Critical Online Resource Evaluation in Secondary Schools:

A Descriptive, Multiple-case Study of Teachers in Quebec

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Abstract

Critical Online Resource Evaluation in the Quebec Secondary School System:

A Descriptive, multiple-case study of teachers

Ingrid Stockbauer

Little is known about the circumstances surrounding how teachers guide their students to understand the credibility and relevance of information they research on the Internet. This two-part qualitative, multiple-case study examined how 11 secondary teachers in Quebec approached instructing their students in critical online resource evaluation (CORE). In Strand 1, an environmental scan of the Quebec landscape was done focusing on materials available to teachers for CORE. This included a systematic review through an extensive search of the website of every English school board, as well as informal discussions with subject matter experts (SMEs) such as a professor of journalism and a professor specializing on information literacy. In Strand 2, teachers shared their varied approaches to teaching CORE in semi-structured interviews. Participants from both public and private schools were selected based on their interest in the study, the grade level they taught, and the subject matter. Within-case and cross-case analysis revealed an overall understanding and acceptance of the importance of CORE in its basic definition. Further, several patterns were observed across cases such as common approaches to teaching CORE. Some obstacles hindering teachers were uncovered including gaps in government curriculum documents such as the *Quebec Education Program (QEP)* and a lack of time for teachers to adequately prepare and plan to teach materials that they are generally self-creating. A strength, weaknesses, opportunities, and threats (SWOT) analysis completes the discussion. Implications for the future include more targeted professional development options for teachers and clearer direction from government-mandated curriculum. More research is necessary to expand the scope of understanding of CORE past this limited sample.

Acknowledgments

I am a life-long student. This is my first Master's degree, but I cannot say right now if it is my last. I have been in school in some form or another since I was five years old, and to this day, decades later, nothing makes me happier than shopping for school supplies or smelling a newly printed textbook. It's no wonder that I ended up a teacher, and even less of a wonder how I keep coming back to school to further my own studies.

This time around, I was fortunate to meet Dr Steven Shaw, who was instrumental in my switch to the thesis option of the Educational Technology program. Thank you, Steven, for giving me confidence in my writing, providing entertaining evening classes, and imparting so much knowledge. Through Steven, I was grateful to be introduced to Dr Ofra Aslan, a kind and understanding person that I have been lucky enough to work with as a TA the past five semesters as I completed this thesis. Thank you, Ofra, your interactions with your students and your compassion for them has influenced me to be a better teacher. Finally, even if the dreaded pandemic took over 2020, it was not all bad, as I happened upon a Distance Education class with Dr Julie Corrigan as my teacher. I knew from the first class that I had much in common with Julie, and that she would make the perfect Thesis Supervisor, and I was not wrong. Thank you, Julie, for getting me through the writing of my thesis by providing your direction, advice, and wisdom for my work, but also understanding and encouragement as I didn't quite make some of my self-imposed and ambitious deadlines.

Thank you to the teachers who, despite being thrown in a lurch as their whole worlds were upturned by COVID-19, still managed to find time for their interviews and impart the knowledge that allowed me to complete this work.

Finally, thank you to my family and friends who listened to me speak about getting my work done for months, and who all encouraged me to get to the finish line with their love and support.

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Chapter 1: Introduction

A headline in the Montreal Gazette said it all: "Trucker convoy spotlights urgent need for media literacy (Nawaz, 2022)." Indeed, for several weeks in early 2022, Canada's capital region was disrupted and descended upon by a mix of mischief-makers and far-right activists (Nawaz, 2022). It demonstrated the real danger of how quickly fake and misleading "news" spreads on the Internet, and the very immediate proliferation of online conspiracy theories, such as those coming from groups like QAnon, with one of the strongest bases outside the US in Quebec (Noël & Marchand, 2020). What is most shocking is that these untrue and unfounded messages can often appear legitimate (McGrew & Byrne, 2020; McNeill, 2020; Sinatra & Lombardi, 2020), making it very difficult to discern between fake and fact. Since important international events such as the 2016 US Presidential election, the 2016 campaign for Brexit, and more recently the 2022 Russian invasion of Ukraine, one cannot argue we are living in a post-truth era, where objective facts are no longer the obvious way to reason and information is weaponized (Sinatra & Lombardi, 2020).

Given the difficulties in determining false from accurate information on the internet, the Quebec Government recently announced updates to the *Quebec Education Program* (*QEP*) for secondary school curriculum to include more attention to media and information literacy training, including critically identifying misinformation online (Ministère de l'Éducation, 2022; Nerestant & Marchand, 2021). This is timely, as the Internet is a vast place where anyone can freely post any unfiltered information they like, as evidenced regularly on social media websites, leaving students faced with the daunting task of deciding whom to believe (Stebbins, 2015). The situation is equally as troubling and prevalent in Quebec as it is worldwide (Mittermeyer, 2005; Nawaz, 2022; Wilson et al., 2011).

Promoting Digital Literacies for Secondary Students: A Collaborative Action Research Project is a study that began in 2020. Funded by the Fonds de recherche du Québec – Société et culture (FRQSC), this study's objective was to design interventions for use in Quebec high schools aimed at "teaching students critical thinking in the context of online evaluation" (Corrigan, 2019). This parent study has three strands, as seen in Figure 1. The present study (right) focuses solely on the Exploratory Strand 1 of this larger study and has two strands: Strand 1, an environmental scan, and Strand 2, semi-structured interviews with teachers in secondary schools.

Figure 1

Parent Study and Present Study

PARENT STUDY	
Promoting Digital Literacies for Secondary Students: A Collaborative Action Research Project (2019-2023)	
Strand and Focus	**Summary of Focus**
1 Exploratory	Research into availability of resources and current practices of teachers
2 Intervention	Interventions developed based on the Exploratory strand using CORE Framework (2019)
3 Knowledge Dissemination and Transfer	Data analysis will be completed, and results communicated

PRESENT STUDY	
Critical Online Resource Evaluation in Secondary Schools: A Descriptive, Multiple-case Study of Teachers in Quebec (2020-2022)	
Strand and Focus	**Summary of Focus**
1 Environmental scan	A summary of resources currently available to teachers
2 Semi-structured interviews	Interviews with teachers in secondary school outlining their current practices regarding teaching students about online resource evaluation

Research Problem

With the Internet as the primary source where students get their information, being critical about what is found online is a necessary competency (Giroux et al., 2011; Nerestant & Marchand, 2021; Sinatra & Lombardi, 2020). Briefly, critical online resource evaluation (CORE) is the ability to judge and select credible and relevant information sources on the Internet (Forzani, 2019). CORE is a competency that can be learned in a multitude of ways. It could be through modeling by the teacher or other school professional, or by looking at videos thus informing students of the many nuances that make information credible. In being guided, the students can learn what to pay attention to and what the important elements to consider are when selecting resources. This could be many things from who wrote the resource, the point of view of the author/publisher, whether it was a sponsored message, and so on. In learning to be critical, students can also start to understand reliability and bias in their resources (Forzani, 2019). Increasingly, students must not only cite their sources but also be able to determine which evaluation criteria leads them to choose one source over another, and many struggle both to evaluate and cite sources independently (Bissonnette et al., 2021; Forzani, 2019; Giroux et al. 2011; Nawaz, 2022; PISA, 2023). Without the skill or ability to combat the proliferation of fake news and misinformation, this faulty information is in danger of leading us to the dismantling of democracy (Bissonnette et al., 2021). Some intervention studies have shown an improvement in students' ability to select reliable information (Coiro et al., 2015; Hämäläinen et al., 2020; Kiili et al., 2018; Macedo-Rouet et al., 2019; McGrew & Byrne, 2020; Pérez et al., 2018; Walraven et al., 2009; Zhang & Duke, 2011), but the literature is not abundant, particularly in the Canadian context. Based on some informal discussions with current Quebec teachers, very little is known about the quality of resources on the internet or the ease of locating them. For example, websites like Mediasmarts.ca (a national not-for-profit group that creates resources related to media

literacy) exist, but the decision to use them or not remains with the teachers, and one must sift through the site for information pertaining specifically to CORE for use within the classroom. Additionally, few (if any) studies to date have empirically validated the usefulness or appropriateness of resources available to Quebec secondary school teachers for teaching CORE (Bissonnette et al., 2021).

In general terms, the problem is that CORE is an essential competency, yet the Quebec curriculum does not address who should teach these skills (i.e., in what subject or grade level), and only basic information is available on how they should be taught (method, curriculum, training) (Dumouchel & Karsenti, 2017; Marin & Halpern, 2011, as cited by Bissonnette et al., 2021). Having recently taught at the secondary school level for the past 10 years, I know firsthand that the subject of CORE is elusive in the curriculum. Without a generally agreed upon method of teaching CORE, teachers could find themselves discouraged, ill-equipped and lacking time as their students remain oblivious to the pressing urgency of acquiring this knowledge (Landry & Basque, 2015, as cited by Bissonnette et al., 2021). To a certain extent, we can assume some teachers are instructing students on CORE, but there exists no information as to how, with what resources, and whether the students are succeeding at CORE (Bissonnette et al., 2021). Because it does not figure prominently in the *QEP* and is not subject-specific, it is at the discretion of teachers. Therefore, before the development of any interventions to assist teachers and students in this area, it is important to understand what is going on. My qualitative case study approach will contribute to our understanding of this problem by providing the current landscape of available resources and giving us a picture of what some teachers are doing in selected schools, revealing some strengths but also some areas that require more attention by making connections to the three-tiered critical online resource evaluation (CORE) Framework (Forzani et al., 2022).

Purpose of the Study

The purpose of my study is to find out what resources are available to teachers currently; to gain insight on the practices, processes, and resources that teachers employ in their classrooms; and to evaluate the strengths, weaknesses, opportunities, and threats that teachers face. On a secondary level, my study will informally guide the planning, development, and design of the intervention curriculum of the parent study, Promoting Digital Literacies.

Research Questions

The overarching questions this study will endeavour to answer are as follows:

(1) How are Quebec secondary teachers currently supported–in terms of curricular programs, policies, and resources in general–in their teaching of CORE?

(2) How do Quebec secondary teachers approach teaching CORE?

(3) How do curricular programs, policies, and resources interact as either strengths, weaknesses, opportunities, or threats (SWOT) in terms of Quebec secondary teachers delivering instruction to students about CORE?

Chapter 2: Literature Review

Introduction

The focus of this literature review is to offer background information on Quebec secondary teachers' approaches to instructing CORE. Next, I examine select studies on approaches for CORE outside of Quebec to inform on what was done in international secondary school classrooms. Finally, I explain the conceptual framework used throughout the study to inform the analysis and coding of the data.

Background on Teachers' Approaches to Instructing CORE

CORE is often an element included in definitions of digital citizenship, which encompasses "information literacy." Information literacy is the umbrella term for a series of indicators including being able to determine what information one needs, and how to access, critically evaluate, and use this information for one's specific purposes ("Framework for Information Literacy for Higher Education," 2015). A Canadian study by Leblanc et al. (2021) corroborated Quebec findings by Dumouchel and Karsenti (2013), revealing that digital citizenship is increasingly important in today's life skills, for adults as much as for adolescents. As students are increasingly choosing to get information online (PISA, n.d.), teachers are being faced with an enormous job ahead of them and not much guidance (Giroux et al., 2014). Regardless, the most recent Organisation for Economic Co-operation and Development Programme for International Student Assessment (PISA) test results from 2018 show Canada faring well out of the 79 participating countries in terms of reading, mathematics, and science (PISA, n.d.). However, in reading scores, only 1 in 7 Canadian youths (15 years old) can distinguish between fact and author opinion (PISA, n.d.), and when divided by province, Quebec students rank third after Alberta and Ontario (Morasse, 2019).

CORE is typically taught in one of three ways in Quebec secondary schools, including through the school library personnel, using in-class Internet search activities like WebQuests (Archambault & McCollough, 2015; Dumouchel and Karsenti, 2017), or through existing programs on open sites such as "CTR-F Find the Facts" (n.d.). Sometimes there is explicit teaching using modeling, guided practice, and autonomous practice (as in the "I Do - We Do - You Do" method) (Dumouchel and Karsenti, 2017; "How to Use I Do – We Do – You Do in Teaching," 2019). Teachers will often enlist the help of library personnel as the go-to professionals in Quebec secondary schools for CORE training (Karsenti et al., 2014). For example, each school in the EMSB has a dedicated librarian or library technician to assist teachers ("EMSB Presents Newest Initiatives for Library Transformation," 2020). As Mittermeyer (2005, p. 210) pointed out, "Information specialists, librarians and library technicians have long observed what appear to be major gaps in students' information skills," therefore the inclusion of these types of specialists is essential. The assistance could be in the form of a tutorial or workshop, a series of lessons, or other guidance ("EMSB Presents Newest Initiatives for Library Transformation," 2020), though most often it seems to be a short workshop in class led by the librarian (Dumouchel & Karsenti, 2013). Simard and Karsenti (2016) interviewed future teachers and, according to these participants, they found the top three effective strategies were project-based and problem-based learning, demonstration and modeling, and ongoing teacher training.

Searches of publications and university websites in French and English revealed some valuable information pertaining to preservice and in-service teachers' skills, readiness, and training for this specific purpose (Note: though publications in French were few, publications in English were even fewer). These are important elements to consider as preservice and in-service teachers' ability to instruct CORE is directly affected in terms of their own online research skills,

knowledge, and confidence. Dumouchel and Karsenti (2013) surveyed 153 future teachers in

Quebec about their Internet and computer research skills, and found these preservice teachers

had high levels of perceived self-efficacy, and that they generally verified the credibility of

information online by checking the source (dates, author) and by using triangulation of multiple

sources to better understand an issue. However, they also found that these teachers had some

gaps in their competencies, for example in specifying usage rights, the origins of a given website,

or distinguishing primary sources of information found on the web (Dumouchel & Karsenti,

2013). Future teachers do their own research with key word searches using search engines such

as Google, they overwhelmingly employ key word modification to tailor their search engine

results pages (SERPs), and though they will consult Wikipedia as a starting point, they hardly

ever consult blogs or social media such as Facebook or Twitter during their research processes

(Dumouchel & Karsenti, 2013; Dumouchel & Karsenti, 2017; Purcell et al., 2012). Dumouchel

and Karsenti (2018) interrogated future teachers about how they envisioned teaching CORE.

Most teachers surveyed said they felt inadequately prepared from university and would not

instruct the planning of a research project to their students (Dumouchel & Karsenti, 2018).

Karsenti et al., (2014) corroborate these gaps in pre-service teacher skills, as do Simard and

Karsenti (2016). The teachers surveyed suggested their techniques would be basic–simple

research assignments (as opposed to projects) based on keyword searches with modifications

using Google and a curated list of websites, steering clear of sites like Wikipedia, and choosing

not to employ advanced search techniques (Dumouchel & Karsenti, 2018).

When it comes to training, there are 12 universities (French and English) offering

accredited teacher training programs in Quebec: Concordia University, McGill University,

Bishop's University, Université de Montréal, Université de Sherbrooke, Université du Québec à

Chicoutimi, Université du Québec à Montréal, Université du Québec à Rimouski, Université du

Québec à Trois-Rivières, Université du Québec en Abitibi-Témiscamingue, Université du Québec en Outaouais, and Université Laval ("Listes des programmes," n.d.). Upon a general examination of these universities' Bachelor of Education degrees, only a sprinkling of courses dealing with technology could be identified, and from these, very few refer to CORE. For example, Concordia University offers Computers in Language Learning as part of its Teaching English as a Second Language Bachelor of Education degree, but this does not cover CORE training. Instead, it covers the integration of technology (for example, how to use computers) in the language classroom. In another example, Université du Québec à Montréal includes a class called Application of Information and Communication Technologies in Teaching (in French) as part of the Bachelor of Secondary Education ("Application", n.d.), but further examination reveals this is a class where student teachers learn how to use technology to share information to their peers. Some universities provide more complete descriptions of the courses on their websites, making it possible to judge whether CORE might be included. For example, Université de Montréal offers Integrating Digital Resources (in French, part of the training for teaching Science and Technology) and Disinformation and Information, (in French, part of the training for teaching Religious Culture). Hence by reviewing titles of courses and information available on university websites, it is not easy to discern to what extent training on teaching CORE is an element in current Quebec teacher training programs.

In sum, it is clear to see that the important gaps in this area are disproportionate considering the perceived media attention and government funds directed at having students be ready to be digital citizens, and within that be able to critically evaluate resources (Simard & Karsenti, 2016). It is not obvious whether the principals of instructing CORE are taught to Quebec student teachers, but the lack of easily locatable evidence suggests there is little or no CORE training. Amongst the future teachers surveyed by Dumouchel and Karsenti (2018), it was

discovered that training received in this area continues to be lacking, which poses a predicament for teachers wishing to instruct CORE skills to students or for teachers themselves to be properly informed.

Intervention Studies on Approaches for CORE Outside of Quebec

During research for the parent study "Promoting digital literacies" (Corrigan, 2019), abstracts for previous studies on online evaluation were screened to find those that used an intervention. Reviewing these intervention studies shed light on practices used by teachers and revealed information about participants in similar situations which helped me develop my study. Like the situation for studies based in Quebec, extensive searching revealed a small, but growing number of studies on CORE internationally. Intervention studies refer to those studies where the current level of knowledge of students was tested (pre-test), an intervention was applied, and then a post-test was administered to check for improvement. Eight studies matched these criteria ranging from 2011-2020. Other studies looked at CORE in the secondary classroom but did not implement interventions. Nonetheless, these studies helped gain background on methods used to teach CORE. They were instrumental in grounding the present study's importance and the modest number of applicable studies available demonstrates the need for further research in this area. Briefly, these intervention studies exemplified how difficult it is for students to critically evaluate the resources they find online, and that many students struggle with information literacy in a general manner (Braasch et al., 2009; Coiro et al., 2015; Hämäläinen et al., 2020; Kiili et al., 2018; Kiili et al., 2019; Macedo-Rouet et al., 2019; McGrew & Byrne, 2020; Pérez et al., 2018; Walraven et al., 2009; Zhang & Duke, 2011). Table 1 summarizes eight such intervention studies that were instrumental in framing the current study. A grey box denotes no information available.

Table 1

Summary of Select CORE Intervention Studies

	Intervention study (author and title)	Year / Country	Grade level	# of hours of intervention	Prof. dev.
1	Bråten et al. Teaching sourcing in upper secondary school: A comprehensive sourcing intervention with follow-up data.	2019 Norway	Upper secondary (10+)	4.5 hours scripted instruction + 9 hours in-class work over 6 weeks	Y
2	Hämäläinen et al. Promoting sixth graders' credibility evaluation of Web pages: An intervention study.	2020 Finland	6	15.75 hours	Y
3	Kiili et al. Students' evaluation of information during online inquiry: Working individually or in pairs.	2019 Finland/ USA	Lower Secondary (12–13-year-olds)	3 lessons (no further time information available)	N
4	Macedo-Rouet et al. Teaching fourth and fifth graders to evaluate information sources during text comprehension.	2013	4-5	55 minutes	N
5	McGrew, S. Learning to evaluate: An intervention in civic online reasoning.	2020 USA	11	9 hours	Y
6	McGrew et al. Can students evaluate online sources? Learning from assessments of civic online reasoning.	2018 USA	n/a	~30 minutes	
7	Pérez et al. Fostering teenagers' assessment of information reliability: Effects of a classroom intervention focused on critical source dimensions.	2018 France	9	6 hours	N
8	Zhang & Duke The impact of instruction in the WWWDOT framework on students' disposition and ability to evaluate web sites as sources of information.	2011 USA	4-5	2 hours	Y

The intervention studies found that students fared better when they were guided or explicitly taught how to evaluate online resources critically (Kiili et al., 2019; McGrew, 2020; Sinatra & Lombardi, 2020). Macedo-Rouet et al. (2013) established since the Internet often reshapes information, students must be able to take ownership of their research. Therefore, one of the ways teachers can best help their students is through modeling.

Other studies found that students need to read multiple perspectives (McGrew, 2020; Sinatra & Lombardi, 2020), as well as be able to look at a variety of criteria at the same time (Coiro et al., 2015) to be able to analyze resources appropriately. Checklists and the like may have been sufficient in the past, but the environment today requires students to be equipped with a "cluster of abilities" to find appropriate information online (Stebbins, 2015, p. xxiv). For example, "weak heuristics," referred to by McGrew (2021), means that otherwise superficial features (like the URL or presentation of a resource) are often used as a quick verification of credibility, but this is an antiquated practice from the early days of the Internet (Wineburg et al., 2021). Sinatra and Lombardi (2020) point out efforts in educating students on sourcing and evaluating information are increasing, however the efforts remain "woefully insufficient" (p. 122). One way to combat this is to not only compare sources but also to evaluate the explanations of those sources (Bråten et al., 2019; Sinatra & Lombardi, 2020). Compared to a control group, students in a study by Bråten et al. (2019) demonstrated improvement by spending more time selecting their sources, going back to them more often, and processing them with greater attention, both in the short and long term. Braasch et al. (2009) found that students varied in their ability to evaluate sources for content, including title and summary, but found other, less helpful elements with less difficulty, such as publication and author. McGrew and Byrne (2020) discovered that teaching students explicitly to evaluate the source of resources, particularly for trustworthiness and expertise yielded positive results. Macedo-Rouet et al. (2019) realized that

students who were prompted by their teachers fared better in indicating a resource's usefulness (except for author competence). Kiili et al. (2019) found that pair work, where students were prompted by an online inquiry tool but could also interrogate each other about their choices, had some modestly positive results, but they did not find the overall quality of reasoning greatly improved. Adolescents often select their information based on their own intuition (Walraven et al., 2009; Koot & Hoveijn, 2005) and they "hardly evaluate sources and information explicitly" (Walraven et al., 2009, p. 241). Another important factor is being able to address bias in the resources examined, as seen by Kiili et al. (2018). In their study, the data showed a student tendency to trust an online resource that was commercial alongside an academic one. Hämäläinen et al. (2020) saw that students became better at deciding on the credibility of Web resources based on source features, but not necessarily on content features, even once they had some training. They stated plainly that students "(…) need explicit instruction in how to evaluate the credibility of information when working with multiple information resources on the web" (Hämäläinen et al., 2020, p. 1).

In summary, students in some of these studies thought they could evaluate websites much better than they realistically could (Kiili et al., 2018; Walraven et al., 2009), and this can lead to students becoming overconfident, reliant, complacent, and dismissive of digging deeper or taking their research to the next level (Bissonnette et al., 2021; Porat et al., 2018; Purcell et al., 2012). Teachers need to guide young people in their approaches and practices to be more critical, because students couldn't do this by themselves (Kiili et al., 2018; Leeder & Shah, 2016). The more students were given the chance to review online resources through criteria and substantiation (for example, asking: It this site reliable or not?), the better they got at recognizing and sorting out the more trustworthy sites from the lesser ones (Pérez et al., 2018; Zhang &

Duke, 2011). In fact, many of these elements were corroborated in the teacher interviews, as will be discussed further in the Findings section.

Conceptual Framework

The conceptual framework for this study was the Three-Tiered Framework for CORE, which is based on "the process of judging the extent to which information is relevant and credible" and how trustworthy the source and context of that information are (Forzani, 2019, p. 4). Since the interventions for the parent study mentioned in the Introduction "Promoting digital literacies" were designed based on this work (Corrigan, 2019), I chose to implement the same framework in data coding of the present study. Figure 2 illustrates the Three-Tiered Framework for CORE (Forzani et al., 2022).

Figure 2

Three-Tiered Framework for CORE

Across Tiers: Habits of Mind & Argumentation Practices

Argumentation Practices
- Prioritizing content and source evidence
- Triangulating evidence within and across tiers
- Using topic- / source-specific evidence
- Using warrants

Habits of Mind
- Critical stance
- Relativistic stance
- Hedging
- Qualifying

Within Tiers: What, Who, When & How

Tier 3: Context
(Situation in which the ideas are presented, including document features)

When and how are the ideas presented?: Interrogating Document & Setting

Evaluating the relevancy and credibility of the situation in which the content and source are presented. This includes evaluating **document features and setting**, such as:
- **setting** (i.e., currency/publication date, place, culture),
- **resource genre** (e.g., blog vs. news article),
- **third party endorsements** (e.g., advertising and sponsors), and,
- **rhetorical techniques**[a] (e.g., persuasion tactics as related to document features).
To evaluate in this tier, readers use practices such as *contextualizing* content and source.

Tier 2: Source
(Author and publisher of the ideas)

Who created the ideas, and why?: Interrogating Source (Author, Venue)

Evaluating the relevancy and credibility of the source (i.e., author, venue) of the content. This includes evaluating **author and venue** elements such as:
- **expertise** (e.g., education, professional experience and credentials),
- **point of view**[a] (i.e., stance on the topic),
- **purpose**[a], and,
- **rhetorical techniques** (i.e., persuasion tactics, language use, as related to source).
To evaluate in this tier, readers use practices such as *sourcing* the content, or using the source to better interpret the accuracy of the content.

Tier 1: Content
(Ideas presented through *knowledge claims, evidence, and reasoning*)

What are the ideas, and are they accurate?: Interrogating Claims & Evidence

Evaluating the relevancy and credibility of the **ideas** presented in search engine results and webpages. This includes evaluating:
- **argumentation** (i.e., author's knowledge claims, evidence, and reasoning),
- **knowledge fit** (i.e., extent to which the claims match with reader's knowledge), and,
- **rhetorical techniques** (e.g., persuasion tactics, language use, as related to content).
To evaluate in this tier, readers use practices such as *critical reasoning* to interrogate argumentation and *corroboration* (with prior knowledge and with other resources within the inquiry task).

