

“What Does Critical Thinking Mean to You?” A Narrative Inquiry of Graduate Students’ Perceptions

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This article was not written with the assistance of any Artificial Intelligence (AI) technology, including ChatGPT or other support technologies.

Abstract

Critical thinking is an important part of higher education in Canada, and many education systems worldwide, but not all cultural contexts. Critical thinking enables students to expand their perspectives and better navigate important personal and professional decisions. This narrative inquiry compares Canadian and Iranian international graduate students’ perceptions of critical thinking. Through conversations with eight participants, deep and complex transcultural understandings of critical thinking were unearthed. Findings indicate that while Canadian participants can articulate informed viewpoints about critical thinking, some Iranian participants require further knowledge to construct their critical thinking conceptualizations. Results suggest that Canadian higher education needs to consider international students’ limited background knowledge of critical thinking and must provide more opportunities to develop critical thinking skills. This study offers insights for higher education policymakers, curriculum developers, and practitioners to consider international and intercultural perspectives to facilitate critical thinking in both international and domestic students.

Keywords: Canada, critical thinking, Iran, international students, narrative inquiry

Introduction

Canada attracts more than one million international students annually for educational purposes, predominantly in higher education (Canadian Bureau of International Education [CBIE], 2024). English is the *lingua franca* of the globalized world, with one in four individuals utilizing it worldwide (Sharifian, 2013). As a predominantly English-speaking country, Canada is among the top destinations and accounts for approximately five percent of the global education market (OECD, 2022).

Critical thinking (CT) is embedded within Canadian higher education, and most programs encourage students to apply CT in their studies. CT is also an important attribute related to their suitability for many jobs because it has been

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shown to facilitate practical skills, such as reasoning, communication, and problem-solving (Zara & Othman, 2013). CT has been deemed an essential skill, as employers value workers who can adeptly solve problems as they may arise. The pivot due to the COVID-19 pandemic is a noteworthy example. Thus, CT gives students an advantage in the workplace. According to Dam et al. (2018), most international students enter Canada with the goal of citizenship. A recent survey conducted by the CBIE (2024) found that 57% of all international students intend to apply for permanent residency. Thus, obtaining a work visa upon graduation is a requirement for many international students who intend to stay.

International students are expected to meet admissions requirements to enter Canadian academic institutions. One of the mandatory obligations for non-English speaking students to enter English-speaking universities is presenting proof of language proficiency through exams such as IELTS or TOEFL. Although these tests claim to indicate students' English proficiency, they do not demonstrate students' critical academic literacy (Ojaghi Shirmard, 2023). Nevertheless, international students are expected to be able to effectively demonstrate CT despite the absence of CT in their countries' education systems (Islamiyah & Sholakhuddin Al Fajri, 2020). Specifically, for international students from non-western academic cultures, such as Iran, using CT is challenging and problematic as the concept of CT is completely foreign to them. Indeed, CT is a sensitive concept that the Iranian policymakers actively discourage. Given the foregoing, how can Western higher education institutions foster CT in international students? Moreover, do Canadian curriculum developers consider international students' limited background knowledge of CT when designing curricula for all students?

This study examines the perceptions of Iranian international students and compares their understanding of CT with Canadian students during their educational journey in Canada. This narrative inquiry seeks to answer the research question: What are Canadian and Iranian graduate students' conceptions of critical thinking?

Significance of the Study

This narrative inquiry research shares Canadian and Iranian international students' perceptions of CT during their graduate studies in Canada. This study is significant because policymakers, practitioners, and key stakeholders need to develop a better understanding of international students and their preparedness to study and succeed in Canada. As such, by understanding graduate students' perceptions of CT and their levels of awareness about CT, curriculum designers may obtain new insights. Most importantly, policymakers can become better acquainted with the challenges international students face, especially for students who arrive from non-western countries with limited knowledge of CT. Similarly, higher education institutions and instructors at colleges and universities may use the study results to design, plan, and implement CT preparedness for international students through curriculum reform. Another unique aspect of this research is adding knowledge to the body of comparative and international higher education. A meta-search of the literature indicated that no research had been done examining Canadian and Iranian conceptions of CT. Therefore, this study is unique in providing an understanding of CT among Canadian and Iranian students during their graduate studies. This study thus provides insights for comparative scholars and curriculum developers. Moreover, this research recommends that higher education institutions consider cross-national and trans-cultural perspectives in curriculum design in order to provide more equitable learning environments for domestic and international students.

