format, I narrowed my focus to the implementation of critical thinking in the English classroom. With the global shift in education towards critical thinking, and recognition of the importance of teaching critical thinking within the Ontario Elementary Language Curriculum,
how are teachers to obtain the guidance, direction and support for incorporating critical inquiry as a major lens for their teacher practice?

1.3 Research Questions

Over the course of my research and interviews, I primarily wanted to find out how teachers are effectively implementing critical thinking in their classrooms, specifically in their English lessons. I believe this formation of skills will permeate into other subjects and other areas of student’s lives. Secondarily, administratively, I wanted to find out how teachers accessed resources in the past while also finding out how the internet has affected or changed how teachers gain access to resources. Has Pinterest, a website commonly cited during my interactions with teachers prior to conducting this research project, taken over any official governmentally issued teaching resource? As a future teacher, I wanted to find out how much support was given to teachers by the government, ministries and teachers unions to aid a teacher’s personal agency through access to resources. I also wanted to learn how teachers were informed about the available resources to continue their professional development. I learned about what kind of in-service training teachers received when the focus on critical thinking was introduced into the curriculum.

1.4 Background of the Researcher/Reflexive Positioning Statement

I was fortunate enough to attend a full-time gifted class from grade six to grade eight. There I enjoyed projects that were unlike anything I had experienced before, ones that challenged me to think divergently, to problem solve and create connections. I loved every minute of it. Upon re-entering “mainstream” education in high school, it was back to lessons driven by textbooks and teacher directed lessons. The reflection of my knowledge was limited to essays and tests. My responses were restrained to ink on the page. My motivation suffered and
school became “boring.” Then, I heard that my home schoolboard was cancelling its gifted program. My heart wept for all of those children who would miss out on the fun learning experience I had. I wish all of my friends had been able to experience a classroom where lessons were fun and unique, the projects were creative and stimulating. Through my initial research for this project I discovered that much of the recommendations for teaching gifted students had the development of higher-level thinking/critical thinking skills at its core. I wanted to explore what it would be like if such an emphasis on critical thinking was realized in all classrooms. As a developing teacher, I am curious about what resources are available to help me develop lessons that incorporate critical thinking from the start, hopefully creating lessons similar to what I experienced in gifted.

1.5 Overview/Preview of Whole

Chapter one introduces the research project by providing context about the world of critical thinking, stating the purpose of the study, defining the research problem and providing some background information about myself, the researcher, pertaining to why I am interested in such a topic. Chapter two is a detailed literature review, defining critical thinking, exploring the history of the Ontario Elementary English Curriculum, and examining avenues of Ministry administrated teacher support. Chapter three details the methodology and procedure that the study will undertake, providing information about the study’s participants. Chapter four contains findings from the interviews conducted, identifying themes and discrepancies from the testimonials. In chapter five, a discussion of the findings occurs, where connections are drawn and suggestions for further avenues of research are made. The research project concludes with a list of references and appendices, which include the questions used to interview my participants.
Chapter 2: Literature Review

2.0 Introduction to the Chapter

In this chapter I review the literature in the areas of critical thinking, the Ontario Elementary English curriculum, and channels of support provided to teachers by educational institutions, such as the provincial government and teacher unions, to implement changes made to the curriculum. I explore themes related to critical thinking by reviewing the literature of John Dewey, Richard Paul and Roland Case, global leaders of the critical thinking movement. Next, I review research on the history of the Ontario English curriculum and track the changes that were made to the curriculum and the teacher response to those changes. Finally, I review channels of Ministry issued teacher support, exploring research on teacher’s issues regarding being supported by educational institutions, all while investigating what the rise of the internet as the main means for sharing teaching resources.

2.1 Critical Thinking

2.1.1 Defining critical thinking and how it has been taught in school

One of the hurdles identified as preventing teachers from effectively implementing critical thinking in their classrooms is an unclear definition of what critical thinking is; critical thinking, unfortunately has many definitions (Harris, 2003, p. 17). Even more difficult, I have found while writing this chapter, is that often the definition of what critical thinking is interwoven with how to do critical thinking, which is inescapably flavoured by the definer’s personal beliefs on how best to teach critical thinking (Case, 2005, p. 48; Thayer-Bacon, 1991, p. 9-10). This clearly sets the stage for a plethora of possible misunderstandings about the whole field of critical thinking.
Harris (2003) defines critical thinking as an organized manner of thought used to assess “the validity of something” (p. 17). Canadian critical thinking scholar Roland Case (2005) agrees with this definition, but expands on it by thinking that the more correct way to view critical thinking is not to view the root word as “critical” but instead understand it as “criteria” (p. 46). Case (2005) takes this criteria-view further, drawing on the common misconception that critical thinking is a step-by-step procedure to follow. Case (2005) believes in an element of procedure, namely testing an idea up against a set of evaluative criteria (p. 46). However, he puts the power back into the reader’s hands and believes that this set of criteria must be made each time by the reader and must be composed of criteria the reader deems appropriate to the subject matter—therefore drawing on higher level thinking skills such as synthesizing and evaluation (Case, 2005, p. 47). Case’s reasoning for the criteria approach draws off of a belief shared by Richard Paul and John Dewey, wherein people must think critically in order to view things from another perspective. Despite never using the words “critical thinking” himself, instead calling it “critical intelligence,” John Dewey believed “man [was] a creature of habit, not of instinct” (Anderson, 2004, p. 69) and viewed teaching as a method of developing critical thinking skills; teaching, he believed, was the only way for a person to “deconstruct/reconstruct ideas… to seek independent, penetrating understanding” (p. 69). Early critical thinking teaching reflected Dewey’s goal for critical thinking. It focused on critical in the negative definition of the word: “critical,” finding fault, doubting and searching for holes in an argument. It was viewed as a “self-defense...taught to discriminate and differentiate in order to judge the “worth” of an article through reading for ‘logic’ because “if a student’s thinking is illogical, he can do as much harm as if he were deliberately malicious” (Critical reading lecture, 1966, as cited in Pullman, 2013, p. 178).
Richard Paul, American philosopher and noted critical thinking scholar, did not believe Dewey was taking the teaching of critical thinking far enough. Instead of having students simply create ideas and understanding for themselves, Paul believed that unless a student was able to critically analyze their own point of view, observe their own biases and other contributing factors that would flavour their own opinion, and in turn seek out the point of view of another person, they were merely thinking “weakly” (Thayer-Bacon, 1991, p. 4). Paul thought Dewey’s method was weak, because it focused only on personal beliefs and did not take into account the narrow scope of a single point of view. In Pauls’ definition, he argued that exploring and analyzing your own viewpoint and personal frame of reference, while also seeking out and taking into account the point of view of others, created “strong thinking” (Thayer-Bacon, 1991, p. 4).

This element of taking in other points of view, and questioning your own, involves a facet of critical thinking that can be traced back to the beginning of academia. Socrates modelled Plato’s technique of dialogical thinking, which takes Paul’s concern about incorporating another point of view to a radical form. A skillful teacher, according to Socrates and Plato’s example, would be able to use questioning to completely flip a student’s point of view, thus enabling them to see things from another perspective entirely (Thayer-Bacon, 1991, p. 9-10). To Paul, Socrates was a “good teacher” exemplified; over the course of the questioning, a student would be made aware of “initial misconceptions … areas where he lacks knowledge” (Thayer-Bacon, 1991, p. 9-10). This methodology, returning to Case’s criteria thinking, is like using a set of criteria to look at an idea from outside of “their narrow, self-driven scope” (Case, 2005, p. 47). The correct use of critical thinking will, therefore, enable a student to have his or her own self-sufficient dialogical thinking session with Socrates.
I believe some of the misconceptions on how to effectively teach critical thinking can be traced back to Dewey who provided a process for teaching reflective teaching: his process was to first suggest a solution to a student; second, have the student experience the problem; third, the student would create a hypothesis and then, fourthly, provide reasoning for their solution; the fifth and final step in Dewey’s systematic approach was for the student to then test the hypothesis/solution (Thayer-Bacon, 1991, p. 9-10). Paul and Case disagree with this teaching process for a number of reasons, but used this initial theory to springboard off of and suggest their own improvements. Case (2005) initially agrees with Dewey’s approach to “problematizing content” (p. 46), which, he argues, makes it less about a closed line of exploration with one set answer, which he views as hardly exploring at all. Instead, he opens up the lesson to include a discussion of multiple solutions, each with their own merit and use depending on the criteria developed and used to evaluate them. Paul dislikes Dewey’s approach saying that it “suggests that all problems can be approached scientifically and methodically” (Thayer-Bacon, 1999, p. 13). It could be inferred that he also disliked Dewey’s explanation because it implies that students need only to make one hypothesis and back it with reasoning. He rallied against the fact that, while students were being taught to be deep thinkers who could back up their arguments with logical reasoning, this methodology just resulted in them being deeper entrenched in their own views – a logical argument, but a weak argument, in his eyes (Thayer-Bacon, 1999, p. 13). Wolff and Geaghan (1998) argue that while this systematic process of thinking is ideally meant to result in a unique, personal point of view, a step-by-step procedure “inadvertently foster[s] dogmatism and rigidity” (as cited in Geaghan, 1998, p. 298). It also implies, argued Wolff and Geaghan, that if you follow the steps you’ll arrive at a desired outcome – completely going against Case’s (2005) aim, where problematizing content creates no single clear answer. This
idea of a “desired outcome” also reflects Pauls’ qualms with critical thinking being interpreted as providing logical reasoning for your thought – once again enforcing a close-minded, single, weak, point of view. Case agrees, believing that critical thinking should be used to instill an “emotional global view” (Case, 1996), which is also reflected in the Ontario curriculum’s global focus (Ontario Ministry of Education, 2006, p. 4) which I will explore in the history of English curriculum in Ontario section below. Case and Dewey had similar beliefs regarding power and benefit to critical thinking. Dewey believed that thinking critically would enable a student to “later ‘navigate an exceeding complex and dynamic world’ and be the best democratic citizen, ‘generating … workable, although imperfect solutions to a living problem” (Anderson, 2004. p. 69, 71).

To add additional confusion to the definition of critical thinking for teachers, is the fact that is discussed simultaneously with creativity in the Ontario Language curriculum documents. Student readers “must be able to think clearly, creatively, and critically about the ideas and information in texts in order to understand, analyze, and absorb them and to recognize their relevance in other contexts” (p. 10) as well as “analyze, synthesize, make connections, evaluate, and use other critical and creative thinking skills to achieve a deeper understanding of the material they have read (p. 10). Such thinking is an important skill to have as a reader, but if a teacher is expected to assess a student on these skills, which thinking skills are critical thinking, and which are creative thinking? Case and Daniels (2005) identify the that there is a common belief that critical thinking is “a discrete form of thinking,” “distinct from decision making, problem solving, issue analysis, inquiry and so on” (p. 13). Critical thinking, as he, LeRoi Daniels, and the Critical Thinking Consortium define, “occurs whenever an individual seeks to reach a reasoned judgement about what would be reasonable or sensible to do or believe” (Case
& Daniels, 2005, p. 13). Case & Daniels also argue that critical thinking is often viewed separately from creative thinking; critical thinking is “caricature[d]” as “cold logic, relentless deliberation and technical rationality” and critical thinking is also “caricature[d]” as “intuitive,” sensitiv[e], “spontaneous” impluse[ive] and imaginati[ve]” (2005, p. 13). Case and Daniels (2005) state that “critical thinkers need to be creative,” (p. 13); critical thinking and creative thinking are “profoundly interrelated: considerable creativity is required for good critical thinking, and considerable critical thinking is involved in being creative (2005, p. 14).