Forzani, E., Corrigan, J., & Kiili, C. (2022). What does more and less effective internet evaluation entail?: Investigating readers' credibility judgments across content, source, and context. *Computers in Human Behavior, 135,* 107359. https://doi.org/10.1016/j.chb.2022.107359

Forzani et al. (2019, 2022) organized the many elements that could be used to evaluate resources into three hierarchical levels, including *context* (currency, endorsements and other elements pertaining to document features); *source* (expertise and point of view of the author, for example); and *content* (what the author's claims are, and whether there is evidence). Readers substantiate a resource's credibility of content by exploring multiple resources (texts) across the three tiers, using source and context to evaluate the content (Forzani, 2019; Forzani et al., 2022). Sinatra and Lombardi (2020) suggested readers look at a wide range of evidence (many resources) on a topic, and Forzani et al. (2022) suggested this triangulation be across all tiers of the CORE Framework. The context tier (tier 3) is the least complicated to dissect and can often be easily gauged by glancing at a resource's date of publication, the presentation, and other plainly visible factors. Within this tier, readers are situating the resource and measuring its trustworthiness (Forzani et al., 2022), but using this tier alone is inadequate for measuring critical evaluation. This is followed by the source tier (tier 2), which can include looking at a resource's URL or author expertise and is generally a straight-forward process to check trustworthiness of the writer of a resource (Forzani et al., 2022). Evaluating content (tier 1), however, is complex, as it requires the ability to read, understand, compare, and question information. It is the most difficult tier to learn and teach because it deals with reasoning, claims, and measuring arguments (Bromme, Thomm, & Wolf, 2013; Forzani, 2019; Forzani et al., 2022). Furthermore, because people are typically not subject matter experts in that which they are evaluating, it is necessary to use source and context (tiers 2 and 3) as proxies for content (tier 1). In the most recent Framework (Forzani et al., 2022), argumentation practices and habits of mind have been included as they guide the process of evaluation by the audience and allow them to look critically at the content of a resource and use "flexible skepticism" (Forzani et al., 2022).

Principle of Least Effort

The tendency to rely on elements of the context or source tiers to evaluate a resource could further be explained by the Principle of Least Effort (PLE) put forth by George Zipf (Leeder & Shah, 2016). The PLE can be applied to a wide range of fields and states that people will chose the fastest, easiest way to accomplish something (Zhu et al., 2018). Often applied to library and information science, it maintains that "efficiency and ease of finding results" (Leeder & Shah, 2016, p. 460) are the driving force in how many select resources from a search engine results page (SERP). Purcell et al. (2012) further corroborate this Principle in that they noted how the definition of "research" has changed from a once somewhat complicated task to nowadays a quick Google search. As well, students endeavor to obtain "just enough information to complete an assignment" (Purcell et al., 2012) and often place trust in Google's SERPs as being credible because they were "the first thing that came up" (Hargittai et al., 2010).

In conclusion, this chapter revealed there is little information existing on CORE teaching in Quebec high schools. There exist a few studies on the Quebec university teacher training programs, and these are useful in that they can indirectly inform on the training and preparedness of pre-service teachers. Since it was difficult to find information about this topic, the unfortunate assumption is that it is under-researched. Literature on intervention studies demonstrate the usefulness of CORE in the classroom, however since researchers were often the ones running the interventions, not a lot of information about what teachers do in their classroom was garnered from these studies. Finally, the conceptual CORE Framework and the Principle of Least Effort were described, and their place in this study was explained.

Chapter 3: Method

This chapter describes the overall research design, data collection, and data analysis procedures used during the study. Data collection and analysis of Strands 1 (environmental scan) and 2 (semi-structured interviews) are then outlined, and the participants are described for Strand 2. Finally, ethical considerations, researcher bias, and validity of the research are addressed.

Research Questions

CORE is an essential competency, yet the problem exists that the Quebec curriculum does not address which teachers should instruct these skills (i.e., in what subject or grade level), nor the methods they should be using to do so in terms of curriculum and other resources. To explore the problem, this study asks the following research questions:

(1)   How are Quebec secondary teachers currently supported–in terms of curricular programs, policies, and resources in general–in their teaching of CORE?

(2)   How do Quebec secondary teachers approach teaching CORE?

(3)   How do curricular programs, policies, and resources interact as either strengths, weaknesses, opportunities, or threats (SWOT) in terms of Quebec secondary teachers delivering instruction to students about CORE?

Design and Procedure Overview

Johnson and Christensen define case study as "research that provides a detailed account and analysis of the characteristics and dynamics present in one or more cases" (2019, p. 253). This simple definition allowed me to look globally at my research problem. To further define the outline of my study, I looked to Yin's definition: "an empirical method" that "investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident" (2018, p.

15). Yin completes his definition by adding there may be "many more variables of interest than data points," and that overall the study "relies on multiple sources of evidence, with data needing to converge in a triangulating fashion" (2018, p. 15) Given the descriptive nature of my research questions, and the fact that I would have widely varying cases, I based myself around these two definitions when contemplating the confines of my multiple-case study.

A descriptive case study approach was logical, as my main goal was to understand the problem in detail as it exists in high schools currently. "Detailed preliminary research" on the emerging topic of CORE in the secondary classroom is minimal, even more so in the Quebec context (Mills et al., 2010, p. 2), and basic information about how teachers instruct CORE is virtually unknown. A multiple-case approach was selected because it allowed the exploration of similarities across all cases, as well as a more nuanced look at case-by-case situations (Baxter & Jack, 2008; Yin, 2018). This allowed the embracing of the holistic features inherent in each case ("analyzing "how" and "why""), as well as appreciating them as a unit (Yin, 2018), "serv[ing] to better illuminate the case[s]" (Baxter & Jack, 2008, p. 550).

Defining the problem required open-ended questions, careful and flexible analysis, and open coding of interviews with teachers to obtain themes (Merriam & Grenier, 2019). There was little control over the contemporary events I studied, and the types of questions asked suited a case study approach (Yin, 2018). The boundaries were clarified early in the study to ensure all cases stayed within reasonable limits and did not become too broad (Baxter & Jack, 2008). The boundaries of this multiple-case study were participating secondary school teacher participants in Quebec who taught any of the classes where CORE instruction could be a beneficial addition (ELA, ESL, Ethics and Religious Culture, Contemporary World, Resource Teacher). Table 2 presents the research design and procedure overview of the study. Strand 1 covers data gathering and the environmental scan, and Strand 2 covers the semi-structured interviews.

Table 2

Research Design and Procedure Overview

Research Question(s)	Method and Data	Analysis
(1) How are Quebec secondary teachers currently supported–in terms of curricular programs, policies, and resources in general–in their teaching of CORE?	**Strand 1: Environmental scan** a) Secondary data, document analysis[1]: • Quebec Government curriculum documents (i.e., *Quebec Education Program*) and policies • Websites of English Quebec public school boards • Websites of select French and English Quebec universities • Select major repositories of pedagogical materials provided to Quebec teachers, including LEARN Quebec and RÉCIT • Complementary Internet resources, such as CTRL-F	Systematic review of every school board website in the province of Quebec, plus pedagogical repositories Qualitative content analysis using a descriptive, comparative approach (looking at what is similar and different between documents) using Microsoft Excel
(2) How do Quebec secondary teachers approach teaching CORE?	b) Subject Matter Experts (SMEs) • Email transcripts **Strand 2: Semi-structured interviews** c) Teacher interview transcripts: in-depth, semi-structured ($n = 11$) of approximately 1 hour each d) Analysis of teacher materials (if provided) e) Mentions of elements of CORE Framework from the interviews	Qualitative thematic analysis using Dedoose Within- and cross-case analysis using thematic coding Interpret data using the CORE Framework to produce bar charts
(3) How do curricular programs, policies, and resources interact as either strengths, weaknesses, opportunities, or threats (SWOT) in terms of Quebec secondary teachers delivering instruction to students about CORE?	a) Integration of data from **Strands 1 and 2**	Strengths, weaknesses, opportunities, or threats (SWOT) analysis

[1] Secondary data sources and documents must match the inclusion criteria outlined in the Analysis of Data section.

Strand 1: Environmental scan

Collection of Data

An environmental scan is a way to gather information to look at the current practices, trends, and resources of a given issue ("Conducting an Environmental Scan," n.d.). It gives a broad view of the surrounding context behind a topic (Hatch & Pearson, 1998) in "real-time" (Fajardo et al., 2019, p. 1403). The present environmental scan which surveyed the Quebec landscape regarding CORE materials available to teachers was one of the few, if not only, ways to obtain current, up-to-date information of resources and complemented the teacher interviews. This type of interpretation of documents is a standard practice and was advantageous because it was inobtrusive (Hatch & Pearson, 1998).

In this explorative strand of the study, the environmental scan consisted of using (almost exclusively) secondary data sources and document analysis. These were obtained by doing a comprehensive, systematic Google search from September 2020 to December 2020 of the resources available to Quebec secondary teachers. My searches were updated in March 2023, however resources remained somewhat difficult to find. Nonetheless, I was free to do as many inconspicuous, broad searches using customized key words as I needed, which were a definite strength of the environmental scan (Yin, 2018). As well, three subject matter experts (two university professors, one also a journalist, and a university librarian) assisted by email with suggestions of documentation to examine regarding CORE.

Resources included the *QEP* and other government documents, as well as some known repositories of resources such as LEARN Quebec and MediaSmarts. There were also many lesser-known, harder to find resources. I performed the searches across the span of three months and looked for documents using search terms both in French and in English, given the Quebec context.

First, the Quebec Ministère de l'Éducation and the Ministère de l'Enseignement supérieur website was consulted for all government issued documents, programs, and resources available to teachers. Secondly, all English school board websites were searched for documents and resources pertaining to CORE. Then, broad Internet-based searches were made to find any other readily available resources. Keyword and common term searches were the main techniques using Google Chrome as the web browser on a desktop computer running MAC OS 10.15 (Catalina). Search keywords and expressions included but were not limited to: online resource evaluation; finding credible information; teaching critical thinking; pensée critique; Quebec context in high schools; teaching resource evaluation; utilisation des technologies de l'information et de la communication pour l'enseignement (TICE); reliable sources; and more. Scholarly, peer-reviewed publications were also sought out using similar keywords. The searches for these publications were either performed on Google Scholar or the university library website. I also searched news sources such as *The Montreal Gazette,* CBC News, Global News, CJAD Talk Radio, and *Le Journal de Montréal*, among others. Finally, where possible, I downloaded pdf files, links to other resources, and opened several school/teacher accounts to be able to access additional materials, such as with CTRL-F's website about its program to help students learn CORE. CTRL-F will be described in detail in Chapter 4.

Analysis of Data

I built the environmental scan using Microsoft Excel, starting with a basic batch of criteria. Knowing the government resources were the seminal documents for curriculum in Quebec, I used these to begin the analysis. As per research question #1, I categorized government documents (curricular programs, and policies) separately from other resources.

Pertaining to my Google searches for other resources, the SERPs were scanned for appropriate results, a sort of "triage" as referred to by Yin (2018, p. 117). I reviewed the pages until the results no longer seemed to match the keyword or common terms searches at my discretion (usually around the fourth page). Then each result was checked for eligibility. Once deemed eligible through the inclusion criteria, it was included as a resource in the environmental scan. To be included, the resource had to adhere to all the inclusion criteria. Resources came from a variety of formats, such as websites, stand-alone documents, online programs, classroom activities, and videos among others. The criteria for including or excluding resources is outlined in Table 3.

Table 3

Criteria for Resource Inclusion or Exclusion

Included	Excluded
(i) Any Quebec Government document, curriculum program or policy (ii) Any Quebec-based resource or program in English or French (iii) Any Canadian-based resource or program that is bilingual in English and French (iv) Addressing some element of CORE (v) Existing in an online format (vi) Freely available to all	(i) Older than 10 years (ii) Existed only in English for those materials that are Canada-based (iii) Did not address some element of CORE (iv) Did not exist in an online format (v) Were not freely available to all (vi) Restricted by paywall

In this manner, search results were tracked and interpreted (number of materials identified, number of materials included in the study, number/percentage of materials included in the study that are researched-based, and so on). This triage was necessary to maintain focus in resource selection, as well as making sure non-relevant resources were not counted (Yin, 2018). The resources were examined for the inclusion criteria, categorized, evaluated (research-based or

not?) and compiled into a comprehensive spreadsheet and report using Microsoft Word and

Excel. Table 4 shows the questions addressed for each resource retained.

Table 4

Questions to Assess Resources for Inclusion or Exclusion

Questions to Assess Resources	
• What is the name of the resource? • What language is it in? • Are there hyperlinks for each language? • What type of resource is it ((lesson plan, video, textbook, audio file, worksheet, reproducible, tip sheet, guide, game, tutorial, workshop)? • What is the publishing year of the resource? • Who is the author or sponsor of the resource (provincial, federal, schools, companies)? • What is the purpose of the resource? • Who are the target users (If students, grade level)?	• What is the main content of the resource? • Is the content pedagogical? • What type of instruction is there? • Are activities included? If so, what type? • What is the school subject (if any)? • Does the resource align with the *QEP* competencies (C1, C2, C3)? • Is the resource based on evidence and research? How do we know? • How is the resource accessed? • How are the materials distributed? • Is the resource affiliated with the Quebec Government? • What territory does the resource cover?

Since there were varying levels of reliability amongst the resources found, it was important

to adhere to the inclusion/exclusion guidelines consistently. For example, a Google search of the

key words "critical online resource evaluation" resulted in "about 24,700,000 results" (March 8,

2023), thus demonstrating the magnitude of range for each search. Figure 3 gives a general idea[2]

how many resources we identified overall, and how many were included as resources in the

study.

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[2] Design for Figure 3 Initial Document Search Results adapted from Fajardo et al. (2019).

Figure 3

Initial Document Search Results
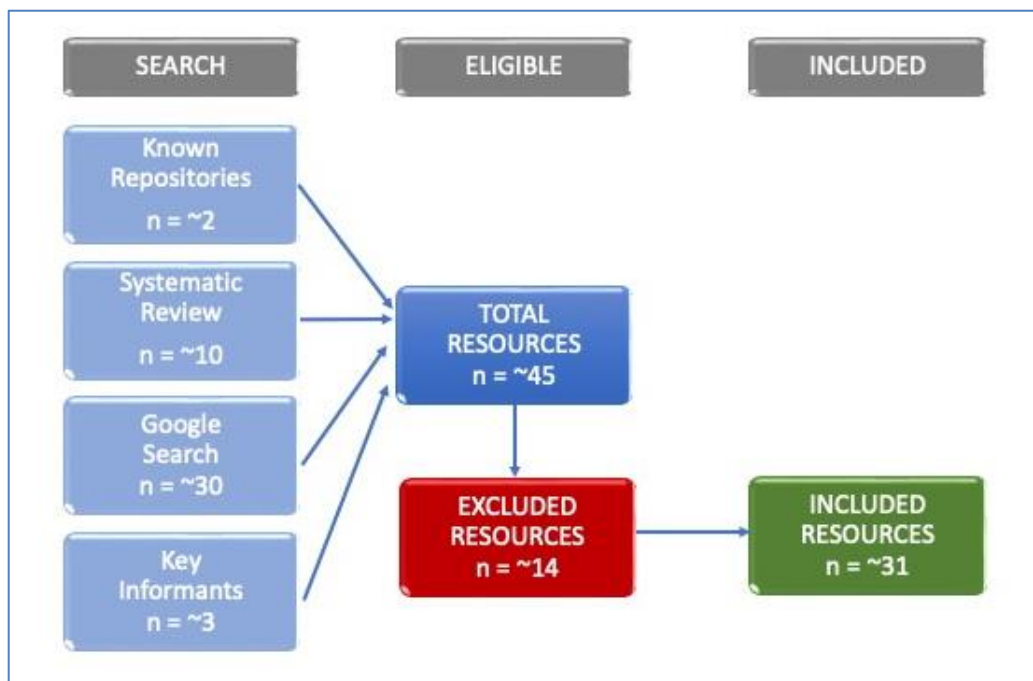
Known repositories denote websites with a variety of resources on them, including but not exclusively those about CORE. Systematic review resources are peer-reviewed articles where some level of information was able to be extracted for the purposes of finding resources for CORE. The Google search covers all resources that were found searching for CORE using key words. Finally, key informants are the SMEs I communicated with by email. This is an approximate number of resources included. For example, schools from a certain school board each had websites, but not all had resources, therefore I counted all school board websites as one resource for simplicity.

Strand 2: Semi-Structured Interviews

Participants

The participants were recruited using a letter to their principals. As per the recruitment letter (See Appendix A - Research Participant Recruitment Letter - Teachers), the target group was initially Secondary IV (Grade 10) teachers. However due to the difficulty in recruiting teachers due to COVID-19 global pandemic[3] and given the likelihood that many teachers would have instructed across several different grades, more flexibility was afforded in terms of grade level. The participants were eleven university-educated secondary school teachers (nine females, two males) in Quebec comprised of eight teachers from the English Montreal School Board (EMSB) and three teachers from a private French school. The schools served mainly working class-neighbourhoods. The participants taught in a variety of school subjects including, but not limited to: English, English as a Second Language, Contemporary World, History, and Ethics and Religious Culture. These subjects were sought out because they afforded the opportunity to do in-class Internet research.

Participants were mostly selected using non-random convenience sampling based on teacher response to the recruitment letter. This type of volunteer selection made the recruitment process easier but is also referred to as a biased sample (Johnson & Christensen, 2019). Since COVID-19 made teacher recruitment difficult, I made some choices in accepting or rejecting certain interested participants based on criteria using purposive sampling (Guest et al., 2006; Vasileiou et al., 2018) and snowball sampling was also used for similar reasons (Johnson & Christensen, 2019). Participants were vetted by me and the head researcher of the parent study

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[3] The COVID-19 global pandemic has delayed programs and has led to many other issues like teacher leave and difficulties in hiring new teachers (Spector, 2020).

depending on their overall appropriateness of fit for the study (Johnson & Christensen, 2019) which was based on:

- Their interest in the study

- The school subjects they taught (primary aim was English Language Arts, but I also accepted: ESL, Contemporary World, Ethics and Religious Culture, and Resource Teacher)

- The grade level they taught (primary aim was Grade 10, but all high school grades 7-11 were accepted)

Adhering to these selection criteria allowed me to choose participants who would have a good chance of using CORE in their classrooms. The cohort of teachers I interviewed was broad and varied and "provide[d] richly textured information" pertaining to the topic of the study (Vasileiou et al., 2018, p. 2).

The goal sample size of 10-12 teachers was based on work operationalizing data saturation by Guest et al. (2006). They suggested saturation may occur around the twelfth interview, especially if the participants are part of a homogenous group (Guest et al., 2006). The overall aim was to interview participants until saturation was achieved, within pragmatic limitations such as time and budget (Vasileiou et al., 2018). Eleven teachers were recruited and interviewed. As the interview process was on-going, I input teacher answers as I got them onto an Excel spreadsheet, and I started seeing some repetitions amongst them early on. By the time I got to around the sixth or seventh interview, answers were beginning to repeat frequently, and I knew I was getting closer to saturation. Finally, saturation had been achieved around the tenth or eleventh interview, as I saw I was learning less new information about the participants and their practices with CORE. Teachers were paid for participating in the interviews.

Collection of Data

The next element used in data collection was the teacher interviews. Qualitative data was gathered through in-depth, semi-structured interviews on Zoom of approximately one hour each (see Appendix C for Teacher Interview Protocol). Yin (2018) wrote that interviews happen holistically, thus creating a fluid, natural conversation that can also be insightful, therefore they were an appropriate choice. Interviews were instrumental in addressing the practices of the participants and allowed for many clarifications of information to occur in real-time (Yin, 2018). These semi-structured interviews were practical because follow up questions were required in certain cases (Adams, 2015). All interviews were held during the day when the participants had breaks at their respective schools, or they were at home. Figure 4 shows the breakdown of The Teacher Interview Protocol (Appendix C). Questions 1-6 pertain to participant background; questions 7-10 are about classwork; questions 11-16 are CORE-specific; and questions 17 to 22 are about supports and barriers for participants.

Figure 4

Breakdown of the Teacher Interview Protocol (Appendix C- continues next page)

Teacher Interview Protocol

Date: _____ Name of Teacher: _____ School: _____

1. What is your name? (to have it on record for analysis/transcription)

   PARTICIPANT BACKGROUND

2. Tell us about your school… size, demographics.

3. What grades and subjects do you currently teach?

4. What is the language proficiency of your students? In other words, at which grade level would you say that your secondary 4 / Grade 10 students read? (ESL: What's their approximate CEFR level? A1, A2, B1, B2, C1, C2)

5. How long have you been teaching?

6. What does your schedule look like for teaching secondary 4 / Grade 10 English / ESL? For how many hours a week do you teach those students? How long is each class in minutes?

7. What kind of writing assignments do you typically assign in Secondary 4 / Grade 10 ESL / English? E.g., book reports, narratives, research essay, literary essay, newspaper article

   QUESTIONS ABOUT CLASSWORK

   a. Do you require your students to use information from sources (non-fiction) in their writing?
   b. If so, do your students use online sources? What types of online sources?

8. How often do your students use the internet in your class? In a typical week, say?

9. How do students access the internet during class? Do they have their own devices or does the school provide them? Are the devices often available? What type of devices are they (e.g., tablet vs. laptop)?

10. What learning management system (e.g., Google Classrooms, Moodle, Brightspace) do your students use, if any?

11. What does online evaluation mean to you? Or, in other words, what does it mean to evaluate information found on the in

    QUESTIONS ABOUT CORE

12. Consider the following questions:

QUESTIONS ABOUT CORE

    a. What role does online evaluation play in your classroom/ in any of the assignments / evaluations you

    b. When you ask students to write using sources, do you evaluate how well they use source information? E.g., select important information, paraphrase the information, synthesize information from multiple sources.

13. What online evaluation knowledge and practices are important in the subjects that you teach? In other words, is there any particular knowledge and practices associated with online evaluation in the subject of _____ ?

14. Do you assign your students online research as a part of your class? If so, please describe the context around this.

15. How often do your students do online research in your class? In a typical week, say?

16. Do you specifically teach the skill of online evaluation in your class? If so, how does it get taught in your classroom? In the school more generally?

17. What supports do you receive, if any, to help you with teaching students to evaluate online information? Examples of su **SUPPORTS/BARRIERS** education, training, and/or resources

18. Are there any barriers to accessing these supports (e.g., time, money, technology access)?

19. What other barriers do you face when teaching students to evaluate online information?

20. Would you be interested in collaborating on our research project? Let me tell you a little bit more about our project…
    • Ensure that we discuss that all of our modules will align with the *QEP*.

21. Previous intervention studies in this area have required between 5 – 15 lessons for the intervention to improve students' online evaluation practices. Would such a time commitment seem reasonable to you?

22. Topics?

Finally, participants were asked to provide samples, wherever possible, of what they used to teach CORE in class. Unfortunately, no samples were received. Upon terminating the interviews, participants were asked whether they would like to contribute further to the parent study and were informed of their remuneration as appreciation for their time.

Analysis of Data

In total, eleven interviews were conducted. The videos and audio files of each interview were collected from the Zoom platform, reviewed, and stored on a safe server. Text files were extracted from the raw data and transcribed verbatim using Otter.ai for input into Dedoose

software for qualitative analysis. Dedoose was instrumental in the handling and organization of the abundance of data (Baxter & Jack, 2008). As I interviewed each participant, I also kept hand-written notes. During the interviews, interim analysis was employed (Johnson & Christensen, 2019). From the first interview, qualitative data were reviewed, and analysis of data began and continued in an iterative manner, thus strengthening the understanding of participant answers as the data collection progressed. In addition, my hand-written notes were based largely on the questions from the Teacher Interview Protocol and the CORE Framework to facilitate matching participant answers with topics. During the first pass, I used open coding and freely identified many codes from the data.

- First, I anticipated interesting codes and noted these down as I listened to and read the interviews the first time.

- Then, I reviewed my research questions and contemplated where I could look for appropriate information to gain answers.

- Codes emerged naturally from the interview data. For example, when asked the question, "What sorts of writing assignments do you typically assign?" the 11 participants individually named several items which, during the first pass of coding, each became a code themselves. These became additional codes that matched my research questions.

- During a second pass of the interview data, the large number of codes that appeared from the first pass were revised and pared down to better groupings and more significant ideas.

- To do this, I reviewed and organized parent (main) and child (secondary) codes by combining codes that were too similar or not significant enough to keep. For

example, I thought the child code "Plays" would come up under the parent code "Read summaries," but it did not appear at all, so I deleted that code.

- If the absence of a particular code was telling for my research questions, I kept it. Therefore, it depended on what part of the research questions were being addressed and whether it mattered that a code count was "0". For example, I found it useful to know that the participants mentioned evaluating source much more (64 times) than they mentioned evaluating content (16 times). Corroboration, an element of content, was not mentioned, but I find this important to know because it will lead me to examine "Why not?"

Codes were developed and revised on an ongoing basis, and in this way, data reduction was achieved ("Within-Case Analysis," 2010). Appendix D shows the initial coding list from Dedoose. Appendix E shows the reduced coding list from Dedoose.

Each interview was coded using thematic analysis and some primary, overarching themes were determined (Guest et al., 2006) during the first coding pass. From this, a list of factors emerged such as teacher motivation, teacher experience and so on. The full list of themes extracted from the interviews is in Chapter 5, Table 10. Data was evaluated in both a within-case (participant in their own classroom) and cross-case (how the participants compare to other participants) format, where it was clearer to see relationships among participants. A narrative-style description from the interviews was the analytical technique best suited for the within-case profiles (Yin, 2018).

Finally, during a third pass of the data, the CORE Framework was the focus, and special attention was paid to codes coinciding with the model. Each of the three tiers became a parent code, and the elements of those tiers became child codes. In some cases, the child codes had additional child codes. Using this form of data analysis, elements of the CORE Framework were

identified. Additionally, a strengths, weaknesses, opportunities, and threats (SWOT) analysis was possible. This section of coding was based on the participants' answers. Each time I judged a participant was alluding to or making specific links to the CORE Framework, it was tallied under the code. This was necessary to see where strengths align with opportunities, and to see what factors were external versus internal ("Conducting an environmental scan," Fordham, n.d.), as future educators and policy makers would find this information very valuable.

Abiding by Concordia's Ethics Summary Protocol Form (SPF), digital data [were] stored in a password protected cloud storage account associated with the PI's research lab. Only members of the research team had access to the hard copy and digital data.