Literature Review

There are several well-known definitions for CT rooted in three primary academic disciplines: philosophy, psychology, and education (Lewis & Smith, 1993; Sternberg, 1986). This study focuses on educational definitions. In higher education, most experts frequently cite two main definitions of CT. The first one is articulated by Dewey (1910), who posited that CT is 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). The second definition is expressed by Ennis (1985), who stated, "critical thinking is reflective and reasonable thinking that is focused on deciding what to believe or do" (p. 45). In their definitions, they underline that reflective thinking involves people having the ability to ask themselves questions about what to believe by evaluating and considering the implications of one's beliefs. In addition, Ennis (1993) stressed that CT is linked to the upper three levels of Bloom's Taxonomy for educational purposes: analysis, synthesis, and evaluation.

Several scholars highlight that CT plays an important role in higher education; therefore, preparing students to think critically is one purpose of higher education. According to Fella and Lukianovaa (2015), CT is vital for students 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” (p. 3). In addition, it is noted by Egege and Kutieleh (2004) that the main distinguishing factor separating university academic standards from secondary school academic standards is CT, which generally has been viewed as a crucial attribute for students. CT benefits students in facilitating academic skills, including distinguishing issues and assumptions in a university setting, identifying relationships, making proper inferences, evaluating evidence, and reasoning conclusions (Tsui, 2003). Obtaining these abilities is a major goal of higher education, which requires higher-order thinking, such as applying critical evaluation and giving evidence for opinions (Fahim & Shakouri Masouleh, 2012). Indeed, within higher education, CT reveals itself in argumentation and empowers students to shift from passive recipients to active participants.

While generally, CT is widely considered the domain of higher education, it has become an integral part of some entire education systems from kindergarten through secondary schooling. For instance, in the province of British Columbia, the site of our study, the public education system has undergone an extensive transformation in terms of utilizing CT components in the curriculum. 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). This transformation emphasizes problem-solving, literacy and communication, teamwork, and information technology in order to align with the realities of the digital era and an ever-changing world (Fillion, 2020; Hymel et al., 2017). Thus, education in British Columbia seeks 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 in their academic and civil life.

In contrast to the Canadian context, the position of CT in the Iranian education system is quite different. It is noteworthy to consider that the Islamic revolution of the late 1970s instigated considerable changes in Iranian society, including the education system. This resulted in dramatic reforms to the content of school textbooks, based on Islamic frameworks and the rejection of other ideologies (Hashemi et al., 2010; Salehi Abari & Nikdoosti, 2021; Shahnazari, 1992). Consequently, the Iranian education system and curricula, decidedly lack any form of CT (Eghbali et al., 2021; Hashemi et al., 2010; Hajhosseini et al., 2016). Furthermore, higher education has not cultivated CT because the traditional system is focused on Islamic teachings and transferring content knowledge. Iranian students are not taught nor educated to be critical thinkers (Hajhosseini et al., 2016). This vastly different cultural context creates challenging and problematic situations for students when they aim to study in western academic institutions.

Previous Studies

As this is a cross-cultural study, focused on Eastern and Western notions of CT, it is important to identify previous research in different cultural contexts. A number of relevant studies were found, detailed here. Considering that CT is an integral part of education and a crucial attribute for students in higher education (Zhong & Cheng, 2021), it is notable to pay attention to international students’ perceptions of CT in Western academic contexts as the concept of CT developed in western countries might be absent in their cultural and educational settings. A broad search of the literature indicates that a branch of investigation exists regarding international students’ perceptions of CT in Western countries. For instance, 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. The findings of their study showed considerable differences in CT disposition between both groups of students. While the Asian students failed to indicate a positive disposition, the Australian students expressed a positive disposition toward CT.

Another study explored the CT dispositions and differences through cross-sectional research between baccalaureate nursing students in Thailand and the United States, built on cultural values (Chaisuwan et al., 2021). Their investigation revealed no statistically significant connection 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 a different study, Egege and Kutieleh (2004) explained why CT is an important element for universities as a necessity of quality academic work, academics still complain about the lack of a critical approach to learning by international students. The authors argued while there are differences in learning styles and attitudes among various cultural groups of students, it is necessary to facilitate the successful transition of international students in developing CT capacity as a vital

“distinguishing feature between western academic models of study and non-western or Confucian-based learning systems” (p. 78).

