THOMPSON RIVERS UNIVERSITY

"Canadian and Iranian Graduate Students' Conceptions of Critical Thinking: A Comparative Study"

by

Farzaneh Ojaghi shirmard

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Supervisor: Dr. Edward R. Howe

Committee Member: Dr. Mahtab Nazemi

Internal Committee: Dr. Hilda Freimuth

External Committee: Dr. Penny Kinnear

ABSTRACT

This qualitative study compares Canadian and Iranian students' conceptions of critical thinking during their graduate studies in Canada. Critical thinking is an essential skill in higher education that enables students to have the art of making reasoned judgements from their observation and experimentation. The present narrative inquiry in the light of open-ended interviews describes the lived experiences of eight students: four Canadian and four Iranian, from different master's programs at a public mid-sized university in British Columbia province to examine their experiences and notions of critical thinking during their studies. The study's findings indicated that while all Canadian participants had a reasonable perception of critical thinking, some Iranian contributors required knowledge to build their critical thinking conceptualization. In addition to different cultural and educational backgrounds, content knowledge, instructors' competence, and teaching methods played vital roles in influencing the cultivation and development of critical thinking among both groups of students. The results recommend the need to re-examine the curriculum and ways instructors can facilitate critical thinking among Canadian and Iranian students.

Keywords: critical thinking, Canadian students, Iranian students, culture, narrative inquiry, comparative study

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LIST OF ABBREVIATIONS

BC ……...…… British Columbia
CT …… Critical Thinking
IELTS ……International English Language Testing System
RQ ……Research Question
GDP ……Gross Domestic Product
MENA ……Middle East and North Africa
NI ……... Narrative Inquiry

DEDICATION

This thesis is dedicated to the memory of my younger brother,

Mohammad Reza Ojaghi shirmard (1991-2017)

who was the river of passion, hope, and love that did not reach the ocean of life.

Mohammad,

Words cannot articulate how much I miss you.

I wish you were here now.

This is for you.

Chapter One: Introduction

How Was the Topic Born?

In January 2021, I started my master's program in Education at Thompson Rivers University in Kamloops, British Columbia (BC), Canada. I started my journey in one of the most challenging times in the history of the world. Since the unprecedented COVID-19 pandemic, all my classes shifted to a virtual format, and these changes posed new complications like a lack of communication with instructors and classmates in my education. At the beginning of my master's journey, I took a course entitled "Research Colloquium" that led us to practice our critical thinking (CT) by participating in various group activities on numerous topics in educational research. In the first session, while the class was virtual, I sat down in front of my laptop and waited for the instructor; I was looking at my classmates' profile pictures and had the typical thoughts: will this course be attractive? how much work I am supposed to do? could I get through my study? and of course, what instructor will look like?. When the instructor joined the class, after introducing herself, she kindly tried to explain the necessary information about the course, activities, and assignments; then, the story began. One of the weekly class activities was "critical discussion" based on the required subjects. When the instructor explained the process, I did not realize that it might be challenging, but, in practice, I had a big question: how should I reflect critically? As a non-western international student who studied in a different educational and cultural systems, I was confused and struggled with those particular assignments. Then, I realized, thanks to the technology, I could search on the internet to find an answer or discover a way to do the tasks. Unbelievably, I could not find anything clear to respond to my question. Also, I did not have a chance to meet the instructor or classmate in-person to ask them, and I was shy to ask them by email because I thought that only I could not manage these assignments.

While I was stressed and had a challenging question in my mind, I got an email from one of my classmates who had the same question. I was surprised since she was from another country and had the same question as me. She explained that she asked other students, and they could not find any clear answer for these particular assignments. This spark made me

dare to ask the instructor about the process of critical discussion. In the next session, at the end of class, I had a chance to express my big question: what is CT, and how can I use it? Therefore, the instructor provided a summary of CT, and based on my understanding, I realized that CT, this western concept is a set of skills that lead individuals to think and analyze a topic from another perspective and have the ability to make a judgment. With that explanation and more practice, I could understand a little about what CT is and how I should critically reflect on the topic. Still, I became curious about how international students who were raised in different cultural and educational backgrounds encounter the concept of CT in their western academic journey?

According to Sermeus et al. (2021), features like considering diverse outlooks, recognizing assumptions, logical thinking and association with complex problem solving and decision making make CT the crucial desirable result of education among students. In this regard, Zara and Othman (2013) noted that CT abilities are recognized as necessary skills for learners in fast-changing world that leads them potentially to enhance creative thinking, reasoning, communication skills and problem-solving talents. However, Kuhn (1999) highlighted that "enthusiasm for critical thinking as a goal of education shows no sign of waning" (p. 16). Yet, as Van Gelder (2005) pointed out, in general, students cannot become critical thinkers by being handed activities and assignments to improve the rigours of CT associated with academic literacy; indeed, they require to be apprenticed to the standards of CT and must gain some theoretical knowledge about its foundations.

According to O'Sullivan and Guo (2011), while some Canadian-educated students are unprepared to engage in the expected level of criticality when they enter university, international students who were educated in various cultural contexts and vastly different educational systems face significantly greater intellectual challenges. Moreover, Shaheen (2016) discovered that international students are often criticized as being non-critical thinkers and rote learners because of the lack of CT in their methods of studies. Likewise, in order to obtain academic literacy, they need to adopt thinking outlines, which highlight academic achievement through disciplines and modes of learning. Thus, international students need more attention to promote them to meet the standards of educational evaluation, which is recognized on the premise that "knowledge exists in and through critical thought" (Paul,

1992, p. 5).

Statement of Problem

The number of international students pursuing higher-level educational degrees in western countries has been growing due to the open-door policy and marketization of institutions in recent decades. One of the mandatory requirements to study in English-specking regions for international students from non-English-speaking countries is passing different language tests such as IELTS (International English Language Testing System). While these exams aim to indicate a fair and accurate assessment of students' English proficiency (Mat Daud et al., 2011) yet they do not indicate students' critical academic literacy "to adequately comprehend and produce academic texts" (Ewert, 2011, p. 5). One of the main attributes of Canadian higher education is to encourage students to think and reflect critically on knowledge and experiences. Nevertheless, international students are required to use CT in an academic context. Therefore, entering a Canadian academic community and becoming critical thinkers might be challenging for some international students, and their educational outcomes might be below academic standards.

Consequently, as CT is a western concept, far less but growing is a body of studies about international students' conceptions and experiences of CT in English-specking universities (e.g., Zhong & Cheng, 2021; Islamiyah & Sholakhuddin Al Fajri, 2020; Samanhudi & Linse, 2019; Tiwari et al., 2003). Most of these investigations focused on Chinese or Indonesian students in universities in the United Kingdom. Therefore, in a comprehensive meta-search of the literature, no studies were found to examine international students' perceptions of CT in Canadian universities. So, I intend to look deeply into the experiences of Iranian international students as the concept of CT developed in western world is absent in the Iranian educational system. I planned to discover their stories about CT, determine the impact of the Canadian educational experiences on their CT and compare their lived experiences with Canadian students. However, I must acknowledge the complexity of this topic which consists of deep cultural/linguistic roots of CT and cultural norms, values, beliefs, and practices that require consideration. In fact, in-depth consideration of these points and identity issues is beyond the scope of this thesis. Also, I must point out

that the definition of Canadian and Iranian students will be discussed in Chapter Four which is the methodology section of the thesis. In this study, when I speak of the "western concept," I mean primarily European and American notions. And, when I refer to "western countries," I refer to the United States of America, Canada, the United Kingdom, and Australia.

Significance of Study

According to the notion that CT is a vital part of academic literacy acquisition for graduate students, there are at least four reasons why study about Canadian and Iranian graduate students' perceptions of CT is important.

First, this research provides information on the experience of two diverse groups of Canadian and Iranian students doing their masters in various programs at a public mid-sized Canadian university. Second, the study's results deliver much-needed insights into the impact of a Canadian university on postgraduate students' conceptions of CT. Third, the present investigation drew on data collected through interviews among participants to compare their experiences, opinions, and challenges of CT during their studies. Through understanding students' conception of CT, curriculum developers will have more knowledge to design a curriculum that considers developing CT among local students while paying attention to Iranian international students' needs and academic backgrounds. The research will lead to a richer indication of how a curriculum and environment can effectively influence the development of CT in the academic context among Iranian students. The findings of this research may be used in higher education institutions to design more culturally relevant pedagogies. Thus, administrators, department heads, and instructors at colleges and universities will be able to design, plan, and implement CT instructional strategies within their curricula. Finally, it is hoped this thesis will add to the body of research and help other scholars interested in comparative and international higher education studies to acquire a snapshot and better understand Canadian and Iranian students' conceptions of CT.

Research Questions

This narrative study examines Canadian and Iranian students' conceptions of CT during their graduate studies. To reach this aim, I broadly engage focus on two research questions (RQ):

1- What are Canadian and Iranian graduate students' conceptions of critical thinking?
2- How does the experience of studying at a Canadian university impact graduate students' critical thinking?

Organization of Chapters

The present research compares Canadian and Iranian international students' conceptions of CT during their master's programs at a Canadian university. In this regard, I present the thesis in seven chapters as follows:

My research begins with Chapter One, which introduces the background for the study by providing a statement of the problem, the significance of the study, and the questions that the study will address. Chapter Two offers a brief literature review to situate the study in the different aspects, including a historical perspective of CT, definitions of CT, the importance of CT, the role of CT in higher education and will sum up the previous studies that have been done in the research scope. Chapter Three spells out different aspects of education in Canada and Iran to better comprehend CT contexts within the two regions. Chapter Four describes the research methodology by focusing on the researcher's positionality, the study's design, site and participants, data collection and procedures, trustworthiness approaches and ethical considerations. Chapter Five details the study's findings based on participants' lived experiences to deliver answers to research questions. The discussion about the results of the study is presented in Chapter Six. Finally, Chapter Seven provides implications and limitations of the research, offers recommendations for future studies, and will come to an end with concluding remarks.

Chapter Summary

This chapter established the need to understand international students' conceptions of CT during their higher education in Canada. The chapter introduced the situations that international students encounter related to the use of CT during their graduate studies. Through vast meta-search of the literature, I found studies that aimed to discover Chinese or Indonesian students' perceptions of CT in western universities, mainly in the UK, and no studies were found in the context of Canadian and international students' pictures of CT. As

the population of international students in Canada is increasing and considering most of these students are from different academic and cultural backgrounds, where CT is not a primary component in their home countries' educational systems, there is a need to pay attention to these students' experiences of developing CT in Canadian academic context. Therefore, the current research aims to be a voice for Canadian and Iranian international students, to discover and clarify their conceptions of CT and the impact of a Canadian university on their CT. The cultural and educational background differences among Canadian and Iranian students appear to demand for curriculum developers to design programs that consider developing these essential skills not only for Canadian students but also paying attention to Iranian international students' needs and academic backgrounds. Chapter one introduced the topic, the problem statement, the importance of the study, and specific research questions in the study. The organization of chapters provides a review of the whole thesis that support this research. In the following, the second chapter will present a review of the related literature on the study's scope.

Chapter Two: Literature Review

This chapter examines the literature on CT features. The chapter first provides a brief history of the concept of CT, followed by an overview of the various notions and scholars in the following sections: definition of CT, the importance of CT, and the role of CT in higher education. Moreover, the chapter will review previous studies about international students' conceptions of CT in western countries.

Critical Thinking

Recognizing Critical Thinking

Historical Perspective of Critical Thinking

According to Paul et al. (1997), the origins of appreciating the value of CT as a learning objective may go back to antiquity and the ideas of Socrates. Through the reflective question of shared beliefs and explanations, Socrates recognized those acceptable and rational beliefs from those which appeal to our natural egocentrism. Indeed, Socratic questioning as a teaching strategy invites the attention of several viewpoints on a subject and the question of an individual's beliefs and the underlying assumptions behind arguments. After Socrates, philosophers like Plato, Aristotle, and the Greek skeptics continued Socrates' tradition and searched for the truth beneath the surface by examining whether what seems to be is what it really is. In the Middle Ages, Thomas Aquinas pioneered the writings and teachings of systematic CT, which believed in the potential power of reasoning and the need for a reason to be systematically cultivated and cross-examined. During the Renaissance, several philosophers such as Colet and Erasmus welcomed the principles of questioning and doubt as a technique of scientific investigation leading to more profound thought and understanding of knowledge. Later, the thinkers of the French Enlightenment (e.g., Bayle and Montesquieu), through extending CT to examine the nature of the social and political world, had a meaningful influence on this western concept.

In contemporary times, an American philosopher and educator, John Dewey, has been identified as the father of modern CT tradition (Fisher, 2001). Dewey (1910) believed that the primary goal line of education was learning to think critically. In the same direction, various contemporary scholars, and educators such as Baron and Sterberg (1987) and Brown

(1998) agreed that training in CT should be an essential task of education.

Definition of Critical Thinking

CT is rooted in two primary academic disciplines: philosophy and psychology (Lewis & Smith, 1993). Also, Sternberg (1986) has noted a third CT discipline is from an educational view. Thus, CT is a rich concept with various approaches that are open to define from multiple perspectives: philosophy, psychology, and education. Some definitions are broad, and some others are narrow. The earliest attempts to define this complex thinking began over 100 years ago with Dewey (1910), who coined the term CT for the first time. Dewey called "reflective thinking" an "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusion to which it tends" (p. 6). In his definition, he emphasizes reflective thinking involves individuals asking themselves questions about what to believe by evaluating reasoning and considering the implications of one's beliefs.

Another definition of CT regularly cited by higher education professionals is defined by Ennis (1987), which is based on five significant ideas: "practical, reflective, reasonable, belief, and action" (p. 10). He integrated these creative elements into the definition of CT as "reflective and reasonable thinking that is focused on deciding what to believe or do" (Ennis, 1985, p. 45). He pointed out that the upper three levels of Bloom's Taxonomy of educational purposes (analysis, synthesis, and evaluation) are associated with CT (Ennis, 1993). In addition, Bloom's Taxonomy is an extensive educational research framework created by Benjamin Bloom in 1956 (Armstrong, 2010). Bloom's Taxonomy is a structure that can be used to define levels of human thinking skills, from lower-order thinking to higher-order thinking. It is a multi-tiered model of classifying thinking into six cognitive levels of complexity that are associated with CT. These categories include knowledge, comprehension, application, analysis, synthesis, and evaluation (Forehand, 2010).

From Sternberg's (1986) viewpoint "critical thinking comprises the mental processes, strategies and representations people use to solve problems, make decisions, and learn new concepts" (p. 3). In terms of CT as a mental process for analyzing or evaluating information or problems, Mendelman (2007) found that CT involves "gradual progression from the superficial to the increasingly complex" (p. 300).

One more definition of CT is provided by Scriven and Paul (1987), who defined as "the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action" (p. 1). Also, Facione (1990) explained that the ideal definition of CT is "habitually inquisitive, well informed, trustful of reason, open-minded, flexible, [and] fair-minded in evaluation" (p. 6). In their research, Lewis and Smith (1993) discussed that there are at least three different definitions for CT: "(a) critical thinking as a problem solving, (b) critical thinking as evaluation or judgment, and (c) critical thinking as a combination of evaluation and problem solving" (p. 134). Moreover, Brookfield (2020) explored that CT is a process that causes individuals to frequently start researching assumptions that they are faced with, which allows them to look for relevant "evidence and experience"; thus, they can further recognize and understand the world. In addition, Islamiyah and Sholakhuddin Al Fajri (2020) noted that CT is defined with general key terms such as inquiry, evaluation, analysis, inference, reflection, and judgment in an academic context. Tempelaar (2006) used the word "metacognition" to define critical thinking as a cognitive psychologist. Unlike the above scholars, Atkinson (1997) argued that CT is a social practice that is learned automatically through living life in a specific cultural context where individualism, self-expression, and using language as a tool for learning are highly valued and promoted. In other words, the researcher believed that "critical thinking is cultural thinking" (p. 89).

According to the above evidence, there is no specific definition for the concept of CT. The literature review demonstrated numerous meanings of CT that causes difficulties in maintaining a clear focus on its essence. However, several scholars (e.g., Howe, 2004; Fakunle et al., 2016) agree that the term CT includes various skills, strategies, and levels of complexity which are associated with creative thinking, problem-solving, decision-making, and deductive reasoning. As I mentioned earlier in Chapter one, I must acknowledge the complexity of this topic. While several elements might impact defending CT among students (e.g., student's background culture, English proficiency among Iranian students, students' program of studies), the main scope of the current research is to examine the level of understanding of the concept of CT among students. Exploring students' conceptions of CT is

based on Bloom's Taxonomy as the second analytical framework, which will be discussed in Chapter Four, the methodology section of the thesis.

The Importance of Critical Thinking

CT is a powerful resource in an individual's personal and civic life and is a pervasive and self-rectifying feature in human phenomenon (Facione, 1990). Further, Franco (2016) believes that "critical thinking is the kind of 'good' thinking used in everyday life to increase the chances of success" (p. 108). According to Kpazaï et al. (2011), CT is a crucial tool for all learners because it favours acquiring several skills required to face a changing world. Through CT skills, individuals can counter uncritical thinking and thoughtless action in different situations. Likewise, CT counts as a sensitive skill in different contexts because it identifies the specificity of each case and provides a viable response. Even more, Norris and Ennis (1989) discussed that critical thinking maintains independence for individuals that lead them to "exercise autonomy in making important decisions, respecting the rights and others autonomy of others, and seeking not only factual information but also an understanding of why things are as they are" (p. 22). Therefore, recognizing propaganda, analyzing hidden assumptions in arguments, and assessing the credibility of information is the result of CT for critical thinkers (Halpern, 1996, as cited in Maudsley & Strivens, 2000). Indeed, the significance of CT not only is allowing individuals to indicate their skills, such as observing, inferring, generalizing, reasoning, and evaluating, but also is a requirement of propensity to "seek and to base judgment and action upon reasons" (Siegel, 1990, as cited in Islamiyah & Sholakhuddin Al Fajri, 2020, p. 4404). Nevertheless, a study conducted by Miri et al. (2007) presented that learning experiences concentrate on analysis, evaluation, and synthesis. At the same time, it develops abilities such as problem-solving, inferring, estimating, predicting, generalizing, and creative thinking, which is all considered CT skills. Indeed, in modern life, making rational decisions based on evaluative judgments or CT is essential for people rather than accepting authority. Also, CT builds a variety of skills for individuals. Namely, critical thinkers can understand how language can be used to create and analyze arguments based on their goals. Moreover, CT leads individuals on how to evaluate hypotheses and use the laws that guide scientific reasoning while, similarly, displaying how to determine probabilities and consider the odds of success in each situation (Franco, 2016). Additionally, Hashemi et al.

(2010) stated that the significance of CT is its impact on people's personal and social characteristics, as CT not only leads them to avoid accepting speech and ideas blindly and without reason but also allows individuals to place a question sign opposite of different models that are inspired smartly from specific patterns. Indeed, the authors argued that CT assists individuals in being sensible and civilized citizens in society. Yet, Marin and de la Pava (2017) noted there is no guarantee being educated and practicing good judgment makes individuals happy or economically prosperous. Still, CT certainly provides more occasions to reach these goals.

To sum up, examining the importance of CT by various scholars indicates that CT is seen as an ability that is not only objectively valuable but also beneficial for evaluation. People's quality of life depends on the quality of their thinking because they can analyze and evaluate different opinions to develop their beliefs. Thus, individuals, by systematically cultivating their knowledge, insights, and assumptions, must improve their thought and perspectives (Egege & Kutieleh, 2004; Marin & de la Pava, 2017).

The Significance of Critical Thinking in Higher Education

Several scholars highlighted that CT plays an important role in higher education, and it is vital for students to develop essential abilities in all programs as "critical thinking successful completion forms the heart and soul of every subject because its concepts and principles are presupposed in, and give rise to, the logic of every subject" (Fella & Lukianovaa, 2015, p. 3). Franco (2016) argued that higher education is a public product, and a high-quality higher education institution follows an attitude designed to guide students to improve as human beings. Another investigation conducted by Chitpin and Evers (2012) highlighted that CT is a fundamental goal in education explicitly featured in the elementary and secondary school curriculum. Yet, Egege and Kutieleh (2004) claimed that the main distinguishing factor separating university academic standards from secondary school academic standards is CT which always has been viewed as a necessary attribute for all successful students. Students as future citizens not only have to build their knowledge capacity, but also, they need to improve their higher-order thinking skills, such as CT, decision making, and problem-solving in order to "facilitate the transition of students' knowledge and skills into responsible action, regardless of their particular future role in

society" (Miri et al., 2007, p. 354). Based on Franco's (2016) point of view, through CT in higher education; people become citizens, who consider life as a process of meaningful lifelong learning "guided by ethics and evidence for personal and common prosperity and, more important, freedom" (p. 118). Likewise, Tsui (2003) highlighted that CT leads students to recognize issues and assumptions in a university environment, identify relationships, make proper inferences, evaluate evidence, and deduce conclusions. Thus, CT must be taught early, practiced often, and not be pushed from online core content designs (Trottier, 2009). Similarly, university context is frequently connected with general key terms such as inquiry, evaluation, analysis, inference, reflection, and judgment (Islamiyah & Sholakhuddin Al Fajri, 2020). According to Fahim and Shakouri Masouleh (2012), preparing students to think critically is an objective in higher education. This ability is the content of education at this level which requires higher-order thinking, such as applying critical evaluation and giving evidence for their opinions. The researchers suggested that in a higher education context, instructors must provide students with diverse models, opportunities, and explanations to assist them in operationalizing their skills.