Ethical Considerations

Before any contact was made with the participants, I completed the Tri-Council Policy training modules on Ethical Conduct for Research Involving Humans (TCPS 2). Teachers gave their informed consent before participating in any aspect of the project (See Appendix B – Research Participant Informed Consent Form - Teachers). Though the study was low risk for the participants, I was sensitive to the fact that there might be some discomfort when speaking about their current practices, as they could feel judged. Since I did not previously know any of the participants, I combatted this with a professional yet friendly interview manner (Yin, 2018). No ethical dilemmas were encountered during my study. Privacy was of utmost importance, in terms of protecting both the data and the anonymity of the participating teachers (Yin, 2018). Pseudonyms were used when reporting on data, which was kept in a password-protected space. The data being kept from this study includes filmed teacher interviews and transcripts. Finally, I took care when working with the data to attend to the 11 cases with equal attention (Yin, 2018).

Exploring Researcher Bias

Being a teacher in secondary school in Quebec, I found it necessary to explore my own biases in relation to my topic as a researcher and my interpretations of the data. As I started this project, I reflected on my own answers to the Interview Protocol (see Appendix C) and practices in the classroom (Baxter & Jack, 2008; Merriam & Grenier, 2019). I generally work in French secondary schools instructing students in ESL. I have had advanced classes where teaching CORE happens somewhat easily, and other classes where it is less possible, given the language level of the students and their needs. Therefore, I have some knowledge of classroom processes used by the participants, particularly those also teaching ESL. However, I endeavoured not to engage in too much "story sharing," thus letting the participants have the focus of all interviews. Nonetheless, I feel that my placement as a fellow teacher helped my interpretation of the participants' answers by giving me an insider perspective and assisted in my empathy towards their cases.

Validity

I used several methods to ensure the credibility of this study. The process of triangulation or using multiple sources of data such as the environmental scan alongside the multiple interviews, assists in the construct validity (Baxter & Jack, 2008; Yin, 2018) and highlights credibility (Yin, 2018). The environmental scan gathered findings on teacher resources and pulled from government, academic, and third-party sources. This allowed me to look at the data collected more in-depth, plus I had different versions of CORE representations, so I could compare them.

Next, having interviewed 11 participants teaching different subjects and at different grade levels, I was able to cross-reference these and look for corroboration, similarities, and

differences. In an added context, the interviews spanned from pre- to post-COVID-19, and a couple of the interviews almost gave the feeling of interviewing participants at two different times, as they would tell me what they were doing "now," (during COVID-19) but in some cases what they might have done "then" (before COVID-19). These 11 interviews were instrumental in understanding multiple points of view. Baxter and Jack (2008) give an interesting analogy and liken each data source to being "strands" that are "braided together to promote a better understanding of the case." Through the interviews, I could begin to see clear patterns in resources the participants talked about, or in the techniques they used in their classes.

I attempted to obtain teacher materials, but unfortunately, I did not receive any. I also did not pursue the participants further, because a good deal of time had passed between my request and paired with COVID-19 still being very present, I didn't feel it was necessary to ask further from the participants.

With the abundance of data I collected, I was able to write my case profiles using "rich, thick descriptions" (Merriam & Grenier, 2019, p. 31). Making efforts to include descriptive explanations of each case allows my readers to cntextualize the study and perhaps find some common ground with the participants (Merriam & Grenier, 2019).

According to Merriam and Grenier (2019), another strategy I used to add to the trustworthiness and reliability of this study was keeping an audit trail. In being transparent with the unfolding of this study, I strove to create a clear picture for the reader of how I applied the principles of case study research (Merriam & Grenier, 2019). In the present study, I include ample, synthesized documentation on my findings, with references for the extended data. Part of keeping an audit trail was regularly assessing the quality of my qualitative research by applying an open-ended checklist of characteristics periodically (Merriam & Grenier, 2019). One such checklist is from Yin (2018), "Outline for a Methodology Section in a Case Study Report"

(Figure 5). In regularly looking over this type of checklist pertaining to each of the important sections, I could ensure I was taking all important elements of the study into consideration.

Figure 5

Outline for a Methodology Section in a Case Study Report

Methodological Topic	Illustrative Content
OVERALL TONE	• A thoughtful, balanced, and transparent tone; methodic but also attractively written
RESEARCH QUESTIONS	• Should suit case study research: e.g., dominated by "how" and "why" questions
DESIGN	• Definition of the case(s) and how selected • The (logical) connection between the research question(s) and the data to be collected • Rivals that were considered
OVERVIEW OF REST OF METHODOLOGY SECTION	• A brief summary of the data collection and analysis methods (enables reader to avoid reading the rest of methodology section, if the reader so desires)
DATA COLLECTED	• Emphasis on how the data provided an "up-close" and "in-depth" coverage of the case(s) • Presentation of the case study protocol and how it was used • List of sources in order of importance; further detail about specific items within each source (e.g., numeric profile of interviewees in tabular form or an appended list of documents reviewed • How the data were verified (e.g., triangulation methods) • Unexpected difficulties that were encountered and how they might have affected the data collection
ANALYSIS METHODS	• Description of the analytic approach (e.g., pattern matching, explanation building) • Identification of any CAQDAS software and how used
CAVEATS ABOUT STUDY	• Inherent shortcomings in the design and analysis and how the shortcomings might have influenced the findings

Yin, R. K. (2018). *Case study research and applications: Design and methods (6th ed.).* SAGE Publications, Inc. 234.

Chapter 4: Findings - The Environmental Scan

This study was completed in two strands. This chapter reveals the results of the

environmental scan (Strand 1, completed in December 2020, updated in February 2023).

Strand 1: Environmental scan

The data was sorted into three major categories: 1) Government curricular programs and

policies, including The *QEP* and the *Digital Action Plan (DAP)* for Education and Higher

Education; 2) Resources from schools and school boards; and 3) Other independent or

collaborative resources freely available online. "Resources" refer to all documents that either

assist in teacher training and information, pertain to curriculum, or are freely accessible sources

on the Internet written by organizations or individuals other than the government. Each category

will be outlined in the coming sections. The environmental scan addressed research question #1

and research question #2. An overview of the government curricular programs and policies can

be seen in Figure 6.

Government Curricular Programs and Policies

Figure 6

Overview of Government Curricular Programs and Policies Pertaining to CORE
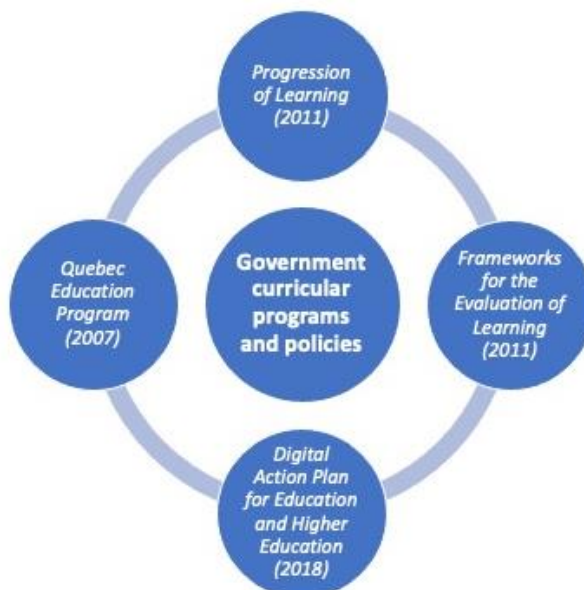
The Quebec Education Program.

The Ministry of Education and Higher Education of Quebec (in French: Ministère de l'Éducation et de l'Enseignement supérieur, abbreviated as MEES) produced the current education program in 2007. The *QEP* encompasses the full curricular program for preschool, primary and secondary students, including (secondary only) a *Work-Oriented Training Path* (with two options, *Prework Training* and *Training for a Semiskilled Trade*) and a *General Education Path*. These constitute the primary documents followed by all educational institutions and are important tools for "(…) all stakeholders in the school system and in society as a whole." (MELS, 2007) The progress of each academic subject is further outlined in the *Progression of Learning* which is a teacher-oriented tool stating the knowledge to be acquired by the students (MELS, 2007) at the end of their high school careers. Finally, the document *Frameworks for the Evaluation of Learning* exists to assist teachers with students in the *Work-Oriented Training Path*. All data collected for this research was from teachers based in the *General Education Path,* therefore this will be the focus for reporting of the data.

The *QEP* is a broad and complex series of documents that are essentially blueprints for teachers to follow during the school year. Though it does not offer materials and lesson plans related to CORE, it does offer several ways to apply general program objectives and skill teaching to students with the possibility of keeping CORE in mind. Teachers must consult it on a regular basis to ensure the materials they are teaching align. This becomes important when teachers are self-creating materials.

The *QEP* incorporates five broad areas of learning, which are issues of importance to society, including Health and Well-Being, Personal and Career Planning, Environmental Awareness and Consumer Rights and Responsibilities, Media Literacy, and Citizenship and Community Life (MELS, 2007). CORE can fit into the Media Literacy section in that students

are invited to use critical judgement (MELS, 2007), the closest element related to CORE. One of the foci of Media Literacy is "Awareness of the place and influence of the different media in his/her daily life and in society" (MELS, 2007). This translates to knowing why media messages are produced (propaganda? Information?) and understanding how these messages can influence the viewers. CORE is important in this respect as being critical about media messages allows the students to gain understanding of how these messages are constructed, but also how to select the credible messages from those that are not. CORE also fits into the Citizenship and Community Life section. This broad area of learning deals with democratic life, being open to others' opinions and beliefs, and learning how their personal perspective can fit in (MELS, 2007). These tenets link back to CORE as students learn how to be critical of messages threatening democracy, such as fake news, and they learn about the dangers of getting lost in filter bubbles and messages buried in bias. An example of this was the 2016 U.S. elections where media messages became contaminated, mostly through unfounded facts and false news stories becoming viral, and this had an important impact on the subsequent presidency (Abrams, 2019). In sum, teachers could apply the broad areas of learning in ways which could help direct their lesson planning and have an impact on the teaching of CORE in the classroom.

The *QEP* also incorporates nine cross-curricular competencies, which, like the broad areas of learning, are not subject-specific. They are uses information; solves problems; exercises critical judgment; uses creativity; adopts effective work methods; uses information and communications technologies; achieves his/her potential; cooperates with others; and communicates appropriately (MELS, 2007). The teaching of CORE falls in line with some of these competencies. For example, "uses information" refers to the ability of students to develop their researching capabilities. They may also question the pertinence of a document, and could consult several documents for a given reason, thus improving their synthesizing skills. This is

key when teachers are looking for ways to validate the inclusion of CORE teaching in their classrooms. With this, their ability to analyze critically develops, and their judgement becomes more informed (MELS, 2007) towards their academic endeavours, but also for real-world applications. "Solves problems" sees the students weighing their options, making important choices, and dealing with more ambiguous information. As with CORE, an answer is not always clearly defined, and there are nuances that come to light. In "Exercises critical judgement," students practice being open to viewpoints other than their own, and this is important when developing critical thought. To manage all these elements, students are "using information and communications technologies." To summarize, teachers could rely on the inclusion of cross-curricular competencies to also have an impact on the teaching of CORE in the classroom. The broad areas of learning and the cross-curricular competencies touched upon from the *QEP* are listed in Table 5.

Table 5

Broad areas of learning, cross-curricular competencies, sec. cycle II

Broad areas of learning	**Cross-curricular competencies**
- Health and Well-Being - Personal and Career Planning - Environmental Awareness and Consumer Rights and Responsibilities **Media Literacy** **Citizenship and Community Life**	**uses information** **solves problems** **exercises critical judgment** - uses creativity - adopts effective work methods **uses information and communications technologies** - achieves his/her potential - cooperates with others - communicates appropriately

Ministère de l'Éducation, du Loisir et du Sport (MELS). (2007). *Quebec education program [secondary cylcle 2].* Quebec, QC: *Gouvernement du Québec, Ministère de l'Éducation.* http://www.education.gouv.qc.ca/fileadmin/site_web/documents/education/jeunes/pfeq/PFEQ_presentation-deuxieme-cycle-secondaire_EN.pdf

Finally, the *QEP* covers all the subject-specific areas of curriculum including Languages, Social Sciences, Math, Science and Technology, Arts Education, Personal Development, Career Development, and the Integrative Project. These groupings form the base of the *QEP* and are meant to have continuity among them. As teachers instruct their own subject matter, they can also make connections towards other subjects, this demonstrating to students that a fully integrated learning experience is the goal. CORE can be instructed in virtually any subject matter, though it could perhaps be most easily integrated into Languages (English Language Arts), the Social Sciences (for example the current Ethics and Religious Culture (ERC) program or Contemporary World program) given the freedom these subjects have with the inclusion of personal research projects and other inquiry-based activities.

A note on the ERC program–as of January 2020, ERC has undergone some major changes. It has been renamed Culture and Citizenship in Québec, and though only a draft program has been released to the public, CORE has a place in this new program as well. Notably, of the program's 3 goals, one is Prepare students to exercise citizenship in Québec society (MEES, 2022) which refers to not only to the traditional sense of the word, but also digital citizenship. This, paired with the program's focus on critical thinking and ethics leaves many possibilities for the inclusion of inquiry-based study. For example, students may pursue a question such as whether COVID-19 shutdowns, which touched many areas and industries in Quebec society since March 2020, worked or not. Of the program's 2 competencies, studies a cultural reality and reflects on an ethical question (MEES, 2022), the latter helps students develop a point of view and promotes the examination of other different points of view, including reasoning error (such as false dilemma or slippery slope) and cognitive bias (such as the repetition effect or bias by omission), both important elements of critical thinking. Figure 7 shows an overview of the QEP for Cycle 2.

Figure 7

Quebec Education Program Summary Table, sec. cycle II
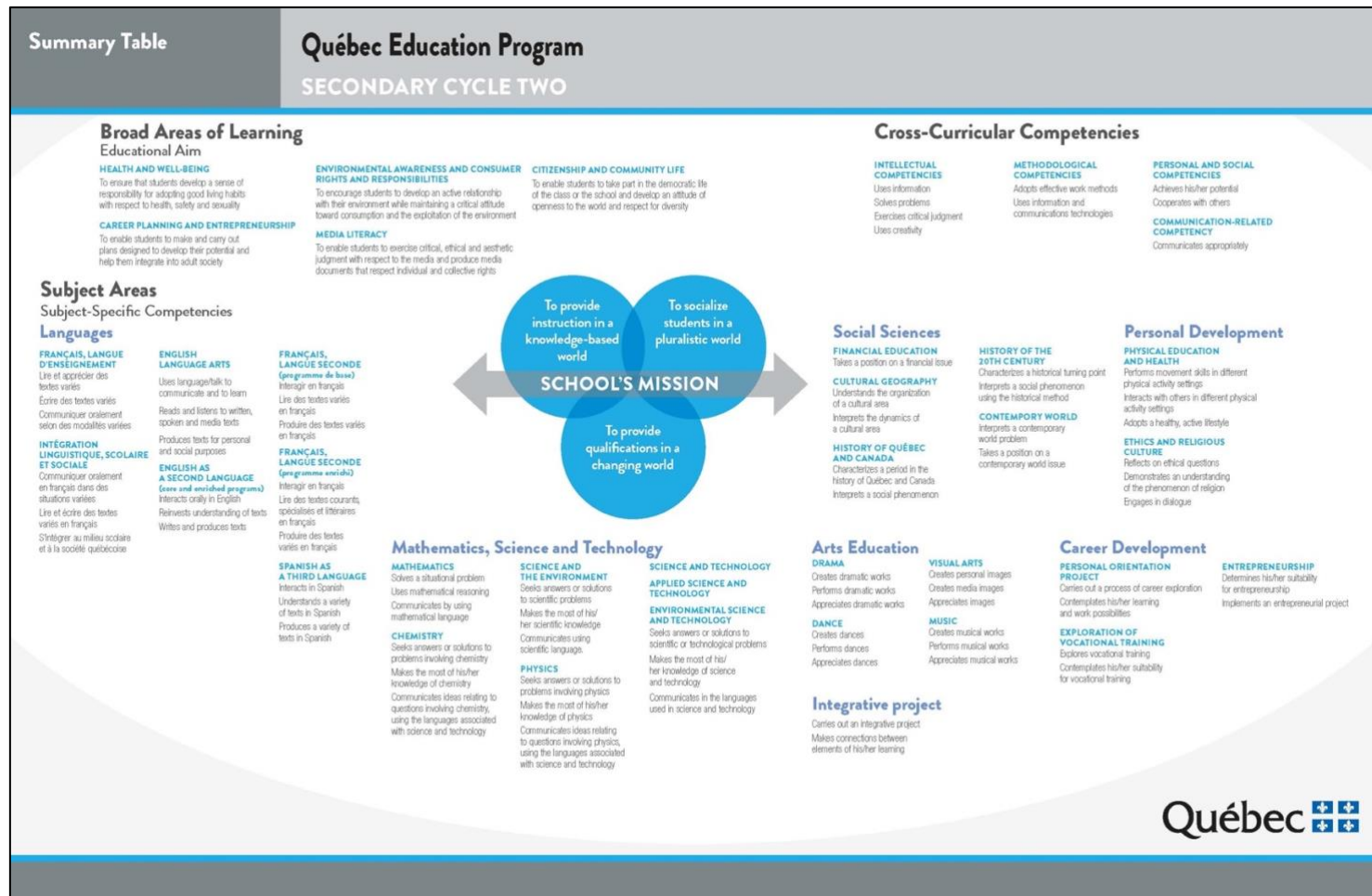
Ministère de l'Éducation, du Loisir et du Sport (MELS). (2007). *Quebec education program [secondary cylcle 2]*. Quebec, QC: *Gouvernement du Québec, Ministère de l'Éducation.* http://www.education.gouv.qc.ca/fileadmin/site_web/documents/education/jeunes/pfeq/PFEQ_presentation-deuxieme-cycle-secondaire_EN.pdf

Digital Action Plan for Education and Higher Education.

With a budget of almost 1.2 billion dollars (MEES, 2018) for the implication of technology in classrooms (primary, secondary, and higher learning), the Quebec government more recently developed the *DAP for Education and Higher Education.* The *DAP* was developed to bring Quebec learners and educators towards innovative and collaborative practices based in the "optimal use of digital technologies" (MEES, 2018), and is complimented by the *Digital Competency Framework* (*DCF*), which defines the key dimensions of the plan (MEES, 2019). According to the *DAP*'s 33 measures, teachers will be trained, and resources will be made available in general to all disciplines, and has a notable CORE element (MEES, 2018). With the emphasis on digital accessibility in education, the significance of the *DAP* in relation to CORE is instrumental. At its launch, Quebec Premier at the time, Philippe Couillard called it, "(…) neither a luxury nor an option; it is an absolute (...)" (MEES, 2018). Table 6 shows the three orientations of the *DAP.* CORE applies to all three Orientations.

Table 6

Quebec's Digital Action Plan – Orientations (MEES, 2018)

Orientation 1	*Support the development of the digital skills of young people and adults*
Orientation 2	*Make use of digital technologies to enhance teaching and learning practices*
Orientation 3	*Create an environment conducive to the development of digital technologies in the education system*

Like the *QEP*, the *DAP* does not offer material or lesson plans. In other words, to date there does not seem to be any development of concrete materials with CORE in mind. However, in coordination with the *DAP,* the implementation of Digital Technology Days across the province began in 2018, offering another resource to teachers. As per the *DAP*: "(…) the

province-wide digital technology days will offer a series of accessible activities and training workshops free of charge for all staff and institutions in both the public and private education sectors" (MEES, 2018).

In sum, the *QEP* and the *DAP* do not produce any curriculum based on CORE for teachers, nor do they make explicit mention of the skill, however their importance as the guiding documents for curriculum in general afford many opportunities to make connections to CORE.

Resources from Schools and School Boards

Quebec's school boards are divided by language. In the public system, there are 64 French-language school service centres and nine English-language school boards, each with websites which provide varying levels of guidance to teachers. Quebec's approximately 140 private high schools are part of the Fédération des établissements d'enseignement privés (FEEP). Typically, private schools follow the *QEP*, but often with some level of enrichment ("About us," n.d.). Due to the time necessary to look at each website in detail, the focus of the environmental scan was English school boards at the high school level. Of the nine English-language school boards, the environmental scan revealed that few had many resources on their websites about digital literacies or more specifically about CORE, and most had very few. In some cases, the resources that exist do not appear to be geared towards a specific audience. Table 7 reviews the presence of resource in relation to CORE.

To give an idea of the levels of resource in relation to digital citizenship / CORE available, "None" represents that no resources, specific or in general, were mentioned on the school board website or on any individual school websites (3 cases). "Low" represents that there may have been a mention of the LEARN website, or a link to Open School's website, but it is not an indication that it happened on every school's website within that board (3 cases). Finally,

"Good" represents that there was a program for digital citizenship or the like in place for students to access (3 cases).

Table 7

English School Boards with Digital Citizenship / CORE Resources on Websites

English School Board (# of high schools in board + # of vocational schools)	Presence of resource in digital citizenship / CORE?*	Program / Resource URL
Central Quebec (10 schools)	None	
Riverside (4 schools)	None	
New Frontier School Board (2 +3 schools)	None	
Eastern Shores (10 schools)	Low	Some school websites link to: LEARN Quebec
Eastern Townships (3 +3 schools)	Low	Some school websites link to: LEARN Quebec
Sir Wilfrid Laurier (10 +5 schools)	Low	Some school websites link to: LEARN Quebec Link to Open School (1 school)
Lester B. Pearson (12 schools)	Good	Digital Citizenship Program (ALL) LBPSB Digital Library
Western Québec (12 +6 schools)	Good	Education Technology
English Montreal (16 schools)	Good	Virtual Library EMSB RÉCIT

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* Based on my own informed judgment

Lester B Pearson School Board.

Lester B Pearson School Board represented the best-equipped site. The different high

schools each have embedded pages within the school board's main site. Figure 8 shows the main

school board site and highlights the program.

Figure 8

Lester B Pearson School Board website – Digital Citizenship Program

Lester B. Pearson School Board (LBPSB) Digital Citizenship Program. (n.d.). LBPSB DCP. Retrieved
March 13, 2023, from https://sites.google.com/lbpearson.ca/lbpsbdcp/home

Upon clicking into the "Digital Citizenship Program," a definition and main menu for the

program are visible. The program centres itself around four sections: Communication,

Awareness, Information Literacy, and Digital Health and Wellness, and appears to be geared at

teachers or parents. Each section is accessible from the drop-down menu under "Curriculum,"

and leads to a table of objectives for Secondary schools, divided by year of schooling. With

reference to CORE, indications can be found under "Information Literacy," as shown in

Figure 9.

Figure 9

LBPSB website – Digital Citizenship Program Curriculum for Secondary Cycles 1, 2

		Secondary Cycle 1	Secondary Cycle 2
Buying & Selling Goods Online		13A. Students understand the pros and cons of buying and selling of online goods.	13A. Students understand how they can buy and sell online goods and services.
		13B. Students know how to be critical consumers (e.g. cost of mobile contracts and internet).	13B. Students are critical of the websites that are available for e-commerce, (e.g. Ebay, Amazon, Craigslist, Facebook Marketplace).
		13C. Students begin to read the terms and conditions associated with websites for buying and selling goods online.	13C. Students read and understand the terms and conditions associated with websites for buying and selling goods online.
		13D. Students know how to stay 'safe' while shopping online (e.g. avoiding scams).	13D. Students can identify and avoid scams online.
Copyright & Downloading		12A. Students are introduced to the issues of copyright.	12A. Students understand how copyright applies in different situations.
		12B. Students regularly use copyright-friendly resources (e.g. creative commons).	12B. Students understand and are able to apply copyright-friendly licensing standards (e.g. Creative Commons).
		12C. Students are introduced to standardised referencing formats, (APA, MLA, etc.) and tools that help with referencing.	12C. Students cite their sources using a standardised referencing format (APA, MLA, etc.)
		12D. Students understand ethical and legal implications of stealing intellectual property.	12D. Students understand and avoid the ethical and legal implications of stealing intellectual property.
Evaluating Websites		10A. Students evaluate websites to determine if they are reliable.	10A. Students distinguish whether or not information on various websites is reliable.
		10B. Students can distinguish if the information is accurate/reliable on various websites.	10B. Students identify relevant websites, by looking at the authority, currency, accuracy, scope, purpose, objectivity and intended audience of a site.
		10C. Students use multiple appropriate search engines when researching.	10C. Students select the type of sources that are most appropriate for the topic.
		10D. Students distinguish the difference between domain names.	
Organizing Information		11A. Students continue to explore the use of social bookmarking and online tools for organizing and note taking.	11A. Students keep track of all their online sources.
		11B. Students share their bookmarks using social bookmarking websites.	11B. Students work collaboratively online by sharing resources through social bookmarking.
		11C. Students use the online tools they have explored for note taking and organising information.	11C. Students use online tools for note taking and organising information.
Searching Strategies		9A. Students are introduced to the differences between search engines, directories, and databases.	9A. Students understand the differences between search engines, directories, and databases.
		9B. Students use the advanced search functions in search engines.	9B. Students apply a variety of strategies for locating information using search engines, directory sites and online databases.
		9C. They become familiar with Boolean operators and continue working on identifying good keywords.	9C. Students become familiar with advanced Boolean operators and continue working on identifying good keywords.

Lester B. Pearson School Board (LBPSB) Digital Citizenship Program. (n.d.). LBPSB DCP. Retrieved March 13, 2023, from https://sites.google.com/lbpearson.ca/lbpsbdcp/home

The "LBPSB Digital Citizenship Program" (n.d.) shows the most applicable section for CORE is under Cycle 2 "Evaluating Websites." The objectives (highlighted in blue) are in line with the principles of CORE, notably that students would: "distinguish whether information on various websites is reliable," "identify relevant websites, by looking at the authority, currency, accuracy, scope, purpose, objectivity and intended audience of a site," and finally the selection of appropriate sources. There are also some pertinent points under "Buying and Selling Goods Online," such as: "Students are critical of the websites that are available for e-commerce, (e.g., eBay, Amazon, Craigslist, Facebook Marketplace)," and "Students can identify and avoid scams online." Unfortunately, there is no mention of exercises, tasks, activities, or opportunities for evaluation options. The site also has "Resources for Teachers," with links to repository sites such

as Common Sense Media, Digital Competency in Action, and MediaSmarts. The link to the

LBPSB Digital Library has certain research resources such as eduMedia and other reference

sites, which could be helpful to teachers indirectly, but no easily located resources for CORE

could be found.