In another study, Chinese international students in Australia were concerned that their perceived inability to present western-style CT reflected poorly on their own different ways of knowing (Song, 2016). The author argued that there is an urgent need for a transcultural approach to thinking critically regarding the practice of CT in worldwide knowledge domains and knowledge production.

In the Canadian research context, several noteworthy studies were found that focused on different areas of CT. For example, Wright (2002) found teaching CT problematic due to existing definitions, practices, and obstacles; thus, the scholar defined various approaches for teaching and developing CT among students. In another study guided by McGrath (2003), the researcher attempted to discover the CT skills and CT dispositions among baccalaureate nursing students at a university in western Canada through a cross-sectional research design. The research’s outcomes specified that only 38% of the study’s participants had sufficient levels of CT skills, but more than 85 % had adequate levels of CT dispositions. The results of the study show that there is a need for continued development in CT areas among nursing students.

In sum, the review of the current literature has found some tangential cross-cultural CT studies, but no investigations focused on Canadian and Iranian students studying at Canadian universities and their conceptions of CT. This study fills a noticeable gap in the literature.

Theoretical Framework

The theoretical or conceptual framework used in this study is based on Clandinin and Connelly’s (2000) narrative inquiry, which is both a framework and a method. We also build on Dewey’s (1910) notion of education as a reflection on experience. The conceptual framework is further detailed in the work of Howe (2010, 2022). While the phenomenon of internationalization of higher education has been well researched and clearly articulated, rarely are international students themselves included in the discourse or in the development of theories. A noteworthy exception is a study recently reported in this journal (Howe et al., 2023). This qualitative research puts lived experience before theory. In this study, the voices of international students are the focus. Our narrative conceptual framework also draws on Hayhoe (2000) and insider-outsider research (Etherington, 2006).

Methodology

This study employs narrative inquiry to investigate Canadian and Iranian graduate students’ conceptions of CT. According to Clandinin and Connelly (2000), narrative inquiry is an approach to a collaborative and reflective understanding of individuals’ experiences. Narrative inquiry is one of the interpretive forms of qualitative research frequently applied to discover a detailed understanding, perception, and outlook of complex phenomena (Creswell, 2013; Maxwell, 2012). The theoretical lens in narrative inquiry is a guiding perspective or ideology that brings a structure for supporting groups or individuals’ experiences in the written report to imply an educational research problem (Creswell & Guetterman, 2019). Narrative inquiry has effectively been used to investigate the experiences of international students in Canada and was the focus of a recent JCIHE article (Howe et al., 2023).

An open-ended interview approach was used to gather data for this investigation. According to Jovchelovitch and Bauer (2000), an interview in narrative inquiry allows researchers to collect narratives from their participants regarding their experiences with a specific phenomenon in order to “externalize his or her feelings and indicate which elements of those experiences are most significant” (Elliott, 2005, p. 4). To focus on discovering a central phenomenon of a small population, a purposeful sampling strategy was used (Creswell, 2013; Maxwell, 2012), which enabled the researchers to intentionally select people and sites “to learn or understand the central phenomenon” (Creswell & Guetterman, 2019, p. 206).

Data Collection

Research Site. This study was conducted at a mid-sized public university in the interior of British Columbia that offers various on-campus and open learning programs in undergraduate and graduate degrees and vocational training for domestic and international students. The first author, Farzaneh, recruited eight full-time and part-time graduate students

who had successfully finished their first year of studies. The rationale for this purposeful selection was to ensure that these students had prior knowledge and experience of CT in their program.