Altogether CT is essential in academic context, especially at higher education levels, as it reveals itself in argumentation and enables students to move from passive recipients to active participants. Thus, through social and cognitive activity, CT creates dynamic skills among students (Islamiyah & Sholakhuddin Al Fajri, 2020). Recognizing some CT aspects from different scholars' world horizons appears culture has a significant impact on promoting CT among people because it influences different academic processes such as learning processes or pedagogies approaches.

Previous Studies

CT is an integral part of education and a crucial attribute for students, especially in higher education (Howe, 2004; Zhong & Cheng, 2021). Although there are several studies regarding conceptions of international students about CT in western countries, there are little data regarding Canadian and Iranian students in this area. For example, Tiwari et al. (2003), through a cross-sectional design methodology, compared the CT dispositions among Asian (Hong Kong Chinese) and non-Asian (Australian) nursing students in two universities, one in

Hong Kong and the other in Australia. The results of their study showed significant differences in critical thinking disposition between both groups of students. While the Hong Kong Chinese students failed to show a positive disposition, the Australian students demonstrated a positive disposition toward CT. Another study by Chaisuwan et al. (2021) examined the CT dispositions and differences through cross-sectional research among baccalaureate nursing students in Thailand and United States based on cultural values. The outcomes of their research displayed no statistically meaningful relationship between cultural values and CT dispositions. However, nursing students in the United States had a remarkably higher mean score on the entire cultural values and subscale of autonomy, secular, and emancipative values than nursing students in Thailand. In another investigation, Zhong and Cheng (2021) published an article that, through a qualitative study focused on Chinese as international students at a British university, to examine their perspectives on CT and ways that students could develop CT during their studies. Similarly, in their research, Islamiyah and Sholakhuddin Al Fajri (2020), in the light of interviews, tried to discover Indonesian students' perception of CT in a British university during their graduate studies to discover influencing factors on the development of CT among students. In a different study, Egege and Kutieleh (2004) explained while CT is a paradigmatic case for universities that maintain it as a requirement of quality academic work, academics still bemoan the lack of a critical approach to a study by international students. The authors argued while there are differences in learning styles and attitudes among diverse cultural groups of students; there is a mandate needed to facilitate the successful transition in terms of teaching or developing CT capacity as a vital "distinguishing feature between western academic models of study and non-western or Confucian-based learning systems" (p. 78). Fella and Lukianovaa (2015), in their study, which focused on the lack of CT skills among international students who study in British universities, found that cultural background among students is a barrier to developing critical thinking ability. The scholars discussed that there is a considerable power distance between teachers and learners in teacher-centered setting education. This creates a passive learning environment in which students accept a teacher's authority and do not participate in lectures or lessons without being invited. Furthermore, researchers highlighted international students continuously in their academic achievements obtain "lower ratings, not only because they

write in a foreign language, but also because they cannot think critically, presumably because they have not been trained to do so before they came to the UK" (Fella & Lukianovaa, 2015, p. 4). In the same light, a study conducted by Song (2016) about Chinese international students in Australia indicated that Chinese students were concerned that their perceived incapacity to present Western-style CT is indicative of the existence of their own different rival types of knowledge. In Canadian research contexts, many studies focused on different areas of CT. For instance, Wright (2002) found teaching CT problematic due to existing definitions, practices, and obstacles; thus, the scholar in their investigation outlined several methods for teaching and developing CT among students. In another study guided by McGrath (2003), through a cross-sectional research design, the researcher tried to explore the CT and dispositions among baccalaureate nursing students at a university in Western Canada. The study's findings indicated that while about 38% of the students had adequate levels of CT, and 85.5% of the students had sufficient levels of CT dispositions, there is still a need for continued development in these areas. In a comparative study, Howe (2004) examined Canadian and Japanese teachers' conceptions of CT through a mixed-method study. The study's results indicated that while Canadian teachers tended to connect CT to the cognitive domain, Japanese educators stressed the affective domain. In another investigation, Gunn et al. (2008) focused on examining the importance of CT in science education, both at the secondary and post-secondary levels among Canadian students, through drawing from CT and science education literature, as well as previous studies in this area. Their study concluded that CT is a necessary component of science education and that it must be pursued at the secondary and post-secondary levels.

To summarize, CT is a key skill for students, especially international students in higher education. There have been several types of research regarding international students studying in English-speaking countries. The review of the current literature has found no research focused on Canadian and Iranian students, studying at Canadian universities, and their conceptions of CT. This study aims to fill this gap.

Chapter Summary

In this chapter, I examined CT from different components, namely the historical

perspective, the definition of CT, the value of CT, and the importance of CT in higher education based on different scholars' ideas. The definition of CT, this essential skill for individuals' daily life, has been multitude and can be found in the literature on CT differently. Moreover, I reviewed current literature regarding international students' conceptions of CT who are studying in western countries and the existing barriers they faced during their educational path. Indeed, their difficulties are compounded by their different ways of reasoning that result from an upbringing in diverse cultural communities (D'Andrade, 1995). Also, I noticed that there is insufficient research in the literature on Iranian students' conception of CT who study abroad, mainly in Canada. In the next chapter, I examine the context of education in Canada mainly BC and Iran from different perspectives to better understand CT's place in these regions.

Chapter Three: Education in Canada and Iran

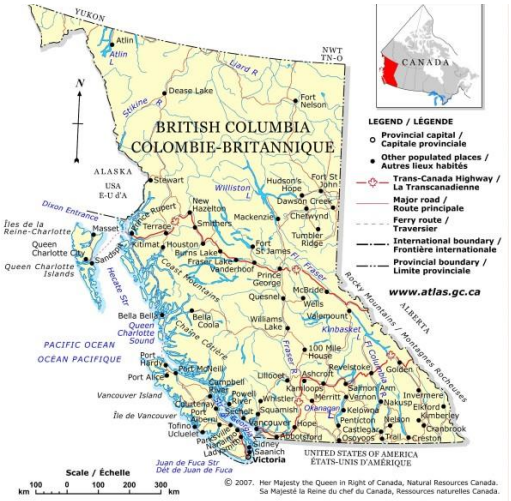
The following chapter explores education in British Columbia, Canada and Iran. This section examines BC from a historical perspective, higher education, international students and the role of CT in BC's education system. In this part, I will discuss Iran by providing information about its geographical location, historical perspective, education system, higher education, and the role of CT in Iran's education system.

Education in British Columbia, Canada

Education in Canada is under the authority of each province. According to Jones (1997), the responsibilities that have been assigned among the government of Canada and provinces allow under the British North America Act, the regions have the sole responsibility for education. Factors that have shaped education in Canada are religion, language, culture, geography, demography, and economics. Canada has ten provinces, but most notably it is BC that has implemented significant education reforms in CT (Howe, 2004). Therefore, in this study, I focus on the region of BC to better understand the context of education in terms of CT.

***Historical Perspective*.** The westernmost province of Canada is BC which is located between the Pacific Ocean and the Rocky Mountains, and it covers 950,000 square kilometres. According to the Government of British Columbia (2021), the population of BC was 5,147,712 as of July 1, 2020. There are various dates about the period of BC's identification and elaboration of provincial needs, innovation, expansion, and the establishment of regional post-secondary education systems, but it might be described anywhere from the 50s to the early 70s (Jones, 1997). Figure 1 displays a map of BC.

Figure 1
Map of British Columbia



Note. Adapted from the Government of Canada, (2007). *British Columbia*. [Map]. https://ftp.maps.canada.ca/pub/nrcan_rncan/raster/atlas_6_ed/reference/bilingual/bc_new.pdf

Higher Education. Post-secondary education in Canada can be traced back to the early permanent settlements of New France. Universities did not emerge until after Canada became a British colony. The dominion of Canada was created by the British North America Act of 1867, and BC joined the Canadian federation in 1871 (Jones, 1997). In BC, the post-secondary education system is integrated. It has a well-established transfer and articulation system among post-secondary institutions that offer a range of education and training options. In this regard, there are various types of post-secondary institutions that include 25 public post-secondary institutions, 20 private and out-of-province public degree-granting institutions, private training institutions, 15 theological institutions, 43 aboriginal-controlled post-secondary institutes, and language training institutions that offer both full and part-time adult education (The Government of British Columbia, n.d.). According to Statistics Canada (2020), during 2018 and 2019, 227,022 domestic students were studying at the post-secondary level in BC, of which 96,276 were men, 130,308 were women, and 438 were

gender unknown. 145,512 were students who attended universities, and 81,510 joined colleges. Therefore, higher education in BC has been playing a prominent role in the social and economic development of the province (Jones, 1997).

International Students. The number of international students from diverse linguistic and cultural backgrounds studying outside their home countries is increasing continuously, with more than 2.5 million all around the world (Samanhudi & Linse, 2019). Their presence, according to, Dos Santos (2018), increase the overall diversity of higher education institutions in Canada. The researcher discussed Canadian higher education institutions, specifically and found BC to be a popular destination among international students for educational and research purposes based on the institutions' well-known academic qualities. Furthermore, BC made the second-largest contribution to Gross Domestic Product (GDP) with 19.8% in 2018 due to welcoming a significant number of international students from more than 150 countries to experience a world-class education and life (Global Affairs Canada, 2020). Thus, international education plays a vital role in the Canadian economy. Statistics Canada (2020) reported that international students in BC in 2018-2019 numbered at 68,466, including 34,074 males, 34,323 females, and 69 unknown genders. Further, 15,642 of these were international students from West Central Asia and the Middle East. In this regard, Gregor and Jasmin (1992) explained that educating international students not only is a great way to provide good relations with other countries but also improves Canada's ability to function effectively in a global economy, as foreign students provide a significant resource for university and college communities.

Critical Thinking in British Columbia Education. Considering that the BC education system is among the best in the world (Dos Santos, 2018; Ali Shah et al., 2019; Khelifaab et al., 2022), several scholars (e.g., Howe, 2003; Hymel et al., 2017; Fillion, 2020) have revealed the BC education system is undergoing an extensive transformation in terms of applying CT components in the curriculum. This transformation aims to stress problem-solving and CT, literacy and communication, teamwork, and information technology in order to coordinate with the realities of 21st-century education. BC's curriculum leads students to make judgments based on reasoning. In other words, students, through considering options, analyzing specific criteria, and drawing conclusions, can make judgments. In fact, CT

"competency encompasses a set of abilities that students use to examine their own thinking, and that of others, about information that they receive through observation, experience, and various forms of communication" (Ministry of Education in British Columbia, n.d., para. 1). Thus, clearly, education in BC aims to foster students who can be critical thinkers and reflect on the different information, ideas, and experiences, in order to set objectives, make judgments and refine their thinking. According to the above evidence, CT is rooted in BC 's education system, especially higher education, in which students critically appraise knowledge and values; therefore, international students are required to be able to adapt to this academic convention to be a part of the academic community (Islamiyah & Sholakhuddin Al Fajri, 2020).

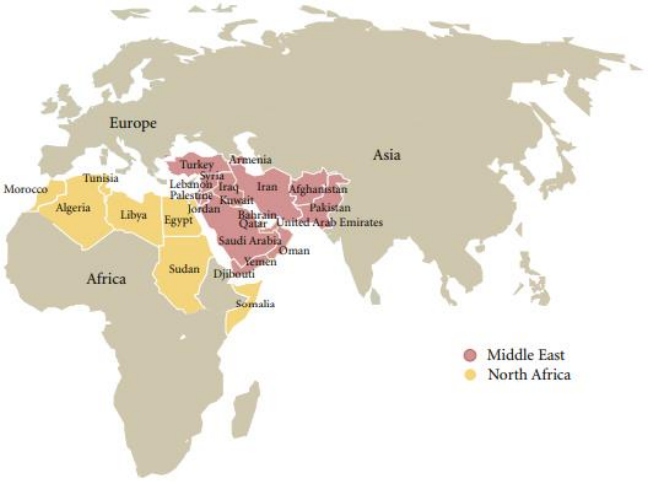
Education in Iran

Iran is one of the Middle Eastern countries. As a starting point for examining education in Iran, it would be worthwhile to review a brief history of the Middle East to obtain a comprehensive outlook of this part of the world. Therefore, this section starts by providing concise information about the Middle East and will finish with a focus on Iran.

Where Is the Middle East? While there is different information about the numbers of Middle Eastern countries**,** Yousef (2004) discussed that according to the World Bank and the United Nations, reference to the Middle East corresponds to the operational definition of the Middle East and North Africa (MENA) region which includes most members of the Arab Union and Iran. Creedon and Al-Khaja (2019) explained that the MENA region ranging from Egypt to the Arabian Peninsula, includes 18 countries from Morocco on the eastern shores of the Mediterranean to the Arabian Peninsula: Algeria, Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates (UAE), and Yemen. Similarly, Alsulami et al. (2013) noted that 15 countries between western Asia and northern Africa structure the Middle Eastern region. Furthermore, the authors identified that Iran, Iraq, Qatar, UAE, Bahrain, Saudi Arabia, Kuwait, Israel, Oman, Jordan, Lebanon, Egypt, Palestine, Syria, and Yemen are Middle Eastern countries. According to the World Bank (2019), MENA countries are the same as those mentioned above, with the exception of Palestine. Aidaros (2005), in their investigation

in addition to countries mentioned earlier, claimed that Afghanistan, Cyprus, Somalia, Sudan, and Turkey are also included in the MENA region. Figure 2 represents Map of Middle East and North Africa.

Figure 2
Map of Middle East and North Africa



Note. Adapted from *Diet, Genetics, and Disease: A Focus on the Middle East and North Africa Region* by Fahed et al., 2012, Journal of Nutrition and Metabolism, 2012, 1-19. DOI: 10.1155/2012/109037

From an economic perspective, Middle Eastern countries are ranked by the World Bank based on their GDP. The high-income countries include Qatar, the UAE, Bahrain, Saudi Arabia, Kuwait, Israel, and Oman. The middle-income countries are Iran, Jordan, and Lebanon, and the lower-income countries are Egypt, Palestine, Syria, Yemen, and Iraq (Alsulami et al., 2013).

Many common themes run across the historical and cultural experiences of Middle Eastern countries. Indeed, the Middle East primarily refers to more or less similarity in the cultural, traditions, religious, geographical, and climatic conditions that do not have precise borders (Aidaros, 2005; Budhwar & Mellahi, 2007). The main ethnic groups in the Middle East include Arabs, Iranians (also known as Persians), Turks, Jews, Kurds, Berbers,

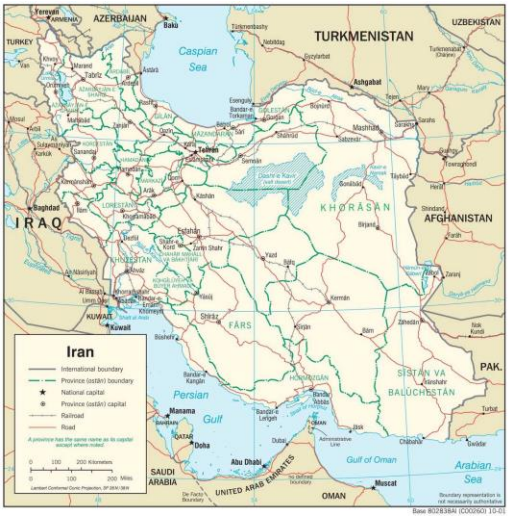
Armenians, Nubians, Azeri, and Greeks. Besides, major languages spoken in the Middle East reflects its ethnic diversity, which includes three main languages which are Semitic (Arabic, Hebrew, and Aramaic), Indo-European (Kurdish, Persian, Armenian), and Turkic (Turkish, Azeri) (Public Broadcasting Service, n.d.).

The Middle East is the birthplace of the three major monotheistic religions: Islam, Christianity, and Judaism (Serour & Serour, 2021). In their research, Budhwar and Mellahi (2007) expressed that Islam is the main religion, with approximately 95 percent of the total majority population following it. Once more, Aidaros (2005) highlighted that the other populations follow Christianity and Judaism. The estimated population of the MENA region was 464,554,123 in 2020 (The World Bank, 2020).

To sum up, Maclean and Fien (2017) revealed while there is great diversity in Middle Eastern countries in terms of demography, culture, and economic development, still, there is much a similarity among the regions, such as having hopes for a better life and the positive future for children and young generations in the Middle East.

Iran's Historical Perspective. Iran, also known as Persia until 1935, is located in Southwest Asia and is one the most populous countries in the Middle East. According to The World Factbook (2022), the estimated population in Iran is approximately 86 million people. Iran is a multicultural and multiethnic country composed of Persian, Azeri, Kurd, Lur, Baloch, Arab, Turkmen, and Turkic tribes. The official language is Persian or Farsi and there are several dialects such as Azeri, Kurdish, Gilaki and Mazandarani, Luri, Balochi and Arabic. Islam is the main religion in the country, and the Iranian population is mainly Shia 90-95%, Sunni 5-10% other (including Zoroastrian, Jewish, and Christian) 0.3%, unspecified 0.2% based on the World Factbook (2022). Figure 3 displays the map of Iran.

Figure 3
Map of Iran



Note. Adapted from the World Factbook (2018). *Maps-Iran*. [Map]. https://www.cia.gov/static/4ee450549211daefc351c92a33a7590c/47498/Iran_Transportation.jpg

Education System in Iran. Education in Iran is divided into two levels. The Ministry of Education manages K-12 education, and higher education is under the Ministry of Science and Technology management. There is compulsory education for all children, starting at the age of six, and there are both free public and private schools at all levels for students. The Iranian education system is extremely centralized and delivers a national curriculum for all grades (Madandar Arani et al., 2012). Iran's Islamic Revolution in the late 1970s affected significant changes in social systems, including educational and legal systems. The educational system has changed in numerous dimensions, such as school programs and the content of school textbooks, which are based on Islam frameworks and the rejection of other ideologies. Hence, in 1980 the Higher Council of the Cultural Revolution was founded to Islamize the country by Islamizing the content of the Iranian education system (Salehi Abari & Nikdoosti, 2021; Hashemi et al., 2010; Shahnazari, 1992). Nevertheless, the latest estimated literacy rate among Iranian people in 2016 was 85.5 %, consisting of men 90.4%

and women 80.8% percent (The World Factbook, 2022).

Higher Education in Iran. Iran has an extensive network of public, private (Azad), and state-affiliated universities that offer main degrees, namely associate-level programs, undergraduate and graduate degrees, and graduate doctorate levels. The tradition of university education in Iran dates back to the early centuries of Islam, the 20th century; however, the system had become old-fashioned and was adapted along French lines. Tehran University is the first modern university located in Tehran, the capital of Iran. It established in 1934, and the Ministry of Science was formed in 1967 (Raisan, 2009). There are 54 state universities, 42 state medical schools, and 289 major private universities operating. Public universities are free for all students, but it is competitive, and students must pass a centralized exam. Private universities also operate the same way, except they are not as competitive, and students must pay tuition for programs (Hamdhaidari et al., 2008). In the light of evaluating higher education in Iran, Hamdhaidari et al. (2008) argued about two considerable aspects: on the one side, educational reforms in different areas, such as widening access via using a wide range of information and communication technologies, gender equity, and decentralization. On the other side, weaknesses in the wide-ranging curriculum not addressing rapid change, the lack of a realistic program for the real needs of the workforce, and the failure to create a student-centered participative environment. From another point of view, Mir (2013) stated that higher education in Iran is plagued by quality issues resulting from a lack of qualified faculty, updated curricular resources and technology, censorship, and an overly high representation of religious content compared to academic content. Still, Karimia and Taghvatalabba (2020), in their latest study, underlined higher education has become more accessible among people, especially women, over the past four decades.