Western Québec School Board.

The Western Quebec School Board (WQSB) Education Technology site includes links to

Ethical Citizenship (developed by several teachers and staff in the school board) and select

information from the *DAP* ("WQSB Education Technology," n.d.). Ethical Citizenship is divided

into four sections: Understanding the Issues, Ethical Implication, Behaving Ethically, and

Physical/Psychological Well-Being. "Understanding the Issues" leads to "Information Literacy,"

including a definition and lessons, some of which pertain to CORE. Figure 10 shows some

lessons for high school cycles 1 and 2.

Figure 10

Western Quebec School Board website – Education Technology Understanding the Issues

Western Quebec School Board Education Technology. (n.d.). WQSB EdTech. Retrieved March 13, 2023,
from https://edtech.westernquebec.ca/

Clicking into any of these links typically brings teachers to other external sites, meaning the lessons may not be Quebec-centered or align with the *QEP* competencies. Therefore, there is no indication whether the resources provided have been tried and tested for quality. Teachers are simply free to make the choice to use them or not. Finally, the site does not have grading / assessment information and there are no rubrics. In general, the site provides some direction for Quebec teachers, but there is a way to go before they are comprehensive, complete, easy-to-use resources. Figure 11 shows a portion of the "Additional Resources" from the site.

Figure 11

Western Quebec School Board website – Education Technology Additional Resources

Western Quebec School Board Education Technology. (n.d.). WQSB EdTech. Retrieved March 13, 2023, from https://edtech.westernquebec.ca/

English Montreal School Board.

The English Montreal School Board (EMSB) website has a link to its Virtual Library which leads to many resources for digital citizenship. "Developed by teachers, education consultants, and librarians from the English education community of Quebec, in English and French," ("EMSB Virtual Library," n.d.) the site's access link leads to the "Digital Competency in Action" portion of LEARN Quebec. Figure 12 shows the main page.

Figure 12

EMSB Virtual Library website

English Montreal school board (EMSB) virtual library. (n.d.). Digital citizenship. Retrieved March 14, 2023, from https://virtuallibrary.emsb.qc.ca/virtual-library/articles/digital-citizenship

"Digital Competency in Action" has links to all the pertinent government curriculum documents, and a complete set of resources under "The Inquiry Process." Here, the Inquiry Process Model steps (Plan, Search, Evaluate, and Use, see Figure 13) are explained, including clear connections to the *QEP*, YouTube video support, additional references, and information for

other inquiry process models. Each of the steps has an accompanying video, teacher, and parent

resources, and select lessons for every grade level ("EMSB Virtual Library," n.d.). Mention is

made of CORE in the "Search" step of the model. The main objective of this section is "The

student locates credible, reliable and relevant sources with the help of a librarian or a resource

person, when needed" ("Search – Digital Competency in Action," n.d.). For example, teachers

might direct their students in cycle 2 to a lesson on "Deconstructing Web Pages" hosted by

MediaSmarts, a Canadian website.

Figure 13

The Inquiry Process Model
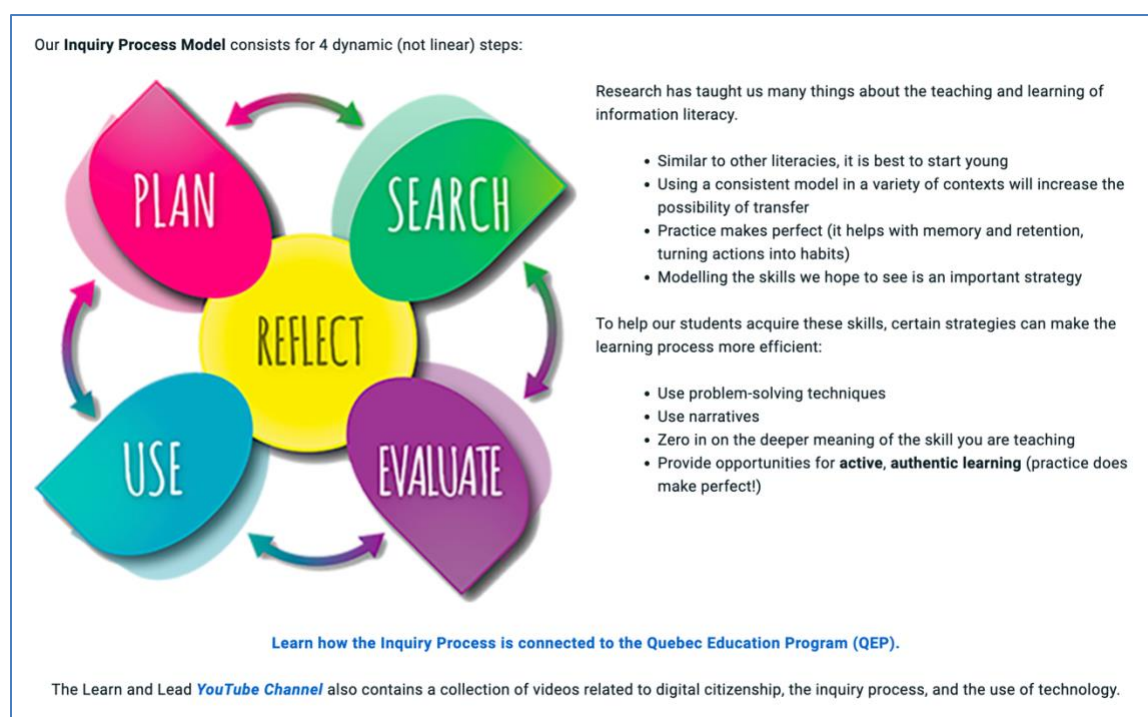
English Montreal school board (EMSB) virtual library. (n.d.). Digital citizenship. Retrieved March 14, 2023, from https://virtuallibrary.emsb.qc.ca/virtual-library/articles/digital-citizenship

Elsewhere on the "Digital Competency in Action" site, teachers can find graphic

organizers for secondary which have been aligned with the *DCF* (MEES, 2019) and the Cross-

Curricular Competencies. The graphic organizers can be selected by competency, such as critical

thinking, information literacy, or problem-solving. In clicking the "Find Additional Resources" tab, teachers can search for topics such as "resource evaluation" and will find results such as "Critical Evaluation of a Website for Secondary" or "I Heard It 'Round the Internet: Sexual Health Education and Authenticating Online Information."

Beyond School Board Resources.

Aside from government documents, curriculum and materials from the school boards, teachers may resort to finding resources on their own. They may consult their own workplaces, ask the librarian, or enlist the help of another teacher. Many teachers referenced their school librarians as the main person for help, training, or workshops for their students with reference to CORE. For example, Lisa said: "(…) we have a fabulous librarian in our system recently got an email from our librarian offering to offer the CIVIX workshops, info literacy workshops in my classes if I wanted to."

Some universities, such as Concordia, have dedicated sections of their websites for criteria to check for when evaluating resources ("Evaluating…," 2022). If the teacher is still a current student, they have even more access to workshops and other library resources (research librarians, databases, articles) to help them. At McGill University, the CRAAP Method (Currency, Relevance, Authority, Accuracy, Purpose) is outlined on the library website (Howard, n.d.) and Université de Québec à Montréal's website offers a full site called Infosphère ("Gagner du temps et réaliser de meilleurs travaux," n.d.) which walks readers through a step-by-step process for a research project and evaluating online resources. Though none of these materials or methods are geared towards secondary students, they can certainly be adapted.

Other Independent or Collaborative Resources Freely Available Online

As of December 2020 (updated in February 2023), the environmental scan showed several resources available to Quebec secondary teachers, including websites, articles, checklists, worksheets, online tutorials, and courses. Few, if any, were standardized with reference to the *QEP* or the *DAP* in terms of rubrics or competencies. Though LEARN and Open School were mentioned on certain school board websites, teachers would typically have to search through these resources on their own, as the mention of CORE was never explicit. In total, approximately 29 resources were found to have met the criteria for inclusion in the environmental scan. In the next part of this chapter, I review some of the most accessible resources and provide a summary of the remainder. Appendix F shows the complete Environmental Scan Summary.

LEARN Quebec and RÉCIT.

In Quebec, there exists networks of services (collaboration, sharing, teaching, training) for the successful integration of technology in schools, as well as the implementation of the *DAP*. Pedagogical consultants from these networks can be contacted to contribute their expertise and support for the sharing and professional development of teachers and other educational professionals. For the English-speaking community, the general focus of the present study, non-profit LEARN is the umbrella website for pedagogical services, resources, and education news ("LEARN," n.d.). For example, teachers can find links to the "Digital Competency in Action" program, discussed previously in the resources from the EMSB website. From the LEARN site, teachers can access links to the RÉCIT network. In Quebec, the Network for the Development of Skills Through the Integration of Technologies, known as RÉCIT (French: Réseau pour le développement des compétences par l'intégration des technologies) serves the provincial community in both French and English, and each school board has dedicated RÉCIT consultants ("RÉCIT," n.d.). LEARN-RÉCIT consultants are specifically for the Anglophone community.

MediaSmarts.

Dubbed "Canada's centre for Digital and Media Literacy," MediaSmarts is a large, free online collection of resources for teachers, where the amount of French and English material available is balanced as well ("MediaSmarts," n.d.). Though not Quebec-based, the bilingual website includes full lesson plans by grade level specific to CORE. Backed by research, the website encompasses various pedagogical materials, including educational games, projects and basic teacher training and information. Some interesting examples are the Break the Fake program, where students are taught how to fact check ("Break the Fake Lesson Plan," 2019), and Authenticating Beyond the Classroom, where students can discuss viral videos and judgment ("Authentication Beyond the Classroom," 2016). For interested teachers, the site provides research into digital literacy topics as well. Under the Teacher Resources tab, teachers can find a "Digital Literacy 101" tutorial, which can help them instruct in authenticating viral videos, for example. They could also search and find lessons such as "Mixed Signals: Verifying Online Information," a complete lesson for Grades 7-9 including a rubric and assessment examples ("Mixed Signals," 2020). There are also guides such as "How to Tell Fact from Fake Online: A Reality Check Guide" and basic videos such as "How Ads Work on Facebook."

CIVIX, CIVIX-Quebec, and CTRL-F.

CIVIX develops programming for classroom use based on democracy and civic education. Some of their material touches on digital media literacy and encompasses various pedagogical aims. Initially starting out as a small team in 2003, encouraging students to vote in a "parallel election program," ("Our Story," n.d.), the organization has grown to include CIVIX-Quebec, put specially in place to help schools in the Quebec context, as well as the CTRL-F *Find the Facts* modules designed to teach students online resource verification skills– exactly what

CORE is about. All information exists in both languages, including the many classroom resources that are available for teachers to use freely ("CTRL-F," n.d.).

CTRL-F has lesson plans, videos, and workshops to help teachers instruct resource evaluation. The full CTRL-F program consists of a pre/post assessment, four complete lessons, 3 extra resource activities, and a culminating activity where teachers can have students make their own Verification Handbook. All material is fully downloadable, and each lesson can be accessed through Google or Microsoft links. Forms are used for student participation, and there are modifications for both blended and remote learning. The program is almost ready to use as is by Quebec teachers, with the one small fact that the evaluation tables are general, and not geared toward the *QEP* or the *DAP*. In short, the CTRL-F program encompasses the essence of CORE instruction, and is an appropriate approach backed by research for secondary students to learn critical evaluation of information they find on the internet.

École branchée.

École branchée, a non-profit digital magazine offers resources for the classroom, links to professional development (CréaCamp), and media education in general ("École branchée," 2023). In their "Les #Édubrèves" feature, teachers can keep up to date with issues related to technology in the classroom. In fact, their spring 2020 edition focussed on "Urgency for Media Education," which included articles on teaching critical thinking and research resources for teachers. Examples of other articles for teachers include "Evaluating the quality of a website can be taught!" written by Phylippe Laurendeau (2022), a techno pedagogue with the magazine. Laurendeau offers criteria to teachers to help students "validate the reliability of their sources when doing research" (Laurendeau, 2022). The criteria come in list format with short explanations. The following is an annotated list from the article:

Distinguish Between Appearance and Content

- Is the site easy to navigate?

- Are there many advertisements or pop-up windows?

- Does the site have any grammatical or syntax errors?

- Do the images serve the purpose?

Discover the Source of the Information

- Is the domain name evocative?

- What is the qualification of the authors?

- Does the site offer links to other reliable sites?

Determine the Intention of the Authors

- Does the site have biases?

- Can we validate certain quotes, images, information?

Other editions of this periodical mention topics like Media Literacy Week, provide links to websites like MediaSmarts, and activities like Digital Citizenship Day. At least one issue was printed with three lessons/activities to educate students on digital media (detecting fake news, and so on) along with tips for teachers. What makes *École branchée* an interesting resource is the availability of several references to CORE through articles or student activities, as well as direct connections to the digital competency from the *DCF* for the pertinent articles article. Teachers can sign up for twice monthly emails to stay abreast of technological developments in education.

Other Notable Resources.

Some resources include gimmicks to make them more memorable. Spotfakenews.ca uses an evidence-based acronym SPOT (Source - Perspective - Other (sources) - Timely) to promote evaluation of resources. Historica Canada's website offers the Critical Digital Literacy Education Guide. *Agence Science Presse* offers resources to help teachers, notably under the section How is

information constructed? Here, teachers can find a series of eight fact sheets for students, as well as infographic-style posters for their classrooms. Apathy is Boring, a Quebec-based site offers a "Media Literacy Toolkit" complete with a short lesson on spotting disinformation in media. Finally, Google for Education also offers an applied digital skills course complete with lessons and teaching resources called Evaluate Credibility of Online Sources, which can be customized and geared towards a specific age. Though criteria were not met for the inclusion of the News Literacy Project which encompasses the Checkology e-learning platform to build literacy skills, it merits a mention, as does the Stanford History Education Group which engages students in historical inquiry and fosters students focus on assessing online resources. TinEye, another Canadian production that helps with image identification and tracking, also deserves to be mentioned (but does not include a French version yet).

Certain other resources could be useful; however, they sometimes only exist in French. Still, if teachers are interested or capable of translating the lessons, they may find some merit in these materials. The evidence-based University of Laval project "Faire une recherche, ça s'apprend," uses a French acronym 3QPOC which stands for "Qui? Quoi? Quand? Pourquoi? Où? Comment?" (Mottet, n.d.) Médias Varia is an example of a resource that is easy to do in one lesson, since it is a simple class activity, but aside from this one lesson, the site would need more development to get teacher traffic and be more useful. Likewise, websites like Allo prof, Carrefour education, La vérif, L'inspecteur viral, Bibliothèque et Archives nationales du Québec (BAnQ), Radio-Canada's Décrypteurs all have viable resources for teaching CORE but exist only in French. Equally, Partick Fleury (Laval School Commission, 2016) wrote a 22-lesson manual in 2016 entitled *Comment montrer aux élèves à faire de bonnes recherches sur le web* or (translated) *How to show students to do good searches on the web*. In this manual for teachers, Fleury (2016) outlines basic elements for teachers to better equip themselves such as using

Google and key words effectively, techniques to help teachers refine their knowledge dissemination, including nuances of searching for information on social media, content aggregators, and using different search engines. However, only three lessons are dedicated to critical thinking.

A print book about searching the Internet can seem counter-intuitive, as some Web links no longer exist, however the manual has an accompanying website with resources to help correct this. Conferences and seminars also exist, such as l'Association Québécoise des Utilisateurs d'Outils technologiques à des fins Pédagogiques et Sociales (AQUOPS). Though not conceptualized for teachers, but rather library staff, L'Association pour la promotion des Services Documentaires Scolaires (l'APSDS) published the "Continuum pour le développement des compétences informationnelles en bibliothèque scolaire" in 2021. It facilitates understanding of the 4 steps of research in a clear and concise manner and is meant to support library technicians and librarians in their assistance to teaching staff (Compétences informationnelles en bibliothèque scolaire, n.d.).

Conclusion

Strand 1, the environmental scan, was successful in showing that several developed resources for teaching CORE exist. Using the results listed in Appendix F Environmental Scan Summary Table, some important themes emerged. Table 8 shows an overview of the themes and sub-themes from Strand 1.

Table 8

Strand 1: Environmental scan – Overview of Themes and Sub-themes

Theme	Sub-theme
Resources Not Lacking	Abundance of resources matching selection criteria
Grades / Subjects	Rarely subject-related or grade-level specific
Flexibility	Used at teacher's discretion
Teacher Motivation is a Must	Customization necessary in most cases
	Time commitment
Dynamic Internet	Links, materials change

The online universe is not lacking in quality resources for teaching CORE. Strand 1 of this study found numerous, helpful documents that adhered to the selection criteria and targeted a Quebec audience and context. They were, in varying degrees, adaptable, flexible, dynamic, and appropriate for teachers and their students. The resources were also too general, not about a specific subject or grade level in some cases, and hard to find, given the dynamic nature of the Internet. Since CORE is regarded as a skill that grows with the development of the students along their academic paths, it is difficult to pin it to a subject or specific grade level. As such, teachers end up with a selection of resources but there is still a lot of work for them in terms of customizing the existing material to their needs. Since using these resources is at the teacher's discretion, it is a fine balance between time spent looking and customizing existing materials versus creating from scratch. Either way, the perception of it being a lot of work for something that is not necessarily evaluated in any high school final exam leaves the weight on teachers' shoulders.

The *QEP* is a flexible document with a wide breadth, however this can come at a cost for those who prefer to have clearer guidelines with reference to teaching CORE. Possibly more helpful would be the *DAP*, as it is geared specifically towards the inclusion of technology in the classroom. The speedbump here is that CORE is a relatively small part of the idea of "technology in the classroom," therefore those elements which apply become hard to seek out for some. In addition, the government-created documents do not have ready-to-use curriculum, but rather sets of guidelines. At the very least, resources like the *DAP*, LEARN and RÉCIT websites and consultants, and publications like *École branchée* are bright lights for teachers. Regardless, teachers will need to be ready to invest time and be motivated to put further work into the available resources, for the most part. The CTRL-F program presents as the most precise and complete resource found thus far, but even here, teachers need to make decisions as to difficulty level and length of time they want to use the documents in the classroom. Finally, most of the resources do not align explicitly with the *QEP*, so evaluation could take extra energy and add to the teachers' workloads.

Chapter 5: Findings – Semi-structured Interviews

While the previous chapter covered Strand 1 of the research project, namely the environmental scan, this chapter reports the results of Strand 2, the semi-structured interviews of participating Quebec teachers. Completed in May 2021, these interviews were analyzed by first exploring key details from each participant's specific profile using a narrative, cased-based approach in a holistic manner (Yin, 2018) with reference to the Teacher Interview Protocol (Appendix C). Combined with the findings of the environmental scan (Chapter 4), these profiles address the research questions of how secondary teachers are currently supported, as well as what instructional approaches are used in their respective classrooms (research question #1, research question #2). These research questions continue to be examined in the thematic analysis following the profiles, with the goal of understanding patterns across all cases of participants (Yin, 2018). These examinations result in a within- and cross-case synthesis, where significant details from different points of articulation reflect in the data (Sullivan et al., 2022).

Strand 2: Semi-structured Teacher Interviews

Interviews (held from November 2020 until May 2021) were semi-structured and used open-ended questions, which allowed for a deeper understanding of the participants' experiences, flexibility for teachers' different situations, as well as the possibility to include follow-up questions (Johnson & Christensen, 2019). The teachers were asked the same basic set of questions, but additional various questions were asked of each participant, based on their answers. These could range from operational questions about their classrooms, to questions about their specific practices in class.

For the purposes of confidentiality, each participant was given a pseudonym, and school names and exact locations are not revealed. All participants worked at secondary schools in the

greater Montreal area. Eight participants (Lisa, Wendy, Karl, Renée, Mara, Ivan, Casey, and Sarah) taught at the same school board (seven different schools), while the 3 remaining participants (Claudia, Helen, and Amanda) all taught at the same French private school. For each participant, I wrote a descriptive text based on their interview. Using within-case analysis allowed each case's interesting points to come to the surface ("Within-Case Analysis," 2010). Table 9 shows an overview of the participants. In this table, the column "Years of experience" has been allocated as follows: Expert (14 or more years of teaching); Intermediate (6-13 years of teaching); and Novice (5 or fewer years of teaching). These categories were strategic based on the overall range of participant experience.

Table 9

Strand 2: Semi-structured Teacher Interviews – Overview of Participants

	Participant (fictitious name)	Years of experience	Teacher Level	Special programs at school / teacher notes	Grade levels	Subjects	Eng / Fr
1	Lisa (F)	19	expert	Alternative high school for students at risk	Grades 10-11 (sec. IV and V)	English Language Arts (ELA), Social sciences	E
2	Wendy (F)	14	expert	Alternative high school for students at risk	Grade 11 (sec. V)	ELA, Visual Arts, Science resource	E
3	Karl (M)	14	expert	Resource Program Regular (CORE) stream NAN school (New Approaches, New Solutions)	Grades 9-10-11 (sec. III, IV and V)	ELA, Drama	E
4	Renée (F)	20	expert	**Special status 420** school = entrance exam	Grades 10-11 (sec. IV and V)	ELA, Financial Education	E
5	Mara (F)	10	Inter	**Special status 420** school = entrance exam + Resource teacher	Grade 7 (sec. I) + resource all grades	ELA (all enriched), Ethics and Religious Culture	E
6	Ivan (M)	1	novice	**Special status 420** school = entrance exam	Grades 7 and 11 (sec. I and V)	Arts, Contemporary World Issues, Entrepreneurship	E
7	Casey (F)	19	expert	IB (International Baccalaureate)	Grade 11 (sec. V)	ELA	E
8	Sarah (F)	3	novice	Resource teacher Regular (CORE) stream	Grades 7-11 (sec. I to V)	History, Contemporary World, Financial Education, Entrepreneurship	E
9	Claudia (F)	5	novice	IB (International Baccalaureate)	Grade 10 (sec. IV)	English as a Second Language (ESL)	F
10	Helen (F)	13	Inter	IB (International Baccalaureate)	Grade 8 (sec. II)	ESL	F
11	Amanda (F)	19	expert	IB (International Baccalaureate)	Grade 11 (sec. V)	ESL	F

The Global and Quebec Context of the Cases

As this study was getting off the ground, everyday life changed globally. On March 11, 2020, the World Health Organization declared the COVID-19 disease had reached pandemic level and was an international health emergency. In the context of this study, all schools came to a grinding halt. The remainder of the school year played out with confused parents, children and teachers sitting in their homes waiting to see what would happen. At some point before the end of the 2019-2020 school year, some, if not all, schools managed to get online, and teachers were mandated to deliver their classes from their homes. In this unprecedented move, the education community saw just how unprepared it was to manage online schooling. Teachers were well-regarded, as they managed their classes, and were expected to teach online, or in the class with a reduced number of students, or both. Some of the teachers I interviewed spoke about "hybrid" classes, meaning they would have several students in the classroom, and several students online at home, with a laptop for them to communicate and share their screen through. To say the classroom was disrupted is a gross understatement. In fact, schools did not fully return to pre-COVID-19 conditions until the 2022-2023 school year, where student bubbles, changing masks multiple times a day, and sanitizing in every class was no longer a requirement. It was through this context that I interviewed the 11 teachers.

I set out hoping to interview Grade 10 teachers of ELA in the public school system, but the pandemic made it necessary to change my candidate pool. Most teachers were in schools serving the EMSB, the largest, English public-school board in Quebec, based in Montreal. Of the public schools, they ranged from having entrance exams, alternative programs for students at risk, or resources programs for students needing extra help. Three of the eleven teachers taught ESL in the International Baccalaureate program in a private French school, not belonging to any board. Based on programs offered at the school, roughly half of the schools served a lower socio-

economic status area. Schools where an entrance exam was necessary or advanced programs were available were typically higher socio-economic status, and the teachers confirmed this. Therefore, it is safe to say the participants came from a wide spectrum of institutions serving a very diverse population.

Quebec is "a distinct, unique French-speaking province" (Bennett, 2017), and as of the 2016 Census report, 48.2% of speakers in the Quebec's largest urban city named French their mother tongue. English is less than half of this number, at 17.4%, and 34.4% of people have other non-official languages as their mother tongue ("Institut de la statistique du Québec," 2022). Quebec's largest urban city had a steadily growing population of over 2 million (2,025,928) in 2021 ("Institut de la statistique du Québec," 2022). Quebec is a province, with immigrants arriving from countries like France, China, or Algeria. ("Institut de la statistique du Québec," 2022). Unfortunately, some laws upholding secularism (Bill 21) and restricting access to English language education (Bill 96) detract from its once diverse reputation (Henriques, 2022). Bill 21 has seen many teachers have to face discrimination, be reassigned, or leave the job, as it does not allow the wearing of religious symbols. As such, the EMSB brought Bill 21 to Quebec's court of appeal (O'Malley, 2022). Currently, Quebec is home to "17 of Canada's 20 least diverse cities" (Henriques, 2022).

Case Descriptions

Case 1: Lisa – CTRL-F and Discussion for Students in Difficulty

Lisa teaches in a school catering to students at risk of not finishing high school for reasons such as insecure living situations and learning difficulties, among others. She has a good bond with her students (grades 10 and 11) and sees them four days out of five during the week. The courses she teaches include English Language Arts (ELA) and the Social Sciences (Quebec

history, Financial education, Contemporary World, Ethics and Religious Culture), and she generally curates a list of websites "for us to work through together as a class" when research is required. She has only approached the topic of CORE with her Grade 11 students, but noted it is not a curricular priority but believes in it as a necessary skill for all her students. Her tools of choice for teaching CORE are twofold–CTRL-F and class discussions. Lisa speaks of the general school culture as one where a small cluster of teachers instruct all the subjects to their students, and the principal is not present in the building. Within the alternative school system, she works with a group of English teachers and a resource person closely to prepare materials, including putting pages concerning media literacy into the school agenda for the students. As such, she has had more freedom with what the students are taught, but at the same time, it can be limiting in terms of other teachers' "literacy facility," and getting administrative support in general.