Participants. This study has eight participants: four Canadian and four Iranian, from different master’s programs. Canadian students studied in education programs, and Iranian participants studied in various fields, namely education, data science, environmental science, and business administration. All students were willing to share their lived experiences voluntarily. In this study, when we speak of Canadian students, we mean students who were raised in Canada and, most importantly, who have familiarity with the kindergarten to grade 12 (k-12) curricula regardless of their race, ethnicity, and gender. In other words, these participants completed their k-12 schooling in Canada and obtained their bachelor’s degrees in Canada. When we refer to Iranian students, we imply students raised in Iran, who have done their schooling in the Iranian educational system, received their bachelor’s degrees in Iran and identified as international students at the university. Both groups of participants were recognized as enrolled students at the university while collecting data. Canadian students consisted of two women and two men. Iranian participants included three women and one man. Upon ethics review and approval, data collection was conducted from January to March 2022 through face-to-face and online interviews. All participants, before the interview, received an informed consent form letter 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. Thus, all names throughout the study are pseudonyms that participants suggested on their consent forms. Table 1 shows the breakdown of participants’ demographic information.

Table 1

Participants’ Demographic Information

Pseudonym	Gender	Program	Education Level	Nationality
Keith	Man	Education	Master	Canada
Jenna	Woman	Education	Master	Canada
Sydney	Woman	Education	Master	Canada
Lamech	Man	Education	Master	Canada
Mona	Woman	Data Science	Master	Iran
Amir	Man	Environmental Science	Master	Iran
#4	Woman	Business Administration	Master	Iran
Mali	Woman	Education	Master	Iran

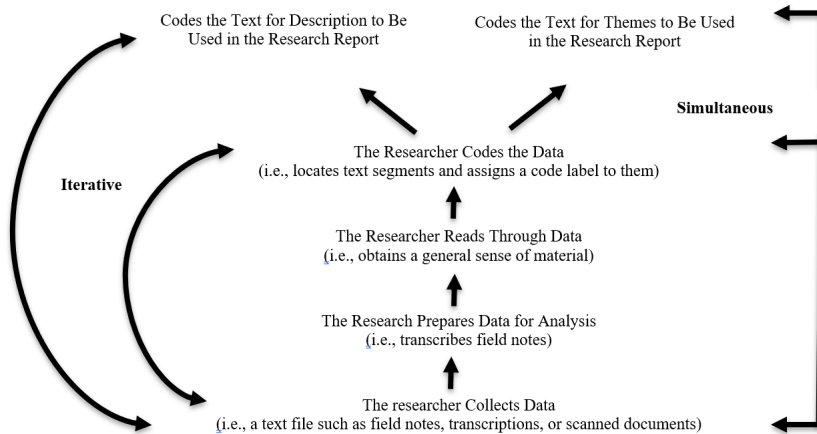
Data Analysis

This research uses thematic analysis and Bloom’s Taxonomy framework for data analysis. Thematic analysis is an appropriate approach to analyze the interview transcriptions to specify whether there were any themes, differences, or relationships among the data (Gibson & Brown, 2009).

To do this, Creswell and Guetterman’s (2019) pattern was used to analyze the data systematically. Following this pattern, the first author, Farzaneh, transcribed all the interviews after each session. Then, all the transcripts were organized into different types based on common and different opinions among participants for later reading and analysis. Next, all data was coded. 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). Figure (1) displays the process of data analysis for this investigation.

Figure 1

Qualitative Process of Data Analysis

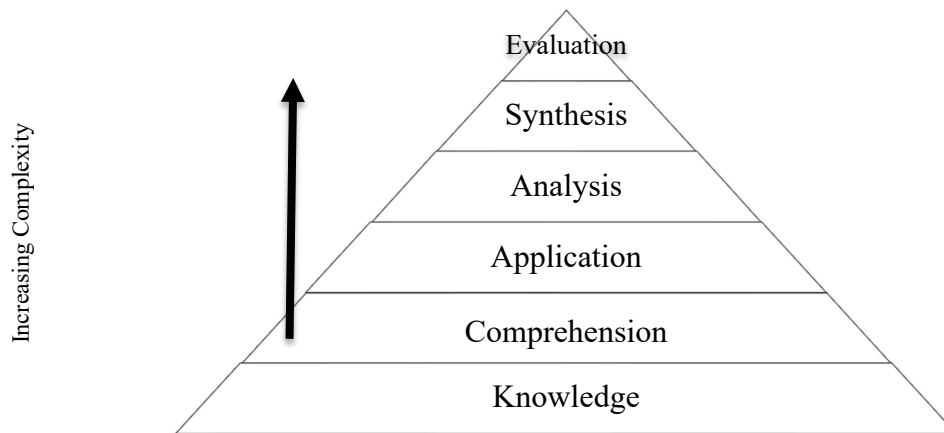


Note. Adapted from “Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (6th ed.)”, by J. W. Creswell and T. C. Guetterman, 2019, Pearson Education, p. 237.