Critical Thinking in Iran Education. In terms of the position of CT in Iran's education system, an investigation conducted by Hashemi et al. (2010) revealed that the Iranian education system stresses knowledge transmission and learning is generally limited to memorizing resources; therefore, the main issue that system encounters is the "goal-centred being instead of being process-centred" (p. 68). According to Eghbali et al. (2021), university is the source of thought and meaning, a symbol of knowledge production and transfer, and a

center of critique and social enlightenment in civil society on a global level. Moreover, the researchers explained despite claims from officials, instructors, and administrators within higher education that there is stress on developing CT among students, "there is not enough will and motivation to encourage students to think and specially to use critical thinking in practice" (p. 28). Indeed, higher education has not been successful and failed to cultivate CT skills among learners because of emphasis on the traditional system, which is placed on teaching and transferring curriculum and superficial and memorized learning. Likewise, Hashemi et al. (2010) highlighted that CT leads students to have doubt, curiosity, diverse notions, and statements about a subject when trained well. While "criticism begins with doubt and criticizers try to awaken the doubt to make the base of certainty firm" (p. 68), many textbooks' contents are still presented subjects vaguely in the Iranian education system, which creates ambiguity among students. In fact, ambiguity is one of society's cultural features, where CT is not fundamental. Thus, considering that most Iranian students are not taught nor educated to be critical thinkers, providing them with an appropriate context to foster CT dispositions is vital during their educational journey and for their day-to-day life (Hajhosseini et al., 2016).

Chapter Summary

This chapter offered information regarding the BC and Iran from multiple angles such as historical perspectives, education systems, and the role of CT in higher education in these areas. While BC's education pays more attention to CT among students at different levels of education especially higher education, Iranian students suffer from a lack of this essential skill in their curriculum. Considering that Canada is one of the popular destinations among international students, many students likely suffer from a lack of CT skills during their educational journey. As the roots of cultural variations in human thinking construct the "habits of thought that were already characteristic of their societies" (Nisbett, 2003, p. xxi), Iranian international students might encounter challenges in the process of learning how to think in educational settings and how to participate in academic criticism during their educational experiences in Canadian and western-tradition universities. The next chapter will indicate the research methodology I utilized for the thesis.

Chapter Four: Methodology

The following chapter describes the narrative inquiry (NI) methodology used. This qualitative study involved interviews through open-ended questions and compared conceptions of Canadian and Iranian students about CT at the post-secondary level studying in Canada. The study focuses on exploring how Canadian university influences students' CT. In this chapter, after introducing the researcher's positionality, I will explain the design of the study, introduce target participants, elaborate on the data collection and analysis procedures, ethical considerations, and explore the trustworthiness approaches of this research.

Researcher's Positionality

"The term positionality both describes an individual's world view and the position they adopt about a research task and its social and political context" (Holmes, 2020, p. 1). The position of a researcher enables readers to realize the study within the context of the investigator's unique characteristics, assumptions, and relationship to study participants (Madge, 1993). All individuals have a social identity from biological structures such as sex, body type and sexual orientation, and socially and culturally features like gender, race, citizenship, and economic status (Gopaldas, 2013). Consequently, in this part, my experiences and perspectives that informed this research are expressed.

I am an Iranian woman from a middle-class family. I was born and raised in Tehran and lived there for almost 26 years, during which time I completed my undergraduate studies and worked in the field of education for several years. I have been fortunate to live and work in Denmark for long periods of time and later to live in Canada for academic purposes. These opportunities helped me obtain various valuable experiences that shaped my worldview, especially self-awareness about who I am and who I am going to be in the future. In Denmark, interacting with people with dissimilar backgrounds offered me an understanding of the aspects that shape my characteristics and identity based on different Danish elements, such as social and cultural contexts. These experiences and observations led to my primary interest to be curious about difficulties and concerns that international people encounter when attempting to create an adapted version of themselves based on host countries' features. Again, when I moved to Canada, a multicultural land, I realized so many differences in

economic, cultural, and social aspects compared with my home country and Denmark.

More precisely, as an international student, I recognized profound differences in the Canadian and Iranian education systems. For instance, regarding the importance of having CT and instructors' stress on using and practicing it in almost discussions, activities, and assignments, I realized how this concept is new and challenging for other international students and me. Generally speaking, being a critical thinker depends on each country's culture and education system. Without understanding the cultural context and considering educational backgrounds and students' ways of thinking, individuals cannot be expected to become critical thinkers in educational settings. In addition, the way that international students especially Iranian students encounter this concept raised an idea in my mind about the opportunity to explore and share their stories about CT. Accordingly, my interests were rooted in what are Iranian students' conceptions of CT and what factors could have been helping them to foster and develop CT during their educational journey. Therefore, my enthusiasm for being a voice for this group of students allowed me to conduct open-ended interviews to learn more about Iranian students' perspectives of CT. Indeed, the point of using an open-ended interview approach was to provide a conversational environment which enables me to understand better the participant's real feelings and opinions about the topic. Undoubtedly, it is not implied that the present study can thoroughly explain a highly complex phenomenon; instead, it can effectively shed light on the phenomenon, research, and practice regarding the concept of CT among Canadian and Iranian students. To sum up this part, at this stage that I am writing my thesis, I have created a personal definition of CT. To me, CT is about having the ability to choose; the mode of thinking leads individuals to analyze and reconstruct ideas, subjects, beliefs, and values to make informed judgments. The ability to choose gives people's life meaning.

Design of the Study

This comparative study utilizes NI to compare and contrast Canadian and Iranian graduate students' conceptions of CT. NI and other interpretive forms of qualitative research are frequently used to discover a detailed understanding, perception and outlook of complex phenomena (Creswell, 2013; Maxwell, 2012). Qualitative research leads the researchers to

gather data either through observation or conversation with the participants (Creswell, 2014; Maxwell, 2012). Based on Elliott (2005), qualitative research is often defined as providing more comprehensive information, and research studies are also tools for constructing data over back and forth discussions. Likewise, to better comprehend individuals' experiences, the qualitative study empowers me to pose questions that their results are not limited to numbers and statistics. Instead, this method is beneficial to making sense of human experience' reality which helps to have the capacity to describe and clarify a social world to develop explanatory models and theories sufficient for individuals' life.

While the study approach is qualitative, it is more based on NI since narrative investigation allows describing people's beliefs, values, and life experiences. According to Clandinin (2007), NI is a "profoundly relational form of inquiry" (p. xv) that studies individuals' lived and informed stories that are personal, cultural, social, or institutional (Clandinin & Connelly, 2000). Additionally, "telling stories is a natural part of life, and individuals all have stories about their experiences to tell others. In this way, narrative research captures an everyday, normal form of data that is familiar to individuals" (Creswell, 2013, p. 502). Through exploring an individual's experience, NI "seek ways of enriching and transforming that experience for themselves and others" (Clandinin & Rosiek, 2007, p. 42). Referring to Creswell and Guetterman's study (2019), the theoretical lens in NI is "a guiding perspective or ideology that provides structure for advocating for groups or individuals in the written report" (p. 516) to indicate an educational research issue through realizing the experience of a person. The scholars stressed, NI studies emphasis on recognizing the experiences of a person or several people to understand their past, present, and future experiences.

One of the tools for gathering data in NI is an open-ended interview approach which creates a narrative environment that investigators can gather stories from their participants about their experiences with a particular phenomenon (Jovchelovitch & Bauer, 2000) to "externalize his or her feelings and indicate which elements of those experiences are most significant" (Elliott, 2005, p. 4). Indeed, the focus on an individual's personal and social experience draws on the philosophical thoughts of Dewey, who saw that a person experience was a main lens for understanding an individual (Creswell & Guetterman, 2019). Besides,

several NI scholars like Clandinin and Connelly (2000) were inspired by Dewey's perspective and highlighted NI as an approach to a collaborative, reflective and relational understanding of individuals' experiences. Additionally, as a relational inquiry (Clandinin et al., 2010), NI begins with relationship creation and engages in a procedure in which the participants' and the investigator's stories are restructured into collaborative stories (Connelly & Clandinin, 1990).

In this investigation, the research questions focused on asking students to share their thoughts about CT and express their experiences about the impact of a Canadian educational experiences on their conceptions of CT during their graduate level. Indeed, I employ the NI approach because it allows me to listen to participants' unique narratives and situate myself in their position to realize their feelings about their real-life experiences. Meanwhile, using the open-ended interview approach as a key tool for data collection allows me to think with participants' stories in multiple ways (e.g., toward my opinion, toward social and cultural contexts) and also create a flexible space for interviewees to share their stories without unnecessary direction from the investigator.

Site and Participants

One of the unique features of qualitative approaches, which focuses on deeply exploring a central phenomenon of a small population, is using a theoretical or purposeful sampling strategy (Creswell, 2013; Maxwell, 2012). Additionally, in purposeful sampling, researchers intentionally select people and sites "to learn or understand the central phenomenon" (Creswell & Guetterman, 2019, p. 206); therefore, a small number of Canadian and Iranian graduate students were involved in this study.

The site of the present study was a public mid-sized university in the interior of BC, that offers various on-campus and open learning programs in undergraduate and graduate degrees and vocational training for Canadian and international students. I recruited eight full-time and part-time graduate students that had successfully finished their first year of studies. The idea behind this was to ensure that these students had knowledge and experience of CT in their program during their education period. In addition, Creswell and Guetterman (2019) argued that it is typical in qualitative research to study a few people "because the overall

ability of a researcher to provide an in-depth picture diminishes with the addition of each new individual or site" (p. 209). I divided participants into two groups: Canadian students and Iranian students. When I speak of Canadian students, I mean students who were raised in Canada and, most importantly, their familiarity with kindergarten to grade 12 curriculum regardless of their race, ethnicity, and gender. In other words, anyone who has done schooling in the Canadian system and obtained their bachelors in Canada. When I refer to Iranian students, I imply students raised in Iran, who have done schooling in the Iranian educational system, received their bachelor's in Iran and identified as international students at the university. Also, both groups of participants were recognized as enrolled students in the interior university of BC while collecting data.

To recruit the early participants, I used the personal network method, which can be seen as convenience sampling in which the contributors are close in proximity to the investigators (Creswell, 2013). Thus, I invited participants to contribute to the study through an invitation email (see Appendix A). After the interviews with the first two participants, I asked them to recommend potential subjects for the study. In this sense, the snowball sampling technique also was used to recruit the participants. According to Creswell and Guetterman (2019), the snowball sampling technique is a type of purpose sampling where existing participants usually recommend potential individuals to be sampled. Thus, passive snowball recruitment was used. Participants were requested to discuss the research topic with friends and contact those they believed may be eligible for the study or forward the invitation email that I sent them to those they thought might be suitable or interested in volunteering to be participants. All participants, before the interview, received an informed consent form (see Appendix B), which provided brief information about the study's purpose and essential factors of their participation in the research. Interviewees with a complete understanding signed the consent form and offered pseudonyms to give anonymity. Therefore, all names throughout the thesis are pseudonyms that participants mentioned on their consent forms. Entirely the data was gathered from the anonymous participants and referred to through pseudonyms in the study. To minimize the bias that can be part of snowball sampling, the participants were recruited from the different programs and gender. Table 1 indicates the breakdown of participants' demographic data by providing their essential information. The

table shows participants' pseudonyms, gender, semester of education, programs of study, education level and nationalities. Canadian participants consist of two men and two women. Keith and Lamech identified as men, and Jenna and Sydney were women. Accidentally, all Canadian students were studying in the Education program, and except Keith, who was in his ninth semester; all the Canadian students were in their last semester. The Iranian group consists of one man named Amir and three women called Mona, Mali and #4. Iranian students were from different programs of study; Amir was a third-semester student in Environmental Science. Mona was a third-semester Data Science student. Mali was studying the third semester in the field of Education, and #4 was in her last semester of the Business Administration program. Again, all names mentioned above are pseudonyms that participants mentioned in their consent forms.

Table 1

Participants Demographic Information

Pseudonym	Gender	Semester of education	Program	Education level	Nationality
Keith[a]	Man	Ninth	Education	Master	Canada
Jenna	Woman	Last	Education	Master	Canada
Sydney	Woman	Last	Education	Master	Canada
Lamech[a]	Man	Last	Education	Master	Canada
Mona	Woman	Third	Data science	Master	Iran
Amir	Man	Third	Environmental Science	Master	Iran
#4	Woman	Last	Business Administration	Master	Iran
Mali	Woman	Third	Education	Master	Iran

Note. [a] Keith and Lamech were doing their master's in an open learning program.

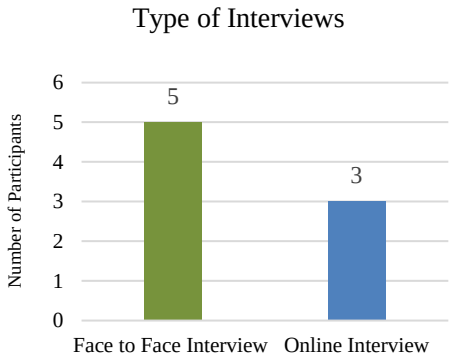
Data Collection and Analysis Procedure

Data Collection. This research discovered the Canadian and Iranian students' conceptions of CT during their master's programs. I collected data from January to March 2022 through face-to-face and online interviews focusing on students' experiences and

understanding of CT. In order to better understand the central phenomenon, I used one on one interview approach. According to Creswell (2013), the one-on-one interview is a data collection method in which the investigator asks questions and records responses from only one or some participants in the study at a time. This method is a great way for interviewing participants “who are not hesitant to speak, who are articulate, and who can share ideas comfortably” (p. 218). The use of open-ended question approach for interview assists in obtaining honest answers which, based on Creswell (2013), not only permits “respondents to add their perceptions” (p. 392) but also let applicants create responses within their “cultural and social experiences” (p. 387). Interviews were the main data source for this study, and the core components of interview data are participants’ words based on their notions and experiences; thus, being an effective interviewer plays a crucial role in the study. In this regard, I followed Merriam’s (1998) guidelines to conduct the eight interviews. The first step to gather meaningful data is to ask proper questions. To achieve this, I avoided the following sorts of inquiries: “multiple questions,” “yes-or-no questions,” and “leading questions”, (Merriam, 1998, p. 79). The interview questions were designed according to the research questions and focused on examining graduate students’ conceptions of CT during their studies. This study involved both Canadian and Iranian interviewees that successfully finished their first year of programs. When I met each participant - in-person or virtually- I introduced myself and presented information about the research in detail, such as the goals of the study, the research’s potential advantages and risks, ways to guarantee privacy and confidentiality, the responsibilities of the interviewees, and the participant’s right to withdraw from the study at any time. Also, I responded to their questions and clarified unclear points about the research and process. Then I started interviews that were performed in the English language for all participants and were recorded for later word-by-word transcription. The conversation usually started with a broad and open question like "how was your day?", then I moved into the details. Details discussed included their opinion about the definition of CT, their notion about the importance of CT for their programs, the problems they encountered related to practicing CT and factors that were helpful for the development of CT. For some participants, I interpreted or explained the question with examples when they had difficulties. I listened carefully to their stories, which sometimes were combinations

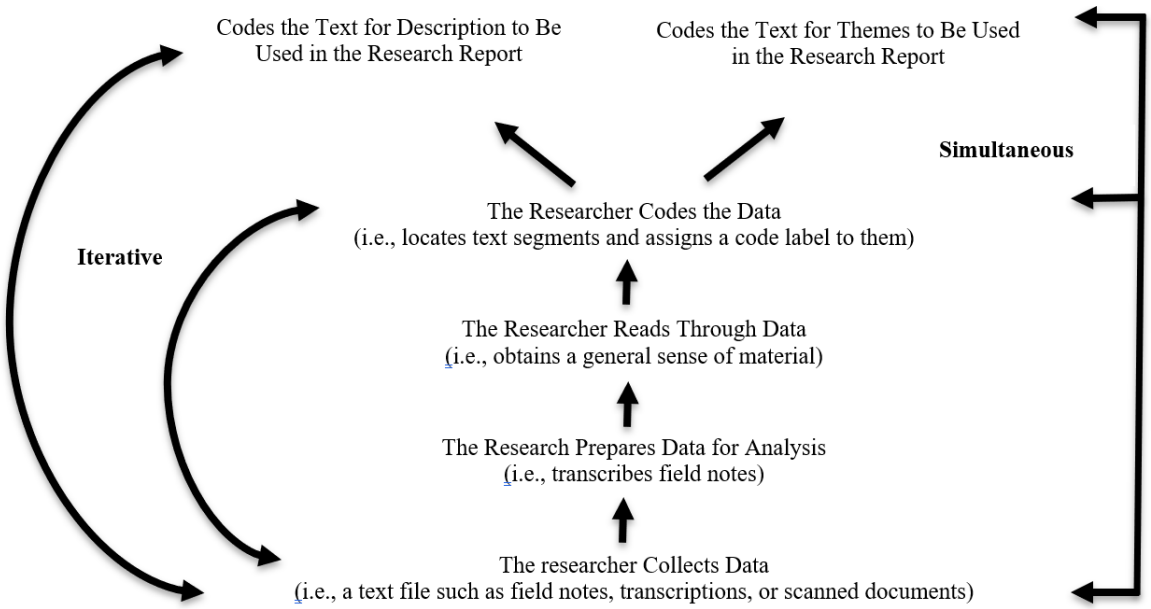
of excitement, frustration, and complaints. Figure 4 shows the type of interviews that participants attended. Five students attended in-person interviews in a convenient location, and three participants preferred an online interview.

Figure 4
Participants' Type of Interview Attendance



Data Analysis. For the present study, I used thematic analysis and Bloom's Taxonomy framework for data analysis. First, I will provide information about thematic analysis and after that I will discuss about Bloom's Taxonomy framework. Thematic analysis is a proper way to examine the interview transcriptions to specify whether there were any themes, differences, or relationships amongst the data (Gibson & Brown, 2009). In order to do this, I followed Creswell and Guetterman's (2019) pattern, as displayed below in Figure 5, to analyze the data systematically.

Figure 5
Qualitative Process of Data Analysis



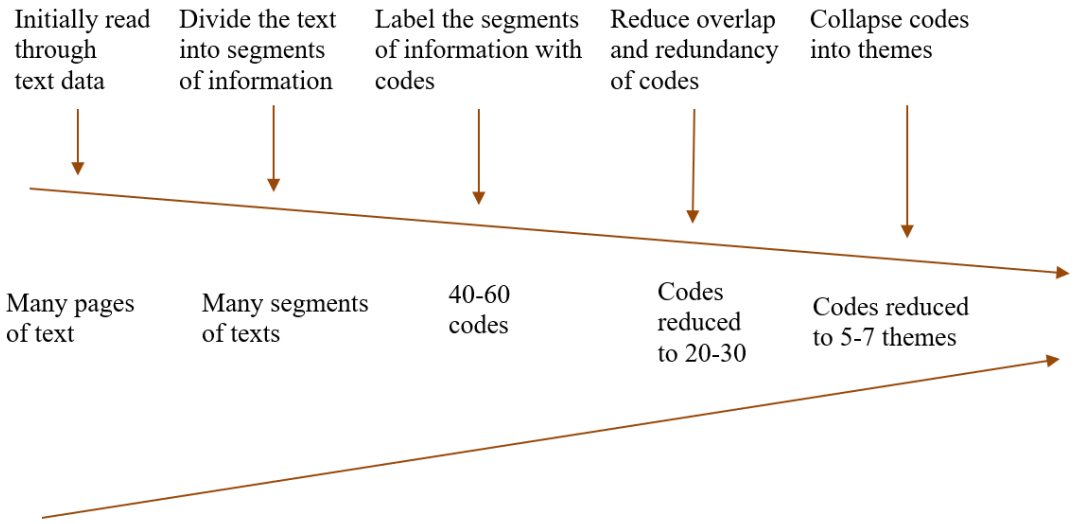
Note: Adapted from "Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (6th ed.)", by J. W. Creswell and T. C. Guetterman, 2019, Saddle River, New Jersey: Pearson Education, p. 237.

To follow the above process, I began to transcribe all the interviews after each session. Then I organized all the materials into diverse types for later reading and analysis. In the next step, I coded all data. Additionally, the coding process aims to make sense of text information by labelling the segment with codes to narrow raw data into broad categories. This process includes five steps: "initially read through text data; divide the text into segments of information; label the segments of information with codes; reduce overlap and redundancy of codes; collapse codes into themes" (Creswell & Guetterman, 2019, p. 244). Also, Creswell and Guetterman's (2019) coding procedure were used to code and analyze the study's themes. The thematic analysis consists of five steps: the first step is a preliminary data exploration by reading through the transcripts. The second step is dividing the text into segments of information; the next step is coding and labelling the data by segmenting the

text. The fourth step is the redundancy of codes by writing margin notes and forming initial broad codes, and the final step is to collapse codes into themes to construct a narrative. Figure 6 represents a visual model of the coding process in qualitative research for this study.