First, she employs the CTRL-F website materials in her Grade 11 Contemporary World class. As mentioned earlier, CTRL-F is a complete website of custom resources centering around the teaching of "digital media literacy and source evaluation" (CTRL-F, n.d.). This was complicated for her class, as many students had yet to develop "stamina and fluency" in both reading and writing, according to Lisa. However, she feels strongly that students needed to develop these skills. She has no set method for selecting lessons from CTRL-F, nor does she go through all the lessons in order, but rather picks suitable lessons for her students' level and interest. Since the COVID-19 pandemic declared in March 2020, Lisa noticed a shift in the ability for the students to keep their concentration, resulting in less material being delivered to the students at the time of the interview. For the most part, Lisa saw her students face-to-face, even throughout the pandemic. While the Quebec Government mandated virtual classes for all, since they were a smaller class of at-risk students, they were permitted to continue fact-to-face classes.

Secondly, Lisa placed a great emphasis on in-class discussions. She was fortunate to have smaller group sizes (around 13 students), so this worked in her favour. Given her students' difficulty in other faculties, speaking was the way she found to connect and get to a point of trust with her students. She then opened conversations and discussed elements of CORE more efficiently and invited the students to fact check live in class on topics as wide-ranging from Stalin to Che Guevara.

Case 2: Wendy – Reaching Students in Difficulty Through English Language Arts

Like Lisa, Wendy teaches in a school catering to students in difficulty. She has a strong connection with her students and demonstrated a genuine concern for their well-being online. Many of them are from a lower socio-economic-status and who have experienced various hardships in life. She uses these points to strengthen her connection to them, and delivers pertinent instruction geared to their real-life needs while practicing harm reduction in her classroom. Her students need to see the practical application in the instruction she delivers to them, otherwise their motivation is low. Wendy raised an interesting point of how students have numerous expectations about their time online placed on them, but they are not the digital natives society makes them out to be:

There are all these communication tools and there's a need for understanding, who is represented and who's not. And then the reality of the classroom–I've got students–and how am I in a position to help them like with the barriers to their success? Am I helping them, or I might just say well you can't do this and don't go online and don't watch TV and don't watch Netflix and your Facebook… like you're supposed to help them like navigate like their cultural reality, right?

This was echoed by Wineburg (n.d.) who wrote that adolescents may be good at using social media apps but, "(…) when it comes to evaluating information, they're easily duped." Another example she brought up was the "Spaghetti Harvest," a popular hoax from a BBC broadcast in 1953 about a Swiss family planting and harvesting a spaghetti tree. She notes when the resource is clearly a parody, the students love it and can understand right away what's happening, but she notes: "(…) when it's subtle they can't. When it's distorted when it's a political view, an issue when you have people in authority who perpetuate ideas or ignorance when ignorance, is just pushed down, you know through news media." These are instances when the students have very hard times reconciling these types of resources or ideas, due, in part, to their trusting attitudes of the Internet, noting, "they're not aware of how someone else is manipulating them after leaving that footprint." She was concerned about educating them to be able to spot "extremist and brainwashing websites" but was also optimistic in that "the greatest advantage I have is that when it comes to online tools and online, like evaluation of online material–I have a smaller class." As such, she can create a relationship with the students, find a place of trust, and cater her classroom approaches accordingly.

Wendy leans heavily on discussion, modeling, and her connection to her students as her strengths when teaching. Verbal explanation is her go-to tool when teaching how to be critical online. She mentioned, "If you don't have discussion, if you don't have inquiries, then you just remain (…) with the herd." In using discussion for inquiry, she says she can see the engagement and reactions of students who might not otherwise be interested. She shared how difficult to navigate topics like defunding the police or the history of Indigenous people can be sources of trauma for her students, given their varied backgrounds and circumstances, but sees this sometimes as part and parcel of doing CORE in class, given the research topics. "What I can tell you from my experience is that I see it's important for students to have a lesson where we're

frontloading the credibility. I feel that a lot of students know this stuff, but they don't necessarily practice it."

Case 3: Karl – A Perseverant Resource Teacher Using the News to Instruct CORE

As a teacher in a resource program, Karl brought a different and necessary perspective to the table. Though Karl taught ELA to his students, he drew heavily on his expertise as a Canadian History teacher to guide his intentions for his students.

It's all about being open to different perspectives to create your own truth. It may not be accepted universally, but at least you've put in the time and effort into examining more than one viewpoint.

Overall, Karl's lessons mirror the research on CORE by the Stanford History Education Group (SHEG), one of the notable resource findings from the environmental scan (under Other Notable Resources). Students in the program (all with Individualized Education Plans, or IEPs, only a few with behavioural issues) benefitted from smaller class size and therefore extra attention in instruction. Karl's school is in a lower socio-economic part of the city and received funding as part of the New Approaches, New Solutions (NANS) initiative. As the students are generally not only reading but also communicating at an elementary proficiency level, the motivation of his students to perform academically was different. The COVID-19 pandemic was another setback which resulted in these students having less time to complete their course work. Karl's students were concerned about graduating in the most basic form and getting straight to the job market, a sentiment Karl attributes to the family and conditions in the culture of society surrounding the school. Education is not as valued as work ethic. In terms of class research, "Everything is Wikipedia." According to Karl, he felt his students were not motivated to look past the first few hits on a SERP, and these typically include a Wikipedia reference. He seemed

to be alluding to the fact that his students trusted Wikipedia as an all-around good enough source.

He brought elements of his areas of expertise together to create his own curriculum for teaching CORE to his students. For example, in a project about Bill 101 in Quebec, also known as The Charter of the French Language, he created materials from scratch based on his knowledge of history, government, and current affairs to apply to his teaching of ELA. His preferred method for teaching about CORE came from online news articles from various sites such as CBC, CTV, BBC, Radio Québec, and so on, which he vetted himself. He selected this topic and created a series of lessons with supporting news sources to deliver to the students through "getting multiple viewpoints, usually through news organizations…" Alongside this process, he would demonstrate the inquiry process to the students (Figure 14) and guide them in their own research topic.

Figure 14

Example of CORE-based inquiry project in Karl's classroom
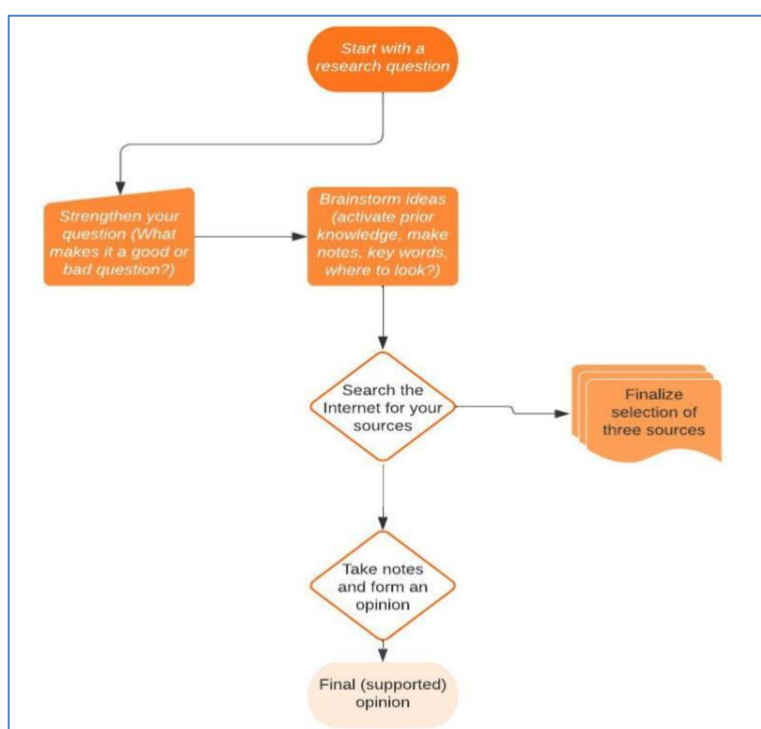
Karl expressed support from his department for the teaching of CORE, and said "At [school], it's absolutely on the radar." Conversely, he stated one difficulty was that students are only receptive to it in varying degrees, noting that "… it's become quite challenging to get them to not even think outside the box but at least be open enough to, to embrace it, to consider different points of view," adding, "there's a lack of drive, there's a lack of motivation." Even if students are guided, and modeling is done for them, it doesn't necessarily translate to good practice by them.

A second major drawback that Karl brought up tied into earlier criticism about the *QEP* mentioned in Landry and Basque (2015) in that follow up is rarely done. Karl took it upon himself (and his department) to teach these skills to students, but without a continuum in the curriculum, it is not a given that they will be revisited once they are taught. In other words, there is no follow up guaranteed in future subjects or with future teachers.

Case 4: Renée – CORE in a High Performing Secondary School

What struck me about Renée was her deep understanding of how her students perform best and what really inspires them. In this high performing, public English secondary school, grades were very motivating for the students, but Renée did mention they were also interested in achieving high standards for themselves. Most of these students would go on to CEGEP and often got their first choice of program, so the stakes were high.

Renée relied on modeling as her number one tool for teaching about CORE in her classroom. Ironically, this practice was a direct result from COVID-19 shutdowns that were imposed on the schools over the course of the 2020-2022 school years. As schools were pushed online, teachers had to adjust their teaching methods. For Renée, this meant finding a way to incorporate student interest into their learning. She did this by personalizing their projects and

understanding how they best liked to learn. This meant giving them flexibility for their projects (present online or in person in the case of their persuasive speeches) and making sure they understood the real-world usefulness of the skills she was teaching them.

Through working in a hybrid system (three days of six in school, and three days at home), Renée altered her course to work better online. Explicit teaching was another method Renée used frequently as she taught the students the general rules of CORE through informal class discussions. Her projects relied on the students finding extra sources, something they were used to doing. Renée listed the public speaking project and the debate project as the two notable opportunities where learning about CORE took place. In both cases, a research topic was developed by the students, and then they would explore their sources based on the guidelines she told them. This began with her showing them how to do a simple citation, then moved on to a Works Cited assignment. The assignment was graded and urged them to select a variety of sources from reputable places. She communicated to her students that finding a reputable source included (among other things):

- Looking at the domain/URL (.ca or .com or other?)

- The title of the page, date produced

- Checking for sponsors on the page

- Looking out for clickbait

- Focusing on Canadian (Quebec) sources

- Verifying names of people associated with the resource (author's name)

Renée would communicate this information through modeling. During the times when the students were online learning, she would have various students send their links to her, and she would model the talk aloud process to help them decide on the credibility of a given source. Much of the time, she alluded to the fact that the resource would be too busy or have "a lot of

clickbait everywhere" which made it difficult for the student to sort out the information. Moving back into the classroom, this was a technique that Renée kept for teaching about CORE. Using the whiteboard, students would send their links and Renée would work together with them to sort out the necessary information. "And by doing that, they didn't realize that they were picking sources that fit the criteria I gave them, right, which is what you should be doing when you're doing research."

Case 5: Mara – Making Students of All Ages Aware of Fake News

With ten years of experience and a background in students with special needs, Mara was concerned with the success of all students, both academically and socially. For her, this translated into customizing her teaching methods no matter the environment. At the time of the interview, Mara was in a resource teacher role at a high-performing English public high school, where she had taught the spectrum of subjects except for Math and Science. Her perspective provided an important overview of how resource teaching is used to propel students past their boundaries and push them to achieve at a higher standard at her school. She mentioned of her students that they "chew up whatever you tell them to do" and "they produce like it's going out of style" and so adding a layer of CORE to their practices was her main goal. In past Grade 7 ELA classes, she has done this through introducing the students to quote analysis and essay writing where she has requested that they use online sources as part of their writing. However, in her current Grade 7 Ethics class she spoke of a culminating activity where the students wrote their own fake news articles, an assignment which lent itself fully to the teaching of CORE.

The unit, which she ran in a workshop style, began with a discussion on disinformation and clarification of vocabulary. Using examples from the internet and a Netflix documentary called *Behind the Curve* about America's flat-Earth movement, she demonstrated various levels

of fake news articles and discussed these with her students. In looking at what makes a fake news article sound credible, the students were then able to apply these guidelines to writing their own fake news articles. One idea she imparted with the students was their presence online also depended on "what you decide to click." Mara also uses summarizing, paraphrase, and synthesis across all levels at varying degrees of complexity.

When asked whether she uses third party websites for CORE materials or in her tutoring (specifically RÉCIT and LEARN Quebec), she said they are very useful. However, Mara gave the impression that those sites were sometimes not optimal by adding, "I would see there's a lack of representation of those sites," or that they're simply "(…) not always in our inbox." At her school, sites and resources like these and Allo Prof, for example, are not typically promoted to her knowledge. She went on to say third party sites can be confusing for teachers who need quick efficient access to materials. It's no wonder she says: "I feel like I'm self-taught," and other teachers would echo this. It has led her to take the stance: "Wing it and work with the curveballs." Being a skilled intermediate teacher, her energy, optimism for her students and ability to challenge them were working very much in her favour.

Case 6: Ivan – Teaching CORE Through Contemporary World

As a student, Ivan was impressed by a former teacher's inclusion in the classroom of current news items, social debates, and the development of critical thinking skills. He said, "I am (…) carrying that mantle forward because I think it's super important for students to be engaged with what's going on in news." These elements are personal interests of his and in his classroom, he endeavored to enlighten students in similar ways because, "I think that's something that isn't afforded to them often enough." Ivan is a novice teacher who began his career as the COVID-19 pandemic was taking over daily

life, and as such, found his first year teaching challenging and demanding. Though there

was a textbook, Ivan admitted to basing "his lessons around what students seem to be

interested in," attributing this freedom to the fact that there was no end of year exam in

this class (MEES, 2017).

Contemporary World was a class where Ivan could see the inclusion of CORE as a key

element, and one of utmost importance to his Grade 11 students at his English public high

school. As they would soon be going off to CEGEP and university, this was their last chance in

the high school system to gain this knowledge, and the perfect place for them to learn about

CORE. In a nutshell, the class required students to interpret and take a position on a

contemporary world issue (MEES, 2017). In taking a position, the students exercised their

critical thinking skills in the research, gathering and selection of documents from different

sources, as prescribed by the program's connection to the broad areas of learning, specifically

Media Literacy (MEES, 2017). Essentially, the students work towards competencies where they

can navigate the research process on their own by the end of their high school careers.

In Ivan's classroom, one way this manifested was a research project on the history of

protest music. Though this afforded the students a way to research and select some sources, they

were not necessarily critical of the sources aside from meeting the guidelines of the project (four

to six sources) and ensuring a variety of sources for their bibliographies. Ivan did use the

opportunity to instruct students on the source of their sources, be it Wikipedia, blogs, or other.

He stressed the importance of Wikipedia being "a great place to start" but that "drawing from its

sources" would offer better options to his students. This type of instruction would happen

alongside in-class project/research work in an informal manner. Ivan stressed an understanding

of the "extra layer of subjectivity" inherent in Wikipedia pages. He also steered them towards

sources with "a little bit more rigor" in some cases, usually by giving examples in class and

reviewing student work on a more individual basis, preferring more implicit ways of relaying the information to his students. Ivan was one of the only teachers to admit that sometimes "a blog could serve that function" which corroborates findings from Forzani (2019). This was optimistic given that one facet of CORE is the existence of nuances–sources are not *good* or *bad*, rather they are credible or reliable in varying degrees of usefulness (cite). Students were held accountable for their choices, as the selection of sources made up part of the grading rubric.

Another way Ivan incorporated elements of CORE into his classroom was his inclusion of news sources in class activities. As the program stipulated, teachers hold the responsibility of creating a "rich and stimulating environment" (MEES, 2017). He mentioned using a range of online sources such as local and national sources like CBC, Global News, *The Gazette*, and *The Guardian* for a more international point of view. Here, the class discussions (usually done in smaller groups given the large class size) and activities centered around political bias, considering his own biases, that of the school, or even the students and their parents. Ivan was sensitive to the fact that the students needed to see a broad number of sources to truly appreciate the spectrum of opinions available, and spoke of, "not always go[ing] to the same metaphorical well, because, you know, they, they're old enough as well, where they catch on and stuff like that." In addition, Ivan showed the students *The Social Dilemma*, largely about how Big Tech uses social networking and algorithms for dubious purposes.

Finally, Ivan also instructed students in CORE during his Entrepreneurship classes as well, but noted that this was a peculiar year, given the Pandemic. Though the students we able to accomplish some research, a major part of the project was halted due to COVID-19 restrictions. Nonetheless, the Entrepreneurship class encompasses the broad area of learning of *Media Literacy* (MELS, 2011), and the students were encouraged to be critical not only when researching their business ideas, but also to "(…) become aware of the role the media play in

how they perceive the world of entrepreneurship." Implicitly, this tied in with CORE training and a tendency towards a certain bias. Therefore, though Ivan does not explicitly teach CORE in his classroom, the students were afforded many opportunities to think critically and witness the mechanics of being critical of online resources through informal discussion, exposure to the skills of researching, and being held accountable on project rubrics.

Case 7: Casey – Low Student Motivation Post COVID-19

Casey is an expert teacher who has been teaching ELA for the last 18 years. She taught in the only English public high school in the study to offer the International Baccalaureate program. At the time of the interview, Casey's consensus of her students was that perhaps COVID-19 and other elements had had a negative effect on them. Her experience is valid in this research because it paints a picture of a regular Quebec high school where sometimes the drive for academic achievement might be low. In schools like Renée's and Mara's, students being away from the traditional learning system due to COVID-19 has had a motivating effect. However, Casey experienced the opposite: "My students have been very honest about wanting to make money, wanting to get out there. And I feel like the interest in academics and all that has declined." This corroborates what Karl said happened at his school.

As some students suffered major setbacks due to COVID-19, Casey noted a salient change in the overall motivation of her students. In particular to CORE, she talked about complacency and students who seemed discouraged at the work it might take to apply CORE to their schoolwork. "The idea of backing up or supporting their arguments is something very challenging for them." She was honest in that she found it difficult as a teacher to know where to start to best cater to their needs. With reference to finding

additional sources, she said of her students, "they told me they don't like to do it and even when I've gone over MLA format. (…) Like I would go find the encyclopedia or that I would figure it out for myself. I don't know how to do it for them to get it." She attributes this to a lack of caring from the students, and how they "don't feel there's a relevancy."

Nonetheless, Casey continued to educate her students, mostly in the related area of plagiarism. Interestingly, she noted her students were quite unperturbed by possible consequences if caught cheating, that they would take their chances, and that they simply did not see the need to cite sources properly as "everyone is doing it," ("it" being copying from the Internet) according to one of her students. She has had serious discussions with them about not using pay-for-essay websites like Course Hero to no avail.

As noted earlier, Casey's case is valuable in the current study as it speaks to the real-life daily classroom barriers teachers can face. As a teacher, Casey seemed rather isolated, not mentioning any support from her department or school aside from the librarian who does one workshop on request. About CORE and working with other teachers in her department, she mentioned: "I think it's something very important, but there's sometimes not collaboration on that, but I definitely think it's important. I don't know if it's everybody in my department who would find it important." When asked about supports and barriers and whether she looks for supports, she said, "I know there are a lot of resources on the *QEP* and everything when you get to looking, it's just, we don't always go and do that. We're like managing like I have, you know, we're managing other things in the classroom." In general, and in the past, Casey has felt successful at teaching elements of CORE. She had taught through modelling and has asked students to look up and select their own resources. Currently, her situation has her questioning how to best get the information across to resistant students. This paired with a constant feeling of being behind since the COVID-19 shutdowns has proven difficult to manage.

Case 8: Sarah – CORE with Research-Backed Resources

"They just couldn't believe that there was a whole process that (…) one needs to keep in mind."

Sarah is a novice teacher, trained in the Social Sciences, but in a resource role at the time of the interview. As a resource teacher, Sarah catered to all grade levels and needs of students. Her teaching style is very much based in research-backed checklists such as the CRAAP test[§] and the use of Google Scholar in class research projects. This coupled with her international experience of teaching in China for one year, have strengthened her in-class processes for teaching about CORE, and she credited her time in China as a motivator for her teaching philosophy. One important takeaway she experienced was "the value of democracy and why it's so important to be critical (…) about what we read and so on." This experience early in her career seems to have cemented her dedication to teaching about CORE, noting her interest in the topic "all stemmed from my year there [in China] with them."

Though some of Sarah's experiences were from an international point of view, they are valuable in the current study as they helped gain insight into her typical practices. Her students were English as a Second Language learners, and as such, they demonstrated some similar challenges as ESL students experience here in Quebec. The complexity of the subject matter being difficult to navigate, and the proficiency level of the students being a broad range present their own set of hurdles for any classroom. Like the Quebec context, and interesting from a global perspective, students were learning something that was not normally taught in the typical educational system.


[§] The CRAAP test is an evaluation method (checklist) to verify the credibility and reliability of a source. The acronym stands for Currency, Relevance, Authority, Accuracy, and Purpose (Fielding, 2019).

Sarah spoke primarily about two applications of CORE in her classroom–having students familiarize themselves with the CRAAP test using a research project, and having students write letters to government officials and prepare for a mock UN symposium. For the research project, her students worked on their own inquiry-based projects and applied the CRAAP test method to each of their resources, which were then graded as part of the rubric. Though critical thinking skills were not generally a strong point in the curriculum for her students in China, many were going abroad, and it was important they develop these skills to give them adequate competencies for the varying educational institutions they were about to experience. Figure 15 shows the CRAAP method described by Sara.

Figure 15

CRAAP Method as Described by Sara
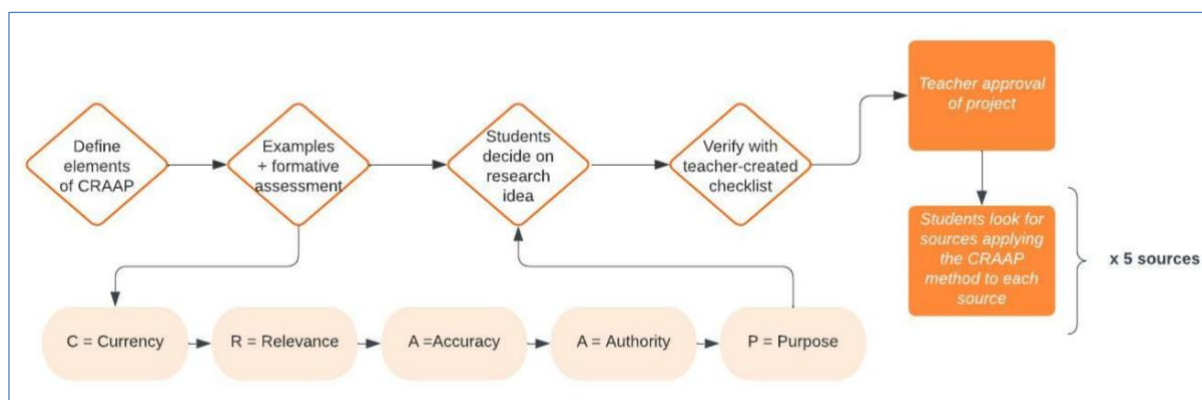
Fielding, J. A. (2019). Rethinking CRAAP: Getting students thinking like fact-checkers in evaluating web sources. *College & Research Libraries News*, *80*(11), 620–622. https://doi.org/10.5860/crln.80.11.620

In a second instance, here in Quebec, Sarah's students applied CORE (again using the CRAAP test) when they searched for resources for their letters to government officials. During a Grade 11 Contemporary World class, Sarah presented the students with an issue, which they then had to take a stance on, find "information from various sources" supporting their opinion using CRAAP, and draft their letters to the selected city officials. This assignment incorporated

reflection, letter writing, and persuasive writing all in one, and gave the students a chance to delve into their chosen sources at a deeper level. The topic for the letter writing activity was then turned into a second step of the project, where students were given a country to represent, and they prepared given their stance on the topic again using sources that they vetted themselves.

Though Sarah expressed having some students reading at lower grade levels, they were receptive to understanding about CORE. Google Scholar, resource personnel at the school, and Sarah's own motivation for her students provided Sarah the means to relay her high standards and importance of knowing where their sources came from. She shares the importance with her students by persuading them to understand: "(…) if we don't develop critical thinking skills now, then there's people out there that are more than willing to think for us, or would love to think for us, whether it be corporations or governments or whatnot. So it's really important to learn how to develop those critical thinking skills."

Case 9: Claudia – Using Projects in ESL

Claudia is an energetic, motivated teacher. She taught core stream English as a Second Language at a private school, but also worked as a personal project supervisor within her school's International Baccalaureate (IB) program, where students must complete a personal project requiring then to submit a bibliography of verified sources. IB is a program framework at certain schools that acts as a supplement to the core program providing extra enrichment across all subjects. Students in the program typically follow it for all their high school years and receive an additional diploma upon completion. The personal project aspect of the IB curriculum allows students to show their development throughout the program, culminating in their final year. For this reason, she had applicable knowledge of CORE and was able to impart that knowledge of her own volition to her classes. In an ESL class, focus is typically placed on fluency,

pronunciation, grammar, and oral communication. ESL students (L2 students) are inherently at a disadvantage as they are trying to understand the language before they understand the already complicated concept of CORE. In the Quebec school system, classes do not have to be "streamed." In other words, ESL classes could be split into Beginner, Intermediate, and Advanced levels or not, depending on the school. Claudia's groups were core English, meaning they were not the more advanced students and therefore, the comprehension level varied somewhat.

Claudia's strong point for dealing with CORE in her classroom was the use of fun, personalized projects. She mentioned such things as rewriting a legend, creating a recipe book, making a reading portfolio, and writing an advice column, just to name a few. She used class discussions to ignite interest in the students, and to share how to go about finding credible sources. Admittedly, her approach was informal and consisted of walking students through the steps of a project and including attention to critical evaluation of resources along the way.

For example, one project had students start off by researching two traditional legends and creating a Venn diagram from the stories, an exercise from the textbook. She coached them by asking for suggestions about what they might write in the Google search box, all the while trying to steer the students clear of Google Translate (not an easy task) and direct them to the Linguée application for more reliability. Her good rapport with her students helped her maintain trust in the classroom where they can use their phones at the same time as their tablets for efficiency and ease of looking words up. She said, "I didn't accept Wikipedia as a source. That was clear. And at first, they were like, "Oh, why?" Because I want you to explore other things." During class time, she would circulate the room, asking students individually or in general discussions: "Do you really think that source is reliable?" "What makes you think that what they say is true?" Finally, if she needs help along the way, Helen's school provided teachers with two resource

people, a director of pedagogical services, and a director of techno-pedagogical services. There people are in the school system to offer directed assistance for academic issues, curriculum questions, and technology.