Case and Daniels discuss in their 2005 article “preconceptions of critical thinking,” “if schools are to succeed in teaching critical thinking, educators must have a clear idea of what it is” (p. 1). While this literature review only scrapped the surface of the many misconceptions of the definition of critical thinking, I believe that the problems raised by the confusion have been made clear.

In it’s 2016 document, 21st Century Competencies: Foundation Document for Discussion, the Ontario Ministry of Education defined “critical thinking in the 21st century” as “the ‘ability to design and manage projects, solve problems, and make effective decisions using a variety of tools and resources’ (Fullan, 2013, p. 9, as cited in Ontario Ministry of Education, 2016, p. 12).” The document expands on this definition by adding that “thinking critically requires students to ‘acquire, process, interpret, rationalize, and critically analyze large volumes of often conflicting information to the point of making an informed decision and taking action in a timely fashion’ (C21, 2012, p. 10, as cited in Ontario Ministry of Education, 2016, p. 12).” This definition is a beautiful combination of the definitions discussed in this subsection of this literature review, however it follows by acknowledging the challenge presented to teachers when attempting to “design educational experiences that address local issues and real-world problems for which
there may be no clear answer” (Drake, 2004, as cited in Ontario Ministry of Education, 2016, p. 12). It suggests teachers use “digital tools and resources [to] support the process of critical thinking, particularly when used to create authentic and relevant learning experiences that allow students to ‘discover, create, and use new knowledge’ (Fullan & Langworthy, 2014, p. 35, as cited in Ontario Ministry of Education, 2016, p. 12). As will be discussed in later subsections of this literature review, online digital resources are not easy for teachers to find. While the Ontario Ministry of Education’s (2016) 21st Century Competencies document provides a well-rounded definition of critical thinking and contains suggestions to guide teachers to successful fostering of critical thinking skills, the suggestions are still vague enough that confusion could occur. Also, since this definition does not appear in the 2006 English curriculum document itself, it is unclear how many Ontario teachers have seen this updated definition, further limiting its successful implementation into the classroom.

2.2 Ontario Elementary English Curriculum

2.2.1 History of the Ontario English Curriculum

While it may initially appear to be a very dry topic, it is interesting to note how changes in culture result in changes in curriculum. Very little scholarship explores how the Ontario English curriculum changed over time. As a result, I can only specifically pinpoint Ontario changes after the year 1970. I believe briefly summarizing the curriculum changes gives scope to my research project, specifically showing how schools are changing in such a way that it is no longer acceptable to have classrooms where teachers are authority figures whose word is law. Instead, a teacher is a learning partner, who, much like Socrates, does not impart pure facts. Instead, they facilitate discussions and equip students with flexible tools to successfully adapt and respond to life’s changes, as is critical thinking’s goal.
At the turn of the 20th century, Canadian English classrooms were modelled very closely on the British Public school system, focusing on grammar rules and later, appreciating literature as “a medium for emotional expression” (Tompkins, 2008, p. 198). After the First World War, emotional expression was abandoned for utilitarianism and English classes focused on teaching students how to read silently so that they could follow instructions in the workplace (Tomkins, 2008, p. 198). This purely practical, workplace English focus continued into the 1960s and 70s. This curriculum was criticized by Canadian author Robertson Davies in 1964 as “fail[ing] to promote an intelligent use and understanding of language” (p. 285). “The Canadian curriculum,” Robertson believed, “should aim at producing a nation of people who know what they were saying and what was being said to them” (Tompkins, 2008, p. 285). Robertson’s criticism indicates that the stage was being set for the critical thinking focus of the current Ontario English curriculum

A core curriculum was only implemented in 1976 (Tompkins, 2008). Tomkins does not state if this was a Canada-wide curriculum or provincial curriculum, but I will continue under the pretence that all provinces were progressing towards the same education goals. Reflecting critically on the history discussed above, if a uniform provincial curriculum was only implemented in the mid-1970s, how then could these pre-1970 general trends in education be explained?

With the implementation of a uniform curriculum came similar problems that critical thinking implementation currently experiences: “Terms like ‘literacy’ and ‘the basics’ were used which were ambiguous and difficult to understand and define” (Tompkins, 2008, p. 291). Change brought controversy as people debated remaining true to old British grammar influences or to adopt more modern American education approaches (Tompkins, 2008, p. 349). Through
arguments, debates, conferences like the New Hampshire Dartmouth Conference held in 1966, and formation of committees, like the Toronto Joint Committee, Canada was trying to form its own educational identity. A “new” emphasis for the English curriculum arose; English should be viewed as a tool for later adult life (Tomkins, 2008. p. 349). Arguably this goal was not new, as the reason behind learning to read and write was still focused on workplace success, not democratic success as Dewey and Case would arguably support.

2.2.2 The Introduction of Critical Thinking in the Curriculum

While the exact date of critical thinking’s implementation into the English curriculum is unknown, it could arguably be traced back Bloom’s taxonomy of educational objectives, specifically the higher tiers of Bloom’s cognitive domain hierarchy: application; analysis; synthesis; and evaluation (Isaacs, 1996, p. 2). Bloom’s educational taxonomy influenced the introduction of inquiry and discovery methods into the classroom in the 1960s-1980s (Tomkins, 2008, p. 283), especially focused on a growing issue: television (Tomkins, 2008, p. 283).

Despite the focus on Blooms educational taxonomy and critical thinking apparently happening in classrooms in the 1960s-80s (Tomkins, 2008, p. 283), critics noted the irony that this critical thinking did not extend outside of the classroom, helping students to critically judge what they were being shown on TV (Tomkins, 2008, p. 343). Studies in New Brunswick in 1978 found that of 20,000 students in grade 5 and 8, the majority spent more time in front of a television set than they did in the classroom (Tomkins, 2008, p. 343). A whole new program (media literacy) was needed to address this. The resulting media literacy programs introduced to address this reality focused more on the initial definition of critical thinking, being critical of something, immediately putting television into the role of informational villain; Finances limited the implementation of media literacy programs, the “real world” use for critical thinking, but in
the 1970s, a push began for media literacy to become a compulsory part of the provincial curriculum (Worsnop, 1997). By the late 1980s, critical thinking was a mandatory part of the curriculum, though under the guise of media literacy. In grade seven and eight, media literacy lessons were required to make up “approximately 10 percent of the total instructional time allotted for language arts” (Worsnop, 1997, p. 9). The English curriculum guidelines for intermediate and senior divisions (grades 7-12) stated that:

The main reason for including media ... is to give students the experience and skills they need to understand, enjoy, and evaluate presentations in a variety of media. Students need to understand what the media convey, how they convey it, and the effects of the media and their messages on people's lives” (Worsnop, 1997, p. 3).

This definition seems half way to critical thinking’s aim – first by questioning and analyzing what is being said, plus a bit about how the messages affect others—but it is not wholly complete as it does not involve exploring what the media’s message means to you, the reader. While media literacy became a separate and clearly defined strand of the English curriculum, critical thinking remains silently interwoven into all curriculum documents, hard to explain and easy to glance over.

2.2.3 Issues with the New Curriculum

The 1997 Ontario Curriculum document condenses all of the core subjects into only fifty-two pages. Critical thinking is only mentioned as a definition in the explanatory notes (Ministry of Education, 1997, p. 48). I could not find any government issued documents specifically on the topic of critical thinking and how to teach it. However, critical thinking implementation was the first concern addressed in the 2001 Elementary Teachers Federation of Ontario (ETFO) report about the problems teachers were having with the new curriculum, forebodingly entitled
“Blurred Vision: Rethinking the Ontario Curriculum.” It is in this report that a clear, more up to date definition of critical thinking and how to implement it in the classroom appears:

Critical thinking involves challenging the status quo, including ideas or actual issues within the real world… Most importantly, critical thinkers must have access to alternative ideas, such as systemic discrimination, aesthetics, good citizenship and environmental awareness in order make comparison with popular prejudices and media-controlled ideas (Aoki-Barret, Barker, Hallman-Chong, Morgan, Walker, Saskoley, 2001, p. 11).

To use ETFO’s own words, “critical thinking should, as the curriculum suggests, lead to the asking of questions, but these questions should not be easy ones with ready-made answers. Instead, questions should lead to discussions and discussions to the formation of a diversity of answers” (Aoki-Barret, et al., 2001, p. 12). In this report, ETFO clearly articulates the central problem being explored in this study – Ontario teachers felt that support was lacking on how to implement critical thinking: “The curriculum does list critical thinking as an expectation in the various areas of study. However, aside from its abstract application in Mathematics and cursory reference in the Reading program, there is little guidance to teachers on developing this essential skill” (Aoki-Barret, et al., 2001, p. 7). ETFO articulates a problem I noticed when first approaching this project: although the curriculum uses “critical” and “critically” as criteria in suggested rubrics for evaluating English assignments (Ontario Ministry of Education, 2006), ETFO noticed “it provides no reference for developing this skill in its expectation. If the criteria of critical thinking are to be achieved, language must be used to analyze and deconstruct concepts” (Aoki-Barret, et al., 2001, p. 11).

Unfortunately, the most recent English curriculum document, the 2006 Ontario English Language Curriculum Document, continues the confusing trend in critical thinking...
implementation. While it states the importance of critical thinking as a 21st century life skill, it groups critical thinking into a list of other higher-level thinking skills, and never wholly defines what it means by critical thinking, despite using the word “critically” as a word in rubrics (Ontario Ministry of Education, 2006). At the end of the introductory paragraph about critical thinking, the Ontario curriculum wants students to use critical thinking to become “responsible citizens” (Ontario Ministry of Education, 2006). This most current change to the English curriculum ironically researches back to John Dewey and his original aim for Critical/Intelligent Thinking: to become good democratic citizens making decisions to solve the problems of the day.

2.3 Avenues of Teacher Support

2.3.1 What Unions and Ministries Used to Provide

In order to best articulate the point of view I want to explore in this project, I am going to explore what I could discern about the history of general teacher support in Ontario. I want to make it very clear that it was difficult to track this history. Please regard the following as the start of an exploration, not the final word on this issue.

When student enrolment in public schools declined in the 1970s after baby boomers had graduated high school, some teachers found new positions working for the school boards and the Ministry of Education of Ontario creating curriculum resources (Tomkins, 2008, p. 294). Their plan was to create resources drawing on collaboration between publishers, teachers, academics, school administration and government, taking into account global trends and breakthroughs in order to provide not only the best resources, but also professional development to support teachers (Tomkins, 2008, p. 379. While a bank of resources was developed, perhaps because sharing was only being promoted on a voluntary basis, this utopian, cross-Canadian and Global
discussion and sharing of resources unfortunately does not seem to have met its goal (Tomkins, 2008, p. 379).