Figure 6

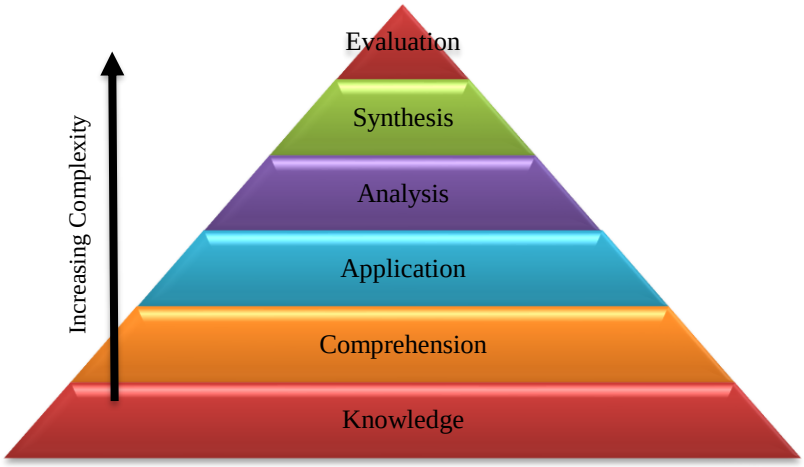
Visual Model of the Coding Process in Qualitative Research



Note: Adapted from "Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (6th ed.)", by J. W. Creswell and T. C. Guetterman, 2019, Saddle River, New Jersey: Pearson Education, p. 244.

Bloom's Taxonomy is also used as an analytical framework to inform a deeper understanding of students' conceptions of CT. As I discussed previously in Chapter two, Bloom's Taxonomy consists of six categories which create a hierarchy. The lowest three levels are knowledge, comprehension, and application and the highest three levels include analysis, synthesis, and evaluation (Forehand, 2010). The scale of the CT concept among participants is based on this taxonomy. I examined students' levels of understanding of the notion of CT based on this hierarchy. Figure 7 illustrates Bloom's Taxonomy hierarchy.

Figure 7
Bloom's Taxonomy Hierarchy



Note: Adapted from "Bloom's Taxonomy of Cognitive Learning Objectives", by N. E. Adams, 2015, *Journal of the Medical Library Association*, *103*(3), p. 153.

Approaches to Ensure Trustworthiness

According to Merriam (1995) "in applied fields like education, social work, counseling, and administration, the question of the trustworthiness of research findings looms large; after all, much research is designed to understand and improve practice" (p. 51). Thus, the validity and reliability of research play an important role in the field of education. Consequently, through reflecting on Merriam's (1995) approach, I applied the following strategies to ensure the validity and reliability of this study.

Peer Debriefing. An in-depth conversation with peers regarding the research design, data collection and analysis, and findings assisted the researcher to recognize the underlying issues and things to keep in mind to develop their study. Asking peers to observe the data and results was an approach to ensure the acceptability of this study (Merriam, 1995).

To start this study, through discussion with my supervisor, I gained professional and constructive feedback and advice in different areas such as the purpose of the study, research design, interview protocol, gathering data, and analysis process. Throughout the study, I

requested my supervisor, one of my instructors and other graduate students who were working on their thesis in the education program to listen to data collection and analysis procedures to make sure the ways are concrete and believable. Namely, through a meeting with one of my instructors, I shared the data analysis and coding process to ensure that we had the same understanding of interviewee ideas, and I chose proper themes for data.

Member Checks. One of the approaches to credibility is member checks which involve inviting participants back to check whether the data and interpretations of the data are correct (Merriam, 1995). In this research, I shared the interview transcripts with the participants to ensure that their words and notions had been carefully and correctly understood. All the students had two weeks to review their ideas and were encouraged to comment on their transcripts for the final report.

Triangulation. According to Merriam (1995), the triangulation process is helpful to ensure trustworthiness through several data sources, multiple investigators, numerous theoretical frameworks, and various methodologies. Based on this belief, if a specific phenomenon can be seen in an interview, observation, theory, or other sources, this phenomenon can be supposed to be true. Therefore, in this research, I interviewed diverse participants with different backgrounds to acquire common visions and perceptions.

Ethical Considerations

Thompson Rivers University's Research Ethics Board granted ethical approval to undertake this research which is presented in Appendix C. All participants read and signed the consent forms before the interview. The ethical requirement of confidentiality and anonymity was emphasized on the consent form. The participants were provided with a written email invitation, consent form and verbal explanations prior to the study's interview.

Chapter Summary

This chapter examined the research methodology, data collection procedures, and the data analysis process. An open-ended interview approach was used in order to address the research questions of this study. A NI was conducted to examine and compare Canadian and Iranian students' conceptions of CT during their higher education. Students from different programs of studies and gender were interviewed through face-to-face and online interviews.

For data collection, interviews were recorded and transcripts word by word. Moreover, data analysis followed Creswell and Guetterman's (2019) process. Peer debriefing, member check, and triangulation approaches were used to determine trustworthiness in this research. Further, for this study's ethical considerations, the ethical approval was undertaken through Thompson Rivers University's Research Ethics Board. In the next chapter, I will present findings from the research data collection.

Chapter Five: Findings

This chapter will present findings based on eight graduate students' data analysis using open-ended interviews. The results will cover the following research questions but will not be limited to the research questions:

1- What are Canadian and Iranian graduate students' conceptions of critical thinking?
2- How does the experience of studying at a Canadian university impact graduate students' critical thinking?

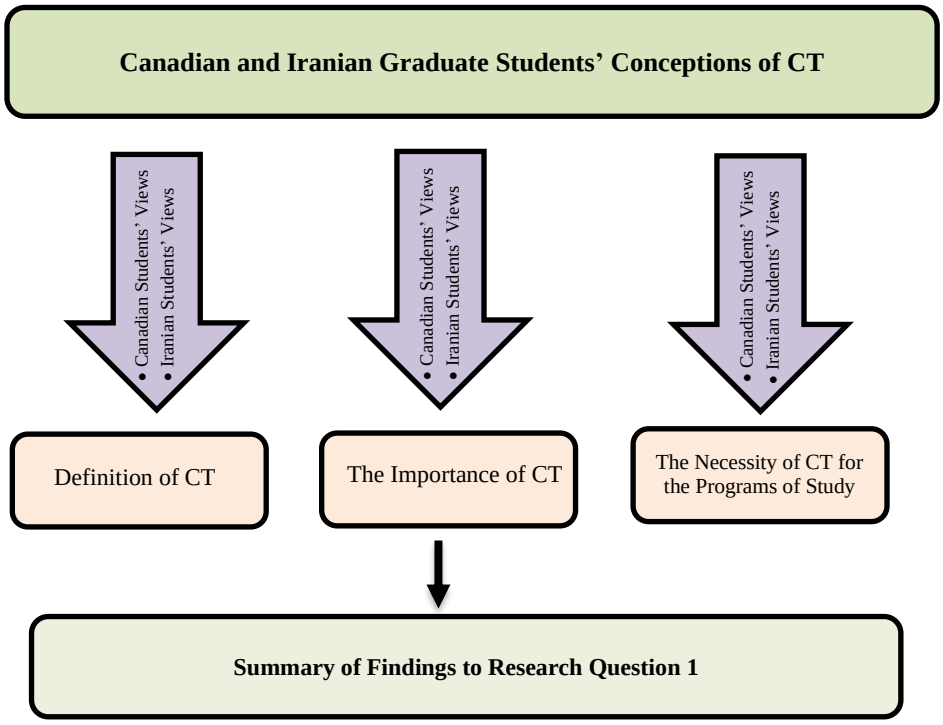
The investigation aimed at recognizing students' conceptions of CT and factors that can facilitate or deter CT among Canadian and Iranian students in their master's programs.

RQ1: What Are Canadian and Iranian Graduate Students' Conceptions of Critical Thinking?

The data analysis of the students' responses about their conceptions of CT provided a comprehensive result divided into three main sections: students' definition of CT, their notions about the importance of CT, and its necessity for their programs of study. Figure 8 illustrates the process and elements for examining the first RQ. The process starts by examining Canadian and Iranian students' views into three categories: the definition of CT, the importance of CT and the necessity of CT for the programs of study. Then, in the final step, I summarize the findings of the first RQ.

Figure 8

Process and Elements for Examination of the First RQ



Definitions of Critical Thinking from Canadian Students' Views. The data conducted from Canadian participants showed all students provided a great understanding of the concept of CT. All the descriptions indicated related CT concepts and presented no complications in defining CT. Starting with Sydney who specified definition of CT in seeking and understanding diverse perspectives about notions. Sydney explained that CT means openness to alternative views, which aligned with the dispositions toward CT introduced by a scholar like Facione (1998). For another participant, Jenna CT means questioning existing knowledge. In our conversation, she conveyed a sense that it is significant to be an open-minded person and have a consideration about each subject from various perspectives. She stressed that CT is about questioning and re-examining assumptions about what we already know and searching for new knowledge. Thinking about Jenna's point of view reminded me that her belief is in line with Facione's (1990) expose that

"well informed, trustful of reason, open-minded, flexible, [and] fair-minded in evaluation" (p. 6) is the ideal definition of CT. Other interviewees, Keith and Lamech, both expressed CT relates to logical reasoning through analyzing and synthesizing information to evaluate and judgment. Additionally, their definitions show their familiarity with the concept of CT and understanding of the importance of this skill in most types of their daily situations. Also, their definitions show that their beliefs are related to the superior three levels of Bloom's Taxonomy (analysis, synthesis, and evaluation) associated with CT (Ennis, 1993) introduced in Chapter Two of the thesis.

All in all, openness to alternative views, questioning existing knowledge, analyzing and synthesizing information and making judgments are key sub-themes of the definition of CT among Canadian students. The key themes of the definition of CT among Canadian students will be presented in the following section.

Definitions of Critical Thinking from Iranian Students' Views. Based on four interview data, the Iranian participant's definitions of CT were slightly different from each other. Some of these definitions implied relevant principles of CT and displayed there are no difficulties in defining CT, whereas others reflected a lack of understanding of this concept. The definitions of CT among Iranian students can be classified into four sub-themes: information processing abilities, analyzing multiple perspectives, criticizing, and self-expression.

Mona, in response to the question about what CT means to her, provided a definition that interpreted CT as a set of information processing abilities. "Mona" explained the ability to "look at all aspects" of problems or information requires CT. When I asked #4, another study's participant to share her idea about the definition of CT, she directed her knowledge of CT as an ability to consider multiple perspectives of information and observations for making a judgment. Mona and #4 knew the significance of analyzing the information they face in their personal and professional paths. Their definition is similar to the definition developed by Ennis (1993), which conceptualized CT as higher-order thinking skills used to make a reasoned judgment. The descriptions of CT from the two other Iranian participants show a lack of understanding of this concept. "Amir's" definition of CT indicated that finding "fault in something and criticize someone or something" is called CT, while CT is

about judgement, which can include finding faults and flaws but emphasizes questioning and analyzing different information and ideas. Indeed, his definition is against most scholars, such as Ennis (1985), that defined CT as rational thinking, which provide the ability for individuals to decide "what to believe or do" (p. 45) rather than criticizing information. On the other side, reflecting on "Mali's" definition of CT, who articulated that facing the concept of CT was "challenging" to her, specified that her understanding of CT did not come reasonably and occurred after conducting repeated practices during her studies. She pointed out, "whatever I like, whatever I do not like, and my opinion about a text or whatever I can express myself" is CT. Mali's perception of CT is synthesizing reliable sources and putting her thoughts about a subject to express herself clearly. While still she needs more awareness about CT to foster this concept, her definition is similar to Atkinson (1997), who stated CT is a social practice which can be learned through different tools, namely self-expression.

In sum, the above findings indicated sub-themes of the definition of CT among Canadian and Iranian students' points of view that assist in extracting key themes of the definition of CT among these groups of students. Table 2 illustrates a comparison summary of both groups' notions about the sub-theme's definition of CT. As the table indicates, Canadian students articulated openness to alternative views, questioning existing knowledge, analyzing, and synthesizing information and evaluating and making judgments were the definition of CT. Information processing abilities, analyzing multiple perspectives, criticizing, and self-expression was the definition of CT among Iranian students.

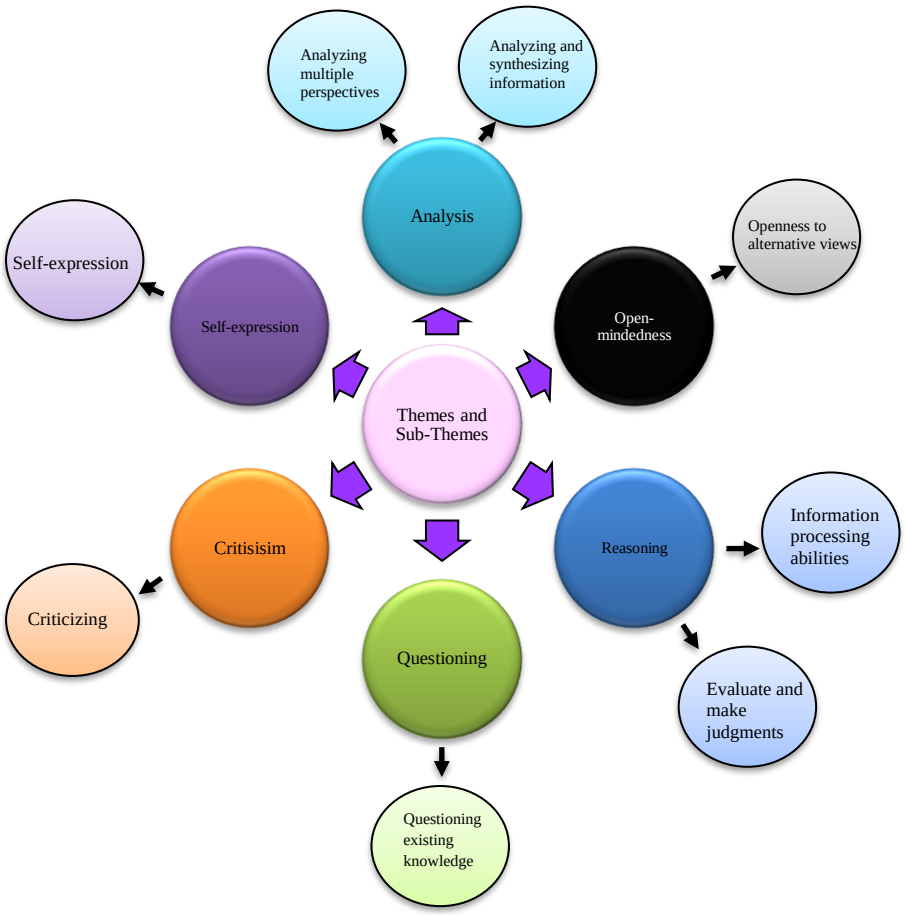
Table 2

Comparison Summary of Sub-themes Definition of CT Among Canadian and Iranian Students

Scope of Comparison	Canadian Students	Iranian Students
Definition of CT	Openness to alternative views Questioning existing knowledge Analyzing and synthesizing information Evaluate and make judgments	Information processing abilities Analyzing multiple perspectives Criticizing Self-expression

The analysis of participants' conceptions resulted in six main themes: *Analysis*, *Open-mindedness*, *Reasoning*, *Questioning*, *Criticism* and *Self-expression*, which represent the meaning of CT from Canadian and Iranian students' perspectives. Figure 9 demonstrates the six key themes extracted from participants' opinions about the definition of CT. The *analysis* theme extracts from analyzing multiple perspectives and analyzing and synthesizing information. The second theme, which is *open-mindedness*, is a result of openness to an alternative view. The third main theme is *reasoning* from information processing abilities and evaluation and making judgments. The fourth key theme is *questioning*, from questioning existing knowledge sub-theme. Criticizing takes place under the theme of *criticism*, and *self-expression* is the last key theme in the definition of CT among Canadian and Iranian students.

Figure 9
Key Themes of CT's Definitions Among Participants



Canadian Students' Views on the Importance of Critical Thinking. The analysis of the four Canadian responses to the question about their beliefs regarding the importance of having CT indicates that all participants came to an agreement that they need to have this skill. Four themes emerged in the responses that show CT's importance for Canadian students, including analyzing, decision-making, evaluating information, and questioning.

Lamech, through his participation in the interview, remarked that CT is an essential skill for him because it helps him navigate the world better to make more reasonable decisions based on his situation. We discussed the impact of gathering different perspectives about the world around us on decision-making skills. “Lamech” stated CT “allows a person to view what is happening in the world and make a decision based on what is going on”. In the same light, Sydney explained CT is useful because it helps decipher different information worldwide. Sydney believed that CT led her to analyze the information from misinformation. Keith and Jenna’s notions were similarly minded, that CT is an essential skill for everyday life. They believed that CT allows them to have the ability to evaluate information and question the existing knowledge to determine inconsistencies and mistakes in reasoning. Clearly, Canadian students had a great sense of the importance of CT, which aids them in reflecting on themselves and making independent judgments.

Iranian Students’ Views on the Importance of Critical Thinking. The interview analysis of the four Iranian responses to the question of their thoughts regarding the importance of having CT specifies that three of the participants believed that it is essential to have CT and one participant mentioned that it depends on the situation. Consequently, problem-solving and decision-making were the two key categories that indicate the importance of CT among Iranian students. It is noteworthy to consider that Iranian students’ awareness of the concept of CT directly impacted their ideas about the importance of CT. Taking Mona and Mali’s points of view about the essentiality of CT, who believed that it helps them to have problem-solving skills through the use of knowledge, data and experiences. In the same line as Mona and Mali, #4 describes that CT enables her to achieve decision-making skills. While decision-making is a process that guides people to gain actionable conclusions, CT helps to determine whether choices and results are sound or not. Additionally, Mona, Mali and #4’s opinions are in line with Miri et al. (2007), who believe that CT is important because it helps individuals to develop their higher-order thinking skills, namely problem-solving and decision-making abilities.

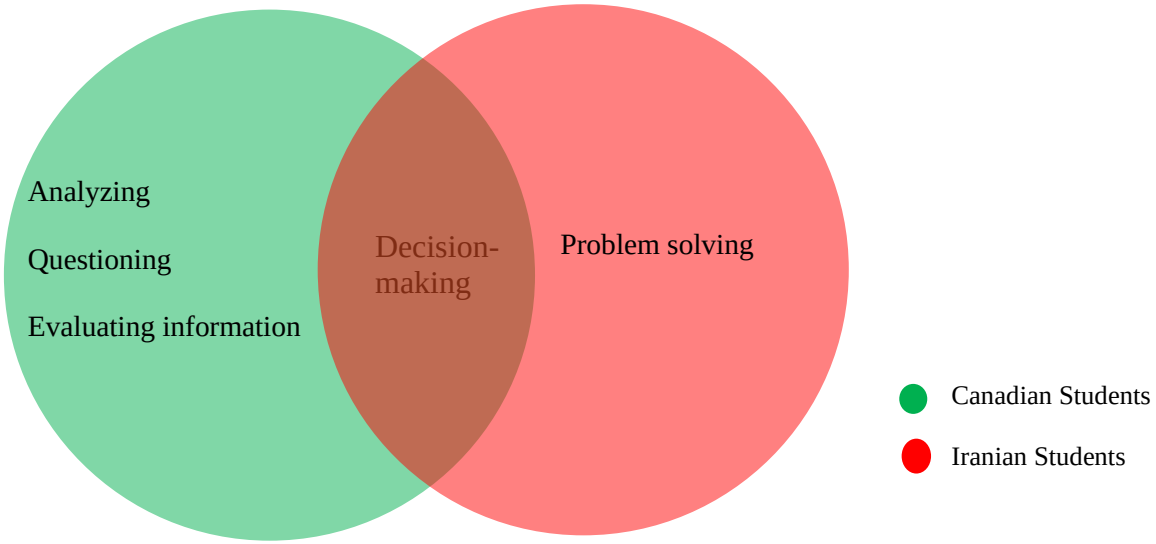
In contrast with other students, Amir believes the importance of CT depends on the situation. Reflecting on Amir’s definition of CT, which ended with criticism, he argued that CT could be used to improve or reform faulty subjects. Recalling the aim of CT from

Franco's (2016) viewpoint, which directs people to assess hypotheses and make judgments rather than uncover faults in people's ideas and decisions, reminded me that from Amir's point of view, CT is not necessary as the purpose of it is correction people's mind and determination.

Therefore, almost all Canadian and Iranian students agreed that CT is a superior skill for their personal and professional pathways. Figure 10 illustrates derived shared and non-shared notions from Canadian and Iranian students' perspectives on the importance of CT. The green circle shows themes among Canadian students, which are analyzing, questioning, and evaluating information. The red circle indicates the main theme among Iranian students, which is problem-solving skills. The shared theme among Canadian and Iranian students is illustrated in the common area of the circles, which is decision-making.