She did not always grade the students' resources, but she did note a certain motivation attached to grades. She said "If I asked, for example, for three different sources, most of them, they'll do more research. Definitely. If I just tell them, look for an opinion or something, and I don't say anything, most of them will stop– like they'll find one." This corroborates the discussion on the Principle of Least Effort from Leeder and Shah (2016) where they noted people use the least resistant way to go about research, favouring easy-to-use resources and good enough results. This sentiment is mirrored by Hargittai et al. (2010) and Purcell et al. (2012).

Case 10: Helen – An Informal Approach to Teaching CORE

At the time of the interview, Helen taught English as a Second Language (ESL) in the core curriculum program at a private French high school (the same school as Claudia). Like Claudia, Helen was also a personal project supervisor for the IB program.

With her core stream classes, Helen took a mostly informal approach to CORE in the classroom. She spoke of having discussions with her students to help walk them through appropriate means of finding credible sources, such as using examples or looking at "the endings of websites." She described her process as not a "big lesson planned out with a whole lot of examples and stuff." Source is something that came up frequently in her class. This could mean talking with students about using different sources such as blogs and Wikipedia or informing them how they can make choices based on the parts of a URL (for example, is it a .org or a .com?) Though Helen did verify sources used and therefore assessed her students on this aspect as part of the rubric, she admits she did not go to each source and check it for herself.

With her IB personal project support, there was more opportunity to discuss reliable sources due to the nature of the program, and the demands for work to be more advanced academically. In IB, students are required to support their work with a variety of sources, include bibliographies with their work, and make sure they credit their sources. In the core program, this is not a regular demand. Therefore, given Helen's experience, she includes some CORE instruction informally in the core program of her own accord. Regardless, Helen spoke of the students being L2 learners (ESL) and the pending secondary V exam as constraints on what can realistically get done. As well, the student tendency to click the first link on a SERP came up, and this is where Helen said she instructed them to "not take the first link that pops up, go through your search results, open up the webpages, go and look and see."

Finally, the nature of an ESL class came up. In French schools, Helen explained that English is a subject where if it's not "fun," the students can become lost and disinterested quickly. She states: "I haven't done big research projects with the students in English. It always seems in other subjects in their main language." Because of this, there can potentially be less focus on the serious aspects of a project, such as information sources and bibliographies. General attitude, parental influence, and student patience are all factors that made up the unique situation in the ESL classroom. "So, for them to get those good, credible results, and then kind of have to sift through them all, like, it takes time. And a lot of the students at that age, they just want to kind of get it over with and they don't put all that effort."

An example of a project in Helen's class would go as such, where she would ask students to "choose an artist or group and a timeline. So, they had to go and do research and find dates and sort of place things in order and explain why they chose that group and a little bit more research on that style of music or that genre." She would use modeling as a main method to help the students know what to do. "I think it's important (…) it's really something that needs to be

taught and shown and really go over with them." She advises them to save the research they

come across in "(…) a Word document, [and] save your website sources, so that you can retrace

it, or if you need to quote." She advised them to "not take the first link that pops up, go through

your search results, open up the webpages go and look and see, is it a blog?" In having her

students practice these steps, Helen hopes to help them find "sources that seem a little bit more

reputable."

Case 11: Amanda – Proactively Planning for Students' Futures

Amanda taught ESL in the same school as Helen and Claudia at the time of the

interviews. Her students were mostly in the sec V (grade 11) core stream, though she had one

enriched group in the IB stream. This paired with the fact she was head of the English

Department gave her a different perspective on the situation. As department head, she would

organize with colleagues not only when to start teaching about the final ministry exams, but also

what should be taught and how the information could be chunked.

Because of her link to the IB program, she felt it important to work online resource

evaluation into the core groups as well. However, the work on incorporating CORE in these

groups was not assessed. In other words, it was included in general classroom discussions, and it

made up part of the direct instruction during class time, but it is not evaluated in the secondary V

core classes. When it comes to the IB program and the Personal Projects, however, it is assessed,

and is part of the criteria on the evaluation grid for those students. "So, they do have to

incorporate sources and they have to evaluate it. So that-- one of the criteria is to evaluate the

sources and really ask themselves and, you know, work on that user judgment, et cetera." A

concern for Amanda was that her school was discontinuing the IB program the year after her

interview. This would be detrimental for the students as Amanda said, "They're not conscious of

that difference between an opinion and something that is more objective and that focuses on facts." Teaching CORE is a process, and one that many teachers simply do not have the time for, given the mandatory elements of the *QEP* and the Progression of Learning they must make sure are delivered to the students. Even with her good intentions, no matter which way it's viewed, CORE is extra work on the teacher's plate, and now would not be offered to any students, unless the teacher makes the decision to fit it in the regular year. Amanda mentioned "as a head of the department, one of the things we realized is once we wouldn't have the IB program at our school, our students would not know how to research because they're not really confronted to that reality anymore."

Specific to ESL, Amanda echoed her colleagues Helen and Claudia in that they "definitely have students who are really at a basic level of English fluency," and this makes their teaching CORE more challenging. "They really have to focus on that. How valuable, how valid is this information? How credible is this author. Is it really useful or is it just interesting, but not pertinent for my work?" Again, here as in other cases, Wikipedia is the popular and simplest choice. "The easiest thing to do is go on Wikipedia. Like whenever we ask them to find some information about anything, it's, it's what pops up, but it's what they know."

Cross-case Synthesis

The overarching research problem of this study is that CORE is a required skill for today's youth to be well-rounded digital citizens, yet the *QEP* does not address this in enough detail for it to be clear to all teaching professionals with reference to whose responsibility it is in terms of subject matter or methods. Across all cases, themes emerged as the data were being analysed that shed light on the current situation that participants face. Cross-case analysis facilitates collection of "critical evidence" (Khan & VanWynsberghe, 2008) that may be used

later to inform policies and curriculum at the government or institutional level. Table 10

summarizes these themes.

Table 10

Strand 2: Semi-structured Teacher Interviews – Overview of Themes and Sub-themes

Theme	Sub-theme
Varying Definitions	Teacher definitions
QEP: Flexible and Rigid	Teacher discretion
	Final exam constraints (sec. IV, V)
	Subject-related
Teacher Motivation / Attitude	CORE is important
	Concern for students' future
	Student bias
	Unmotivated students
Barriers: Few but Important	Isolation (apart from close colleagues)
	Resources
	Time
	Class size
Technology is not Lacking	Availability of technology
Teacher Use of Techniques	Class discussions (around source)
	Research projects/writing process
	Guidance / Modeling
	Teach CORE implicitly
	News resources
	Librarian

Varying Definitions

It is important to note the similarities, and nuances in the participant definitions of CORE before understanding how teachers approached instructing it. All participants were asked "What does online evaluation mean to you? Or, in other words, what does it mean to evaluate information found on the internet?" (Interview protocol Q#11).

Most participants had similarities in their basic definitions of CORE that included the theme of following steps or asking a list of questions. For example, Ivan stated, "(…) I would define it as having the skills to understand like what sources are appropriate and when and having, like at least a few steps or a few thoughts that you run when you're making that judgment." This was like what Lisa had to say: "What steps can you go through to make sure that the information you are using, or you are relying on is credible? So where did it come from? Who created it? What is their goal and put it in publishing it in this way?" Renée's definition included asking similar questions: "(…) like looking at a website, seeing the domain is important, like .ca, .qc (…) were there some weird ads on it? Sponsor? No clickbait? Again, (are there) Canadian sources, Quebec sources?" Additionally, Amanda first started CORE is "a way to use information from the Internet," and completed her definition with a list of questions to look out for as well: "How valid is this information? How credible is this author? Is it really useful or is it just interesting, but not pertinent for my work?" Finally, Sarah mentioned, "(…) there's so many things that we have to keep in mind when we're evaluating sources, that it helps scaffold the process of critical thinking, development." This corroborated what Karl thought in that it requires "being open to different narratives and different viewpoints in order to create a concept of what of what truth is."

Some participants had answers which I termed "with adjacent ideas"–bringing in other elements to their definition. For example, Sarah mentioned fostering critical thinking: "(…) if we

don't develop critical thinking skills now, then there's people out there that are more than willing to think for us, or would love to think for us, whether it be corporations or governments or whatnot." Casey's answer approached the related idea of plagiarising and addressed the contrasting concept of "good" and "bad" sources. She said: "(…) it's the whole idea of like not plagiarizing, and what is a credible and reliable source." She added the idea of a filter: "(…) as a critical student, you should have some kind of filter, what's a good source? What is a bad source (…)?" Mara's definition incorporated the idea of online safety for students:

> From the teacher's perspective, it's definitely about whatever resources that I'm using, but especially that I'm using with the kids, I would need to sort of test it and see how it can a) serve my students b) Is it safe for my students? Right, we're not going to have like, weird pop ups and naked people coming up, right?

Other participants were not sure what CORE meant and misconstrued it as being online assessment of students. These were interesting elements because they revealed slight differences or misconceptions about what CORE is from the participants themselves. For example, Helen mentioned, "When I first saw online evaluation, I thought, oh, correcting online (…) but then (…) I understood that it was, you know, finding the reliable sources and whatnot." Likewise, Claudia replied, "I didn't think about that. So, you really mean what they can find and use in their assignments?" Wendy was confused at first ("So I've been using Google Classroom for evaluation,") but then clarified how the definition has changed for her into meaning how information is searched and selected by her students.

Finally, some participant definitions of CORE were very detailed and showed a deep understanding of the implications. Lisa had a particularly developed definition of the topic. She mentioned, "It's nebulous. (…) So, if it's facts, is it coming from sources? Who are conscientious in their collection of an organization of information in their in their research? (…) Like who is

trying to get closer to the truth as opposed to people who have in a particular position that they're really trying to reinforce?" Karl's definition was also layered, mentioning "It's a very ambiguous term (…) It's all about being open to different perspectives to create your own truth. It may not be accepted universally, but at least you've put in the time and effort into examining more than one viewpoint."

Following the questions about their definitions of CORE, participants were then asked a series of questions about their approaches to teaching core in their classrooms. Over the eleven interviews, several themes emerged as strong patterns in the data.

QEP: Flexible and Rigid

A popular theme that emerged from the data was how the *QEP* can be both a flexible curriculum document but also a constraint. An important factor was the sub-theme of teacher discretion. Teachers who are interested in CORE, who see it as important and who teach a subject where it's possible to fit it in, will likely do so. For example, Karl said, "At [school name], it's absolutely on the radar," but added that CORE was not, "a curricular priority." Lisa said, "We think it matters," so there are "those of us who are making a point of working it in." This was also brought up by Wendy: "It's important for students to have a lesson where we're frontloading the credibility." Contrarily, it's also an element that remains optional, even for a well-meaning teacher. When asked about including online research in class, Casey admitted having done it, "maybe two years ago." In addition, she said, "I just feel like I didn't follow up," after the librarian lesson on CORE at the start of the year. Renée added to this feeling: "We do it at the beginning of the year, and then not so much."

The occurrence of a final Ministry exam at the end of the school year in certain subjects and grade levels factors into the teaching of CORE. Ian said of Contemporary World class: "It's a

class that doesn't end in a year end exam. You do have a lot of freedom regardless in this class. Yeah, I have, in all honesty, chosen just to go my own way." Karl added, "It's very much teach to the ministry expectations," with reference to the ELA Secondary V class which has a final end-of-year exam. Claudia said: "(…) They know that secondary IV is important for their grade. It's an important year."

A related sub-theme is the actual subject the teachers instruct. In the cases of the main subjects taught by the participants at the time of the interviews (ELA, ESL, Ethics, and Contemporary World) CORE is taught based on teacher's discretion Lisa said: "The QC English curriculum is really wide open. But the problem is, because it's so wide open, almost everybody filters their projects through the language arts program." Other teachers corroborate a relative ease of including CORE, particularly within the subjects of ELA, ESL, Contemporary World, and Ethics. Of Contemporary World, Lisa said: "But teachers have a lot more play for deciding how much to cover it, how to cover it and how it's evaluated." Alternately, CORE is less easy to incorporate in other subjects. Karl said, "In perhaps math or science, where there there's really nothing to refute. But in a language course, or humanities-based course. It's all about being open to different perspectives to create your own truth." Overall, CORE does not figure in any set manner in the government curriculum documents, nor is it a clear responsibility of any one subject area or grade level.

Teacher Motivation and Attitude

Across the range of teachers, most were motivated to teach CORE and had a positive attitude to including it in the classroom. A concern for this to be a part of their toolkit was mentioned by Mara: "They're going to keep working with this for the rest of their educational career," and Ivan: "It's just going to become more and more important as they move from high

school into CEGEP." Claudia was equally concerned about equipping her students: "As internet is so accessible to students (…) they need to know more about how to use online resources and how to evaluate them properly."

Participants were further motivated by witnessing students' biases through outright rejecting facts and being dubious of research. Lisa said, "I just found that more and more of the information people were relying on was crazy. (…) Teenagers love conspiracy theories, but then at the same time, it leads them to kind of rejecting knowledge, you know, so I had to address that in the contemporary world class." Ian mentioned: "They just take the take it so uncritically and without reserve (…) Why would Google lie to me?" This notion of accepting the first results as the good enough results plays into the Principle of Least Effort theory mentioned earlier. Instances like these gave teachers a certain determination to instruct the notions of CORE. For example, Casey said: "I just think they can be apathetic about it." Therefore, teachers seeing a lack of motivation in their students to search for credible information over simply getting the job done has come up as a compelling force.

Barriers: Few but Important

Though the barriers the participants face with reference to teaching CORE will be explored in detail in the Discussion, certain barriers came up repeatedly and therefore presented as a theme across the cases. A positive but telling theme was that participants reported feeling few barriers, however the barriers they mentioned were consequential. First, a feeling of isolation was predominant for some, but this wasn't related to the unique conditions brought about by COVID-19. It was more a sense of teachers feeling isolation within their departments, as Casey said: "I think it's something very important, but there's sometimes not collaboration on that (…) I don't know if everybody in my department would find it important." Some participants reported

having supportive departments, but they felt the government programs left them in a lurch. Karl represented this sentiment. "I'm on my own with my colleagues, we're there's very much a cohesiveness to working together." At the same time, he mentioned, "(…) we recognize the flavor of the day for the government is we're going to put money into this section or to this subject matter. (…) they're flying by the seat of their pants is my impression." Even in cases where a teacher knew resources were in place, they would tend to go their own way, as Sarah pointed out: "our non-teaching staff that's very available and very educated on the matter," but added, "I feel like I'm self-taught. (…) it's been a lot of self-teach and filter and then pass that on to the kids. Overwhelmingly, it seems that teachers are well placed to instruct CORE, but the lack of allotted time to do so and the scarcity of resources hinders their good intentions. Larger class sizes tended to show as a barrier that would be hard to curtail, so those who reported smaller class sizes, in particular Wendy and Lisa, saw the smaller number of students as a positive point.

Technology is Not Lacking

The availability of technology was a very positive theme that came up in all interviews except for one. Only Sarah noted: "You know, not everyone has a phone, in my school, and when you say, take out your phones, you're leaving behind those who might not have one." Aside from this, however, the schools seemed to be well equipped with frequent access to laptops, tablets, and students with access to phones.

Teacher Use of Techniques

The use of class discussion surrounding CORE and modelling were the main techniques used by participants. The discussions would usually revolve around finding credible sources and could include some teacher modeling as a result. Most teachers said they teach CORE implicitly

to the degree they were either comfortable with or had the time to manage. All teachers

mentioned using the writing process alone or as part of a research project where they would

implicate the students in searching for their own credible sources. Much of the time, this came in

the form of news resources. Finally, the teachers were very keen to employ librarian services

where possible. This was both a strong and weak point, however, as the librarian would often

visit the class once, but teachers reported it was hard to find time to put the skills into practice.

Across all cases, eight participants responded that they tend to evaluate CORE (with "yes," or at

least "sometimes," as their answers) with only three saying they did not evaluate CORE.

Cross-case Synthesis Using Variables

In this section, data is organized in a cross-case synthesis within the categories of

language of instruction, special program offered at the school, or years of teacher experience.

Though noted below, the category of School board coincides with Language of instruction (all

public schools were English, and the only private school encompassed all three participants and

was French), therefore only the latter will be used to simplify explanations. Across all

participants, a total of four different types of school programs could be distinguished. two

participants taught at alternative schools for students at-risk of not finishing their secondary

schooling; four participants taught at schools with the IB program; two participants taught at

Special status 420 schools where an entrance exam is required; and finally, two participants

taught at secondary schools where the program was referred to as regular core instruction (not to

be confused with CORE).

During a portion of interview coding, quantitizing was used. Sandelowski et al. (2009)

refer to quantitizing as, "the numerical translation, transformation, or conversion of qualitative

data." As such, each time a participant mentioned an element of one of the tiers of the CORE

Framework (Context, Source, or Content), it was tallied in the software. These tallied elements were then translated into a percentage and transposed using a chart feature in Dedoose. The goal was to examine different slices of data and their incidence on the teaching CORE. The variables and the percentage of participants in each variable are summarized in Table 11.

Table 11

Summary – Variables and the Percentage of Participants in Each Variable

| CATEGORY	VARIABLE			
SCHOOL BOARD	*PRIVATE* 27.30%	*PUBLIC* 72.70%		
LANGUAGE OF INSTRUCTION	*FRENCH* 27.30%	*ENGLISH* 72.70%		
SPECIAL PROGRAM	*ALTERNATIVE FOR AT-RISK STUDENTS* 18.20%	*INTERNATIONAL BACCALAUREATE (IB)* 36.40%	*420 SCHOOL (ENTRANCE EXAM)* 27.30%	*REGULAR CORE STREAM* 18.20%
TEACHER EXPERIENCE	*EXPERT (14+ YEARS)* 54.50%	*INTERMEDIATE (6 to 13 YEARS)* 18.20%	*NOVICE (<1 to 5 YEARS)* 27.30%	

Teaching of Tier Three of the CORE Framework: Context

In French schools, the only class to teach CORE would be as part of the ESL program (L2 classes). In English schools, CORE could potentially be taught in a wider variety of courses, plus the students are English-speaking (L1). Therefore, the instance of exposure as well as the level of comprehension could be assumed to be inherently higher in English schools. Context, the first tier of the CORE Framework, refers to elements including genre usefulness, genre

credibility, presentation, structure, URL, currency, and endorsement. Figures 16 to 18 show the distribution of the 24 occurrences of Context across all cases in language of instruction, special program, and teacher experience.
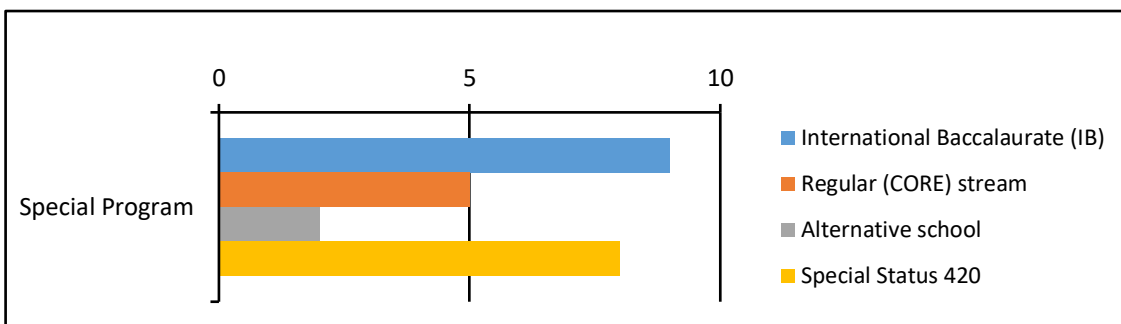
Figure 16

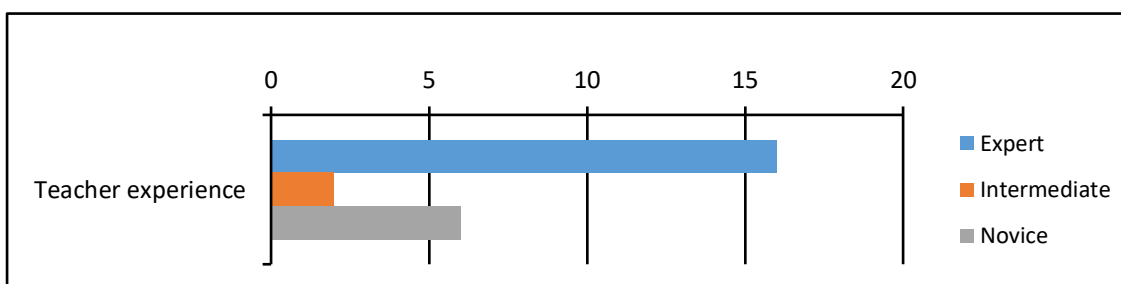*Occurrences of Context – Across Language of Instruction*
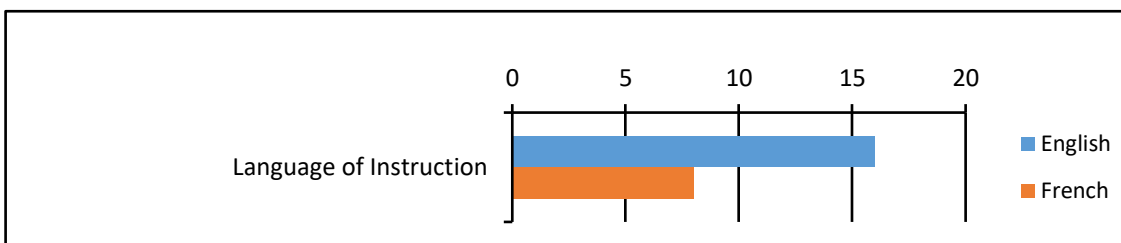
Figure 17

Occurrences of Context – Across Special Program

Figure 18

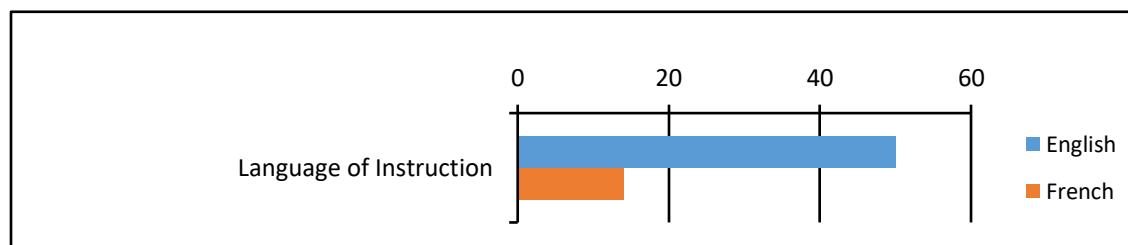*Occurrences of Context – Across Teacher Experience*

Context was more often referred to in the English L1 classes (16 times), versus eight mentions in the French L2 classes. When it comes to Special program, the Context tier was referred to most often in the IB programs (L1 and L2) at 9 out of 24 mentions. Special status 420 schools are close, with eight mentions, and overall, it was least referred to in the Alternative schools (which were all English, incidentally). Expert teachers were most likely to mention the elements of Context in their classes, and Intermediate teachers were least likely, with only 2 references out of 24.

Teaching of Tier Two of the CORE Framework: Source

Source, the second tier of the CORE Framework, refers to elements including expertise area, expertise, purpose, point of view, and rhetorical techniques. Figures 19 to 21 show the distribution of the 64 occurrences of Source across all cases in language of instruction, special program, and teacher experience.
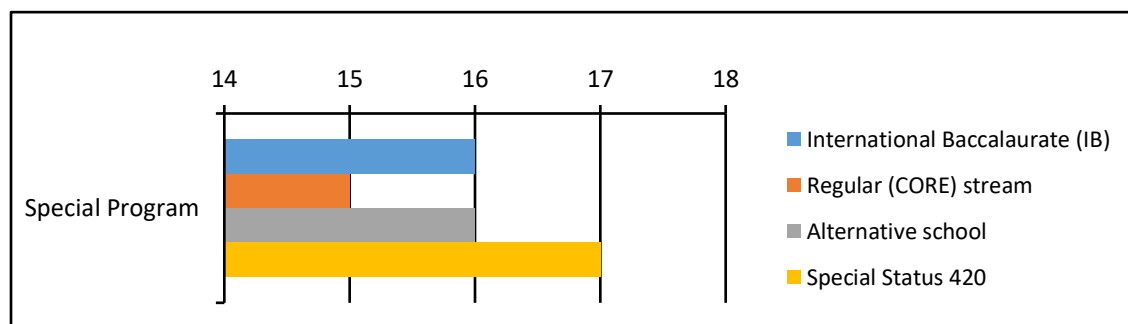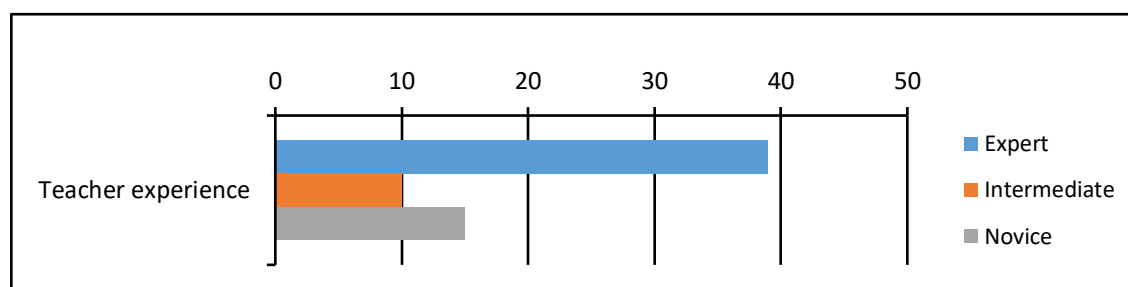
Figure 19

Occurrences of Source – Across Language of Instruction

Figure 20

Occurrences of Source – Across Special Program

Figure 21

Occurrences of Source – Across Teacher Experience

Of the 64 mentions of Source across all cases, 50 of these came from the English school participants, as opposed to 14 from the French school participants. Mentions of source in Special programs was approximately even with 17 mentions from participants at Special status 420 schools, 16 at both Alternative and IB schools, and 15 at Regular (core) stream schools. Overall, expert teachers made many more references to Source, with 39 out of 64 mentions, and again, Intermediate teachers made fewest mentions.