2.3.2 Issues Teachers Have with Available Support

While Rose Fine-Meyer’s (2012) research focused on teachers accessing resources in order to implement a focus on women’s history in their classrooms, she discussed the resource librarians who were available for a classroom teacher to contact, ask for resources on a particular topic and have them promptly delivered to their classroom (2012). Fine-Meyer’s research also articulates two problems that are reflected in the current problem implementing critical thinking. First, she describes how there was a communication break: not all resources for women’s studies were shared with all of the teachers. Of the Ontario teachers she interviewed, only the teachers who worked on creating the resources could recall specifics about the materials available (Fine-Meyer, 2012, p. 123). Secondly, while Fine-Meyer shared how resources were made known to the teachers through resource guides, she laments on how no information was given to the teachers on how to use the resources in their classrooms (Fine-Meyer, 2012, p. 123) severely handicapping their implementation. Here it can be shown that, even when a specific directed focus was made to support the implementation of a topic into the curriculum, it was not effective system wide. A parallel, though not clearly articulated as happening in Ontario, and also found to be present by Case (2005), can be drawn between Fine-Meyers findings and the trouble of implementing critical thinking.

Even when implementing changes in the curriculum, teachers have criticized the Ontario Ministry of Education for not properly supporting them. When the new math curriculum was introduced into high schools in 2006, the Ministry was way behind in offering training and support for implementing the change: “All teachers who were surveyed reported that their boards
did not yet provide training for the grade 9 and 10 applied math curriculum until last November, half way into the semester...Ultimately teachers are tired of having to undergo yet another round of curriculum changes in such a short period of time with very little support available” (Miller, 2006). This testimony implies that this is lack of support is common. The researcher couldn’t find any research about the problems in implementing changes made to the English curriculum specifically, but with the immense network of school boards in Ontario alone, it can be assumed that similar implementation problems exist in other subjects, specifically delays in training,

Outside of a lack of support from the Ministry, teachers have reported many things that stand in the way of them implementing the curriculum successfully. Some of the main reasons they cite are large class numbers, and a lack of funding for materials and resources (Mackenzie, 2002; Rozanski, 2002). Due to the lack of funding, the resources are out of date and insufficient (ETFO 2002; People of Education, 2003 as cited in McAdie, 2003). If this inclement class climate exists, when combined with the common misconception that critical thinking is an extra to be added on at the end if there is time (Case, 2005), naturally teachers would struggle to find time to include critical thinking, and as a result, critical thinking would be disregarded.

2.3.3 The Internet

The teacher resource libraries mentioned in section 3.1 were closed because of lack of funding (Fine-Meyer, 2015). Where did all of the resources go when the resource centres shut down? Were they all digitized and put on the internet? If so, the transition was not declared in any Ministry documents that could be found. Or, were the resources dismissed because they were assumed to be outdated? Due to the difficulty finding lush banks of resources on Ministry-approved websites, the researcher assumed that a lot of the material was lost, or is in physical storage, not yet digitized. The Ontario Ministry of Education and ETFO have all created resource
pages online, however when “critical thinking “was searched for on the Ontario Ministry of Education’s “Survive and Thrive” website, a dedicated resource base for supporting new teachers, only three resources appeared: two links to ETFO’s “Blurred Vision” report addressing the problems about lack of support for critical thinking (Aoki-Barret, et al., 2001); the second, a link describing the Critical Thinking Network initiative. The Critical Thinking Network, a governmentally funded professional development project is self-described as a place for “educators to come together and ‘think about thinking’. Providing information, sharing resources “to assist with embedding critical thinking.” After this promising description, the link was clicked and it was found that the page did not exist. After a Google search only directed back to the same empty page, it can be assumed that this Ministry driven initiative did not come to fruition.

There appears to have been problems with teachers using the internet to access resources since its inception. Conferences were held by the Toronto District School Board to address “how few teachers were accessing resources and information from the internet” (Fine-Meyer, 2012, p. 127). Teachers continued to receive hard copy resources in their school mailboxes or from department heads at their school (Fine-Meyer, 2012, p. 127). The Canadian Council of Teachers of English developed a “thriving publication, The English Quarterly” which “provid[ed] a national forum for teachers that had never been available in the past” (Tomkins, 2008, p. 350). Upon further research, it appears that this journal is now out of print. The English Language Arts Network publishes an electronic journal ELANguage to continue to support incorporating media literacy into the English curriculum (English Language Arts Network, n.d.), but it appears that issues are irregularly published and only accessible to paying members.
With the overabundance of emails suffocating inboxes, how can teachers best identify that they are reading emails they would most benefit from? If newsletters and correspondence from school boards, unions and subject specific teacher associations have digitized and become e-newsletters, how much news in those emails is organization updates and how many contain links to useful resources? It is so easy to dismiss emails, especially when your time is limited, as is the case for teachers. By switching to email, has an effective, valuable channel of communication between teachers and the Ministry or subject-specific teacher organizations closed?

The research did not discredit the information sharing ability of the internet entirely: the internet does connect people to other resources, not limited to their geographical location. Pinterest is the number one resource used by teachers to get lesson plans and troubleshoot classroom problems, as was cited by teachers I met at practicum and other teaching experiences I had, prior to conducting this study. The internet allows for a new opportunity for teacher agency. Teachers who take pride in their own ideas and lesson plans can use accessible methods of publishing to personally fill the gaps in support. Teachers can easily give feedback to other teachers in comment sections, sharing tweaks and success stories. The internet, with blogs, Twitter and Pinterest creates a global Professional Learning Community between likeminded people, linked by interests, not just by their proximity and shared workplace. But, can it then be argued that the teachers would not have to search for something online if they were already being helped by their school boards? Or is this also just the way that people look for help today? With smart phones and laptops, Google is often the first go-to for help, not a person. Has the Ministry of Education realized this and silently stepped back and allowed the internet to pick up the slack supporting teachers?
2.3.4 Professional Learning Communities as Teacher Support Groups

If the internet and emails are not adequate forms of support, what can schools do? The most common response is to establish a Professional Learning Community (PLC), a group composed of teachers in the school, collaboratively working to address a local problem. “The professional learning communities approach to school improvement is arguably the most ubiquitous strategy currently used in Canada. Every Ministry of Education in Canada has referenced this” (Riveros, Newton, & Burgess, 2012, p. 205). However, argues Riveros, Newton, & Burgess (2012), because so much attention is put on student success, what teacher success/improvement looks like is less clear, and as a result, PLCs are not wholly effective (p. 204): “The underlying assumption in professional learning communities is that peer collaboration has the potential of transforming teaching practices in ways that will bring about higher rates of student achievement” (Riveros, Newton, & Burgess, 2012, p. 204). While collaboration is at the core of how PLC’s work, the end goals are set by the curriculum, therefore are set by the government, not the teachers themselves in the community. As a result, teacher attitude towards the PLC matters in its effectiveness, argues Riveros, Newton, & Burgess (2012, p. 207).

2.4 Conclusion

In this literature review I looked at research on critical thinking, the Ontario English Curriculum and channels of support for teachers implementing curriculum. This report explains the extent that attention has been paid to the incorrect ways in which critical thinking has been implemented in the classroom, while proving that Ontario curriculum documents do not provide a satisfactory answer to what the best way of teaching critical thinking skills is. It also raises questions about what has happened to the channels of support for teachers since the rise of the
Internet. This literature review points to the need for further research in the areas of how to effectively support teachers implementing changes in the curriculum. In light of this, the purpose of my research is to learn how supported teachers feel by the educational institutions and where they turn for resources and ideas to improve their own practice so that critical thinking can be effectively implemented in Ontario’s classrooms.
Chapter 3: Methodology

3.0 Introduction to the Chapter

In this chapter I explain the research methodology I used while conducting my study about how teachers effectively implement critical thinking in their English classrooms. I identify the reasoning behind the decisions I made and why they were appropriate for this study on effective critical thinking practices. First, I explain the procedures I used to select participants, collect and analyze the data followed by a review of ethical considerations I took to complete this study on the best ethical grounds. Finally, I discuss the strengths and limitations of this study and provide a brief look into what will come next.

3.1 Research Approach and Procedures

For this research project I used a qualitative approach focusing on how teachers effectively implement critical thinking in their classrooms, and possible issues with government, school board or union provided critical thinking support.

The course of this study included a review of the existing literature pertinent to the successful implementation of critical thinking in Ontario English classrooms. The literature review (see chapter 2) examined the history of critical thinking; tracked the history of the Ontario English Language Curriculum, specifically focusing on when critical thinking became part of the Ontario English Curriculum requirements; and also included research on the methods and occurrences of teacher support offered by the Ontario Ministry of Education, Ontario school boards and teacher unions. To build upon this knowledge base, I conducted semi-structured, face-to-face interviews with three Ontario teachers who have been selected because of their skill at implementing and fostering critical thinking in their lessons.
I chose to use a qualitative approach because I felt the transferability of the data collected, a characteristic of qualitative data, is exactly what I set out to find with this study: transferable strategies for effectively implementing critical thinking into elementary English classrooms (Marshall, 1996). While quantitative research focuses on generalizations (Carr, 1994, p. 717), my literature review found that the generalizations about critical thinking implementation were negative, confusing or disappointing. By looking closer at the exceptional teachers, the outliers in data if you will, and bringing those findings to public light, this study serves to raise the general understanding of critical thinking implementation.

A common theme explored in my literature review was a conflict of how to define critical thinking. Qualitative research is the exploration of meaning, with the attempt to understand phenomena. Using this method, I gained a deeper understanding of critical thinking implementation in classrooms (Merriam, 2002; Jones, 1995). As qualitative research also aims to understand phenomena from the perspective of the participant, instead of that of the researcher (Jones, 1995) learning from teachers who successfully implement critical thinking in their classrooms helped me, as a pre-service teacher, understand how best to bring such skills into my own classroom.

3.2 Instruments of Data Collection

In qualitative research, data is commonly collected through three methods, interviews, observations and documents (Merriam, 2002). Due to the ethical limitations of this study put upon me by the University of Toronto and Ontario Institute for Studies in Education (OISE) Research Ethics Board (REB), as mandated for the Master of Teaching Research Project (MTRP), I was not able to conduct in-class observations. Instead, I focused primarily on face-to-face interviews conducted with three teachers. Each interview participant read, understood and
signed a consent form that laid out the particulars of my research project, so conflicts of interests could have been made known then. All were given a list of the interview questions before meeting for an interview and were allowed to veto any questions they did not feel comfortable answering.

A qualitative research study was most appropriate for me as it provided the opportunity to inquire into lived experiences, thought processes and grievances that teachers may have regarding the implementation of critical thinking into their classrooms. As qualitative studies allow for researchers to ask “how?” and “why?”, this was the best way to find out how teachers navigate the unclear definition of critical thinking and implement such important skill development into their lessons (Marshall, 1996).