Figure 10

Canadian and Iranian Students' Shared and Non-shared Themes about the Importance of CT Skills



Canadian Students' Views about the Necessity of Critical Thinking for Their Programs. In response to the question about the necessity of CT in programs of study, Canadian interviewees provided different points of view. Jenna and Sydney agreed that CT are crucial for their programs, while Keith and Lamech believed that it depends on the purpose of the study and the curriculum. During the interview, Jenna was optimistic that CT in the program of study supported her to be an open-minded person. She believed that although, without CT, still, she could finish her master's yet, the achievement could not be sufficient for personal and professional development. In the same direction, Sydney said the CT is essential for her graduate study as it improves her decision-making ability. She pointed out that CT could allow her to reflect and clarify information to be a good decision-maker. Indeed, the necessity of CT in their programs aids them to have the right to accept or reject any knowledge, ideas, and experiences, which is in line with Ennis (1985), who pinpointed that CT's focus is on helping people to decide "what to believe or do" (p. 45). On the other side, Lamech and Keith provided different views. Lamech said that while CT would help get in-depth knowledge about a particular subject, it does not play a positive role in obtaining great grades for courses. In the same way, Keith added that CT is more proper for research courses than other curricula which aim to complete tasks and assignments. Keith argued:

> To be honest, I feel that critical thinking skills were not very important for most of the coursework. I found that in many of the courses, if you have critical thinking skills, you can learn more from the information and the content, but I felt a lot of courses in the program focus on completing tasks. […] the one exception to this is, I believe, doing the thesis research project that requires some critical thinking because it is not information that is given to you; it is information that you are searching for.

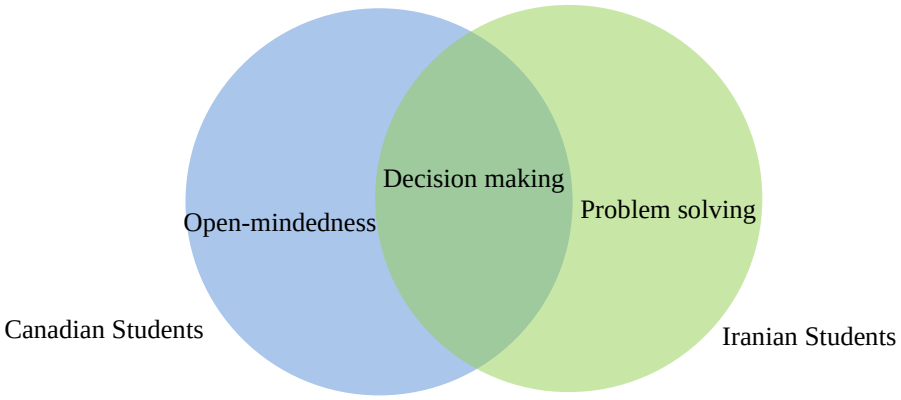
Iranian Students' Views about the Necessity of Critical Thinking for Their Programs. The analysis of the Iranian students' responses about the necessity of CT for their studies programs indicated that all of them concur that CT is vital for their field of studies. Three of the participants addressed the most common element of problem-solving skills resulting from CT in their programs. One interviewee commented that decision-making ability would result from CT in her program. Mona, a student in Data Science, explained that

CT is essential for her field as it helps her to be an efficient problem-solver. She spoke that when she is positioned in a professional and academic situation where she needs to find an appropriate way to solve an issue, CT assists her in analyzing and evaluating her background knowledge, which consists of different science like mathematics, statistics and programming to choose a proper solution that is suitable for situations. Alongside, Mali and Amir had the same opinion that CT is essential for their programs because it supports them "to see the depths of everything and helps to solve the problem" explained "Mali". #4, a Business Administration student, agreed that CT is crucial for her program because it fosters decision-making ability. She articulated CT helps her in avoiding being emotional or doing wrong actions when she wants to make decisions.

Understanding both groups' perspectives about the necessity of CT for their programs of studies guides to getting an insight into their levels of conceptions of CT for their field of studies. Figure 11 represents the main common and non-common themes of the necessity of CT for programs of studies among Canadian and Iranian students. The blue circle shows the theme of Canadian students, which is open-mindedness, and the green circle, which is problem-solving, indicates a theme among Iranian students. The share part of the circles, decision making, is the common theme among both groups of students.

Figure 11

Common and Non-common Main Themes Among Canadian and Iranian Students Related to Necessity of CT for Their Program of Studies

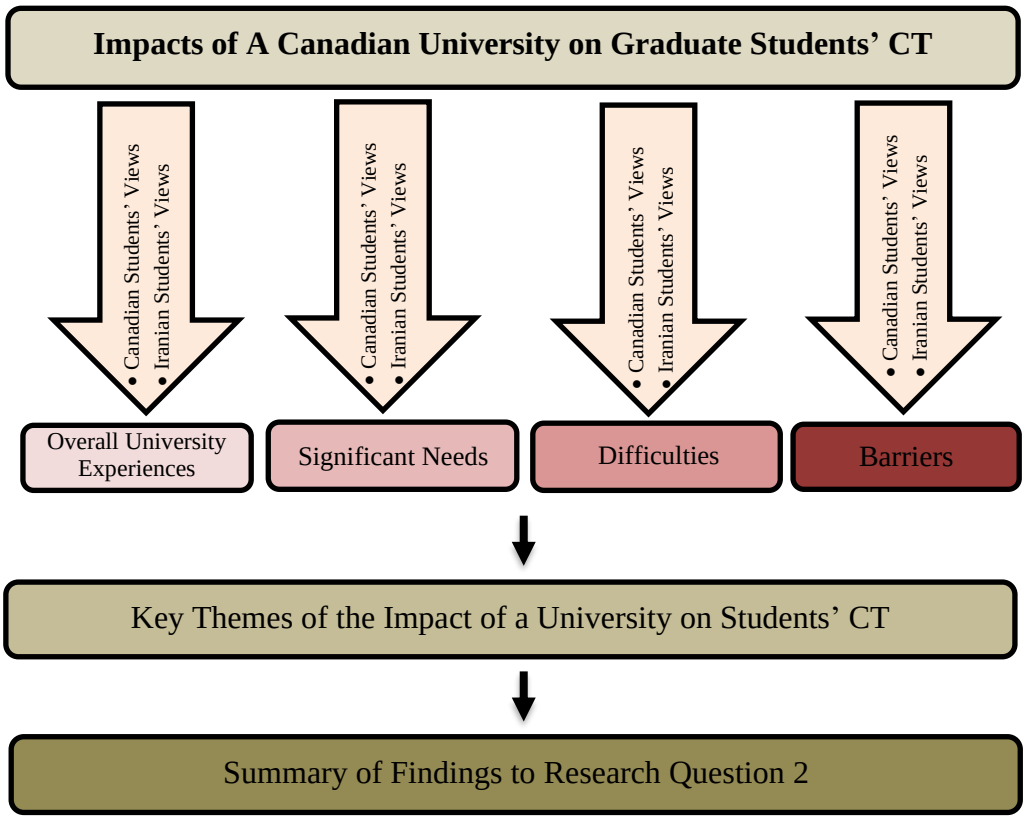


Summary of Findings to Research Question 1. The overall picture of the data analysis linked to research question one about Canadian and Iranian graduate students' conceptions of CT, divided into three main categories: the definition of CT among both groups, its importance, and whether it is necessary for their field of study. The results indicated that Canadian students had a more reasonable interpretation than Iranian students about the definition of CT. Almost all Canadian and Iranian participants recognized CT as an essential skill that can help them improve different abilities, namely decision-making skills which was a common theme among the two groups. While all Iranian participants and two Canadian students were agreed that CT is necessary for their studies programs, two Canadian students articulated that the necessity of CT depends on the purpose of the study.

RQ2: How Does the Experience of Studying at a Canadian University Impact Graduate Students' Critical Thinking?

The second RQ aims to specify the impact of a Canadian educational experiences on students' CT in higher education. To explore this RQ, I began by discovering Canadian and Iranian students' stories about CT during their educational experiences. When I listened to their narratives, I realized several elements exists in their experiences; their overall university experiences linked to CT, their significant needs for developing CT, the difficulties they faced with the concept of CT in their studies and factors that inhibit the growth of CT in their fields. Therefore, to reach answers for this RQ, I divided participants' stories into four categories include their overall university experiences with CT, the significant needs of Canadian and Iranian students that impact their CT, difficulties that they encountered in their programs connected to CT and elements that inhibit the development of CT in their fields. The procedure and factors that analyzed the second RQ between Canadian and Iranian interviewees demonstrate in Figure 12. As the figure shows, key categories, including overall university experiences, significant needs, difficulties and barriers linked to CT, were examined from Canadian and Iranian students' views. Then from participants' stories, I obtained the main themes of the impact of the university on their' CT and finally, by summarizing the results, I wrapped up the second RQ.

Figure 12
The Process of Analysis of the Second RQ



Canadian Students' Overall University Experiences about Critical Thinking. The stories and experiences shared in the interviews with Canadian students indicated their positive insights and acknowledgments of the optimistic impact of the university on developing their CT. The most frequent domain of the effects of the university on participants' CT was the ability to identify different perspectives, which Keith, Lamech, Sydney and Jenna pointed out. In different words, all students explained that their overall educational experiences that positively influenced their CT helped them to foster the ability to understand and examine situations from different places and assume other beliefs, experiences, and viewpoints. The role of instructors was the second most frequent category,

present in three participants' responses. Jeena and I spoke about how in her experiences, instructors positively impacted her CT development. Jenna explained her instructors' art of CT supported her to "see things through a different lens". In similar respondents, Lamech and Keith believed that instructors, through appropriate curricula, can assist students in developing logical reasoning. Keith experienced that his instructors presented different ways of thinking about his field and challenged his "preconceptions" and initial thoughts about his program. In the same direction, besides the role of instructors, the helpful curriculum was another vital theme articulated by two interviewees. Lamech believed using a proper curriculum helps students to develop their CT during their studies. He explained, "teachers set up assignments in a way that they force you to do some in-depth critical thinking and analyze from different perspectives and synthesize using your own experience into what you are working on". Disposition to build own ideas was the last category mentioned by one student. Sydney said that while her undergrad level was mainly about reading textbooks and doing assignments, the graduate-level has more efficiency in developing her CT, namely building her own ideas. Indeed, the ability to construct personal ideas directly can influence human development. Table 3 exhibits the repetition of specific codes recognized in the Canadian students' points of view about their overall university experiences linked to CT. As the table displays, all participants' first code is the ability to identify different perspectives. The role of instructors articulated by three students placed in the second row. The third row is the location of the helpful curriculum code that two students expressed. Finally, the code builds own ideas stated by one interviewee can be seen.

Table 3

Codes Repetitions of Canadian Students' Overall University Experiences with CT

Codes	Number of Students
Ability to identify different perspectives	4
The role of instructors	3
Helpful curriculum	2
Build own ideas	1

Iranian Students' Overall University Experiences about Critical Thinking.

Suppose I define positive experience as white and negative experience as black; in this case, the narratives of Iranian participants regarding their overall university experiences with CT at the graduate level would be defined as gray experiences. The first common domain among Iranian students' overall educational experience about CT was the role of instructors in obtaining and/or developing CT, which was articulated by three participants but in different directions. #4 and Mali had the same stories. They discussed the positive role of instructors in their programs as educators were aware of the essentiality of this skill. #4 and Mali agreed that their instructors provided an environment where they could develop their CT. For example, Mali expressed that while the concept of CT was new to her and she did not have any knowledge about this western concept in her previous education back in Iran, the instructors provided sufficient opportunities to support her to be familiar with this subject. In contrast, Mona claimed that instructors in her program did not have enough knowledge and experience to help her improve her CT. She explained that her main focus was to do assignments or pass exams rather than time to think and reflect on subjects she learned. She had unhappy educational experiences that did not offer proper opportunities to gain CT during her study. The second most repeated category was constructive courses expressed in two participants' responses. When Mali and I spoke about her university experience with the CT, she said that while she experienced a challenging and demanding time, the university supported her in becoming familiar with this concept by offering beneficial curricula. However, she believed that CT practices in the academic context must be increased for her and unfamiliar students with this concept. In the same light, #4 also had the same opinion that in her program, the university, by offering constructive courses, namely "project management", aided in constructing her CT positively. The last category claimed by two students was named ineffective university. When Amir and I met each other, in response to a question about his overall view regarding the impact of the university on his CT, he found no practical effect during his educational journey. Indeed, Amir and Mona agreed that the university was ineffective in developing their CT. Table 4 flashes the repetition of particular

codes distinguished in the Iranian students' thoughts about their overall university experiences with CT. As the table presents, the role of instructors was the first repeated code among students but positively and negatively. Two students mentioned the positive role of instructors, and one participant said the negative role of instructors. The helpful curriculum was expressed by two students placed in the third row. Finally, in the last row, the code ineffective university stated by two interviewees can be found.

Table 4

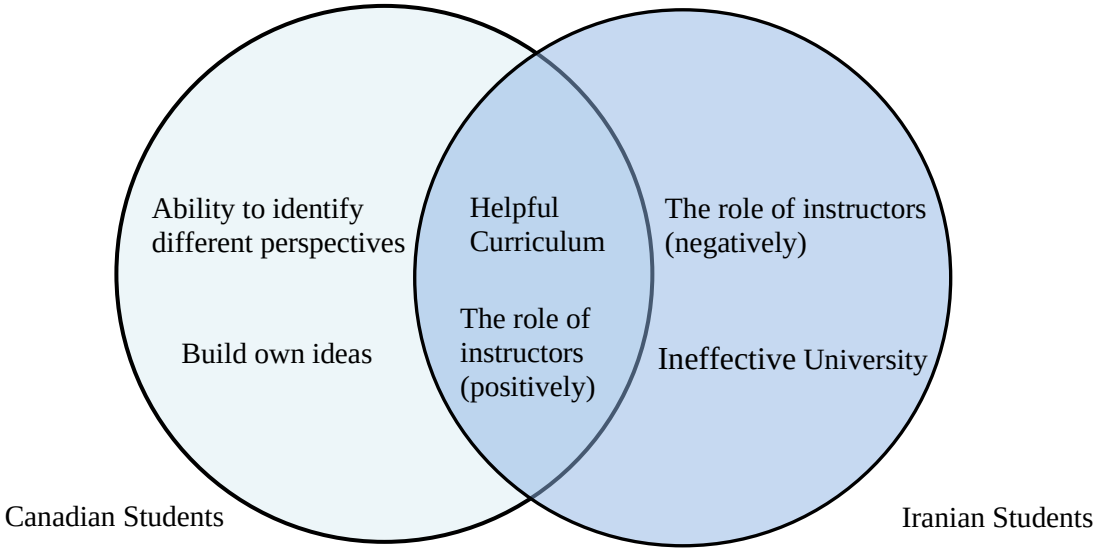
Codes Repetitions of Iranian Students' Overall University Experiences with CT

Codes	Number of Students
The role of instructors (positivity)	2
The role of instructors (negatively)	1
Helpful curriculum	2
Ineffective university	2

Recalling Canadian and Iranian participants' stories regarding their overall university experiences with the concept of CT shows some comparisons and variations among students. Figure 13 illustrates similarities and differences in overall university experiences among both groups of students. The light blue circle indicates Canadian students' notions, including the ability to identify different perspectives and build new ideas. The Iranian participants' thoughts placed in the dark blue circle contain the role of instructors (negatively) and ineffective university. The shared areas between the two circles indicate common beliefs among Canadian and Iranian participants, including helpful curriculum and the role of instructors (positively).

Figure 13

Similarities and Differences in Overall University Experiences Among Canadian and Iranian Students



Canadian Students' Significant Needs for the Development of Critical Thinking.

When Canadian students shared their stories about their educational experiences related to CT, each participant expressed the considerable need that could help develop their CT. These demands include the role of instructors and questioning, exposure to a variety of cultures, critical reflection and reading different resources. Starting with Jenns's story, who believed having instructors that create an environment where students allow to ask questions about existing knowledge can be counted as a significant need for CT development. "Jenna" explained, "the most significant part of my developing critical thinking is questioning but also having teachers that are willing to have me question them and discuss with them". Questioning gives a chance to Jenna to examine and analyze ideas, assumptions, or theories rather than accepting them at face value. Exposure to various cultures is another need that Lamech believed can be a supportive tool to increase his CT. During our virtual meeting, he noted that exposure to different people, diverse cultures, and various religions to synthesize

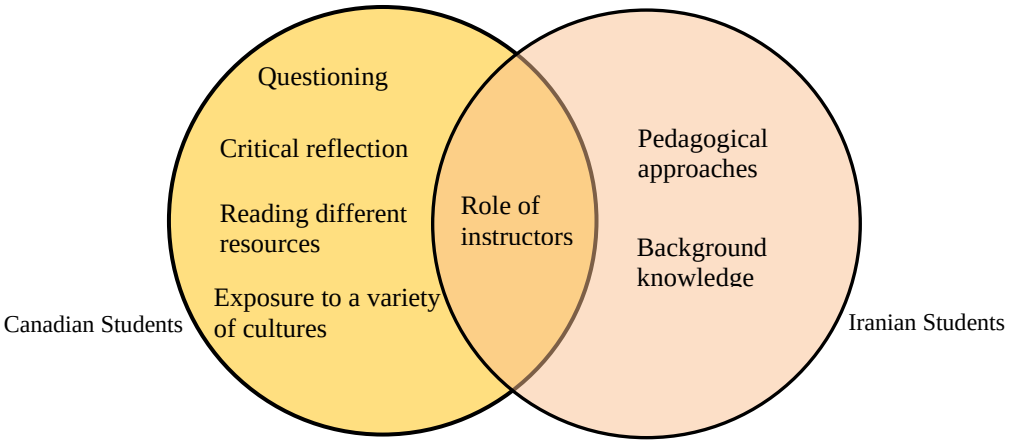
information supports him develop CT. Lamech expressed that understanding people's differences helps him to navigate and resolve issues and become an independent learner to deepen his knowledge of the world around him. Sydney, another Canadian student, explained the significant factor that could develop CT is the ability to reflect critically on different subjects. She believed that "being able to think about yourself and your own beliefs is kind of like the most important step in developing critical thinking skills". In our conversation, she expressed that critical reflection allows individuals to engage in higher order thinking and creative practice, which supports making sense of experience. Another different need among Canadian students was articulated by Keith, who believed reading different resources plays a significant role in CT growth. During our online meeting, Keith clarified that diverse reading resources could provide several outlooks which enable him to have different skills such as decision-making ability and realizing which information and fact make the most sense. "Keith" statement in this sense is: "being able to read a lot of fiction and nonfiction that gives a lot of different perspectives on life, on thinking, on information, studying, and on everything".

Iranian Students' Significant Needs for the Development of Critical Thinking. The data analysis outcomes of Iranian students' stories indicated different essential demands that positively influence CT development during their studies. The first element that two participants mentioned is the role of instructors in the development of CT. The second element is the pedagogical approaches presented by two participants, and the third one is the development of background knowledge mentioned by one student. Mali and Mona both agreed that instructors played a prominent role in fostering CT. They explained similar notions but in different words that educators can increase or improve their CT by using proper pedagogical approaches. For instance, Mali spoke that whenever she asked her instructors about the concept of CT, they tried to explain the process in a simple way that she could make sense of the subject. Also, Mona believed that by designing reasonable curricula and using proper activities, instructors could help to flourish CT in her field of study. Identical to Mona, #4 highlighted proper pedagogical approaches influence her development of CT. She explained that providing situations where CT can be used could help her develop CT. She clarified that knowing about CT practices step-by-step can support her in realizing

in each step what should be considered. The shared demands in #4, Mon and Mali's stories were the instructor's professional competence and pedagogical approaches, which directly impact the development of CT during their graduate studies. Background knowledge was the last significant need for CT development in the Iranian group articulated by Amir. Amir believed that having background knowledge about the concept of CT could assist him in having more understanding of the topics. Amir clarified that by having prior knowledge about CT, he would be able to participate in class while reacting to prosperous CT assignments actively.

Through the conversations with Canadian and Iranian students, I realized that identifying their significant needs, which play constructive roles in promoting CT during their master's level, helps them to boost their self-esteem and encourages them to understand and grasp academic concepts. Considering both groups' lived experiences indicated shared and non-shared significant demands that support students to grow their CT. Figure 14 offers an overview of these needs among Canadian and Iranian students during their master's level. While the left circle indicates Canadian students' significant needs related to CT development, the right circle shows Iranian students' essential demands that assist them in developing their CT. The shared area between two circles presents identical needs among both groups of students. In this regard, questioning, critical reflection, reading different resources, and exposure to a variety of cultures expressed by Canadian participants. Iranian interviewees highlighted pedagogical approaches and background knowledge. The role of instructors was a noteworthy common need articulated in both groups of students.