Teaching of Tier One of the CORE Framework: Content

Content, the third and final tier of the CORE Framework, refers to elements including evaluating usefulness, evaluating comprehensiveness, corroboration, evaluating explanation, and evaluating argumentation. Figures 22 to 24 below shows the distribution of the 16 occurrences of Content across all cases in Language of instruction and Special program.

Figure 22

Occurrences of Content – Across Language of Instruction

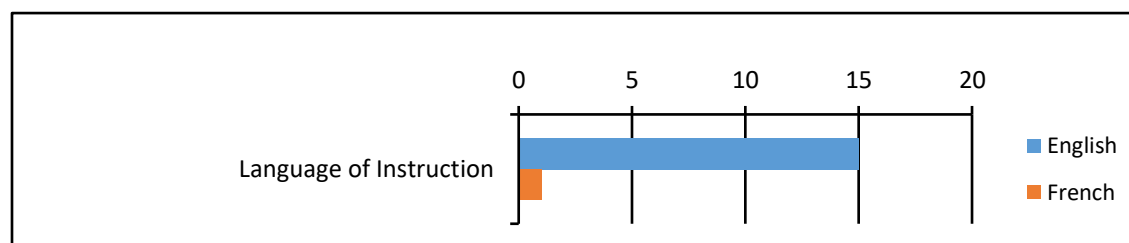**Figure 23**

Occurrences of Content – Across Special Program

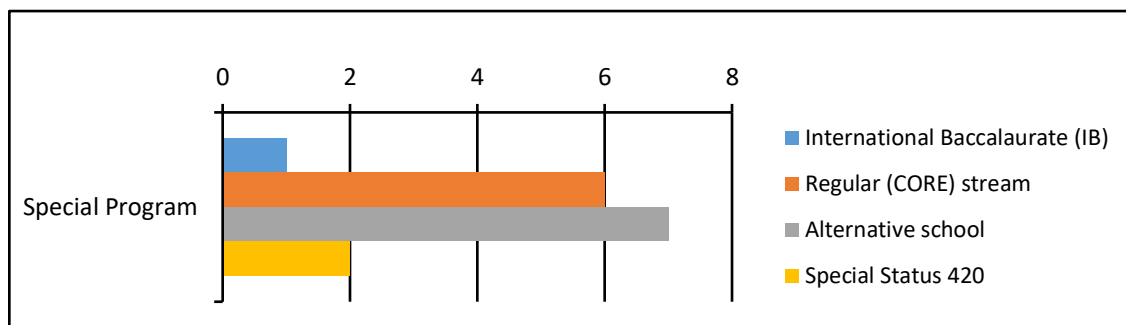**Figure 24**

Occurrences of Content – Across Teacher Experience
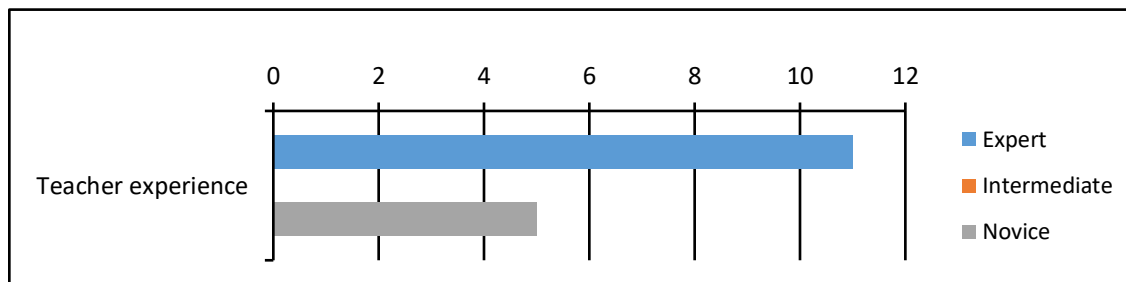
Of the 16 mentions of Content across all participants, almost all of them (15) came from the English school participants, as opposed to just 1 from the French school participants. Mentions of Content were highest in participants at Alternative schools, and fewest in participants at IB schools. Finally, once again, expert teachers made the most references to Content across all cases, with Intermediate teachers making zero mentions of Content.

Summary of Cross-Case Analysis

Looking at the different variables across all cases revealed some interesting elements. Expert teachers seem to be leading the way in the classroom. According to Figures 18, 21, and 24, they are consistently the most likely to approach the CORE Framework elements, whether this be in discussion or in modelling. Participants at Special status 420 schools and IB program

schools, traditionally programs for academically achieving students, seem to include more exposure to CORE in their teaching, but it depends on the aspect of CORE. Surprisingly, participants at Alternative schools exposed their students the most to Content, incidentally the most difficult of the tiers to instruct. It was also a notable pattern that Intermediate teachers come up repeatedly with fewest mentions of CORE.

Chapter 6: Discussion

The findings from Strands 1 and 2 will be integrated and discussed in this section via a strengths, weaknesses, opportunities, and threats (SWOT) analysis. Strand 1 included the environmental scan of resources available to Quebec high school teachers for instructing CORE. Strand 2 included the semi-structured teacher interviews where 11 participants' points of view on CORE in the Quebec secondary school classroom were revealed. The themes that emerged from the qualitative data suggested that many elements are involved in the successful teaching of CORE. This SWOT analysis can be used to answer the final research question, "How do curricular programs, policies, and resources interact as either strengths, weaknesses, opportunities, or threats (SWOT) in terms of Quebec secondary teachers delivering instruction to students about CORE?"

Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis

A SWOT analysis is traditionally used as a business tool to help organizations measure their situation in a certain context versus their competitors ((Namugenyi et al., 2019; Teoli et al., 2019). They can be applied to entities outside of business (Benzaghta et al., 2021), and here I have applied it to look at how the findings create a landscape for CORE. The point of doing a SWOT is to have an overall vision of the moving parts (patterns, trends) of the issue and their implication on it (Namugenyi et al., 2019). Teoli et al. (2019) write that a SWOT can also help advance a strategy. In this case, future decision makers involved in education policy and curriculum development could benefit (Namugenyi et al., 2019). Teoli et al. (2019) warn, however, that a SWOT analysis is virtually a snapshot of an organization at a specific time. Though the situation examined in the SWOT is not static, its dynamic nature can get lost in this

type of analysis. Nevertheless, careful consultation and "critical reflection by a collective group" (Teoli et al., 2019) can help curb this phenomenon.

The strong point of the SWOT analysis is that it allows both internal and external elements to be treated at the same time. "Strengths" and "weaknesses" come from within the organization (Teoli et al., 2019). In this case, the participant (teacher) and their environment (school) are the focus. In a broader sense, this could mean the school board as well. "Opportunities" and "threats" are therefore external (environmental) elements in this situation (Teoli et al., 2019). Figure 25 shows the SWOT analysis of the interaction between the findings (curricular programs, policies, and resources) collected from Strands 1 and 2 of the present study. Following this figure, the strengths, weaknesses, opportunities, and threats will be examined in more detail.

Figure 25

SWOT Analysis of Findings from Strands 1 and 2
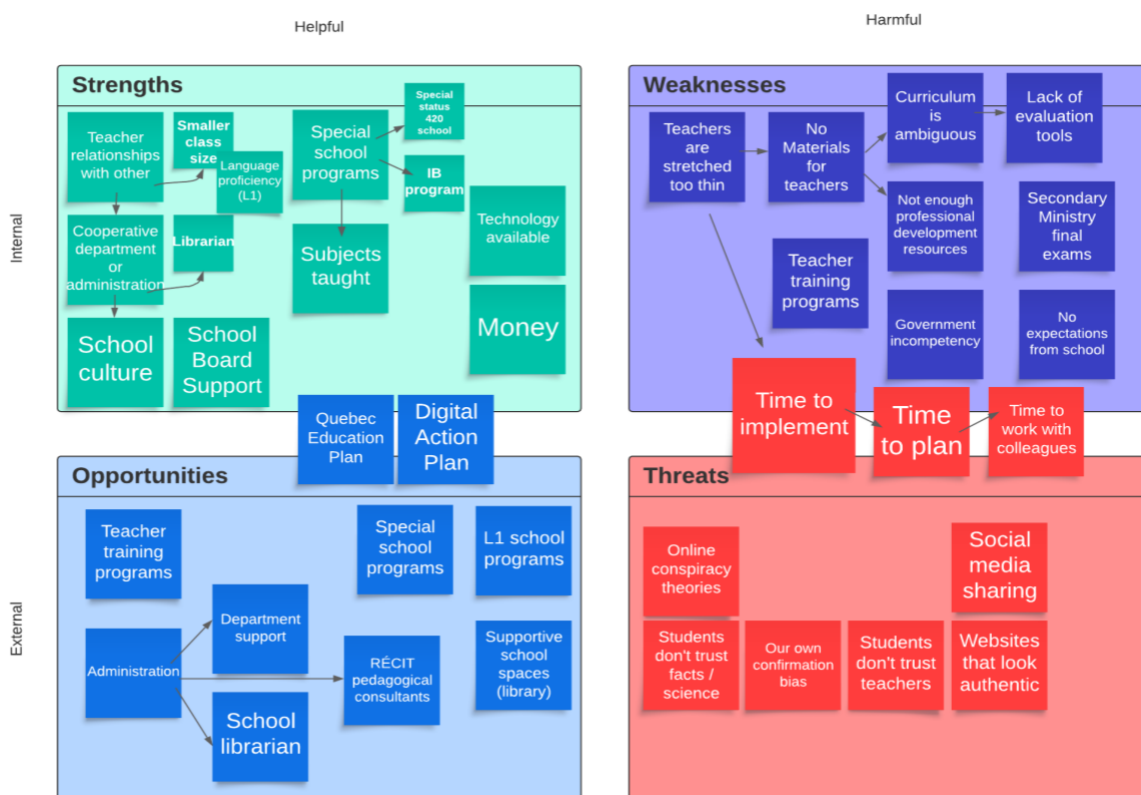
Looking at the Strengths with Teaching CORE

According to Namugenyi et al. (2019), strengths are the "internal capabilities and positive factors" in an organization that help the organization "achieve their objectives and serve their customers." In the context of the study, I asked the questions: How are teachers advantageous? What do they do well? How does their environment (school) already assist them? What is working in their favour? What do they bring to their students?

Starting with the individual, teachers bring many strengths to the instruction of CORE. Their positive relationships with their students, their departments, other staff, and administration all facilitate teaching CORE, whether it be by gaining their students' trust, co-teaching with colleagues, or requesting special materials or other resources from administration. Some teachers reported having smaller class sizes as a strength (Wendy, Lisa), allowing them to create connections easier in some cases. Librarians, for example, were referenced by all participants as being extremely helpful, cooperative, and knowledgeable. This leads to a positive overall school culture. The findings indicated that the school boards, though unclear to what degree they were implicated, were generally supportive of the participants.

Strengths could be programs at the schools which accommodate the teaching of CORE. IB programs, advanced-level ELA or ESL classes, and schools with entrance exams (special status 420 schools) have the flexibility for CORE to be worked into the regular curriculum. As well, the subjects taught are a strength. For example, in the IB program, students must complete a personal project. According to Amanda and Helen, this was the best opportunity for CORE to be taught and applied alongside the regular program.

Money did not come up as an issue, as technology infrastructure already exists in most schools thanks to funding from the government. The teaching of CORE does not require an extra funding in the classroom as such, but the teachers could benefit from workshops, training, and

other classes. They could order copies of *École branchée*, or other resources with a paid subscription. The participants seemed confident that if they asked for a resource or service within reason, that they would be able to procure them.

On the cusp are the *QEP* and the *DAP*. The government programs are strengths in their flexibility, their broad range, and their forward-thinking stance on technology use in the classroom, of which CORE is a part. Though the *DAP* could benefit from being amended to include explicit mention of CORE in a more important manner, the program addresses some of the gaps that teachers have faced up until now that weren't addressed in the *QEP*.

Understanding the Important Weaknesses

In looking at the weaknesses of the issue, I asked the questions: How are teachers disadvantaged? Where do they need to improve? How does their environment (school) work against them? Where are the gaps? Weaknesses are defined by Namugenyi et al. (2019, p. 1146) as being "internal factors or constraints which might impede or hinder the performance of an organisation."

The number one weakness overall, was time. Teachers are stretched too thin. They have packed workloads, government curriculum they must accomplish in the school year, full classrooms, and based on the findings, an overall important lack of time to do anything further than their main teaching tasks. In terms of developing new CORE lesson plans, taking the time to research the material and design the implementation, it is a struggle for all participants. The lack of quality, easily findable materials is also a weakness. Not all teachers are equipped to spend the time searching for additional curriculum over what they already must teach. Therefore, if the curriculum from the government were less ambiguous surrounding the issue of CORE, this could help teachers greatly. In the same way the QEP was a strength previously, it is also a weakness.

The omission of CORE from the *QEP* means there is no expectation from Administration to teach these skills, as Eric mentioned in his interview. In grade levels with final exams, there is often not time to include more than necessary, nor is any one teacher, class or grade mandated to teach CORE. Many of the measures could facilitate the development and sharing of these resources, even in the professional development of teachers, but the fact remains, the orientations and measures (thus far) have not resulted in any evaluation tools. Finally, the virtual lack of training for teachers makes including CORE in the curriculum on their own a daunting process for some. Future teachers in Quebec do not get enough training in teaching information literacy, and oftentimes gather what they can from short workshops given by their university libraries (Dumouchel & Karsenti, 2013).

Opportunities to Improve CORE Instruction

Opportunities are elements that can provide new paths or outlooks for teachers, and their schools. In this case, they are elements that would favour the teaching of CORE that could be put in place to facilitate the teachers' jobs. The *QEP* and the *DAP* are the main curriculum documents for Quebec high school teachers, and as such provide the biggest opportunities for improvement for CORE instruction. CORE as a competency does not figure explicitly in the *QEP* and is essentially regarded as optional by many. The participants in this study saw CORE as a necessary element to teach but communicated varying degrees of support or knowledge about CORE amongst colleagues and administration. As mentioned in the report *Usages du numerique dans les écoles québécoises,* done by CEFRIO (2014), it is essential that pre-service teachers are given ample training in implementing technology in the classroom (including CORE) because the successful transfer of skills depends on their mastery of them. Therefore,

there is room for curriculum and policy changes that could be positive forces and facilitate the teaching of CORE in high schools.

Opportunity exists in the supportive school structure, such as the variety of subjects where CORE could be applied (in the English schools at least), the availability of school librarians (an under-used opportunity), as well as other pedagogical consultants from the boards who represent organizations such as RÉCIT and are available for teachers to get assistance.

Threats to the Teaching of CORE

There were several threats that emerged in the data from Strands 1 and 2. According to Namugenyi et al. (2019), "Threats deal with negative factors external to the [organization], which can hinder or delay the achievable goals." In this context, the goal of delivering CORE instruction in the classroom is first threatened by time and essentially money, as corroborated by various teachers during the interviews. Teachers do not feel they are paid enough to warrant working so many extra hours per week. Teachers are covered by their Collective Agreement, and therefore the threat of demanding job conditions is having a direct implication on their productivity. This is not only true of teachers teaching CORE, but all teachers. From a political standpoint, teachers in Quebec are facing another issue, in Bill 21 ("Bill 21," n.d.). Though not directly related to CORE teaching, it has been a threat to the teaching profession, as teacher have had to make choice to leave the profession or comply with the law.

Some other threats that hinder the teaching of CORE come from teacher perceptions of their students. While many participants reported having good relationships with their students, there were also some participants who struggled to gain their students' trust. Some students were simply not motivated or concerned by CORE, and it is hard work keeping a room full of students attentive. The social interactions between teacher and student can hinder CORE teaching.

There were students who liked online conspiracy theories and would take them at face value. Or students who simply didn't trust science, or trusted Google too easily. Participants reported it being difficult to keep the students' attention, and it made me wonder whether it had become worse due to the huge interruption students suffered through COVID-19. Or maybe social media is to blame for the (seemingly) low attention spans of students. Some students think they can search Google, therefore they are able to find correct answers to queries easily enough, and once they've found the answer they thought they were looking for, they stop looking. Either way, the "changing student" exists because of external threats molding young minds.

As the literature has shown throughout this study, this is the real danger–the threat that it is easy to make authentic looking websites, or that we are unconscious of confirming our own biases sometimes. With social media as a main way that people get their news, it is no wonder that faulty, fake information is trickling down the pipe. Misinformation being repeated through algorithms is detrimental and can leave an impression on vulnerable teens.

In conclusion, the SWOT analysis has proven to be an interesting way of seeing where we stand with the implication of CORE in the Quebec high school classrooms. It can be a useful starting point for change, strategy-making, and discussion. Though there is the risk of looking at a dynamic situation in a static way, careful consideration and understanding are necessary to reap the benefits of a SWOT analysis.

Chapter 7: Conclusion

Limitations

For Strand 1 (the environmental scan), one limitation was the difficulty in locating all the appropriate documents related to CORE when doing the systematic sweep through Google (Yin, 2018). The Google SERPs would likely change over short periods of time, as the Internet is a dynamic entity (Fajardo et al., 2019). It was time consuming to do the environmental scan (Hatch & Pearson, 1998), and there was no way to see that the searches were exhaustive (Yin, 2018). I am unsure if I uncovered all there is to find on CORE in the Quebec context, but I adhered to the list of criteria when searching to my best ability, in French and English. Being a secondary teacher who is interested in the topic of CORE, I found I still had slight difficulties searching for good quality resources and had to rely on an "intuitive approach" to the phenomena I was examining, both an advantage in its openness, and a disadvantage for the same reason (Mills et al., 2010).

For Strand 2 (semi-structured interviews), teacher recruitment was a challenge. Given the context of the global COVID-19 pandemic, teachers were less easy to reach, they were extremely busy, and they were needing to catch up on missed time. The participants were from an array of schools, and I feel this both added to the study, but also made it difficult to generalize about any one thing. However, since non-random convenience sampling was used, it was understood that the findings would not be generalizable (Johnson & Christensen, 2019). The impact on the study was not significant since the goal was simply to explore what participants were doing. The schools were mostly located in more populated areas (mostly urban, one suburban), meaning those participants were over-represented. Interviews that were meant to be held in person were held online using Zoom. This was a necessary measure for safety reasons. Interviews provide excellent insight but are also considered as merely "verbal reports" according to Yin (2018, p.

121). As this type of data is subjective and limited to the interviewee's opinions, the interviewer's techniques, and the data analysis, the information cannot be used to corroborate information from other teacher interviews (Hatch & Pearson, 1998; Yin, 2018). Finally, I found it difficult to maintain an invested tone with my interviewees without portraying a sense of subjectiveness to what they were saying, known as reflexivity, or unintentionally influencing the interviewee. (Yin, 2018). I would have liked to have the transcribed interviews coded by another researcher (inter-rater reliability) for the sake of reliability, but my work was done alone during the early days of COVID-19. At this point, people were still getting their bearings after the shutdown. It was a difficult time to ask more of colleagues who were already stretched. For this same reason, I neglected to send the transcripts back to each participant for their approval once I had transcribed them.

Future Directions for Research and Concluding Remarks

High school students are not the only people susceptible to believing things they see online, nor are they the only ones that have trouble understanding how to search for credible resources to use in their research. Critical online resource evaluation is essential for all ages, not just young adults. There is a reason why the Government of Canada announced in 2019 that they were putting several projects into motion that would help citizens work on their critical thinking skills and enforce their knowledge against disinformation ("Helping Citizens," n.d.). With $7 millions of funding going to several organizations (with the likes of CIVIX and Agence Science-Presse amongst them), it is uplifting to see a project that will "help Canadians critically assess online information" ("Helping Citizens," n.d.). Canadian Heritage's Digital Citizen Initiative was also set to receive $19.4 million of funding from the Canadian Government. However, it's too bad the occurrence of projects like these aren't cropping up quickly enough.

This study suggests that there is a way to go before the implementation of CORE in Quebec secondary classrooms is adopted in a broad fashion. It has been demonstrated that gaps exist within the school curriculum, and that the *QEP* could benefit from a revision where clear guidelines for including the teaching of CORE are outlined. As it stands, the cross-curricular competencies, where CORE can be "infused" into the disciplines, are sometimes in danger of falling "to the wayside in a crowded curriculum" (Hoechsmann, 2015). Teachers are doing the best they can, but are generally working on their own or, if they are lucky, within their departments at their schools to plan, produce and teach curriculum on CORE, often only with the help of the school librarian. Yet we hear frequently how CORE is an imperative skill for the current times, and we see how the government is emphasizing its inclusion in society. In this respect, Quebec is not fully equipping its future teachers or current students to address CORE.

On a positive note, the point of this study was to understand what is being done currently in high school classrooms, and in this respect, it was a success. With this information, CORE can be easier implemented in classrooms as it can provide valuable information to policy makers and curriculum writers. The best-case scenario would be a province wide initiative to get CORE into high schools in a uniform manner. At this point in the global landscape, it is no longer an option.

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Appendixes

Appendix A: Research Participant Recruitment Letter (Teachers)

DATE, 2020

Dear [teacher],

We are writing to invite you to participate in a Fonds de recherche du Québec – Société et culture (FRQSC) funded grant **aimed at improving students' ability to evaluate the credibility of online information**. This project has been approved by [insert name here, such as school principal or school board ethics review board].

Nowadays, anyone with a smart phone and internet connection can publish whatever they wish rapidly and widely. Therefore, it is no wonder that youth struggle with knowing which information to trust. Knowing how to evaluate online information plays a key role in the academic success of students, across multiple subject areas and disciplines, particularly as they advance throughout their secondary and post-secondary education. These evaluation processes empower students to make important decisions regarding their political, social, and economic lives. Without evaluation skills, students are forced to rely on the judgements of others, who may have agendas at odds with the students' own values or best scientific evidence. Indeed, a lack of ability to evaluate credibility allows disinformation to spread, jeopardizing democracy. Despite its importance, research has shown that the ability to evaluate the credibility of online information remains a challenge for students.

Our goal in this project is to **work alongside Quebec teachers to develop culturally and contextually appropriate instructional interventions that align with the Quebec Education Program and are tailored to both school-wide and classroom specific learning goals**. This project also supports the Digital Competency Framework advanced by the Ministère de l'Éducation et de l'Enseignement supérieur (MEES).

Teachers who choose to participate in the project would be expected to, for example, participate in interviews with researchers, take part in classroom observation, provide feedback on the design of instructional materials, implement the instructional materials, and assess student learning before and after the implementation of the instructional materials.

Both teacher and student participants will receive financial compensation for their participation in the project. **Teachers will receive up to $1500, while student participants will receive up to $60.**

Please be aware that, in light of the current pandemic, we will adapt our collection of data to online spaces when needed and we will work alongside you to ensure the continued safety of your students.

If you are interested or would like to know more, we encourage you to email or call [insert name and contact information of research assistant responsible].

With warmest regards,

J. Corrigan

Julie A. Corrigan, Ph.D.
Principal Investigator
Assistant Professor of Education, Concordia University
Julie.Corrigan@Concordia.ca

[insert contact information of researcher practitioner here]

Appendix B: Research Participant Informed Consent Form (Teachers)

**INFORMATION AND CONSENT FORM FOR
TEACHER PARTICIPANTS**

Study Title: Promoting digital literacies for secondary students: A collaborative action research project
Researcher: Julie Corrigan
Researcher's Contact Information: julie.corrigan@concordia.ca
Source of funding for the study: Fonds de recherche du Québec - Société et culture (FRQSC)

You are being invited to participate in the research study mentioned above. This form provides information about what participating would mean. Please read it carefully before deciding if you want to participate or not. If there is anything you do not understand, or if you want more information, please ask the researcher.

A. PURPOSE

This research project investigates how secondary teachers and students understand and engage in the evaluation of online information. The goals of this research project are to (a) identify teachers' pedagogical practices related to online information evaluation, (b) assess secondary students' online information evaluation practices, and, (c) to develop interventions aimed at improving students' ability to evaluate online information.

B. PROCEDURES

Between September 2020 and June 2023, you may be asked to participate in the following:
1. Participate in in-depth interviews with a researcher (either in person or via Zoom).
2. Have your class observed during a time when your class is learning about / doing online research.
3. Take a survey about your internet use. Also, you will administer a similar survey to your students.
4. Administer a diagnostic assessment of online evaluation skills to your students (one hour).
5. Submit feedback about the design of the instructional interventions.

6. Take training on how to implement the interventions (1 day; a substitute teacher will be provided).
7. Implement the interventions and record your observations (15 minutes at the end of each class).
8. Administer an assessment (post-test) once the interventions have been completed.
9. Participate in and perhaps lead professional development sessions with other teachers.

In detail

1. We will begin by inviting you to participate in an interview using Zoom. The purpose of the interview is to understand how you currently approach teaching students to evaluate information in online contexts. Moreover, we hope to uncover more detail regarding what barriers and facilitators that you experience when it comes to teaching students online credibility evaluation.

2. While the instructional intervention materials are being drafted, you will be invited to submit your feedback so that we can improve the instructional materials. You may choose to provide feedback on one or more of the modules.

3. If face-to-face classes resume and it is safe to do so, we will conduct classroom observation in person. If classes are online, we might observe your class remotely (during a Zoom session, for example). The purpose of this observation is to understand how you currently approach the teaching of online evaluation. Our researchers will not interfere with the way in which class activities would normally transpire. These sessions will be video and audio recorded to aid us in observation and subsequent analysis.

4. You will take a survey about your internet use. You will also administer a similar survey to your students. The teacher survey will have two parts. The first part will ask you for background/demographic information (gender, number of years teaching, etc.) while the second half of the survey will ask about how often you use particular internet applications (email, Facebook, etc.). The survey will be administered via an online, secure platform.

5. You will administer a diagnostic assessment (i.e., a pre-test) to your students before we implement the instructional interventions. During the assessment, in brief, students will be asked to compare websites and determine which are more or less credible. Then, they will be asked to write their conclusions. Student scores from this assessment will be used as a baseline against which their performance can be measured at the end of the intervention.