Quantitative research involves numerical data, and questions with fixed choice responses (Jackson II et al., 2007). While my research involved fixed questions as part of a semi-structured interview, I chose a qualitative interview approach because it gave my participants the chance to respond freely. It is in these nuanced, in-depth responses that I hoped to find the most valuable knowledge about teacher critical thinking practices. A semi-structured interview format allowed me to design interview questions that fit my critical thinking implementation research so I could find out more information about the direct areas I was interested in. Despite using this set of predetermined questions, semi-structured interviews allowed for additional questions to emerge from the answers. This is advantageous for my research as I was only a pre-service teacher; the participants I interviewed were teachers with classroom experience and thus had a deeper understanding of the subject. I welcomed the ability to diverge from my pre-set questions, as this divergence revealed more information and other avenues related to my research topic that I had not been aware of or considered. Using this structure, my participants had the ability to elaborate
their answers and “re-direct attention to areas previously unforeseen by the interviewer” (Creswell, 2007).

I organized my questions (located in Appendix B) into four sections. First I asked questions about my participants’ background, and then followed with questions about individual teacher perspectives and beliefs, teacher practices, supports and challenges, closing with questions about some next steps in developing their own understanding of critical thinking and also the understanding of teachers in the province.

Examples of questions included:

- How would you define critical thinking?
- How do you know when you have taught critical thinking effectively? How do you know your students “get it”?
- Do you feel supported by the Ministry, school board, department head, etc. through resources, professional development, in order to implement critical thinking in your English classroom?
- How do you feel that you can develop your critical thinking proficiency further? What next steps do you have or support would you like to have?

An in-depth and nuanced discussion of my findings can be found in chapter 4.

3.3 Participants

In order to best find out what methods and strategies teachers use to effectively implement critical thinking in their classrooms, I developed a set of criteria used to best select teachers who are notable in this field.
3.3.1 Sampling Criteria

The following criteria were used to select teacher participants:

1. Teachers will have taught in an Ontario public school board since the 2006 English Curriculum update

2. Teachers will have at least five years teaching experience

3. At least one teacher will have experienced the English curriculum update in 2006

I selected teachers who have experienced a curriculum update. All were teaching prior to the update to the Ontario Curriculum made in late 2000s with the focus on critical thinking now embedded in all subjects of the curriculum.

Geographical location, gender, sexual orientation did not matter in my selection as I looked at teachers’ abilities which I viewed as unconnected to the above criteria. I also looked for teachers with at least five years teaching experience as I wondered how it is that they know that they were being effective in implementing critical thinking, and this insight, I hypothesized, might come from watching students grow and pass through multiple years at the same school. I was also interested in the answers of teachers with at least five years experience because they have to use a greater deal of independence and teacher agency as the lessons from their teacher education program may be forgotten or amalgamated into their practice. I was interested to learn if they were more or less likely to turn to external resources to support their planning as compared to when they were a beginning teacher. While initially I was interested in critical thinking in only English classrooms, due to the fact that critical thinking is a requirement across all curriculum subjects and that most elementary school teachers teach the bulk, if not all of the course subjects, finding a participant who is strictly an English teacher (as would be the case for high school teachers) was not a strict criterion for my selection process.
3.3.2 Sampling Procedure/Recruitment

The method of recruiting participants for a study was effected by the aim of the study. As a main focus of this study was to find specific behaviour (teachers who effectively implement critical thinking), I used purposeful sampling because it involved purposefully selecting participants based on their likelihood to provide deeper insight and understanding of a subject (Marshall, 1996). An element of convenience sampling was present in my selection of participants, because this study was conducted within the constraints of a two-year Master’s program that also required up to eighteen hours of class a week (Marshall, 1996). Convenience sampling was also used because I obtained my participants through existing connections made through my own experience in schools, both as a student and as a pre-service teacher (Marshall, 1996). This was an important factor for my research because, while observation was not allowed due to MTRP restrictions set upon the MTRP by the University of Toronto and OISE REB, I had witnessed the skill my participants had implementing critical thinking in their classroom first hand as a student or through practicum experience as a teacher candidate. Additionally, since I had experience with the teachers, I hoped this put the participants at ease during the interview process, allowing them to answer questions more freely than perhaps they would have with a stranger.

3.3.3 Participant Biographies

All three of my participants were practicing teachers in the same Southern Ontario public school board. Ms. Warner has taught for 14 years, always at the same elementary school, primarily teaching grades 4-6 gifted ISP classes. Ms. Archer, like Ms. Warner, has been teaching at the same middle school for her 16 year teaching career. She has primarily taught grade 7. Both
Ms. Warner and Ms. Archer have always worked for the same Southern Ontario public school board, and both were associate teachers to the researcher during my teaching practicums.

Ms. Lewis, an outlier in comparison to the two other participants, has taught a wide-range of ages and subjects, from Kindergarten to twelfth grade. She has taught in both public and private schools, and has experience teaching special education classes. At the time of the interviews, both Ms. Archer and Ms. Lewis were colleagues at the same middle school.

3.4 Data Analysis

Data analysis is an inductive procedure, beginning with collecting data and then analyzing the material, organizing and rearranging it into groups or spotting patterns to deepen understanding of the subject matter (Thorne, 2015). These patterns are referred to as codes; these codes are analyzed to spot themes as through a process DiCicco-Bloom and Crabtree (2006) have labeled a template approach. Themes are valued, but equally valued are any discrepancies and null data collected in the interviews. In chapter four I discuss my findings and look at the significance of all data, coded and patterned conforming or not.

All of my interviews were audio-recorded while I made typed written notes. The interview was converted into a written transcript and sent to the participant to read over and approve. Once the participants approved the transcripts, the original audio files were deleted. Notes were made from the transcripts, creating a coding system, noting common themes, reoccurrences and discrepancies within the responses from the participants.

3.5 Ethical Review Procedures

Ethical issues are unavoidable and exist in all research (Orb, Eisenhauer, & Wynaden, 2000). Interviews evoke unique ethical issues. In order to address these issues, I assigned all participants false names and removed all tags that may be used to identify the participants.
Participants were made aware, through the signing of a letter of consent (Appendix A) before agreeing to participating, that they had the right to refuse to answer any questions that they did not feel comfortable with, and could remove themselves from participation at any point. Participants were asked to sign a consent letter (Appendix A) giving their consent to be interviewed as well as audio-recorded. This consent letter provided an overview of the study, addressed ethical implications, and specified expectations of participation (one 45-60 minute semi-structured interview). Participants received a list of questions before the interview to best ensure the comfort of the participant. Later, once the interviews were transcribed, a copy of the transcript was sent to the participant where they had the opportunity to not only approve their answers, but elaborate on, or retract, comments. There were no known risks in participating in this study as, in the researcher’s opinion, critical thinking was not, and is not, a controversial subject. All data (excluding audio recordings) will be stored on my password protected laptop and will be destroyed after 5 years. All participants were sent a copy of the final MTRP.

3.6 Methodological Limitations and Strengths

The strength of using qualitative research methodology is that it allows for the greatest opportunity to uncover a much deeper understanding of how Ontario teachers understand critical thinking and what are the best ways to implement critical thinking than a more general approach of data collection would have (Carr, 1994, p. 717). My role as researcher is ‘human instrument’ which presents the potential for biases and shortcomings within the data (Merriam, 2002). Instead of trying to remove this possibility, I tried my best to identify and inspect how a bias might influence my data (Merriam, 2002). A possible limitation suggested by Carr (1994) is the relationship between the participants and researcher (p. 718). This relationship, states Carr, could potentially distort findings (1994, p. 718). Carr argues that the quality and value of qualitative
data far outweighs the risks of such biases (1994, p. 718) and I agree. Also, as stated above, since I knew the participants before interviewing them, it was my hope that this familiarity allowed for greater participant comfort while being interviewed and that stronger answers were a result.

This research project, unfortunately, only allows for the interviewing of three participants, which naturally results in a small sample size and a very limited scope of data to analyze. A major limitation to this project was that I was not able to do in-class observations of teachers conducting lessons, English or otherwise, in order to see firsthand if critical thinking, based on my definition, was or was not being implemented in Ontario’s classrooms. As a result, I had to take the word of my participants and the published works of scholars and administrators as my only form of evidence if critical thinking is being taught. Another limitation for this research project was that, as a teacher candidate, I did not have full access to all of the resources available to teachers currently employed by a school board. As a result, I acknowledge that significant databases of potential resources may be unknown to me. Also to note, this research project was completed as part of a full-time Master’s program with up to eighteen hours of class a week, and as a result this paper was completed within a tight time restriction.

3.7 Conclusion

In this chapter I explained the research methodology. I began with a discussion of the research approach and procedure, delving into the meaning and reasoning behind the choice to conduct a quantitative study using semi-constructed interviews and how it best suits my research to find out how teachers successfully implement effective critical thinking skill training in their classrooms. Next, in chapter four, I report, analyze and discuss the findings from these interviews.
Chapter 4: Findings

4.0 Introduction to the Chapter

This chapter presents and discusses the findings that emerged through analysis of the research interviews conducted with three teachers, Ms. Archer, Ms. Warner and Ms. Lewis, all employed by the same public school board in Southern Ontario. The research question: “How are teachers effectively implementing critical thinking in their Elementary English classrooms?” was the foundation for the analysis. While coding and analyzing the data from the interviews, it became clear that there was a divide between what the teachers were doing inside their classrooms and what support they were getting outside of the classroom. The findings were divided up by this binary, inside and outside, to highlight the difference between what the educators were doing in the classrooms, the real, on the ground work, versus the work in critical thinking they were given from those who were outside their particular classrooms, such as resources from the school board and Ministry of Education.

In this chapter’s following discussion, the findings are separated into two main themes:

1. Critical thinking pedagogy inside the classroom

2. Critical thinking pedagogy and support outside the classroom

The two themes are broken down into sub-themes that further illustrate how the participants understood, implemented and fostered critical thinking in their classrooms. Chapter four closes with a summary of the research findings discussed within the chapter.

4.1 Findings

4.1.1 Critical Thinking Pedagogy Inside the Classroom

4.1.1.1 Critical Thinking Expressed as Media Literacy
When talking about what critical thinking is and what it looks like in the classroom, two out of the three participants, Ms. Archer and Ms. Lewis, focused their definitions of critical thinking around a media literacy-based definition. To them, critical thinking is demonstrated when readers create criteria they then use to evaluate what they are reading. Ms. Archer’s definition of critical thinking lay predominately in the ability to analyze information, sources, and voices, looking specifically for biases present in a document. She fosters critical thinking in her class by encouraging her students to “look at the text before we engage with it.” She attributed her understanding of, and training in, critical thinking to her undergraduate history degree where she was often asked: “How do we know history?” She encouraged students research to find other sources, written from other perspectives, so that all sides of an issue could be explored: “I think you have to teach the kids what critical thinking is and what it looks like. I’ve had readers who have taken what they read at face value without thinking about it…You have to teach them to ask questions.” Ms. Archer appears to share Dewey’s desire for critical thinkers to use research to come to a personal conclusion about an issue (Anderson, 2004, p. 69). “Information seeking is important,” she said, “but what are you going to do with that information?” This call to action following being exposed to information could suggest her agreement with the Ontario’s goal to make students “active participant[s] as world citizens” (Ministry of Ontario, 2006, p. 4) further aligning with Dewey’s belief that critical thinkers should be engaged, problem solving citizens (Anderson, 2004, p. 69, 71).