Figure 14
Shared and Non-shared Needs among Canadian and Iranian Students



Canadian Students' Difficulties with Critical Thinking in Their Programs of Study. Examining the data analysis of Canadian students' notions about challenges they faced in using CT in their programs of study indicated different factors. Information evaluation, critical reflection and judgment, lack of background knowledge and re-evaluating existing knowledge were four major difficulties that interviewees mentioned in the interviews. Sydney remarked that evaluating information to consider subjects' reliability and accuracy was the challenging part of her study. She spoke in her different assignments critically evaluation of what she was reading and how she was thinking was tough because she could not realize how good she is in evaluating the subject. Speaking with Lamech made me realize that the ability to critical reflection and judgment was another hardness of operating CT that he faced. Lamech articulated that CT, reflection, and judgment had always been part of his life which kind of go hand in hand. Yet, having a mindset to practice CT into assumptions and stereotypes requires thinking profoundly to make rational and logical choices and analytically considering thoughts, beliefs, and facts. In another participant's

story, I listened to Keith's experience about the lack of background knowledge that created a hard situation to utilize CT at his graduate level. In this sense, Keith explicated prior knowledge about the subjects affects the level of achievement of a meaningful reflection on materials and elaboration of the learning context. He said in courses which offer basic knowledge about the topic; he could successfully be able to think critically. In another area, Jenna's point of view indicates that the opportunity to re-evaluate existing knowledge was a concern in using CT in her field of study. "Jenna" explained:

> There are certain things you were raised with that are very hard to re-evaluate. Certain things are easier to change your opinion. On and others are just so ingrained with you. And so, I think that is probably one of my biggest obstacles, especially when it comes to theories of education.

Iranian Students' Difficulties with Critical Thinking in Their Programs of Study. Like Canadian participants, Iranian students faced some difficulties in terms of using CT during their studies. Lack of proper pedagogical approaches mentioned by two students and the role of instructors presented by one participant. Due to a lack of knowledge about the concept of CT, one participant in this group did not provide a related answer.

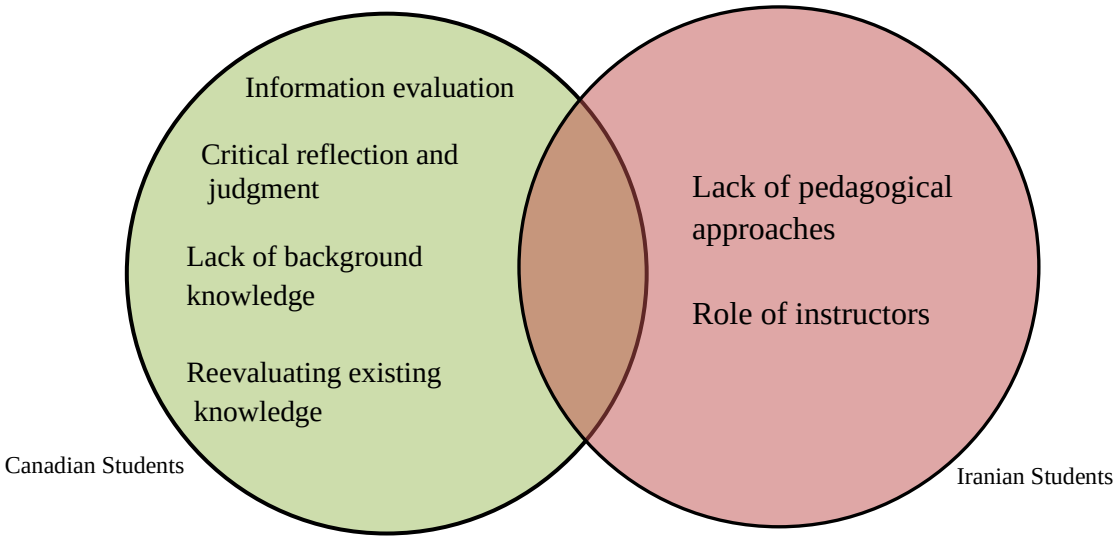
Discussion between Mona and I resulted in the issue that Mona did not have an opportunity to develop and practice CT in her field of study due to overwhelmed assignments and exams provided by her instructors. While Mona's stories indicated she experienced many pressures and stress during her educational period, she clearly noted that her instructors' teaching methods did not provide a place where she could express, analyze, and realize aspects of what she learned compared to real-life situations. Along with Mona, Amir also shared that the lack of proper and practical courses to develop CT in his program was the main difficulty during the study. He mentioned that his program did not deliver any supportive opportunities for him to gain information and ideas about CT, which would be useful to apply CT in academic and professional situations. The role of instructors was the other factor that impacted the development of CT among Iranian students. A remarkable example comes from #4, who explained that some instructors expected to practice this skill in assignments or classroom activities without considering students' knowledge and background. "#4" noted:

> Instructors, most of them, not all of them, expect you to have that skill but not teach it. So, it is kind of like common sense that this is critical thinking, and you should be doing and putting it in all your answers, but there was no specific procedure that you need to do this.

Through sharing both groups of students' experiences in terms of difficulties they faced in developing CT during their postgraduate studies, Canadian and Iranian students revealed their different points of view. Figure 15 campers Canadian and Iranian students' difficulties related to the growth of CT during their graduate level. While information evaluation, critical reflection and judgment, lack of background knowledge and re-evaluating existing knowledge were difficulties that Canadian students faced in growing their CT; lack of pedagogical approaches and role of instructors were complications that Iranian students met in improving CT during their master's level. Also, there was not any common difficulty among these groups of students.

Figure 15

Comparison of Canadian and Iranian Difficulties Related to The Use of CT



Canadian Students' Views About Barriers to Develop Their Critical Thinking.

Canadian students identified several factors that prevented them from being successful critical thinkers. According to their narratives, while one interviewee expressed there is no specific limitation for improving CT in her program, two other participants had the same opinions that a lack of interaction and communication was the major factor that prevented the development of CT in their programs. Exclusive resources are another factor mentioned by one student who believes that caused to inhibit CT's improvement in her field of study. With her strong tone that showed she knew what she wanted, Jenna articulated that did not find any limitation in her program that banned her from using and developing CT. She was positive that her university experiences ultimately helped her to have opportunities to practice CT. Keith and Lamech, who studied their programs online, shared the same opinion that the shortage of interaction and communication was the factor that acted as a barrier to improve their CT. In Keith's lived experience, online learning where there was no chance to have an organic discussion in classrooms was a vital factor limiting CT development. He explained that conversations with classmates help engage CT because it allows everyone in a class to challenge and bring different perspectives that individuals were not expecting. Nearly the same, "Lamech" stated, "seeing the people in person and seeing that diversity in person would have enhanced my critical thinking". From Keith and Lamech's outlooks, interaction and communication were viewed as the basic structure of CT that allowed them to launch unique learning experiences and opportunities to set new patterns of thought, reflection, and exploration. When I questioned Sydney to share her thought about inhibition factors in improving CT, she asked for a few seconds to think about it. While the environment was silent and we drank our green tea lemonade, her soft tone broke the silence and expressed exclusive resource was the factor that acted as a barrier to promoting CT skills in her program of study. To clarify her thoughts, she explained that the information she gets in her program was very culturally positioned around North American culture, which made it difficult to think critically about something when it was the only thing presented in her field.

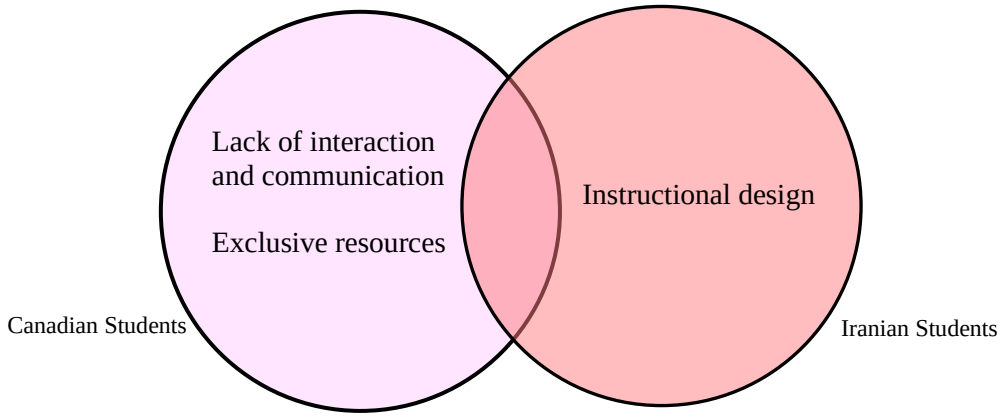
Iranian Students' Views About Barriers to Develop Their Critical Thinking.

While two Iranian participants did not have any idea about factors that might have a role in inhabitation the development of CT, two other interviewees had similar opinions that

instructional design was linked to reducing CT in their programs. In my conversation with Mali and later with Amir, they did not have any ideas about factors that had roles in inhibiting them from being critical thinkers. While I let them have time to think about this, they said they could not find any answers for this area. In contrast, #4 and Mona had the same problem but different experiences. They pinpointed that lack of proper instructional design was a factor that banned them from improving their CT. For example, #4 described that in some of her courses, there was no emphasis on practicing CT. Therefore, she did not have opportunities to apply CT on different subjects and topics. Mona, much like #4, explained she could not practice CT in her various courses, as her courses mainly focused on transit knowledge rather than providing an opportunity where she could analyze information.

Narrating Canadian and Iranian students' stories about the factors that acted as limitations delivered different points. One Canadian student believed there was no barrier to developing CT during her study. At the same time, two Iranian students did not have any opinion on what factors could plat as barriers to CT improvement in their programs. Still, other Canadian students expressed that lack of interaction and communication, and exclusive resources were factors that negatively impacted their CT growth. Instructional design was the issue that Iranian students believed did not permit them to improve their CT. Figure 16 designates barriers to developing CT from Canadian and Iranian students' viewpoints. The left circle shows Canadian students' views, including lack of interaction and communication and exclusive resources, and the right circle displays Iranian students' sights containing instructional design. Both groups of participants did not share any common opinion about elements that inhibits their CT in their field of studies.

Figure 16
Barriers To developing CT from Canadian and Iranian Students' Viewpoints



In the second RQ, Canadian and Iranian students' stories were divided into four main parts, including their overall university experiences, their significant needs for developing CT, their difficulties, and the barriers they faced in improving CT in their field of study, which I addressed in the present section. For each part, students presented shared and non-shared codes related to their notions about their experience of studying at a Canadian university that impacted their CT during their master's level. As illustrated in Figure 12, through Table 5, I represent all participants' ideas based on the findings parts to show the final themes related to the second RQ. Table 5 consists of four parts; Canadian and Iranian students' overall university experiences, their significant needs for developing CT, and their difficulties and barriers linked to CT development. Each of these parts included sub-themes that I presented in their positions. Three key themes extracted from sub-themes of the second RQ's findings include curriculum design, pedagogical approaches, and instructor's competence. These themes play a significant role in Canadian and Iranian students lived experiences with the concept of CT during their graduate studies.

Table 5
Key Themes of the Impact of University Experiences on Students' CT

Scope of students' Experiences	Group of students	Sub-themes	Themes
Overall university experiences	Canadian	Ability to identify different perspectives	Curriculum Design
	Canadian	Building own Ideas	Pedagogical approaches
	Canadian/Iranian	Helpful curriculum	Curriculum design
	Canadian/Iranian	The role of instructors (positively)	Instructor's competence
	Iranian	The role of instructors (negatively)	Instructor's competence
	Iranian	Ineffective university	Curriculum design
Significant needs	Canadian	Questioning	Pedagogical approaches
	Canadian	Exposure to a variety of cultures	Curriculum design
	Canadian	Critical reflection	Pedagogical approaches
	Canadian	Reading different resources	Curriculum design
	Canadian/Iranian	The role of instructors	Instructor's competence
	Iranian	Pedagogical approaches	Pedagogical approaches
	Iranian	Background knowledge	Curriculum design
Difficulties	Canadian	Information evaluation	Pedagogical approaches
	Canadian	Evaluating and judgment/critical judgment	Pedagogical approaches
	Canadian	Lack of background knowledge	Curriculum Design
	Canadian	Reevaluating existing knowledge	Pedagogical Approaches
	Iranian	Pedagogical Approaches	Pedagogical Approaches
	Iranian	The role of instructors	Instructor's competence
Barriers	Canadian	Lack of Interaction	Pedagogical Approaches
	Canadian	Exclusive Curricula	Curriculum Design
	Iranian	Instructional Design	Pedagogical Approaches

Summary of Findings to Research Question 2. To reach an answer for the second RQ, I analyzed Canadian and Iranian students' lived experiences in four parts: their overall university experiences related to CT, their significant needs for the development of CT,

difficulties that students faced with CT in their program and factors that inhibit the growth of CT in their field of studies. In terms of their overall university experiences, Canadian students had a more positive experience of the impact of the university on their CT than Iranian students. Half of the participants (three Canadian and one Iranian) agreed that instructors have the leading role in facilitating and developing CT in their program of study. While one Canadian student stated the experience of studying assisted her in building her ideas, two Iranian students mentioned that the university was ineffective in improving CT skills during their studies. While the role of instructors, questioning, exposure to a variety of cultures, critical reflection and reading different resources were the fundamental needs that could impact the development of CT among Canadian students, Iranian participants articulated that the role of instructors, pedagogical approaches, and background knowledge were prominent demands in the progress of CT. Fostering CT was not an easy achievement for Canadian and Iranian participants, and both groups of students faced difficulties in their programs. Information evaluation, critical reflection and judgment, lack of background knowledge and re-evaluating existing knowledge were areas that Canadian students encountered challenges. On the other group, the lack of proper pedagogical approaches and the role of instructors were two main obstacles that Iranian participants faced. Given factors that inhibit the growth of CT among Canadian and Iranian students, while lack of interaction and communication and exclusive curricula were the main inhibition facts among Canadian students, Iranian participants confirmed that the instructional design prevents the development of CT in their program of study. Therefore, analysis of the participants' responses indicates that the university experiences that influenced their CT ended in three main categories: curriculum design, instructors' competence, and pedagogical approaches.

Chapter Summary

In this chapter, I presented and interpreted the data and findings, guided by research questions focusing on Canadian and Iranian students' conceptions of CT and their university experiences related to CT during their master's programs. The results of each research question were organized into different parts to reach the data's salient points yielded based on each group's points of view. The overall results of the first RQ, which is about Canadian

and Iranian students' conceptions of CT, show that Canadian students had a better understanding of CT than Iranian students. Yet, both groups agreed that this concept is significant and necessary for their personal lives and professional paths. The general outcomes of the second RQ, which focused on the impact of the experience of studying at a Canadian university on students' CT, revealed that Canadian participants again had more positive experiences than Iranian students. Iranian participants faced various difficulties in CT, and they needed more attention and opportunities to obtain and develop CT during their graduate studies. Curriculum design, instructors' competence, and pedagogical approaches were the main themes linked with Canadian and Iranian participants' beliefs about the impact of the university on their CT, which will be discussed in Chapter 6.

Chapter Six: Discussion

This chapter discusses the results of this study's data analysis, which aims to compare Canadian and Iranian students' conceptions of CT during their graduate studies. Even though several studies have investigated the concept of CT among international students at western universities, fewer specifically looked at Canadian and Iranian students' understandings and interpretations of CT. As CT is traditionally seen as an essential feature of an educated individual in western academic culture, it is necessary for all students to have an outcome of contemporary education that meets the demands of citizenship in a democratic society and successful employment in the quick and highly competitive economy. In this regard, the outcomes presented in the previous chapter display the rich narratives shared by the eight graduate students from Canada and Iran who participated in this study. This comparative study explores the Canadian and Iranian students' conceptions of CT from multi-dimensional perspectives, namely beliefs, challenges, and hindrances during their master's programs. In this chapter, I will discuss the results and respond to the following research questions at length:

1- What are Canadian and Iranian students' conceptions of critical thinking?
2- How does the experience of studying at a Canadian university impact graduate students' critical thinking?

Dissection of Research Questions

Discussion about Research Question One

This question aimed to understand the Canadian and Iranian students' perceptions of CT. In other words, this question addressed whether students, especially Iranian students studying as international students at the master's level, had any notions about this concept. To deliver an answer to this question, I examined students' conceptions in three aspects, including a) the meaning of CT from students' viewpoints, b) their notions about the importance of CT, and c) the necessity of CT for their programs of studies. This part will discuss and compare both groups' points of view regarding the first research question.

The Definition of Critical Thinking Among Canadian and Iranian Students. During the interview, my first question from students was about the meaning of CT to them.

While Canadian students provided a reasonable explanation of the concept of CT, extracts of the interview data showed that two Iranian students had an awareness of the idea of CT and the two other participants, Amir, and Mali, had difficulties with this concept. *Analysis, Open-mindedness, Reasoning, Questioning, Criticism* and *Self-expression* were the main key categories of the definition of CT among both groups of students. While *Analysis, Reasoning, Open-mindedness,* and *Questioning* are predominantly explained as higher-order cognitive skills and procedures, *Criticism* and *Self-expression* are not active processes of effectively thinking about thoughts and actualizing subjects according to the concept of CT.

One Canadian and one Iranian student chose *analysis*, which allowed them to analyze and synthesize information from multiple perspectives. As I discussed in Bloom's Taxonomy in Chapter 4, the upper three levels indicate higher-order thinking skills that involve deeper learning and more cognitive processing among individuals. The *analysis* aims to distinguish between fact and opinion to identify the claims of an argument where the abilities are commonly thought of as CT (Adams, 2015). For Lamech and #4, the definition of CT was the ability to break down information and examine it from diverse perspectives to have superior clarity about information.

The *Open-mindedness* that one Canadian student chose shows through being an open-minded person, people can be more receptive to all diverse notions and arguments without considering whether they agree or disagree. As Ferkany (2019) discovered, open-mindedness includes a willingness to consider "new ideas, practices, or experiences" (p. 405) to establish whether to add or modify thoughtful or critical objects to an individual's existing knowledge. Open-minded people can learn new things about subjects and challenge their preconceived beliefs to make a judgment by logic, reasoning, and evidence. Being open- minded allows people to think flexibly, determine options, and find new methods to accomplish a given task. These features are associated with the synthesis level of Bloom's taxonomy.

Reasoning is another theme that one Canadian and one Iranian participant articulated as a meaning of CT for them. The *reasoning* process is an integral part of CT discovered by different scholars such as Scriven and Paul (1987) and Zara and Othman (2013). These researchers stated that people could evaluate statements, assumptions, and arguments about subjects in ordinary situations through the reasoning process. For Keith and Mona, the ability

to process and assess the information to make a judgment is the definition of CT. Therefore, their definition of CT is related to the analysis level of Bloom's taxonomy. The analysis represents the ability to consider complex problems by assuming the information that individuals gathered and organized.

Questioning is a further theme definition of CT articulated by a Canadian participant. Questioning helps students by focusing openly on the process of thinking about the information and existing knowledge to think critically. The ability to question can create a questioning mind in the same direction as the critical mind. In other words, questions push assumptions, debates, and vague thoughts for thinking forward. In the same light, Fahim and Bagheri (2012) explained that Socrates believed that students could reach a deep understanding and thinking through questioning the fundamental beliefs and assumptions to consider various perceptions. So, the ability to question and gather different viewpoints is related to the analysis level of Bloom's Taxonomy. Analysis ability improves individuals' motivation and leads them to be independent thinkers to make informed decisions.

Criticism is a definition of CT that an Iranian student explains. Even though there is a difference between having CT and being a critical person, Amir believed that thinking "against" something or someone could be counted as CT. The word criticism in the online Axford Dictionary (n.d) refers to "the act of expressing disapproval of somebody/something and opinions about their faults or bad qualities," which intersects with CT's concept. Many scholars, such as (Ennis, 1985; Sternberg, 1986; Scriven & Paul, 1987) defined CT as a set of skills that leads individuals to approve or disapprove of an argument through judgment which results from analyzing, reasoning, and evaluating the observations and information. Amir's understanding of the concept of CT is related to the lower order thinking of Bloom's Taxonomy which is knowledge. Amir requires practice in order to build his CT conceptualization and be familiar with the concept and purpose of CT. However, the considerable point in Amir's view about the definition of CT backs to the different cultural contexts that I will discuss in the following section.