6. You will join other participating teachers to receive training on how to implement the interventions. A substitute teacher will be hired (and paid for by the grant) to teach your class while you participate in the training.

7. You will implement the interventions with your students. There will be 9 online modules that you can tailor according to your instructional goals. Ideally, you will integrate these modules into your regular instructional activities (e.g., when students are doing a project that requires online research). When you implement the instructional intervention, a researcher may observe your class, either remotely (via Zoom, for example) or in-person. After each class in which you implement an intervention, you will submit a report about your observations (e.g., what worked, what didn't, what might be improved, etc.).

8. Once you have implemented all of the interventions, you will administer a post-test to your students. This will be a similar assessment to the diagnostic assessment you already administered. The researchers will compare the students pre- and post-test scores.

9. You will be invited to share what you've learned with your colleagues. This might involve helping to lead professional development sessions so that other teachers can learn about how to implement the interventions in their own classrooms.

C. RISKS AND BENEFITS

Risks: It is possible that you may feel self-conscious when talking about your teaching practices with the researchers or while having your class observed. We would like to remind you that we (the researchers) are not there to judge your performance, but rather to learn more about how the students' learning of online evaluation skills can be best supported.

Benefits: You will benefit by receiving instructional materials that will help you teach students to evaluate the credibility of online information. These materials will be created by the research team in response to the teachers' needs in teaching online evaluation to their students. Your students will benefit from the opportunity to learn more about how to evaluate online information.

All participants will be given the option during the consent process to request study results. Any participant who requests study results will be provided with a short description of the findings electronically.

D. CONFIDENTIALITY

We will gather the following information as part of this research:
- Interview data
- Questionnaire data (background and demographic data, as well as internet use data)
- Student assessment data from the pre-/post-tests
- Feedback from you about the design of the interventions
- Artefacts from students created during the interventions (screen captures, audio/video recordings, written products)
- Report data (your observations after each intervention has been implemented)
- Student and teacher answers to the research questions

We will not allow anyone to access this data, except for people directly involved in conducting the research (e.g., researchers, research assistants). We will only use the information for the purposes of the research described in this form.

The information gathered will be coded. That means that the information will be identified by a code. The researcher will have a list that links the code to your name.

In the event that schools resume face to face instruction, we will protect the information by storing the hard copy data artifacts in a locked file cabinet in the researcher's locked research lab.

All data collected, whether digital or hard copy, will be properly secured and protected. Digital data (e.g., digital artifacts and Zoom recordings) will be stored in a password protected cloud storage account associated with the researcher's research lab. Hard copies of data will be kept in a locked cabinet in the research lab. Only members of the research team will have access to the hard copy and digital data.

After information from the hard copy artifacts has been de-identified and entered into spreadsheets, they will be destroyed. Digital artifacts will be de-identified and archived for possible secondary analysis. Zoom recordings will be converted into de-identified transcripts, after which the recordings will be deleted.

We intend to publish the results of this research. You will not be personally identifiable in these publications as your identity will be protected by the use of a pseudonym.

[ ]   I accept that the data and research from this study will be published and that I will be represented in these publications, although my identity will be protected through the use of a pseudonym.

[ ]   I do not accept the above.

We will destroy the information five years after the end of the study.

To make sure that research money is being spent properly, auditors from Concordia University or outside will have access to a coded list of participants. It will not be possible to identify you from this list.

F. CONDITIONS OF PARTICIPATION

You do not have to participate in this research. It is purely your decision. If you do participate, you can stop at any time. You can also ask that the information you provided not be used, and your choice will be respected. If you decide that you don't want us to use your information, you must tell the researcher up until four weeks after data collection has ended. To withdraw from this study, you may contact the researcher by emailing her at the email address listed on the first page of this consent form.

Teachers who participate in Strand 1 will receive $100:
- sharing their current instructional materials related to how they teach students to evaluate online information with researchers (1 hour)
- being interviewed about their teaching practices that are connected to teaching online evaluation (1 hour)

Teachers who participate in providing feedback on the instructional modules will receive $75 per module:
- for providing feedback on draft instructional materials of a module. Feedback is expected to take approximately 1.5 hours / module to complete.

Teachers who participate in Strand 2 will receive $1,000:
- taking training on administering pre-tests (30 minutes)
- administering a pre-test to students to collect baseline data (1 hour)
- taking a questionnaire and administering a similar questionnaire to their students. The questionnaire will cover demographic and internet use items. (20 minutes)
- for receiving training on how to implement the instructional materials (1 day; a substitute teacher will be provided)
- for implementing the instructional materials with their classes over approximately six sessions, integrating these into their regular teaching
- for keeping a diary of their observations after each class session where the intervention was implemented (15 minutes at the end of each class)
- providing formative feedback to students regarding their learning on the interventions

- participating in ongoing interviews with researchers
- providing ongoing feedback to the research team about materials design and evaluation
- administering a post-test to evaluate any change in students' online evaluation skills over the intervention strand

The honorarium was determined based on the number of hours that participation will entail (approximately 20) and an hourly rate of $50. If a teacher withdraws early from the study, they will still be compensated at the end of the semester.

There are no negative consequences for not participating, stopping in the middle, or asking us not to use your information.

You are asked to print and sign this consent form, and then either scan or photograph the signed consent form and return it to the researcher via email.

If you are not able to photograph or scan the consent form, you may provide oral consent via telephone. For oral consent by phone, the speaker function on the phone will be enabled and a digital audio-recorder will be used to record consent. A member of the research team will paraphrase the final statement from the consent form (i.e., You have read and understood this form. You have had the chance to ask questions and any questions have been answers. You agree to allow your child to participate in the research under the conditions described) and the researcher will ask you if you agree and consent.

G. PARTICIPANT'S DECLARATION

I have read and understood this form. I have had the chance to ask questions and any questions have been answered. I agree to participate in this research under the conditions described.

NAME (please print)   _____

SIGNATURE   _____

DATE   _____

If you have questions about the scientific or scholarly aspects of this research, please contact the researcher. Their contact information is on page 1.

If you have concerns about ethical issues in this research, please contact the Manager, Research Ethics, Concordia University, 514.848.2424 ex. 7481 or oor.ethics@concordia.ca.

Appendix C: Teacher Interview Protocol

Teacher Interview Protocol

Date: _____ Name of Teacher: _____ School: _____

1. What is your name? (to have it on record for analysis/transcription)

2. Tell us about your school… size, demographics.

3. What grades and subjects do you currently teach?

4. What is the language proficiency of your students? In other words, at which grade level would you say that your secondary 4 / Grade 10 students read? (ESL: What's their approximate CEFR level? A1, A2, B1, B2, C1, C2)

5. How long have you been teaching?

6. What does your schedule look like for teaching secondary 4 / Grade 10 English / ESL? For how many hours a week do you teach those students? How long is each class in minutes?

7. What kind of writing assignments do you typically assign in Secondary 4 / Grade 10 ESL / English? E.g., book reports, narratives, research essay, literary essay, newspaper article

    a. Do you require your students to use information from sources (non-fiction) in their writing?
    b. If so, do your students use online sources? What types of online sources?

8. How often do your students use the internet in your class? In a typical week, say?

9. How do students access the internet during class? Do they have their own devices or does the school provide them? Are the devices often available? What type of devices are they (e.g., tablet vs. laptop)?

10. What learning management system (e.g., Google Classrooms, Moodle, Brightspace) do your students use, if any?

11. What does online evaluation mean to you? Or, in other words, what does it mean to evaluate information found on the internet?

12. Consider the following questions:

    a. What role does online evaluation play in your classroom/ in any of the assignments / evaluations you assign?

    b. When you ask students to write using sources, do you evaluate how well they use source information? E.g., select important information, paraphrase the information, synthesize information from multiple sources.

13. What online evaluation knowledge and practices are important in the subjects that you teach? In other words, is there any particular knowledge and practices associated with online evaluation in the subject of _____?

14. Do you assign your students online research as a part of your class? If so, please describe the context around this.

15. How often do your students do online research in your class? In a typical week, say?

16. Do you specifically teach the skill of online evaluation in your class? If so, how does it get taught in your classroom? In the school more generally?

17. What supports do you receive, if any, to help you with teaching students to evaluate online information? Examples of supports are professional development, teacher education, training, and/or resources (e.g., books, websites).

18. Are there any barriers to accessing these supports (e.g., time, money, technology access)?

19. What other barriers do you face when teaching students to evaluate online information?

20. Would you be interested in collaborating on our research project? Let me tell you a little bit more about our project…
    - Ensure that we discuss that all of our modules will align with the *QEP*.

21. Previous intervention studies in this area have required between 5 – 15 lessons for the intervention to improve students' online evaluation practices. Would such a time commitment seem reasonable to you?

22. Topics?

Appendix D: Initial Coding List from Dedoose

- **Great quotes**
- **Teacher definition of CORE**
- **Topics**
- **Teacher concern**
- **Principle of least effort**
- **CORE_Context**
  - Presentation
  - Setting
  - Currency
  - Genre usefulness
  - Rhetorical techniques
  - Resource type and format
  - Genre credibility
  - Structure
  - Third party endorsements
  - URL
- **CORE_Source**
  - Purpose
  - Point of view
  - Expertise
  - Rhetorical technique
- **CORE_Content**
  - Eval. comprehensiveness
  - Eval. argumentation
  - Corroboration
  - Eval. explanation
  - Eval. usefulness
- **RQ1_Teacher Support Mat/Doc**
  - Curriculum design
  - CRAAP test
  - CIVIX
  - What they use
  - Quebec Education Program (QEP)
- **RQ2_Approaches to teaching**
  - Librarian/expert assistance
  - Methods
    - Opportunities to research in class
    - Approach – implicit
    - Approach – explicit

- Promote critical thinking
  - Teaching style
  - Assessment
  - Use of workbook
- Curated lists for students
- Modeling
- Existing materials
  - Study aid / tool
- Debates/public speaking/interviews
- Understanding bias
- Read summaries
- Class discussions
- Different reading styles
- In-class Internet use
- CORE specific
- Other projects (not research)
- Practice exams for Sec V final
- Rely on other subjects
- Sources (use of)
  - News sources
  - Google scholar
  - Blogs
  - Wikipedia
  - Eval. of sources used
- Reading/analysis
- Writing process/ response/reflections
  - Journals/media logs
  - Parody writing
  - Descriptive writing
  - Narrative texts
  - Opinion essay
  - Paraphrase/synthesize
  - Persuasive writing
- **RQ3_Support/barriers**
  - No expectations from school academically
  - Bias (confirmation)
  - Materials/curriculum lacking

- Information included?
  - Materials accessibility
- School spaces
  - EMSB virtual library
  - Library + space
- Department support
- Trusting attitude
- Expectancy (digital natives)
- Government incompetency
- School board support
- Language proficiency
- Professional development resources
- Must self-create materials
- Teacher training program
- Virtual learning
- COVID-19 impact
  - + consequence
  - - consequence
- Class size
- Distrust of science/facts
- Learning management systems (LMS)
- IB program
- Money
- Attitude
- School culture
- Secondary ministry final exam
- Time
  - Dedicated to planning
  - Overall lack of time
  - Overall ample time
  - Dedicated to professional development
  - Technology available
    - Smartboard
    - Cell phones
    - Laptops
    - Apps/websites

- Tablets
- Too much technology
- Teacher
  - Knowledge
  - Experience
  - Expectations
  - + Teacher attitude
  - - Teacher attitude
  - Misconceptions
  - Motivation
- Subjects taught
  - Contemporary world
  - ESL
- Student
  - Misconceptions
  - Motivation
  - + Student attitude
  - - Student attitude
  - Reading level
  - Comfort level in classroom
- Quebec education program (QEP)
  - Digital action plan
- Personnel
  - Outside resource person
  - Administration
  - Other teachers
  - In-school resource person
    - Librarian
    - Other in-school person (not librarian)

LEGEND
- **Parent code**
  - Child code 1
    - Child code 2
      - Child code 3

Appendix E: Reduced Coding List from Dedoose

- **Great quotes**
- **Teacher definition of CORE**
- **Principle of least effort**
- **CORE_Context**
  - Presentation
  - Setting
  - Currency
  - Genre usefulness
  - Rhetorical techniques
  - Resource type and format
  - Genre credibility
  - Structure
  - Third party endorsements
  - URL
- **CORE_Source**
  - Purpose
  - Point of view
  - Expertise
  - Rhetorical technique
- **CORE_Content**
  - Eval. comprehensiveness
  - Eval. argumentation
  - Corroboration
  - Eval. explanation
  - Eval. usefulness
- **RQ1_Teacher Support Mat/Doc**
  - CRAAP test
  - CIVIX
  - Study aids/tools
  - Resources
    - News sources
    - Google scholar
    - Blogs
    - Wikipedia
- **RQ2_Approaches to teaching**
  - Librarian session
  - Class discussions
  - Projects (research)
  - Projects (not research)
  - Teaching technique
    - Approach – implicit
    - Approach – explicit

- Critical thinking
- Assessment/Eval. sources
- Workbook
- Rely on other subjects
- Curated list of links
- Modeling
  - Final exams practice
  - Writing / Reading / Speaking
    - Oral practice
    - Reading summaries
    - Essays/Reflections
    - Reader response
    - Journals/media logs
    - Descriptive writing
    - Paraphrase/synthesize
    - Persuasive writing
- **RQ3_Support/barriers**
  - Bias (confirmation)
  - Materials lacking
    - Accessibility
    - Quality
    - Must self-create
  - School
    - EMSB virtual library
    - Library + space
    - Learning management systems (LMS)
    - Culture
    - Program
    - No expectations
    - Class size
    - Money
    - School board support
  - Government
    - Incompetency
    - Teacher training program
    - Ministry final exam
  - School board support
  - Language proficiency
  - Professional development resources

- Virtual learning
- COVID-19 impact
  - + consequence
  - - consequence
- Time
  - Planning
  - Overall lack of time
  - Overall ample time
  - Professional development
  - Technology
    - Smartboard
    - Cell phones
    - Laptops
    - Apps/websites
    - Tablets
    - Too much tech.
- Teacher
  - Experience
  - Expectations (digital natives)
  - + Teacher attitude
  - - Teacher attitude
  - Misconceptions
  - Subjects taught
- Student
  - Misconceptions (not trusting science)
  - Motivation
  - + Student attitude
  - - Student attitude
  - Trusting attitude
  - Comfort level
- Quebec education program (QEP)
  - Digital action plan
- Personnel
  - Administration
  - Other teachers (Dept. support)
  - Librarian

LEGEND
- **Parent code**
  - Child code 1
    - Child code 2
      - Child code 3

Appendix F: Environmental Scan Summary – Updated February 2023

		Language FR EN	Hyperlink FR	Hyperlink EN	Main Content	Evidence-based/based on research? Y/N/?
1	30 seconds to check it out 30 secondes avant d'y croire	FR & EN	30 secondes avant d'y croire	30 seconds to check it out	30 seconds to check it out is a training initiative developed by the Fédération professionnelle des journalistes du Québec. It lists different dangers of fake news, and was established mainly for Secondary Cycle Two students in Quebec. Examples of worksheets (French section only): *Repérer les sources de l'information, Comment authentifier une image,* and *Comment reconnaître une théorie du complot* UPDATE: https://www.cqemi.org/fr/ (Centre québécois d'éducation aux médias et à l'information)	Y research included
2	ACELF	FR	Médias Varia	–	**Médias Varia:** a pedagogical activity (comparison of 4 media sources) targeting students created by l'Association canadienne d'éducation de langue française. Includes Banque d'activités pédagogiques.	?
3	Allo prof	FR	L'ère de l'information numérique	–	Pedagogical material - a Fake News infographic poster (reading only) targeting users students and educators.	Y IFLA-produced
4	Apathy is boring	FR & EN	L'apathie c'est plate	Apathy is Boring	Pedagogical material–reading only in the Media Literacy unit: Disinformation about Fake News. Includes the 7 deception levels of fake news.	Y
5 NEW	Continuum pour le développement des compétences informationnelles en bibliothèque scolaire	FR	Continuum pour le développement des compétences informationnelles en bibliothèque scolaire	–	"L'objectif principal est de servir de cadre de référence pour le personnel qualifié des bibliothèques scolaires afin qu'il puisse soutenir adéquatement les enseignants dans l'enseignement de ces compétences importantes qui contribueront à faire des élèves des citoyens informés, efficaces et critiques par rapport à l'information."	Y
6	Boys and Girls Club	FR & EN	Parlons citoyenneté numérique	Let's Talk Digital	Pedagogical material - reading and activities by the Boys and Girls Club (nation-wide) [part of Canada's largest child-and youth-serving agency, many clubs in Quebec] "(...) [engaging] youth in a series of digital, media and civic literacy workshops and engagement opportunities, with the aim of lessening the impact of misinformation, polarization and disengagement." NOTE: Chapters called: Disinformation & Misinformation and three activities; The Changing Media & Information Environment and three activities READ LATERALLY, look for other places you can find information on the topic.	Y The Samara Centre for Democracy Government of Canada
7	Campus récit	FR & EN	Campus récit	Campus récit	Digital Training in Education: Professional Development Resources for Teachers, offered by RÉCIT and LEARN, related to the Digital Action Plan of the Education Ministry of Québec. Courses like "Compétence informationnelle" or "Leadership numérique" for example.	N/A
8		FR	–	Cours: À un clic de la fausse nouvelle	This web course has the option to register so teachers can receive a badge once completed. The course is meant to develop expertise in teaching staff on the topic of fake news and digital media. Page is very dynamic, inviting, ith animations, different texts, many videos.	Y
9		FR & EN	–	EMSB Récit site	Digital Literacy -> Digital Citizenship: Use, Understand, Create: A Digital Literacy Framework for Canadian Schools **SEE MEDIA SMARTS WEBSITE / DIGITAL CITIZENSHIP QUEBEC WEBSITE**	N/A
10		FR	Fausse nouvelles	–	YouTube file for teachers describing how false news is perpetuated. Good resource for teachers planning their material or for background.	N/A

		Language FR EN	Hyperlink FR	Hyperlink EN	Main Content	Evidence-based/based on research? Y/N/?
11 NEW	Escouade ÉDU		Escouade ÉDU Coaching LI-VE		Podcast Coaching LI-VE: 6 30-minute webinars Coaching virtuel gratuit (example lessons) -Comment vivre positivement une rentrée scolaire différente -21 leçons de leadership apprises durant la pandémie -Le leadership au service de l'autre et les conversations courageuses	
12	Récit	FR	Récit	–	The general Récit website has links to Campus récit and basic administrative information. Important: The academic advisors can be reached from this weblink: Conseillers pédagogiques du RÉCIT Some of the advisors have specific websites for the purposes they serve, or the information could be related to the designated school area they are involved with.	N/A
13		FR	Développer le jugement critique face à nos découvertes sur le web	–	Complete website called "Vers une identité positive à l'ère du numérique" but only one unit pertains to critical thinking in an online context: Développer le jugement critique face à nos découvertes sur le web. The unit has to do with validating sources online. **Mentions Cross Curricular Competencies from QEP**	Y
14	Carrefour éducation	~~FR~~	~~Carrefour éducation~~	–	~~Free resources for teachers by GRICS (the largest information technology company specializing in education in Quebec)~~ ~~Example: À un clic d'une fausse nouvelle~~ ~~**SEE 30 SECONDS / CTRL-F / DETECTEURS, ETC (All links go to outside sources)**~~	N/A
15	CIVIX	FR & EN	CTRL-F	CTRL-F	Pedagogical material using the range of software (Forms, Slides, PPT, etc.) targeting students and educators in highschool and elementary school. Both the English and French versions of the site offer many options for teachers and students. The videos are interesting, current and thought-provoking. One of the rare finds where the English and French information and resources available mirrir each other. Technique using 3 steps to verify information: source, claim, trace. No particular Quebec focus. READ LATERALLY, leave the page the information is on to check it on other oages first.	Y
16		FR & EN	Actufute	NewsWise	Pedagogical material using the range of software (Forms, Slides, PPT, etc.) targeting students and educators in highschool and elementary school. Both the English and French versions of the site offer many options for teachers and students. No particular Quebec focus. Videos link back to CTRL-F videos / Lesson: Fake News and Verification	Y
17		FR & EN	Civix Quebec	Civix Quebec	Éducation aux médias section of the website links to different case study ideas and the French content of CRTL-F. Quebec-focused unit: Boussole électorale : Édition jeunesse / Vote Compass Youth Edition Also interesting news: 2020: Consultations Budgétaires auprès des élèves du Québec	Y

		Language FR EN	Hyperlink FR	Hyperlink EN	Main Content	Evidence-based/based on research? Y/N/?
18	Décrypteurs	FR	Décrypteurs	-	A news site to fight against misinformathion on the web. Certain stories have some guidelines, but the site is not necessarily geared towards students in high school. There is a partion of the site where you can chat with a bot as it walks you through what you think you know or don't know about media literacy and fake news (14 self-learning topics: fake news, identifying weak sources). The site uses evidence very well. Les Décrypteurs are members of the International Fact-Checking Network (IFCN) UPDATE! https://www.facebook.com/groups/decrypteurs/	Y
19	Agence Science Presse	FR & EN	Détecteur de rumeurs	How is information constructed? Not the same as the French site. Aide-memoires, posters for classrooms	A Science oriented website resource with pedagogical options for worksheets, assessments in the section Éducation aux médias et à l'information. Certain (though not all) parts of the information exist in English. Topics: Information vs. opinion, How can you recognize a reliable website?, Assessing the validity of scientific information, How disinformers fool us Includes 75-minute training modules for: Fighting Fake News, Becoming a Fact Checker, Decoding Conspiracy Theories, and Understanding Science Disinformation. (You must sign up, then you will be contacted - unclear what the training looks like). Some material is third-party (Science ! Oh blogue, 30 seconds, etc.)	Y
20	Digital Citizenship Section: Information Literacy	FR & EN	Citoyenneté Numérique Québec	Digital Citizenship	By teachers, education consultants, and librarians from the English education community of Quebec. Of note: the section called Information Literacy. It has a wide range of different lessons though they do not all deal with critical thinking. Some are more geared towards ads, some spam, etc. They are not all Quebec-focused. Database searchable by grade level, for example Secondary Cycle II. Example of activity: True or Alternative Facts Classroom Activity. French and English offerings do not appear to be the same.	(?)
21	Ecole Branchée FR only	FR & EN	Ecole Branchee	-	A non-profit media that trains, informs and equips to help meet the challenges of teaching in the digital age. Professional development, digital competence and media education are their main focuses. The magazine has back issues which can be downloaded and certain issues might have a link to OCE (for example, this issue, p. 26) Teacher Education & Workshops Monthly emails with lots of resources (but non for OCE so far). UPDATE! https://ecolebranchee.com/evaluer-la-qualite-dun-site-web-ca-senseigne/ EB_V22N3-2020-Printemps.pdf There are a few resources from this publication that help with teaching CORE.	N/A
22	Historica Canada	FR & EN	Historica Canada	Historica Canada	Specifically, the Critical Digital Literacy Education Guide is a resource among several on this searchable database of various pedagogical materials.	Y
23	L'inspecteur viral	FR	L'inspecteur viral	-	~~L'inspecteur viral fact-checking and myth debunking blogue is no longer active. STOPPED in 2017. Jeff Yates went to Décrypteurs.~~	Y
24	La vérif	FR	La vérif	-	Fact-checked news articles, answers to questions.	Y

		Language FR EN	Hyperlink FR	Hyperlink EN	Main Content	Evidence-based/based on research? Y/N/?
25	Le Réseau d' information pour la réussite éducative (RIRE)	FR	RIRE	–	*"Le Réseau d'information pour la réussite éducative (RIRE)* disseminates information likely to meet the needs of those involved in educational success. This information is identified through monitoring activities of the *Centre de transfert pour la réussite éducative du Québec (CTREQ)."* Pedagogical resources seem to come from other sites (HabiloMédias, etc.)	Y
26	LEARN QC	FR & EN	LEARN Accueil	LEARN Home	LEARN (Leading English Education and Resource Network) is a non-profit educational organization with a mandate to serve the English-speaking community of Quebec. -> Pedagogical services -> Educational Technology / RÉCIT Network -> RECIT Anglophone Community (Local RECIT network) **SEE RECIT** OR -> Digital Citizenship Website **SEE DIGITAL CITIZENSHIP WEBSITE**	N/A
27	Faire une recherche, ca s'apprend	FR	Faire une recherche, ca s'apprend	–	Pedagogical material using the 3QPOC model. Target users could be elementary school or secondary, but the graphics on the site are a bit childish. Initiative of Université de Laval professor Martin Mottet. Specifically, notes and unit on "Évaluer une source" using the model.	Y
28	MediaSmarts Habilomedias	FR & EN	Habilomedia	MediaSmarts	Publication cited in Environmental Scan: USE, UNDERSTAND & CREATE: A Digital Literacy Framework for Canadian Schools Break the Fake, their popular fake media campaign, in English and French, among many other searchable lesson plans and resources. Activities like: Au-delà du message médiatique : la représentation du développement international dans les médias - Activité	(?)
29	SPOT the fake news online VRAI ou faux en ligne	FR & EN	Vrai ou faux en ligne	Spot the fake News Online	Canadian News Media Association website outlining 4 easy steps to spotting fake information online, can also apply to OCE.	(?)
30	Québec Education Program	FR & EN	Programme de formation de l'école québécois	Québec Education Program	Quebec's Elementary and Secondary Education Plan	N/A
31	Digital Action Plan	FR & EN	Plan d'action numérique en éducation et en enseignement supérieur	Digital Action Plan	Digital Action Plan for Education and Higher Education	N/A
32	School boards		Trouver un centre de services scolaire ou une commission scolaire anglophone ou à statut particulier	List of school boards and Service centres	Certain school board and Service centres have resources on their websites.	N/A
33	BANQ site (Bibliothèque national)	~~FR~~	~~Comment repérer les fausses nouvelles?~~	–	~~Target users general public *"Les fausses nouvelles"* (fake news)~~ ~~Adapted from https://www.torontopubliclibrary.ca/spotfakenews/~~ ~~The BANQ has no English (from QC) documents or resources on their Resources list.~~	~~Y*~~ ~~* depends on source~~