Ms. Lewis was hopeful that her students would demonstrate critical thinking when they looked into news stories, and specifically, analyzed their social media feeds, critically reflecting on whose voices were being heard or not heard. While she did not explicitly talk about critically analyzing sources, Ms. Warner did define critical thinking as “the ability for someone to think
deeply about the world around them… a lack of fear when looking for the truth.” This answer suggests that she also shares the idea of critical thinking as critically analyzing information sources, though it was not her main focus.

Similarly, when asked if they agreed with the Ontario Ministry of Education’s (2016) statement that critical thinking is an essential 21st-century competency (p. 12), Ms. Archer agreed, speaking to the importance of “consider[ing] the sources” of the information “bombarding” people through smart phones and other technology. Ms. Lewis also agreed, taking Ms. Archer’s thoughts one step further. She spoke to the importance of thinking about what is being said in the media. She prompted students to consider Donald Trump’s 2016 presidential campaign as an example of essential 21st-century critical thinking. She then expanded her definition, saying that critical thinking is essential because it involves changing the notion that teachers are the owners of information, critically engaging in the idea of teacher as source. Both Ms. Archer and Ms. Lewis spoke to critical thinking’s importance in creating “informed citizens.” Ms. Lewis believed the ability to think critically “has huge impacts for our future.” Ms. Warner agreed critical thinking was an essential skill, but argued that it was equally essential in the 19th and 20th centuries: “I think all great thinkers are those who have been able to think critically about the world around them, so I wouldn’t necessarily say that it is only applicable currently.”

In summary, the all three participants shared an understanding of critical thinking which revolved largely around the idea of a reader critically analyzing a media text for bias, in order to become an informed citizen. None spoke to the idea of students taking action after acquiring information and using it to solve local or global problems, as is called upon by Dewey (Anderson, 2004, p. 69, 71) and the Ontario Ministry of Education (2016, p. 12).
All three teachers interviewed talked about the importance of questions when asked what critical thinking looks like. When defining critical thinking, Ms. Archer believed that critical thinking is “asking good questions with an objective,” suggesting an alignment with Dewey, recreating a problem with a known answer for the student to experience the problem first hand (Thayer-Bacon, 1991, p. 9-10): “Asking a good question is a big part of critical thinking,” Ms. Warner was unsure: “I don’t know if I think that critical thinking is something you teach… I feel it is something you make room for, and encourage, and model when you can,” she said. Later, however, Ms. Warner spoke about how a teacher models critical thinking by sharing her thought process out loud, a strategy that includes asking questions while you are working. Arguably from this answer, Ms. Warner is also agreeing that critical thinking lays heavily in the asking of questions. Ms. Archer and Ms. Lewis both believed that teaching critical thinking was teaching questioning.

Ms. Warner and Ms. Lewis both agreed that critical thinking involved idea creation and innovative thinking. Ms. Lewis’s father was a high school math teacher who valued what he called “free thinking.” He modelled “free thinking” in his classrooms by putting up a problem and inviting his students to create their own methods for solving it. Ms. Lewis states it is her father’s beliefs that informed her ideas about critical thinking, specifically the idea that the teacher does not hold all of the knowledge or information and that students should be encouraged to share and create new ideas of their own.

All three teachers had different ideas of what successful critical thinking looks like. All teachers connected the higher-order thinking skills of analyzing, connecting, and synthesizing to successful critical thinking. For Ms. Archer and Ms. Lewis, successful critical thinking in the
classroom looked like quality classroom discussions, “between peers and with the teacher, students asking questions, building on ideas, disagreeing, asking for peer’s opinions and experiences and respecting them, listening to them, noticing differences and similarities.” Ms. Archer says success occurs when students ask questions connecting two unrelated things together (the higher-order thinking skill of synthesis or connection). Ms. Lewis believed that critical thinking was successful when students enthusiastically start investigating something they’ve seen in the news. Through their comments, it can be suggested that both Ms. Archer and Ms. Lewis believe that successful critical thinking is demonstrated through student discussion. However, they both stressed that a positive classroom climate first exist in order for students to feel comfortable asking questions, sharing ideas and respectfully disagreeing with each other. Ms. Warner did not discuss if she invited critical thinking as a group activity within in her class. Her answers focused on critical thinking as demonstrated in individual student projects. She expressed concern that her students, because of their young age (nine or ten years old), would lack the maturity to make constructive comments, instead making comments that could be seen as hurtful to others if invited to think critically as a whole class. With this idea in mind, she viewed critical thinking through discussion as an add-on, only to be employed in the classroom when she judged the time to be right. This hesitancy demonstrates that she believes her students understand critical thinking to be critical, meaning passing judgement, and not as a constructive form of evaluation (Case, 2005, p. 46).

Rubrics are the key for the evaluation of critical thinking. Therefore, they are the key to what successful critical thinking looks like. Ms. Archer believed that critical thinking evaluation was “all about the questions.” With her students, she has them practice creating “good” questioning sentences and invites them to evaluate their questions with their peers. Ms. Lewis
also teaches how to create good questions in her classroom. She uses a “Robot, Detective, Judge, Inventor” anchor chart in her lessons. Robot, the first and lowest level of thinking, asks factual and sequential questions; Detective questions require students to think about the causes or reasons behind events; Judge questions encourage students to form opinions based on their knowledge; Inventor questions, the highest level of questioning in this method, supports problem solving, idea generation and exploring or creating other options. Ms. Lewis found that the students enjoy such question prompts because it invites them to “put on a role” and think like a certain character, making practicing the questioning techniques easier and more fun. Ms. Lewis uses “Robot, Detective, Judge, Inventor,” prompts to create rubrics, often replacing the usual headers (level 1, 2, 3, and 4) with Robot, Detective, Judge, and Inventor. When officially assessing, Ms. Archer also looks for evidence of higher-order thinking skills (synthesizing, application of knowledge, etc.) as proof of good critical thinking. She looks for evidence of new learning, that a student changed their opinion through analysis of multiple sources. Ms. Warner’s definition of critical thinking aligned closely with Case and Daniel’s (2005) argument that critical thinking was interwoven with creative thinking (p.13). When discussing the evaluation of critical thinking, Ms. Warner mainly looked for creativity and “innovative thinking,” often using those words directly in her rubrics. She embeds critical thinking into the success criteria she creates with her class: “New,” “original,” and “innovative” are the measurable terms for critical thinking she uses in her rubrics because they “let students know that they have the freedom and responsibility to be free thinkers in the work they are doing.” She then evaluates by assessing if the student work meets the success criteria or not.

The interviews revealed that critical thinking lies in the questions that the students generate. Assessment could be done using the depth of the question asked, the higher grades
being awarded to questions that demonstrated higher order thinking skills, such as analyzing, connecting, and synthesizing.

4.1.1.3 Critical Thinking Requires a Safe Classroom Climate

When discussing how best to foster and implement critical thinking in their classrooms, all three participants’ answers were connected by the idea that critical thinking requires a safe classroom to be effective. Critical thinking involves sharing ideas, which is a risky endeavour for students. Ms. Lewis, who encourages student talk by having them talk in table groups, is aware that there are “a lot of kids who don’t talk in class…[who don’t] take the opportunity to talk to the teacher, to talk to the whole class. I’d love it if they feel more comfortable that they could talk in class.” She acknowledges comfort level as a reason why students do or do not participate verbally in class. She believed that accountable talk, modelled by anchor charts with sample sentence starters, helps, encouraging “language like ‘I don’t think that, but this is because…’ or ‘Can I add on to what so-and-so was saying?’” Again, she connects student talking and sharing ideas to that of a safe classroom culture: “Part of it is creating a culture and environment where students are okay with hearing other students trying to work things out, you know? So that they feel safe to say ‘I’m wondering about… I’m thinking about.’” She continued, adding “I think it is still risky to be wrong, so I think that if you feel that it’s risky, that is something we need to work on. That’s part of creating a culture of respect. Not judging the comment and no correction.”

Ms. Archer believed that there were many possible reasons why students might struggle with critical thinking. In her opinion, all “depended on a student’s previous school experiences, their previous experiences with teachers and their confidence in themselves”; she expanded on her thought and said, “I’ve had some very bright kids who have done very well and think they know how to answer a question, but they are more concerned with what they think I want to
When students feel uncomfortable being themselves, they follow the misconception that there is a right or wrong answer to a question, she shared; they only say what they think the teacher wants to hear. This habitual classroom behaviour may have worked for students in the past, but Ms. Archer knows that students are not challenging themselves. When she has a student in her class that she believed is acting this way, Ms. Archer said she works hard to “teach them how to ask questions.” She believed all students are capable of thinking critically: “Often they’re thinking it but they aren’t writing it, so you need to encourage that skill.” Ms. Warner reinforced the need for a safe classroom when she talked about her students simply needing the teacher “to give them permission, to give them the space and time in their instructional day to use their voice and think critically.” This comment echoes back to the classroom culture being important to fostering critical thinking.

When asked if she felt confident incorporating and fostering critical thinking in her classroom, Ms. Warner said she did, but hesitated because she:

Needed to find places where critical thinking [was] going to really add to student experience and how students can analyze their environment and think about what they’re doing while still keeping kindness and collaboration in front of mind. That’s a difficult balancing act for students and I’m working on it over time.

This emphasis on critical thinking requiring kindness and collaboration further suggests the students have an understanding that critical thinking is critical, and therefore criticizing. She ties this concern to the age of her students, first scoping out her students to see if they, aged nine or ten, are mature enough to provide constructive comments.

Ms. Warner believed that a critical component to teaching and fostering critical thinking lay in the teacher not being afraid to share her thought process with her students. She thought it
important for the teacher to show that she was not “afraid to make a mistake.” Ms. Lewis shared this belief, adding that she as a teacher must demonstrate that she is not the owner of the information. She shared the following anecdote to enforce her point:

Even just today, we were just playing around with a frisbee or something that had a hole in the middle, so I said it was like a halo, and the other students said “no wait” and he put the hood on the kid and stuck out his ears and put the think on his head and I said “Well, what is it?” and he said “it just is” right? And that was like a check for me. Why does it have to be anything? Critical thinking is about not knowing what it but is about exploring and having that conversation and you're figuring it out together.

In order to have that conversation, to explore, to figure it out together, Ms. Lewis believed there must be a safe classroom climate, with deep-rooted respect for everyone’s ideas and opinions.

4.1.1.4 Critical Thinking can be Incorporated into All Subjects, and Should be Taught for All Ages and Capabilities

When directly asked, none of the teachers thought that there was an age where students should not be taught critical thinking skills, nor a subject that critical thinking should not be incorporated in.

Ms. Archer and Ms. Warner did share that there were subjects where incorporating critical thinking did not come naturally to them. Ms. Warner stated that she found there were “subjects where it is a lot harder to spark that creative thinking, that critical thinking, but [she] wouldn’t exclude a subject.” She extended her belief in critical thinking’s wide applicability when she said: “I do not think it is an on or off switch…I think it is a lens through which to see the world.” Despite this belief, math was commonly mentioned as a subject where the
participants found incorporation of critical thinking difficult. Ms. Warner suggested that critical thinking was not present when there was a set procedure for a task when she said: “I think that there are some subjects that you can pretty easily say ‘this is the way it is. 1+1=2, so there you go.’” Ms. Lewis’s father, a high school math teacher, would disagree with this mindset; he encouraged “free thinking” in his students by “ask[ing] them to create conjectures, and if they had solutions, he encouraged different solutions for the same conjectures or the same question in mathematics, and if they came up with different ways of solving that problem, solutions he hadn’t thought of, he’d stand on his head.” Due to her father’s example, Ms. Lewis was the only one to agree whole-heartedly that critical thinking can exist in the math classroom. Ms. Archer, after much thought, hypothesized that critical thinking could be present in mathematics by inviting student experimentation when solving problems, prompting them to develop their own strategy to find an answer.