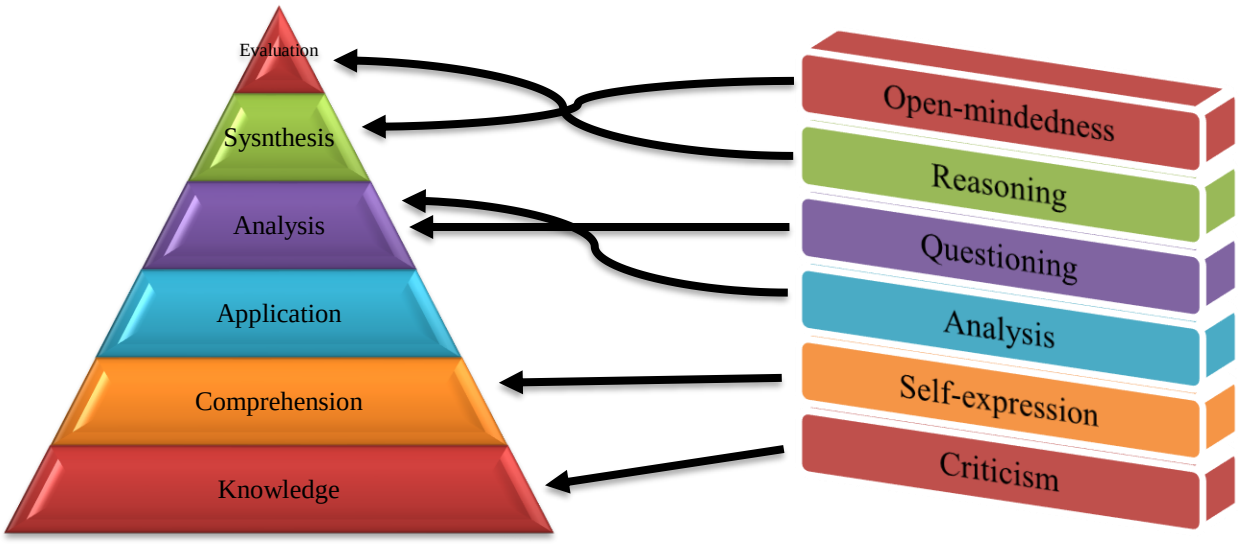
Self-expression is the last theme of the definition of CT presented by an Iranian student. In the light of Kim and Ko's (2007) definition of self-expression as "expressing one's thoughts and feelings, and these expressions can be accomplished through words,

choices or actions" (p. 326), it is understandable that Mali's definition of CT is linked to the lower order thinking of Bloom's Taxonomy which is comprehension. According to Armstrong (2010), comprehension refers to understanding that a person knows what is being communicated and can utilize the material or idea without necessarily connecting it to other material or noticing its entire implications. Mali's definition of CT aims to construct meaning through interpreting, summarizing, comparing, and explaining the content.

According to the above discussion, the scale of the meaning of CT from students' understanding shows that most of their knowledge and thoughts about CT are associated with the upper three levels of Bloom's Taxonomy. Figure 17 indicates students' level of familiarity with the concept of CT based on Bloom's Taxonomy. On the left is Bloom's Taxonomy hierarchy comprising six levels. On the right side are six key themes that are extracted from Canadian and Iranian participants' conceptions of CT. The theme of criticism is related to knowledge. Comprehension is linked to self-expression. Two theses, including question and analysis, are connected to the level of analysis. The reasoning is linked to evaluation, and open-mindedness is related to synthesis level.

Figure 17

Students' Level of Familiarity with the Concept of CT Based on Bloom's Taxonomy



The Role of Critical Thinking in the Iranian Cultural Context. Along a slightly different line with the definition of CT among students, it is noteworthy to know the meaning of CT in the Persian language and Iranian culture. While in English literature, there is a specific noun word for CT which means "The process of analyzing information in order to make a logical decision about the extent to which you believe something to be true or false" (Axford Dictionary, n.d), in Persian dictionaries (e.g., Dehkhoda Dictionary, Mo'in Farsi Dictionary, Amid Farsi Dictionary) there is no word for the definition of CT. According to the Dehkhoda Dictionary, which is one of the comprehensive Persian encyclopedic dictionaries, critical thinking (in Persian: تفکر انتقادی) consists of two words: thinking (Taffakor /تفکر) and critical (Enteqād /انتقاد) that have separate definitions. The word thinking (Taffakor) has the same meaning as thinking in the English language, which focuses on using a person's mind to consider or reason about something. Yet, the word critical ('enteqād/ انتقاد) means "correction" or "description of the advantages and disadvantages of a poem or article or book" (Dehkhoda Dictionary, n.d). So, putting these meanings together shows that Amir's definition of CT, which mainly focused on thinking against someone or something or criticizing people and subjects, is close to the meaning of CT in the existing Persian language. However, it should be noted that there are several Iranian scholars (e.g., Hashemi et al., 2010; Fahim & Bagheri, 2012; Fahim & Shakouri Masouleh, 2012; Hajhosseini et al., 2016; Eghbali et al., 2021) who published numerous inquiries in order to provide a great and reasonable definition of the concept of CT based on its purpose for individuals' academic and day to day life. Still, there is a need to enter the sensible meaning of this concept in the Iranian language and literature to increase people's knowledge and conceptions about this notion.

Another light that can be shed on examining CT among Iranian students is the Iranian cultural context. As I discussed in Chapter 3, from 1979, Iran followed the Islamic revolution that impacted different areas, namely the education system in the country. This Islamic adaptation created the government's version of an education, which was influenced by every Islamic laws. Fahim and Bagheri (2012) explained that while some of the fundamental points of fostering CT among students are to teach them to build a habit with enough evidence,

familiarize themselves with conflicting beliefs, teach them to ask profound questions, and acknowledge the fact that knowledge is always subject to change yet, working on the concept of CT requires great care and understanding as "it is never possible to question the beliefs and values in the name of fostering critical thinking" (p. 1125). Therefore, fostering or developing CT among Iranian students should be issues that do not "question religious or political matters" (Fahim & Bagheri, 2012, p. 1125).

Considering the above points, the education system in Iran is traditional, and students are supposed to memorize the materials. Students who can remember more information obtain better academic achievement. Thus, not only there is no specific curriculum to familiarize students with the idea of CT, but education systems did not successfully offer an environment where learners can practice this skill in an academic context. Consequently, most Iranian students come from a different academic culture with no history of learning and practicing CT during their studies. Therefore, when they arrive at a western university, they face challenges linked to their lack of CT.

Canadian and Iranian Students' Views About the Importance of Critical Thinking. Both Canadian and Iranian students were invited to share their thoughts about the importance of CT. Almost all Canadian and Iranian students agreed that CT is an essential skill for their personal and professional paths. *Decision-making* was a common theme among both groups. *Analyzing*, *questioning*, and *evaluating information* were the key themes among Canadian students, and *problem-solving* was the main category among Iranian students.

Decision-making is one of the results of CT for those who have the capacity to think critically. According to Harris (1998), decision-making is the process of recognizing and selecting alternatives based on the standards and preferences of the decision-maker. Indeed, a student who is required to make decisions on a more frequent basis and consider those decisions using their criteria improves the ability to think critically. Decision-making skill is one area that lends credence to students as a citizen in a democratic society. Yet the provoking question that appears is how those students growing up in a non-democratic community can be involved in the decision-making process in their educational system where there is not enough practice for CT? In addition, I believe students' decision-making skills must be the center of academic culture in order to teach students what criteria are crucial in

making a decision and what would be the impacts of their choices result on themselves and others. Decision-making ability leads individuals to actionable conclusions that define whether the option is sound by the CT elements or not. People, through using CT, instead of automatically accepting all possible results and arguments, they likely to ask questions about all the potential outcomes and views. A sufficient educational system can operate decision-making ability as a tool for the growth of the person's skill to think critically and for fostering individuals as effective members of a democracy. While Canada, as a democratic country, provided enough concepts and practices in terms of promoting and developing CT among students at different levels in the educational structures, Iran, as a non-democratic society, faces a lack of CT content in the academic context, which students are not allowed to promote CT through being in a sustainable learning environment that let them express their notions, explore, take risks, share their wins and defeats and question each other.

Through the above arguments, whereas Canadian students had proper academic background knowledge about CT, which led them to know about its importance, on the other side, Iranian students with an academic background which did not promote CT among them through social practices got familiar with this concept as Atkinson (1997) explained CT can be learned through living life that one either grows up with or not had an awareness of the significance of this skill.

Four non-common themes of *analyzing*, *questioning*, *evaluating information* and *problem solving* significantly indicate the differentiation points of view between two cultures' levels of students. On the one side, Canadian beliefs indicate that the ability to analyze, question, and evaluate the information results from the importance of CT, which primarily stands for focusing on a range of possibilities about different information or beliefs and breaking down data and observation to consider all aspects of subjects to determine the significance and the value of the given data.

Through *analyzing* skills, individuals can examine the information and understand what is behind the data and observation to describe the implications of that information. Questioning is one of the ways that can encourages Jenna to think critically by requiring her to go beyond the actual recall or routine levels of existing knowledge. Through *questioning*, students engage in higher-order thinking, which causes the analysis and evaluation of the

knowledge or data. In this regard, Albergaria-Almeida (2010) noted that "students' questions result from a gap or discrepancy in the students' knowledge or a desire to extend their knowledge in some direction" (p. 306). Through *evaluation*, which in Bloom's Taxonomy is the highest level of thinking, students distinguish the information and judge or identify if there is a need to be changed. Likewise, from Canadian points of view, the importance of CT led them to obtain analyzing, questioning, and evaluating abilities that are helpful to "transfer knowledge learned from certain disciplines to other cognitive areas" (Santos, 2017, p. 162), which is the purpose of CT. In other words, reflecting on Tsui (2003), who asserts that "identify issues and assumptions, recognize important relationships, make correct inferences, evaluate evidence or authority, and deduce conclusion" (p. 743) are the usual key terms of the importance of CT in an academic context.

On the other hand, *problem-solving* was the central theme among Iranian participants. Iranian students' perspectives about the importance of CT are mostly linked to solving or improving problems or faulty decisions. Bearing in mind that CT's significance is mainly related to the definition of CT among participants, those students who were aware of the concept of CT found that it led them to promote problem-solving skills for themselves. Through CT, people likely could utilize knowledge, details, and data to solve problems efficiently. In so doing, this does not imply that individuals have to find an immediate response to the problem. Yet, the focus is that people be able to think about the process, evaluate issues and discover proper solutions by considering diverse aspects. While McCormick et al. (2015) argued that many students were not learning problem-solving and CT, which are fundamental to the core objectives of general education across all disciplines at the postsecondary level, reflecting on Dewey's (1902) points that to develop of CT and problem-solving skills we should move away from curricular content as the crucial point of learning and towards activities and tasks from which students can draw experiences to aid them in further learning. Still, I must point out that learning CT requires both training and practice in a collaborative environment. Again, since Iranian students did not foster their problem-solving skills through explicit teaching, they realized this skill directly and naturally in a social context. Therefore, Mona and Mali's points of view regarding the ability to solve problems show that, in general, they have a positive insight about the importance of CT for

their fields of studies, workplace, and day-to-day life, as Nezu et al. (2013) underlined by having a positive problem orientation, individuals are more likely to be optimistic and consider that problems are solvable that can help them to obtain more confidence in their capacity to solve problems. But looking at Amir's idea that the importance of having CT results in having problem-solving skills when people "criticize each other" or aim to "improve a subject" clearly indicates his culturally shaped conception of the importance of CT. One of the purposes of CT indeed is to help people obtain problem-solving skills, as Dewey (1910) named it a reasoning process for all subjects and grade levels. Yet, it seems that Amir's problem-solving is used when individuals are faced with several critics because of their diverse opinions, abilities, and processing capabilities. Still, in problem-solving, which is the result of CT, people, through curiosity which is "the most vital and significant factor in supplying the primary material" (Dewey, 1910, p. 30), can gather a more comprehensive form of relevant information to evaluate ideas to solve problems (Hardy et al., 2017).

Canadian and Iranian Students' Views about The Necessity of Critical Thinking. Canadian and Iranian students shared their perceptions about the necessity of CT for their programs of study. Participants were from different disciplines of study, namely education, data science, business administration, and environmental science. The data analysis of their insights, as shown in Chapter 5, indicated that while all Iranian students agreed that CT is necessary for their programs, Canadian students provided diverse responses. The main non-common theme about the necessity of CT for programs of study among Canadian students was *open-mindedness*. At the same time, the *problem-solving skill* was the Iranian students' theme, and *decision-making skill* was the common category between both groups of students.

Focusing on the Canadian students, all participants were studying in the education program but with different points of view about the essentiality of CT in their programs. Keith and Lamech argued that the concept and practice of CT depend on curricula and the reason for the study. Keith noted that while CT is useful for specific courses like thesis research that lead students to search for particular topics to provide critical views and create innovative ideas, viewpoints, and arguments, other courses' focus is on completing assignments and tasks. In the same light, Lamech stated that although using CT in curricula

provides in-depth perspectives about the topics, it is against getting reasonable grades. While CT is at the forefront of learning and encourages students to reflect and realize their perspectives at different educational levels, an important point that requires attention is the role of CT in graduate study for individuals. There are numerous scholars (King et al., 1990; Seldomridge & Walsh, 2006; Moore, 2013; Labake et al., 2016), who have highlighted that the primary purpose of higher education in western countries is building and/or developing CT skills which are generally accepted to be a desired characteristic among students in graduate education. Moreover, Dewey (1933) argued the main objective of education should be reflective thinking that leads learners to conclude the careful collection and evaluation of evidence. Therefore, CT is a vital ability for a well-educated individual who can make knowledgeable judgments and describe their reasoning about different subjects; thus, it is prominent to consider what happens in university classrooms and how instructors evaluate students' outcomes, specifically regarding higher-order thinking.

The other two Canadian students, Jenna and Sydney, agreed that CT is a requirement for their field because it assists them in being *open-minded* and having *decision-making skills* which indicate the vital role of CT in the field of education. The examination of Jenna's point of view as a non-common theme among Canadian and Iranian students represents that for her, content knowledge and pedagogical skills are not enough to be an active person in her area. She believes that she can play an influential role in her major through open-mindedness. According to Dewey (1933), open-mindedness is defined as "freedom from prejudice, partisanship, and other such habits as close the mind and make it unwilling to consider new problems and entertain new ideas" (p. 17). Hence, open-mindedness is commonly recognized as an intellectual virtue in the lists of epistemic and argumentative virtues, which emphasize a willingness to interrogate one's own beliefs (Bowell & Kingsbury, 2016). Meanwhile, being open-minded leads individuals to be critically receptive to different possibilities, be willing to think again despite having formulated a perspective and be concerned with defusing any factors that constrain one's thinking in predetermined ways (Hare, 2003). Open-mindedness through welcoming new insights and accumulating available experiences is one of the attitudes located at the center of education that enables individuals to think critically and rationally in their studies.

Considering the Iranian participants, although students were studying in various academic programs, all interviewees had the same opinion that CT is necessary for their field of study. *Problem-solving skill* was the central theme from Mona, Mali, and Amir's points of view that agreed is the outcome of the CT for their areas of studies and a vital ability for themselves in their career paths. Fundamental problem-solving skills are common in many disciplines for students, as Krulik and Rudnick (1988) defined it as the process of how "an individual uses previously acquired knowledge, skills, and understanding to satisfy the demands of an unfamiliar situation. […] the student must synthesize what he or she has learned and apply it to the new and different situation" (p. 3). The scholars named problem-solving as a process that leads students to synthesize the knowledge and skills they have learned and use them to solve a problem in a new situation. The point that I believe is important is how students obtain problem-solving skills based on their personal and academic life. Without a doubt, solving problems in each field requires background knowledge, experience, and creativity which assist individuals in finding a proper solution to a particular situation. Still, the capacity to think is more significant than having broad knowledge in solving problems; as Carson (2007) stated, thinking about the knowledge base, and transferring that knowledge to solve a problem are the essential elements in solving problems. Developing cognitive skills, such as problem-solving abilities, is helpful across all collegiate programs because students utilize CT to analyze and synthesize issues and apply previously learned concepts to find a proper solution. In other words, students should think critically to be able to solve problems and make effective decisions if they desire to be efficient in the workplace. Simply, the more ability to think critically, the more capacity to solve problems effectively (Snyder & Snyder, 2008).

Decision-making skill was the common theme between one Canadian and an Iranian participant. Sydney, an education student and #4 a business administration candidate, both agreed that CT is essential for their programs because it led them to have the ability to evaluate the accuracy and credibility of sources for making logical decisions. Some needed skills are mandated for individuals in the 21st century, which leads them to succeed in their lives and future occupations. These abilities include but are not limited to CT and problem-solving skills that advantage individuals to informed decision-making. Learning how to make

decisions depends on several abilities, such as analyzing and reasoning skills that, as I discussed previously, are in higher-order thinking levels of Bloom's Taxonomy. People who are likely to use CT make fewer weak decisions in their daily lives and careers. To add a shred of evidence to this argument, the result of a study conducted by Butler (2012) showed critical thinkers who utilize their good thinking skills to be successful in several domains, including school, home, and job significantly had fewer poor life decisions. Therefore, university classes have to promote these skills in students to have an inclination, or disposition, to pay attention to facts, identify gaps within the evidence, and evaluate all the options when making decisions (Gambrill, 2005).

Discussion about Research Question Two

The second research question was designed to answer how the experience of studying at a Canadian university impacts students' CT during their graduate studies. According to the study's findings, as presented in Chapter 5, Canadian and Iranian students shared comprehensive experiences that were classified into four sections, including a) their general overviews, b) their significant needs, c) difficulties, and d) barriers that are linked with the university's impacts on the development of CT during their studies. Three main key themes, including curriculum design, instructor's competence and pedagogical approaches, were extracted from their stories. In the following part, I will compare both groups' insights in each section and discuss obtained main themes related to their experiences to answer the second research question.

Canadian and Iranian Students' Overviews Related to University Experiences. The finding of this research revealed that while all Canadians had positive experiences regarding the impact of the university on their CT, Iranian students had partly positive and partly negative experiences. Two Canadian students agreed that their program helped them gain the ability to recognize diverse perspectives and build their notions. In contrast, two Iranian students mentioned that university and instructors did not positively impact their CT. Interestingly, two Canadian and two Iranian students had similar thoughts that helpful curriculum and effective instructors supported them in fostering and developing their CT in their studies.

The first two Canadian participants' experiences showed that they have a clear

understanding of the intellectual standards underlying CT, which could result from the university's proper curriculum design and suitable pedagogical approaches that positively assist them in flourishing their CT. At the same time, against Canadian participants, the first two Iranian students had negative experiences, which means the university's curriculum and instructors were not beneficial for them to foster and/or develop their CT. In the same direction, the other half participants, two Canadian and two Iranian students, clearly stated that curriculum and instructors positively played significant roles in obtaining and/or improving the concept of CT in their field of studies.

Canadian and Iranian Students' Significant Needs for Developing Critical Thinking. In response to the question about what participants believe would be vital needs for their programs that assist them in improving CT, they mentioned different elements. While the role of instructors was the common need among Canadian and Iranian students that could help them develop CT abilities, Canadian students believed that questioning, exposure to a variety of cultures, critical reflection, and reading different resources are vital needs that can support them improve their CT. Moreover, proper pedagogical approaches and background knowledge were crucial needs that Iranian participants mentioned would be beneficial for them to enhance their CT.

Canadian and Iranian Students' Difficulties in Developing Critical Thinking. Canadian students emphasized that information evaluation, evaluating and judgment/critical reflection, lack of background knowledge, and re-evaluating existing knowledge were difficulties they faced in developing CT skills. On the other side, Iranian students pointed out that lack of background knowledge and the role of instructors were two areas of challenges they experienced during their studies. These difficulties among students show the importance of utilizing appropriate curricula and instructors that could deliver quality education to students.

Barriers to Developing Critical Thinking Among Canadian and Iranian Students. The data analysis of students' responses about the possible obstacles to developing CT indicated that lack of interaction and exclusive resources were the areas that inhibit Canadian students from improving their CT during their higher education. A lack of appropriate instructional design was the primary barrier that Iranian students mentioned

preventing them from thinking critically.

By comparing Canadian and Iranian students' viewpoints about their experiences of the impact of the university on developing their CT, three claims can be generated that support students to be critical thinkers. These are content knowledge, instructors' competence and teaching methods that are further discussed below in the following parts.

Content Knowledge. The conceptualization of CT requires to be developed, practiced, and frequently incorporated into the curriculum to encourage students to the active learning process. To achieve this aim, the primary attention should be placed on the curriculum that consists of different aspects, namely content knowledge (Snyder & Snyder, 2008). According to Islamiyah and Sholakhuddin Al Fajri (2020), adequate content knowledge is a significant feature of the development of CT that able individuals to think critically about issues in several domains. Moreover, Willingham (2019) discovered that knowledge content should provide enough information about a subject that lets students have the ability to "analyze, synthesize and evaluate information" (p. 6) like a reasonable objective, but those skills mean various ideas in diverse disciplines. Providing enough content in the curriculum helps students to get knowledge to have the ability to analyze and synthesize different perspectives on various subjects. Considering Lamech and Sydney's points of view as Canadian students that expressed their program suffers from a variety of cultural content appears a question how Canadian curriculum developers in Canada, one of the multicultural countries in the world, consider designing inclusive content that supports both Canadian and international students to discover components of different cultural contexts? Exclusive content cannot let students think about different structures of arguments and the ability to consider and analyze different perspectives. Providing enough knowledge content in the curriculum can help students obtain sufficient background knowledge about a subject that they can bring to the class and use while working on rich CT projects. Accordingly, some scholars discovered having background knowledge is prominent for students if they are willing to demonstrate their CT skills (Case, 2005; Willingham, 2007). Looking at Amir's experience as an Iranian international student, a lack of adequate background knowledge about the concept of CT in his curricula banned him from gaining information about the concept and losing opportunities to practice during his study. As CT is

logical and reflective thinking, having background knowledge assists students, especially those not familiar with the concept of CT or the content of courses, in understanding resources, processing the information, and getting a sense of the learning context. Therefore, sufficient content knowledge assists learners in judging the quality of thinking as it is one of the mandated resources that students require to think critically (Case, 2005).

Instructor's Competence. Reflecting on Canadian and Iranian students' stories about their experiences of developing CT skills at the graduate level demonstrates that instructors played a significantly positive and negative role as one of the elements of shaping CT skills during their journey. Instructors are one of the prominent components of educational systems, which directly impact various aspects of education, such as students' learning process, formulating learning goals and assessment of learning results; therefore, considering their competency plays a vital role in the success of educational programs (Saidah et at., 2018). Undoubtedly, enhancement of the ability to think critically depends on several factors, including the instructor's competence to identify the value of CT and suitable preparation to develop it among students. (Gul et al., 2010). In the broadest sense, teachers lead students to foster and build their CT which allow learners to be independent individuals rather than a person who blindly adopt others' perspectives or take information as facts. In this regard, two thoughtful points require attention. The first one is the consideration of the level of teachers' conceptions of the concept of CT and the second noteworthy point is how to ensure that teachers have enough experience to facilitate and utilize the concept of CT among students specifically those who suffer from a lack of CT in their background knowledge. Instructors without a deep-rooted understanding of the purpose of CT might only rely on teaching techniques connected with CT instruction rather than facilitate the improvement of CT in their students. As Ball and Garton (2005) highlighted, instructors "must first emulate higher cognitive levels in their instructional practice" (p. 59) which indicates their ability to use proper teaching approaches that influence students to foster or develop CT abilities and disposition during their learning process. Sharing experiences of Mona and Mali, both Iranian students with different programs and unique experiences about the impact of their instructors on the development of CT, clearly shows how teachers can shape students' abilities to gain skills. On the one side, Mali, who almost did not have any knowledge and

practice about the concept of CT, noted her instructors, by using different teaching strategies, such as critical reflection tried to encourage her to think critically about various subjects and led her to become familiar with the concept of CT. On the other side, Mona explained that while her main focus in the program was to pass tests or do assignments, she did not have enough time and motivation to think about what she was doing or provide a reflection on topics that she was working on. It must be noted that surely there are differences in content, practices and assessment between disciplines which require particular teaching and learning strategies; still, the point is whether instructors' perception of CT impacts their teaching strategies to encourage students to use CT or just they are merely concentrating on the comprehension of the subject matter. To sum up, instructors' competence to stimulate CT in their students cannot be reached unless they constantly have an awareness of their assumptions about the concept of CT and a deep understanding of procedures that they can incorporate CT skills into their lessons where all students with different backgrounds and knowledge have the opportunities engage and improve their logical thinking.

Teaching Methods. To develop CT and dispositions, utilizing effective teaching and learning approaches can encourage students to use their higher-order thinking to think critically. While each discipline has its specific content, practices and assessment, which require particular teaching methods, instructors must use constructive teaching strategies like reflection and questioning to actively engage students in their learning process in order to infuse the habit of using CT skills in students' minds (Gul et al., 2010). Teaching CT is particularly essential to students from non-western cultural backgrounds due to their lack of knowledge and practice, and teachers should be able to explain, practice and stimulate the concept of CT in their course design and classroom activities. Reflecting on Mali's experience as an example, she expressed that her instructor encouraged her to foster CT by using a questioning approach. This experience indicates that she identified a relationship between herself and the instructor that assisted her in believing that the instructor welcomed her thoughts which led her to be keener to think critically in the process of learning. Indeed, teachers, by using proper instructional methods, can recognize the level of cognition that learners engage in and can influence students to feel engaged in the class activities, which is one of the requirements for developing CT. In contrast, in Mona's experience, she clearly

stated that due to overwhelmed assignments and tests, she did not have time to think about the course and analysis the content, and she was stressed to just passed tests and get good grades. According to her experience, it seems that her courses were designed based on content-centred rather than students centred, as Snyder and Snyder (2008) aptly described, when the criterion of students' learning emphasizes test scores, the learning process from student-centred places on the content-centred. Still, if the purpose is to develop students' CT, they should have the freedom to discover and analyze content and have the ability to apply information. Moreover, scholars revealed that students were usually not trained to think or learn individually, and they infrequently pick up skills on their own. Also, keeping in mind that the one purpose of assignments and quizzes is to demonstrate and determine students' level of learning, practice and evaluation of the course; reflecting on Ennis's (1993) beliefs that assessments should underline thinking rather than facts reminds a point about whether quizzes or graded assignments are intellectual or just memory recalls in different programs.

Through using effective teaching strategies, teachers generally lead students to have the ability to build their notions. For example, asking questions assist students in stimulating thinking critically. Meanwhile, proper teaching methods can efficiently guide students to use their lower or higher-order thinking. In other words, the more influencing students' higher-order thinking, the more increasing students' ability to evaluate information and existing knowledge. According to Zhao et al. (2016), educating students in a way that they can use their higher level of thinking by facilitating them to "infer, judge, evaluate, expand their ideas" (p. 17) creates the tremendous potential to stimulate CT.

Adopting active and cooperating learning methods that focus on students' active participation and interaction can support them in improving their CT. Focusing on Keith and Lamech, both Canadian students who studied online, which pointed out a lack of interaction and communication was a barrier to improving their CT, indicates instructors have to create an environment where students have more opportunities to practice the concept of CT even virtually. According to Zhao et al. (2016), to inspire students to have an active role in classrooms in terms of building their CT, it is prominent that teachers create a cultural environment where learners are encouraged to probe assumptions, ask vital questions, and evaluate reasons by different interactions namely teacher-student and student-student

communications. As a final point, using proper teaching methods, especially where there are multicultural students, can lead them to build CT that are useful in every aspect of life. Likewise, the main criteria for developing CT among students should be focused on determining students' level of thinking and putting them in a direction that they are users of information rather than receivers of information (Snyder & Snyder, 2008).

Chapter Summary

Chapter six focused on discussing the interview findings and the dissection of research questions. I examined the first research question under four headings, including a) the definition of CT among Canadian and Iranian students, b) the role of CT in the Iranian cultural context, c) both groups of students' views about the importance of CT, and d) Canadian and Iranian students' opinions about the necessity of CT for their programs. The investigation of the second research question ended with a discussion about content knowledge, instructors' competence and teaching methods extracted from Canadian and Iranian students' university experiences in developing their CT during their higher education. In the next chapter, I will discuss the research's implications and limitations and offer suggestions for the next steps for future studies in the research areas.

Chapter Seven: Conclusion

The following chapter is devoted to implications and limitations drawn from investigating Canadian and Iranian students' conceptions of CT during their graduate level. This section describes recommendations for future studies in the research area and will be finished by the study's conclusion.

Implications

As one would expect of any research, my study indicates several stories to come. Canadian and Iranian participants narrated their opinions about the concept of CT. Also, they shared their experiences about the university's impact on developing CT in a narrow framework of their needs, obstacles and barriers that played significant roles during their higher education. The vital implication drawn from the findings of Canadian participants lived experiences demonstrated that while all students had a reasonable awareness of the nature of CT, they still required appropriate instructional modules and training to develop their ability to think critically. Improving higher-order thinking requires new learning approaches that present information and study strategies that lead to an adequate education that promotes the ability to think critically among them during graduate studies. The biggest hurdle in teaching CT to Iranian international students is their cultural and educational background. While several scholars (e.g., Hashemi et al., 2010; Aliakbari & Sadeghdaghighi, 2011; Fahim & Sa'eepour, 2011; Hajihosseini et al., 2016; Taghizadeh et al., 2018) discovered that Iranian students suffer from a lack of knowledge and practice related to CT, it would be fortunate if Canadian universities and educators consider students' understanding and preconceived ideas about the concept of CT and the means of being critical thinkers. Building CT among Iranian students is a cognitive process that develops new characteristics of an individual's identity. Thus, Iranian international students require knowledge, time, and training to distinguish the differences between thinking patterns related to various cultural contexts. Reflecting on Chan and Yan's (2007) quote that if learners are taught to be "aware of the natural and cultural contexts in which their thinking patterns are embedded, they should become more sensitive to their own ways of thinking and less likely to misapply them or make hasty judgements based on them" (p. 400) shows building CT in Iranian students as

a new thinking habit requires specialized development courses and experienced instructors that can highlight the development of these new cognitive patterns in students.

Without a doubt, Canada, as a multicultural country, welcomes the majority of international students to pursue their educational degrees at different levels. International students with different cultural and academic backgrounds face unique experiences that lead them to create diverse communities where they can share their experiences and ideas; especially in an academic environment where everyone can enrich their learning experiences. However, the important point is that if Canadian universities, specifically higher educational institutions, hope to create an inclusive environment for everyone, they need a further examination of curriculum and instructional pedagogy. Institutions and instructors need to create conditions and environments to support all students' activities and transformative learning as well as facilitate them to transfer transform knowledge and abilities to build their CT for working, public and personal lives. Universities that seek to increase the number of international students have to purposefully create academic and social contexts in which foreign students be able to achieve desired results. Meanwhile, designing an appropriate culturally relevant curriculum that provides enough content, presents teaching methods, and formative assessment supports both local and international students to transfer to different contexts to enhance their CT dispositions. Therefore, to implement the position of CT, these essential western abilities among local and international students, universities and educators should re-think their strategy linked to pedagogy, procedures, and learning environment in order to construct and/or develop CT among students to prepare them to have the ability to think. There is a broader context for further study of Canadian and Iranian students' stories of CT, and arguably above applicable. More studies will help recognize how universities should teach CT to both local and international students to become embedded in their practice and support shaping them into critical thinkers.

Limitations of the Study

Like any research study, the present study consists of several limitations since the purpose is focused specifically on the narratives of Canadian and Iranian graduate students' conceptions of CT. The first limitation is related to the nature of qualitative research. This NI

utilized open-ended interviews, personal networks, and snowball sampling to gather data which allowed me to uncover interviewees' profound understandings of their stories. Still the study was reflected in the small size of the research population (eight participants in total) which limits the transferability of the research results. For instance, the results from such small-scale research may not be illustrative enough for a comprehensive understanding of Canadian and Iranian students' perceptions of CT and their experiences during their higher education.

The next limitation is although the aim of the participants recruited was to invite students from different programs, accidentally all Canadian students were from the education field. This means that the voice of Canadian participants is not representative of Canadian students' conceptions in various programs, and it is not fair to say that other students in different majors have similar conceptions or experiences. Future studies could be considered drawing from more diverse disciplines. Also, this study explored Canadian and Iranian international students' conceptions of CT and the impact of a university on the development of CT during their master's program in the context of a Canadian public and mid-sized institution rather than in a high-ranked institution. In this sense, the findings might not be applied to describe Canadian and Iranian international students' perspectives in a high-ranked university.

Another limitation of this study has related to the complexity of the topic. This study aimed to understand students' conceptions of CT regardless of different effective elements, such as the role of language. Language and CT grow together and promote each other's growth. I interviewed all participants in the English language; so, it might be possible that some Iranian students did not have enough English proficiency to express their ideas about the topic. Therefore, identifying these issues and points are beyond the scope of the current thesis. This research can be considered a pilot study for future detailed discovery of Canadian and Iranian students' CT.

Recommendations for Future Research

The present NI aimed to compare Canadian and Iranian international students' conceptions of CT during their master's level. I utilized open-ended interview questions to

gather data from both groups of participants. The findings of the study addressed the gap in the literature (e.g., the lack of understanding of Iranian international students' conceptions of CT in Canadian universities). Also, this NI extended the knowledge of Canadian students' perceptions, needs, difficulties and barriers regarding developing their CT.

I employed the qualitative method as Babbie (2007) highlighted has the strengths of a deeper understanding of a particular case or a concept through intimate and in-depth interviews and observation of a specific group of people. I learned the importance of such strength from the gathering data process when I observed interviewees' voluntary responses to the probing questions and shared their insights and stories. Participants detailed sharing of their personal experiences, reflective thoughts, and obstacles about the topic of the study helped obtain an understanding of some Canadian and Iranian international graduate students' perspectives on the research topic. I recommend that other researchers interested in NI and comparative research into such a topic take more students in different levels of study. This study mainly focused on graduate participants who were in the last year/semester of their programs. Future studies can involve students from undergraduate levels. For the next steps, researchers can also use a quantitative research methodology (e.g., studying how university impacts evolving conceptions of development CT among international students during a semester). For such quantitative research, I recommend that researchers use a case study approach, a descriptive and exploratory analysis of an individual or group of students to examine how a university influences their CT development during a specific period, explicitly examining the beneficial factors for them rather than inhibit improvement.

The primary purpose of this study was to compare Canadian and Iranian international students' conceptions of CT and their experiences of developing this ability during their higher education. Presently, there are pre-sessional courses (e.g., English for Academic Purposes (EAP) for all programs or Graduate Certificate in Educational Studies (GCES) for entrance to the Master of Education program) which are designed to assist students, especially international students, to improve academic upgrading for the studying at Canadian higher education. These courses are mainly aimed at helping students with low English test scores or updating academic knowledge. Still, designing an introductory course for graduate students that teaches CT for academic purposes would significantly support

students to the expected level of CT for their programs. Future research can focus on examining the educational approach, qualifying students' prior learning knowledge and recognizing intended learning outcomes in order to establish great opportunities to employ such a course to build, develop and assess non-western students' conceptions of CT.

In this research, I aimed to be a voice for some Canadian and Iranian international students that encountered the concept of CT during their programs. The results of their stories indicate that curriculum and environment significantly impact their CT. Future scholars can examine designing a proper curriculum and environment for local students while paying attention to international students' needs and academic backgrounds.

Conclusion

The present study compares Canadian and Iranian international students' conceptions of CT and explores their experiences of improving CT during their master's programs in Canada. In this narrative inquiry, I addressed two research questions. The first one focuses on examining the concept of CT among students. The findings related to this question reveal that all Canadian participants had knowledgeable perspectives about the idea of CT. Also, Iranian contributors from non-Western traditions carried different viewpoints about the concept of CT. The results show Iranian students need more of the universities' attention to support them in building their CT conceptualization. The second research question concentrates on the impact of a Canadian university on students' CT. The findings show Canadian and Iranian students faced challenges and obstacles related to content knowledge and teaching methods that directly influenced their CT ability. Not surprisingly, the results also claim that instructors play an essential role in supporting students to improve their CT. Teachers need to pay attention to their students' background knowledge, level of thinking and intercultural competence when teaching CT, especially to international students. The present study also proposed possible suggestions that would help improve CT among Canadian and Iranian international students. Finally, these findings call for a more comprehensive understanding of how Canadian institutions pay more attention to offer a curriculum and environment where Canadian and Iranian international students feel that they can realize and develop CT and become more productive and effective users in their programs.

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Appendices

Appendix A: Invitation Email

THOMPSON RIVERS UNIVERSITY

Invitation to recruit Participants for Canadian and Middle Eastern Graduate Students' Critical Thinking' Study

Date:

Dear student,

You are invited to participate in a research project titled **Canadian and Middle Eastern Graduate Students' Critical Thinking**, which is a requirement for my master thesis under the supervision of Dr. Edward Howe from the Education and Social Work Department, School of Education at Thompson Rivers University. The study aims to investigate the critical thinking skills among Canadian and international graduate students from Middle Eastern countries. Due to this, I would appreciate it very much if you are willing to be one of the study participants.

As a participant, you will involve in an interview that takes approximately 45 minutes to talk about your opinions about critical thinking during your program. The interview will be recorded and later will be transcribed word for word. Once I have transcribed, I will send the document to you, and you can review your responses and opinions and make changes where needed. You have two weeks after receiving the transcribed file to do this step.

Your participation in this research is completely voluntary, however; I will offer a cup of coffee and a cookie at our interview at a place of convenience for you (for instance, a café). If we cannot meet in person, the interviews will be done online (for example, Zoom). Further, the collaboration will be done by email.

Therefore, you have the right to withdraw from the project for 60 days, starting from the interview date. If you choose to withdraw, please send me an email and I will use my best endeavors to remove any of the information relating to you from the project, including any final publication.

Your identity will be kept anonymous as your name will not be used in the thesis nor published at any time. Instead, you can choose pseudonyms to identify yourself from another. All data will be stored on an encrypted hard drive for 5 years. Afterwards, it will be destroyed.

I would be happy to clarify any queries you may have about this research. If you are willing to participate, please reply to this email, and I will send you the consent form and arrangement for a date and time that suits you.

Do let me know if you wish to receive a copy of the results from this study.

Yours sincerely,

Farzaneh Ojaghi Shirmard, M.Ed. Graduate Student
Education and Social Work, Thompson Rivers University
Ojaghishirmardf20@mytru.ca

If you have any questions, please contact Farzaneh Ojaghi Shirmard at Ojaghishirmardf20@mytru.ca or supervisor Dr.Edward Howe at ehowe@tru.ca or Chair of TRU Research Ethics Board at 250.828.5000 or TRU-REB@tru.ca

Sincerely,

Joyce O'Mahony
Chair, Research Ethics Board

Appendix B: Informed Consent Form

THOMPSON RIVERS UNIVERSITY

Canadian and Middle Eastern Graduate Students' Critical Thinking

Farzaneh Ojaghi Shirmard, MEd Graduate Student
Education and Social Work, Thompson Rivers University
Email: Ojaghishirmardf20@mytru.ca

This research investigates the critical thinking skills among Canadian and international graduate students from Middle Eastern countries. International students are an integral part of Canadian universities, and studying how universities influence their critical thinking skills will provide much-needed insights into the impact of Canadian universities on graduate students' critical thinking. In addition, the study will cover two questions including: 1) How does the experience of studying at a Canadian university impact graduate students' critical thinking?; and 2) What are Canadian and Middle Eastern graduate students' evolving conceptions of critical thinking in their program of studies? To help answer these questions, you are asked to participate in an interview.

Interviews will take approximately 45 minutes to talk about your opinions about critical thinking during your program. The interview will be recorded and later will be transcribed word for word. Once you have received your transcribed, you can review your responses and opinions and make changes where needed. You have two weeks after receiving the transcribed file to do this step.

Your participation in this research is completely voluntary, however; I will offer a coffee and a cookie at our interview at a place of convenience for you (for instance, a café). If we cannot meet in person, the interviews will be done online (for example, Zoom). Further, the collaboration will be done by email.

It is hoped you consent to participate in this study. Your identity will be kept strictly confidential. You can suggest a pseudonym. You have the right to withdraw your data. To this aim, you can send a withdrawal request by email to me within 60 days after the interview date and the data will be destroyed. All data will be stored on an encrypted hard drive for 5 years. Afterwards, it will be destroyed. Any inquiries concerning the procedures of this study may be directed to any of the individuals below. Thank you for your contribution to this study.

THOMPSON RIVERS UNIVERSITY

- I have read the above and understand the nature and purpose of this research project. I understand and agree to participate.
- I have received a copy of this consent form.
- I understand that the interview will be recorded.
- I understand that I have to reflect on my transcribed and review and back it to you within two weeks after receiving the document.
- I understand that I have a right to withdraw from the research project within 60 days after the interview date.
- I understand that data will be stored on encrypted hard drives.
- I understand that information gained during the study may be published, both in paper and multi-media formats.
- I understand that there are no risks associated with this study.
- My preferred pseudonym is: _____

By signing below I understand and agree with the statements above and consent to participate in the study.

Print Name: _____

Date: _____

Signature: _____

☐ By ticking this box, I will receive a report on the findings of this study and have provided my email details for this purpose. **My email addressee is:**

If you have any questions, please contact Farzaneh Ojaghi Shirmard at Ojaghishirmardf20@mytru.ca
or supervisor Dr.Edward Howe at ehowe@tru.ca
or Chair of TRU Research Ethics Board at 250.828.5000 or TRU-REB@tru.ca

Appendix C: Research Ethical Board Approval Letter

THOMPSON RIVERS UNIVERSITY

December 14, 2021

Mrs. Farzaneh Ojaghi Shirmard
Faculty of Education and Social Work\Education
Thompson Rivers University

File Number: 102866
Approval Date: December 14, 2021
Expiry Date: December 14, 2022

Dear Mrs. Farzaneh Ojaghi Shirmard,

The Research Ethics Board has reviewed your application titled 'Canadian and Middle Eastern Graduate Students' Critical Thinking'. Your application has been approved. You may begin the proposed research. This REB approval, dated December 14, 2021, is valid for one year: December 14, 2022.

Throughout the duration of this REB approval, all requests for modifications, renewals and serious adverse event reports are submitted via the Research Portal. To continue your proposed research beyond December 14, 2022, you must submit a Renewal Form before December 14, 2022. If your research ends before December 14, 2022, please submit a Final Report Form to close out REB approval monitoring efforts.

If you have any questions about the REB review & approval process, please contact the Research Ethics Office via 250.852.7122. If you encounter any issues when working in the Research Portal, please contact the Research Office at 250.371.5586.

Sincerely,

Joyce O'Mahony
Chair, Research Ethics Board