Ms. Lewis and Ms. Archer spoke on subjects where they felt critical thinking was the easiest to incorporate and foster: For Ms. Lewis, media literacy “came to mind more than anything.” Ms. Archer’s “first thought was that English, social studies, and science are quite easy to incorporate critical thinking”. Later, she revisited the topic, adding history and geography to her list of critical-thinking-friendly subjects. Through talking with “a student who has a vested interest in a newspaper article, in media or colonial influences in history,” the implementation of critical thinking in the classroom was straightforward to Ms. Archer.

Art was another subject that was brought up and expanded upon by Ms. Lewis and Ms. Archer. The two teachers, however, were not harmonious when they discussed the ways critical thinking could be incorporated in art lessons. Ms. Archer believed that critical thinking in an art class would be more prominent as a lens to self-evaluate, where students ask “what makes a
good piece of art? Have I achieved that?” Ms. Lewis thought critical thinking revealed itself in
the art room because students had to develop problem-solving skills to create an idea that was
appropriate to the assignment theme, and then decide how they were going to execute their idea,
which incorporated design elements.

All three participants discussed student age in relation to maturity and cognitive
development. All three agreed critical thinking was a skill to be fostered at every age, but they
agreed that certain ages, specifically the “middle years” (grades six to eight), were naturally
primed to be more open and susceptible to successful critical thinking. Ms. Lewis stated that she
thought “the middle years are sometimes the best because [students] really want to have those
opportunities [to think critically], especially the intermediates, and well into high school for sure
as well. They want to have those conversations, and ask those questions.” For Ms. Archer, grade
seven was “an age of great self-discovery” for her students: “They’ve got one foot in childhood
and one foot in adulthood…They’re developing their own identity.” From her experiences,
students at this age are eager to think critically, to discuss what they saw on the news. When
talking about her grade four students, Ms. Warner said “the reality is they are nine year olds,
their brains are still very much developing. That critical thinking layer is really still developing
so… [Critical thinking] is very developmental, so some students really developed the maturity to
go deeper than others.”

All three participants discussed what critical thinking might look like in the primary
grades. Ms. Archer was not sure what critical thinking would look like in a kindergarten class (“I
guess a sort of ‘stranger danger’?”) but believed the skill could be fostered at a young age. Ms.
Lewis passionately believed that kindergarteners can do critical thinking “because they’re super
creative.” Despite not having experience teaching primary grades, Ms. Warner, a mother of a
student going into grade one, thought “it is absolutely essential to have kids thinking critically and to be looking for the big picture in what they’re doing in their day-to-day learning.” Again, she reinforced her idea of critical thinking as a mindset, not directly teachable, when she said, “I don’t think it is something you do in class, I think it is a way of being and I absolutely think it something that can be learned very, very young.”

For the teachers with experience teaching students with special needs, there was no belief that critical thinking could not be fostered in students with exceptionalities. Ms. Warner believed that gifted students were natural critical thinkers. She emphasized the fact that she has only taught in the gifted program, claiming that “these are kids who are primed and ready to be critical thinkers, so I don’t think it is a fair representation of the general student population.” If any student was not wholly successful with critical thinking, Ms. Warner believed it was due to a learning disability, a language barrier, or a behavioural issue. Contrasting Ms. Warner’s believe, Ms. Lewis celebrated the creativity and capacity for critical thinking of the students she has taught with learning disabilities: “they often have other strengths and quite often they can be more creative.”

In conclusion, all participants agreed that critical thinking could be incorporated into all subjects, though they felt some subjects, like English, history and media literacy, were a more natural incubator for critical thinking skills. They all also agreed that all students, regardless of age or cognitive abilities, were capable of developing critical thinking skills.

4.1.1.5 Juggling Multiple Definitions and Understandings of Critical Thinking

Case (2005) found that muddled and conflicting definitions of critical thinking existed. Through the discussion of research findings above, the three participant’s interviews only confirmed Case’s findings. All three had multiple definitions for critical thinking that emerged in
their answers. This sub-theme has been included in order to note the existence of differing definitions of critical thinking, while also highlighting the participant’s attitude towards their own understanding of the topic.

Throughout the interviews, both Ms. Archer and Ms. Lewis were confident in their understanding of critical thinking. When asked if there was anything about critical thinking she was still unsure of and would like to know more about, Ms. Archer replied: “Am I on the right track? I think I am.” Only one teacher interviewed, Ms. Warner, stopped to question what the definition of critical thinking was. As the interview progressed, she became unsure if she knew the “correct” definition for the term, and questioned if she was demonstrating it herself in the classroom. Her confusion was echoed by the researcher, who found the more she dove into the literature on the topic, the more elaborate and inconsistent the definition of critical thinking became. Interestingly, Ms. Archer and Ms. Lewis’s definitions and expressed implementations of critical thinking were the narrowest, focusing around the idea that critical thinking is the act of questioning the sources of the material being read and looking closer to find biases or stories not being told within; Ms. Warner’s answers, however, rarely mentioned critical thinking as the analysis or critiquing of sources; instead, Ms. Warner’s definition focused on creativity and idea generation. She used the phrase “innovative thinking” often, and believed it was a higher-level thinking skill than others, such as forming connections: “Connections come really, really easily for students. I do think that innovative thinking takes time.” Ms. Warner was the youngest of the three teachers interviewed, but had equal years’ experience. Age might then only suggest being raised in a different school culture, or hint at her own personal experiences as a Gifted educator and the more open-ended style of teaching such an environment encourages. It would be wrong to suggest that any participant’s definitions were incorrect. Instead, all were nuanced and varied.
4.1.1.6 Resources as a Jumping-off Point for Lessons: “I make it my own!”

All three teachers use the internet as their predominate source for resources when creating lessons. Their use of the internet was not to find pre-made worksheets, lesson plans or unit plans; instead, all three teachers were on a constant hunt for inspiration from current events. News articles, videos, pop culture, images, and educational videos were used by all participants to spark discussions or projects, or help explain material in a different way. Ms. Archer put it best when she said: “I never go online for lesson planning. I might get good ideas to incorporate but I tend to teach how I cook: I make it my own.”

All three teachers said they rarely use pre-made resources, citing experience as the reason they have drifted away from them. All three said that looking for resources was an ongoing, time-consuming process. This time, however, appears to be spent as a form of recreation, as all three said they got ideas from the news and media they were consuming themselves. They, therefore, brought their own interests into the classroom by developing lessons out of the media they consumed for enjoyment. Ms. Lewis claims she spends “a ton of time” accessing resources, just as much time as a new teacher, but is “smarter and more efficient at it.” Ms. Warner says that the way she looks for resources and what she looks for has changed since she became a teacher. Now, since her focus is teaching through inquiry-based learning, her resources are mainly graphic organizers and other ways to scaffold student-led research. They all rarely visit school board-created websites to find resources.

Ms. Warner believed the students of today require current, “unofficial” (not pre-made by the school board or the Ontario Ministry of Education) resources: “I think the reality is that whether I want to or not, students experience their world in a completely different way than they did when I started teaching 13 years ago. Everything is so much more ‘now’ for them, so if you
don’t have current technology, or you don’t have current images in your lessons, then it is ‘critically evaluated’ not as being of value to students.”

Despite not going online to look for lesson plans, both Ms. Warner and Ms. Archer said they have a bank of resources that they refer to often, containing physical papers, lesson plans, and books, as well as digital resources. Unlike her peers, Ms. Lewis was a firm believer in not reusing resources: “I rarely do something twice. If I’m bored, my students are bored.” She culls her resources often. During the interview, she proudly showed the researcher how all of her resources fit into two medium sized binders, rather than multiple shelves stuffed with books and papers, like her colleagues.

Participants revealed that the internet was the predominant resource used during lesson planning. Despite the existence of school-board created digital resources, all participants gained inspiration for their lessons from the internet-based media they consumed for recreation.

4.1.1.7 Advice for New Teachers: Be Brave, Relinquish Control, Talk Less

All participating teachers were asked: “What advice do you have for beginning teachers who want to implement critical thinking into their classrooms?” A common narrative arose from all three answers: be brave, relinquish control, and talk less. All three of the teacher’s answers revolved around the idea of teacher as a facilitator of learning, not the ultimate source of knowledge. They believed the students’ interests, ideas, and responses should lead the lessons. Ms. Warner encouraged teachers not to “be afraid to loosen the reins on what your students are going to accomplish and where they are going to go with any given subject.” Ms. Archer urged teachers to be less concerned with meeting curriculum expectations: “Seize the teachable moment…Often [the students] will take you places that are appropriate for the curriculum anyways.”
When encouraging a teacher to talk less, Ms. Lewis quoted the following maxim: “The person who talking is the person who is thinking”. She expanded on this idea by saying:

If you’re [the teacher] doing all the talking, you’re doing all the thinking and that’s a rip off for them. You are not the keeper of information, the information is everywhere and everyone has access to information. So it’s not about being a keeper of information anymore, it’s all about how you facilitate the knowledge, how you work with the knowledge, how you think critically about information and content and things like that.

Ms. Archer also advocated strongly for frequent class discussions: “Give the students a voice.”

To the researcher, the participants’ advice aligns with the absence of pre-made resources in their classrooms. In order to allow students to lead the learning, materials used in class must be highly personalized by the teacher. Therefore, pre-made resources, purposefully made general to fit a wide range of needs, do not allow for such personalization and are not conducive to activities in the classroom.

4.1.2 Critical Thinking Pedagogy and Support Outside the Classroom

Transitioning from what actively goes on in the classrooms of the three teacher participants, the following major theme and related sub-themes discuss the outside support that the teachers interviewed had received from their school, school board and provincial Ministry of Education to help implement critical thinking in their classrooms. Also discussed is professional development with regard to critical thinking.

4.1.2.1 School Board Provided Resources: General

The secondary focus of this research was to find out how supported by their school boards and Ministry of Education teachers felt, specifically through school-board created resources. Questions about resources were asked in the hopes to discover where teachers were
going to find resources after the support teachers received from school board resource librarians ended (Fine-Meyer, 2012). Both Ms. Lewis and Ms. Archer stated that they never went on school board or Ministry of Education created websites to look for resources. Only Ms. Warner said she used school board-created websites to find resources the board suggested, often in the form of links to other websites not created by the school board. Ms. Warner expressed eagerness to use the school board’s virtual library more, stating she was “just starting to sink [her] teeth into all the things that are available.”

School boards and the Ontario Ministry of Education also provide support through mandatory or optional professional development (PD) sessions. While none of the participants had attended professional development explicitly discussing the implementation and fostering of critical thinking in their classrooms, all three had attended PD sessions that they saw as being connected to critical thinking. Ms. Lewis attended a workshop about asking good questions, discussing what made up “really good questions,” questions that invite deep thinking, ethical thinking, and empathy. As part of a PD workshop, Ms. Warner had the opportunity to observe a teacher facilitating an inquiry-based social studies class, which she thought really helped her develop her own inquiry projects. Ms. Archer also attended inquiry based PD for History and Social Studies, but had not received inquiry-based PD for other subjects. She thought PD was lacking in this area, and believed more should be offered to help teachers transition after updates in the curriculum:

Depending on what kind of teacher you are and how comfortable you are with change, some of these curriculum changes get overlooked and people continue to do what they’ve always done. I think more PD or a [sample] unit plan, or opportunity to discuss would be beneficial.
All three teachers expressed that professional development (PD) was limited, and often restricted to one or two school staff members. All were unsatisfied that it was up to the teacher who attended the PD to share the information with colleagues. This dissemination of learning was often reduced to a five-minute window at a staff meeting, or was only shared with colleagues who were friends with the attendee. Self-expressed life-long learners, both Ms. Lewis and Ms. Warner enjoyed attending PD sessions. Ms. Warner spoke to the fact that attending PD is mainly in the hands of the teacher; it is up to the teacher to locate the PD they are interested in and advocate to their principal as to why they want to participate. Both Ms. Warner and Ms. Lewis were aware of the fact that not all teachers had the drive to attend optional PD sessions and were disappointed that this lack of initiative would impact the quality of education students received.

Despite the wish for more PD opportunities, all three teachers were satisfied with the amount of support they had received from the school board and Ministry of Education. Ms. Warner believed that support was there if a person went hunting for it. She felt that if she needed help with any aspect of teaching, there would be people to help her. Ms. Lewis felt greatly supported within her own school. She frequently consults with the vice principal and other teacher colleagues while creating lesson plans.

4.1.2.2 Supportive School Climate, but Critical Thinking Not a Focus

Critical thinking is a focus of the Ontario curriculum and therefore should be being fostered in all Ontario schools. Despite the participants agreeing that their schools were supportive of critical thinking, all agreed that implementing critical thinking was not a school-wide focus. Ms. Lewis noticed that incorporating critical thinking was not a focus for teachers in her school who had not been trained in Canada. Ms. Lewis views critical thinking as a
progressive way to teach, and believed that not all teachers are politically inclined to foster this skill in their students. Ms. Archer, a teacher at the same school as Ms. Lewis, did not make the same observation about the willingness of her peers to incorporate critical thinking. Ms. Archer connected critical thinking to inquiry-based learning, and said she felt her school was supportive because the administration was pushing for a grade-wide inquiry project in the upcoming school year. Ms. Warner was passé about her whole school being supportive of critical thinking: “No one would say ‘No, why would I do that?’” she said, with “that” being fostering critical thinking in the classroom. She said it was hard to tell how much critical thinking went on at her school because teachers were busy in their own classrooms and did not spend time watching their colleagues teach.

4.1.2.3 Curriculum Updates Lacking Support, but No Cause for Personal Concern

Stated as an essential 21st-century competency by the Ontario Ministry of Education (2016, p. 12), critical thinking is a prominent focus of Ontario curriculum documents. For this reason, participants were asked about the type of support they received when curriculum documents were updated to help foster the successful implementation of critical thinking, now a curriculum-wide expectation.

None of the participants had received professional development or support specifically tailored towards a successful transition to updated curriculum documents. Ms. Warner said she used a do-it-yourself approach to managing the updates. She compared having to teach with a new curriculum document to “like having to teach a new grade.” Ms. Archer wanted more support to help with the transitions, especially now that the curriculum is inquiry focused, a pedagogical approach she wishes to understand better. Ms. Archer thinks PD is lacking in this area, and believed more should be offered to help teachers transition after updates in the
curriculum: “Depending on what kind of teacher you are and how comfortable you are with change, some of these curriculum changes get overlooked and people continue to do what they’ve always done.” Ms. Lewis was not concerned about the lack of support from the school board or ministry. She welcomes curriculum updates, hopeful that they contain more progressive ideas and focuses. She was not looking for support on how to use the curriculum documents; to her, curriculum documents are “like technology, you just use it… If you focus on big ideas, or the overall expectations you’re fine.”

4.1.2.4 Desired Resources

As discussed in sub-themes above, all three teachers wished for more professional development in a variety of areas. When specifically asked what kind of support they would like to have to develop their critical thinking proficiency further, the answers were varied. Ms. Warner wanted to spend more time in other people’s classrooms, watching good examples of how to foster critical thinking. She wished for more feedback on her teaching practice from other teachers and administration. She “would really, really love to have the opportunity to have that kind of reflection in a focused, ongoing way.” Ms. Archer wanted more help with developing holistic, cross-curricular units, focusing on how to incorporate inquiry into math lessons. She would also find sample unit plans helpful when curriculum documents were updated. Ms. Lewis wanted to work on fostering accountable talk in her classroom, continuing to help her students come up with “really good” and “deep” questions.

4.2 Conclusion

When analyzed, the interviews conducted with three teachers from a Southern Ontario school board revealed two major themes: Critical thinking pedagogy inside the classroom, and critical thinking pedagogy and support outside of the classroom. Critical thinking was
predominately defined by the participants as the critical analysis of bias in media sources. Teachers taught critical thinking by fostering students to ask deep, ethical questions and share new and innovative ideas. A safe, supportive classroom climate was necessary for students to feel comfortable critically thinking. All participants agreed that critical thinking could be incorporated into all subjects, and was a skill that could be fostered regardless of student age or ability. Advice on how to best implement critical thinking was shared.

The internet was the predominant source that participants used to find resources, with lesson inspiration coming from media outlets, not school-board created websites. All agreed that their schools and school board were supportive of fostering critical thinking, but the skill was not a large focus. All had attended professional development that they felt strengthened their understanding of how to successfully implement critical thinking in their classrooms. Participants then shared the resources and professional development they would like the school board or Ontario Ministry of Education to provide.

Implications for these findings are discussed in Chapter five, as well as recommendations and potential areas for future research.
Chapter 5: Implications

5.0 Introduction to the Chapter

In the following chapter, I will provide an overview of the key findings found in chapter four and briefly highlight their significance. I will address potential broad and narrow implications of the research findings. Recommendations for teachers, school boards, and the Ontario Ministry of Education, as well as teacher education programs, are made in the belief that they will best address successful implementation of critical thinking in Ontario classrooms. Areas for further research are also suggested and the concluding comments bring this paper to a close, briefly highlighting the significance of the research findings of this project.

5.1 Overview of Key Findings and their Significance

This Masters of Teaching Research Project began with an examination of critical thinking scholarship. My main research question focused on seeking out how Ontario elementary teachers effectively implemented critical thinking in their classrooms, specifically in their English lessons. I wanted to seek out how teachers accessed resources in the past, while also finding out how the internet has affected or changed how teachers gain access to resources. I viewed a wide range of literature exploring the definition of critical thinking, the implementation of critical thinking in the Ontario English curriculum, and the avenues of support for teachers, specifically regarding critical thinking. This literature review created a solid broad basis for understanding the topic of critical thinking. Following this gained understanding, I was able to interview three currently practicing Ontario teachers. The interviews brought to light aspects that were not clear in the scholarship or curriculum documents, specifically informative were the methods the teachers practiced which they believed directly implemented critical thinking in their classes. What this study then brings together is the ability to look at the fostering of critical thinking
skills from all areas (scholarship, curriculum documents and practicing teachers), and therefore I was able to draw some clear conclusions: critical thinking often appears in the classroom as a critical analysis of media or historical documents. While reflection on the biases or missing voices is important to foster within students, such a focus misses the other aspects of critical thinking. While the media literacy approach does meet Harris’ (2003) definition of critical thinking, to assess “the validity of something” (p. 17), it may not always lead to Dewey’s desired outcome for critical thinking, where ideas are deconstructed or reconstructed and a new, deep and independent level of understanding is achieved (Anderson. 2004, p. 69). It does not also support the Ontario Ministry of Education’s (2016) goal for critical thinking to create students with the “ability to design and manage projects, solve problems, and make effective decisions using a variety of tools and resources” (Fullan, 2013, p. 9, as cited in Ontario Ministry of Education, 2016, p. 12). This study’s findings suggest, and support, the overlap and connection of critical thinking and creative thinking found in the Ontario Language curriculum documents (Ontario Ministry of Education, 2006, p. 10).

5.2 Implications

5.2.1 Broad Implications

Through the varied answers of the teacher participants, and the multiple, varied definitions of critical thinking explored in the scholarship, this study demonstrated the fact that interpretation of the curriculum in classrooms is very much directed by the teacher. In Ontario, there is no governing body that enforces that all teachers to follow a particular pedagogical approach to the Ministry of Education curriculum documents. There is a broad understanding in Ontario that community matters, and that “schools are a vital part of the ecosystem of influences on Ontario’s children, families, communities” (People for Education, 2011, p. 24). Teachers have
the freedom to implement curriculum in ways that meet the needs and interests of their students, reflecting conditions in their school’s community. This freedom could also have negative connotations because there is limited control preventing students from receiving poor education as result of poor teaching. Due to this lack of direct enforcement of the curriculum, there is a diverse system of pedagogical approaches currently being practiced in Ontario public schools. It is unclear, however, whether stronger pedagogical controls over teachers would ensure that critical thinking skills were being fostered in the classroom. Educators teach according to their personality, subject interests, and skill sets. Differentiated instruction is a pedagogical approach promoted because it recognizes that students have unique and individual learning preferences; it could be argued that the same differentiated instruction is reflected in the presence of teacher agency to teach the curriculum expectations according to individual learning and teaching preferences.

Another broad implication of this study’s findings is how a teacher’s confidence in their teaching ability grows over the course of their career. This confidence could result in a stronger sense of teacher agency; a more experienced teacher may be more likely to feel confident in their ability to bring unique media based resources into the classroom. An experienced teacher may also be more confident trying new pedagogical approaches they believe promote student success. However, with lengthy teaching experience can also come a narrow, outdated pedagogical approach. Experienced teachers may become so confident in their abilities that they do not reflect on other practices. This could result in the continued use of outdated pedagogical practices in the classroom.

Teaching is a predominately a solo endeavour. Teachers often plan and teach alone. While this independence does encourage teacher agency, it, like extensive teaching experience,
might also promote pedagogical stagnation. Teachers have limited opportunity to observe their colleagues in the classroom, which limits the chance to share knowledge, reflect on their own practices, or be inspired by the work of others. Outside of the limited annual professional development sessions, teachers are often isolated and have limited opportunity to see, experience or discuss new teaching methods in action. Teachers also have limited agency to choose what they learn about on professional development days, and often are required to attend workshops that are not related to their specialization. Teachers who are proactive in improving their practice may seek out professional development opportunities over and above the annual requirement, however this growth mindset may be a minority.

5.2.2 Narrow Implications

While critical thinking is a term defined by the Ontario Language Curriculum Documents in the back glossary, instructions on how to implement and assess critical thinking skills are not directly provided. As a result, the ways that teachers understand, foster and assess the skill set is varied. Teachers are given a sense of agency because they can choose how to design lessons, and can combine curriculum expectations in cross-curricular activities. As the limited findings of this study suggest, teachers find it easiest to incorporate critical thinking in subjects like Media Literacy and History. Critical thinking skills are then being fostered while students analyze sources for bias and misrepresented perspectives.

Teachers have the agency to choose where they look for resources to help meet curriculum expectations. The internet contains a diverse bank of resources teachers can use. Because of the diversity and ease of access, it is the most used source for classroom resources. Not only that, the internet is used daily by many people, often for personal enjoyment. Therefore,
internet usage is an everyday action, so extending it to find teaching resources is a natural teaching practice.

Teachers have the agency to use a variety of materials in their lessons, if they decide the content is appropriate for their students. It is then also up to the teachers to ensure that the materials brought into their classroom is culturally relevant to their students. Fortunately, the internet provides a vast wealth of potential resources, but it is up to the teachers to critically select resources that are most effective and appropriate for their classroom.

Frequent internet usage is an important teacher practice because it improves the probability that teachers will stay up to date on global and cultural events. As Ms. Lewis noted, staying up to date is good teacher practice because it allows teachers to answer student questions and misconceptions in an educated fashion, as well as providing opportunities for students to engage in world events. Staying current on pop culture is also important because it helps teachers to identify when classroom behaviour or conversations are no longer appropriate, and relevant discussion about conduct and discrimination can be facilitated.

Returning to the idea of teacher agency, because teachers have the opportunity to design their own lessons using resources they desire, teachers then have some freedom to change their teaching style to try out current teaching pedagogy, so long as curriculum expectations are met by the end of the school year. Because of this flexibility, freedom, and independence when creating lessons, teachers are great advocates for change because they can immediately implement action to respond to student need.

As a teacher-researcher, the findings of this research project are significant to me because they highlight the fact that there is not an exact, singular way to teach. Teachers interpret and apply the curriculum documents in unique and personal ways. As with the interpretation of any
text, there are many voices giving advice on pedagogical strategies. This study’s findings suggest the importance of communication between educational colleagues, specifically the sharing of resources and ideas about curriculum content.

5.3 Recommendations

The following recommendations for teachers, administrators, Ministries of Education, school boards, and teacher education programs are made in response to this study’s findings.

It is recommended that teachers meet with their peers and discuss definitions of “critical thinking” and identify skills associated with critical thinking. This will most likely reveal a definition of critical thinking that is not uniform. It is then recommended that teachers grapple with the discrepancies and differences in opinions found between their colleagues. A consensus on a shared definition is not necessary, instead the discussion itself would open up an opportunity for dialogue about frequently used, but vague, terms that appear in the Ontario Curriculum documents, such as critical thinking or creativity. These discussions could help facilitate teacher research with a focus to generate strategies that best implement critical thinking in the classroom. Teachers could also share resources they have found and create a supportive community of collaborators.

To aid teachers in the implementation of critical thinking, administrators should set aside time for teachers to observe their colleagues in the classroom. As reflected by Ms. Warner, opportunities to observe fellow teachers helps with reflection, of both teacher-presenter and teacher-observer. Administrators need to find more opportunities to support the sharing of resources between members of staff. As part of staff meetings or professional development, administrators can help facilitate discussions about curriculum documents, inviting teachers to pose questions about the documents and address misunderstandings. Hosting discussions
wherein the school faculty to explore and brainstorm strategies for best practice helps create a sense of collaboration and camaraderie between staff. Individual teacher strengths would also be highlighted and shared, strengthening the group as a whole. Critical reflection on the purpose and intention of professional development sessions offered is also highly recommended.

It is recommended that Ministries of Education and school boards survey teachers and administrators to find out what their understanding of critical thinking is, how important they rate it, and how they implement it in their classrooms. They should look for discrepancies within the survey results and identify themes. The findings should help school boards develop a plan to address, change, and enhance the understanding of the curriculum and relevant pedagogy. The inclusion of exact criteria for assessing critical thinking in curriculum documents would be helpful to guide teachers to the desired understanding of the skills and foster positive student results. More online critical thinking resources for teachers would also be helpful. Such resources could include unit plans with a critical thinking focus, question prompts for teachers and suggested culminating projects or locally driven problem solving challenges.

As part of their curriculum, teacher education programs should facilitate critical discussions about critical thinking. Teacher candidates should reflect on how they see critical thinking being fostered in their placements, and receive advice on how to incorporate it into their lessons. Teacher candidates should also be provided with strategies on how to best approach educational terms (like creativity, and intelligence, and diversity) especially when they are terms that are expected to be assessed.

5.4 Areas for Further Research

Due to the limited scope of this Masters of Teaching Research Project, the areas for further research are vast. A potential area for further research would be to conduct in-class
observations in Elementary English classrooms across Ontario to specifically see how teachers are implementing and fostering critical thinking skills in their classrooms. A broader survey of Elementary English teachers could gather a picture of how critical thinking is understood across the province.

An interesting idea for further research would be to perform a survey that asks Ontario teachers to define common educational terms and look for commonalities and misconceptions in their understanding. This research could be extended by creating professional development specifically addressing the needs identified in the interviews or surveys. Further research could be done investigating the channels teachers use to access resources or build on their knowledge. Such findings could help improve channels of communication between teachers and school boards, allowing for more wide spread sharing of information and effective implementation of targeted help. Another avenue for study would be to interview students to uncover their definition of critical thinking and why such skills are important; to discover what value they see in the skills.

Moving away from active research in the field, a more in-depth study of the research literature on critical thinking would be recommended to help remove confusion about the nuances of the term. Additional research could be done towards the creation of a guide or resource manual to teach critical thinking.

5.5 Concluding Comments

This study found that the three Southern Ontario teachers had a good understanding of what critical thinking was, and successfully implemented it in their classrooms, despite the fact that the participants’ definitions and methods of implementation were broad and different. All in all, this is a positive finding. However, if critical thinking skills are currently being assessed in
Ontario Elementary English classrooms, it is important that all educators have a solid understanding of what critical thinking is, and share pedagogical strategies to ensure it is implemented in classrooms. A solid understanding of what critical thinking looks like and how to facilitate the development of critical thinking skills are necessary for continued student success, especially if Ontario is to meet the goal set out in the 2014 Ontario Budget, to “be a world leader in higher-order skills, such as critical thinking and problem solving, which will allow Ontario to thrive in the increasingly competitive global marketplace” (Sousa, 2014, p. 9 as cited by Ontario Ministry of Education, 2016, p. 7).
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Appendix A: Letter of Consent

Date:

Dear ________________________,

My name is Heather Carlson and I am a student in the Master of Teaching program at the Ontario Institute for Studies in Education at the University of Toronto (OISE/UT). A component of this degree program involves conducting a small-scale qualitative research study. My research will focus on how school boards and the government provide resources and training to help teachers effectively implement critical thinking in their classrooms. I am interested in interviewing teachers who integrate critical thinking in their classroom in a unique and engaging way. I think that your knowledge and experience will provide insights into this topic.

Your participation in this research will involve one 45-60 minute interview, which will be transcribed and audio-recorded. I would be grateful if you would allow me to interview you at a place and time convenient for you, outside of school time. The contents of this interview will be used for my research project, which will include a final paper, as well as informal presentations to my classmates. I may also present my research findings via conference presentations and/or through publication. You will be assigned a pseudonym to maintain your anonymity and I will not use your name or any other content that might identify you in my written work, oral presentations, or publications. This information will remain confidential. Any information that identifies your school or students will also be excluded. The interview data will be stored on my password-protected computer and the only person who will have access to the research data will be my course instructor. You are free to change your mind about your participation at any time, and to withdraw even after you have consented to participate. You may also choose to decline to answer any specific question during the interview. I will destroy the audio recording after the paper has been presented and/or published, which may take up to a maximum of five years after the data has been collected. There are no known risks to participation, and I will share a copy of the transcript with you shortly after the interview to ensure accuracy.

Please sign this consent form, if you agree to be interviewed. The second copy is for your records. I am very grateful for your participation.

Sincerely,
Heather Carlson

Course Instructor’s Name: Dr. Rose Fine-Meyer
Contact : rose.fine.meyer@utoronto.ca
Consent Form

I acknowledge that the topic of this interview has been explained to me and that any questions that I have asked have been answered to my satisfaction. I understand that I can withdraw from this research study at any time without penalty.

I have read the letter provided to me by Heather Carlson and agree to participate in an interview for the purposes described. I agree to have the interview audio-recorded.

Signature: ________________________________

Name: (printed) ________________________________

Date: ________________________________
Appendix B: Interview Protocol

Thank you for agreeing to participate in this research study, and for making time to be interviewed today. This research study aims to learn about how teachers find support through resources provided by the school board, Ministry of education or independent group for in order to aid in effectively implementing critical thinking in the classroom. This interview will last approximately 45-60 minutes, and I will ask you a series of questions focused on your teaching practices revolving around critical thinking. I want to remind you that you may refrain from answering any question, and you have the right to withdraw your participation from the study at any time. As I explained in the consent letter, this interview will be audio recorded. Do you have any questions before we begin?

Background Information
  1. How long have you been teaching?
  2. What grades have you taught? Any special streams (i.e. Gifted Class, Special Ed, French Emersion?)
  3. Have you always taught in a public school?

Teacher Perspectives/Beliefs
  1. How would you define critical thinking?
  2. What does critical thinking look like to you?
  3. Would you say that you feel confident incorporating and fostering critical thinking in your classroom? Have you always felt this way?
  4. Critical thinking is viewed by many researchers and is by the Ontario Ministry of Education as an essential 21st century skill. Do you agree or disagree?
  5. Do you think that critical thinking can be applied in all subjects, or are there certain subjects that you believe are a better fit for critical thinking?
  6. What is the attitude in the school about bringing critical thinking into the classroom?
  7. Are there certain ages that you feel critical thinking should not be a focus? Are there certain groups of students (i.e. classes) where you were more open to bringing critical thinking into the class, or years where you felt it would not be the best

Teacher Practices;
  1. How often do you go looking for resources and support when creating your lessons?
  2. Where do you go for resources?
3. Has the amount of time you spend accessing resources changed over the course of your teaching career? If so, what caused the change?

4. How do you evaluate critical thinking in your class?

5. Are there areas of critical thinking that you feel that your students struggle with, or are not getting a chance to practice and develop?

Supports and Challenges

1. Do you use the internet for your lesson planning? If so, what sites do you go to? Do you find that the internet has influenced how you teach and lesson plan?

2. Have you experienced a curriculum update? If so, what was the transition like? What kind of support (resources, emails, professional development) did you get to help with the transition to understand new goals/outcomes? Did you find that support helped ease the transition?

3. Do you feel supported by the Ministry, school board, department head, etc. through resources, professional development, in order to implement critical thinking in your English classroom?

4. Have you received any professional development specifically about implementing critical thinking in your classrooms? If so, what did it entail and who created or lead the session? If not, do you think you and your colleagues would benefit from such professional development?

5. How do you know when you have taught critical thinking effectively? How do you know your students “get it”?

Next Steps:

1. What advice do you have for beginning teachers who want to implement critical thinking into the classrooms?

2. How do you feel that you can develop your critical thinking proficiency further? What are your next steps or support would you like to have?

3. Is there anything about critical thinking that you are still unsure of and would like to know more about?

Thank you for your participation in this research study.