Bloom’s Taxonomy is also used as a second analytical framework to understand students’ conceptions of CT better. 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, and the first author, Farzaneh, examined students’ levels of understanding of the notion of CT based on this hierarchy. Figure 2 illustrates Bloom’s Taxonomy hierarchy.

Figure 2

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.

Validity and reliability have traditionally played a significant role in educational research. However, these are positivistic constructs and need to be carefully reconsidered in light of qualitative research designs such as narrative inquiry. Merriam (1995) suggested different strategies to ensure validity and reliability in qualitative research, including peer

debriefing and member checks, as utilized in this study. Interviews, or what might be better called *peer-to-peer conversations*, facilitated data collection, reflexive analysis, and findings (Howe, 2010; Howe, 2022; Howe & Cope Watson, 2021). Using the member check strategy, the first author, Farzaneh, shared the interview transcripts with the participants to ensure that their words and notions were carefully and correctly understood. All participants had two weeks to review their ideas and were encouraged to comment on their transcripts for the final research text.

Results

This study addresses the research question: What are Canadian and Iranian graduate students' conceptions of CT? Thus, what follows are highlights from students' narratives of their perceptions of CT.

Canadian Students' Perceptions of Critical Thinking

The data analysis of Canadian participants demonstrated that all students had a knowledgeable understanding of CT. Sydney described a working definition of CT in seeking and understanding diverse perspectives about notions. She believed that CT means openness to alternative views. For another participant, Jenna, CT means questioning existing knowledge. In our conversation, she delivered 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. Other Canadian students, Keith and Lamech, expressed that CT relates to logical reasoning through analyzing and synthesizing information to evaluate and judge. Additionally, students' narratives show their familiarity with the concept of CT and their understanding of the importance of this skill, not only in academic contexts but also in other situations. Indeed, students' deep understanding of CT shows that their viewpoints are related to the three upper and advanced levels of Bloom's Taxonomy (analysis, synthesis, and evaluation).

Iranian Students' Perspectives on Critical Thinking

The Iranian participant's definitions of CT were slightly different from each other. Some individuals implied relevant principles of CT and displayed no difficulties in defining CT, whereas others reflected a lack of understanding of this concept. In response to the question about what CT means to her, Mona provided a definition that interpreted CT as a set of information-processing abilities. Mona explained that the ability to "look at all aspects" of problems or information requires CT. Another student, #4, 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 faced in their personal and professional paths.

However, 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 CT is finding "fault in something and criticizing someone or something". CT is about judgement, which can include finding faults and flaws but emphasizes questioning and analyzing different information and ideas. Reflecting on Mali's definition of CT, who articulated that facing the concept of CT was "challenging" to her, illustrates that her understanding of CT did not come reasonably and occurred after conducting repeated practices during her studies. She pointed out, CT is "whatever I like, whatever I do not like, and my opinion about a text or whatever I can express myself". Mali's perception of CT is synthesizing reliable sources and adequately articulating her thoughts about a subject to express herself clearly.

Critical Thinking Themes

The above findings indicated that *openness to alternative views*, *questioning existing knowledge*, *analyzing*, *synthesizing information*, and *making judgments* are sub-themes of the definition of CT among Canadian participants. The sub-themes of the meaning of CT among Iranian students' points of view consist of *information processing abilities*, *analyzing multiple perspectives*, *criticizing*, and *self-expression*. The analysis of participants' conceptions of CT resulted in six main themes: **analysis**, **open-mindedness**, **reasoning**, **questioning**, **criticism**, and **self-expression**. Table 2 compares both groups' notions about CT by presenting sub-themes and themes.

Table 2*Summary of Canadian and Iranian Students' Conceptions of CT*

Students	Sub-themes	Themes
Canadian	Openness to alternative views	Open-mindedness
	Questioning existing knowledge	Questioning
	Analyzing	Analysis
	Synthesizing information and making judgments	Reasoning
Iranian	Information processing abilities	Reasoning
	Analyzing multiple perspectives	Analysis
	Criticizing	Criticism
	Self-expression	Self-expression

Discussion

The findings of this narrative inquiry clearly show that Canadian students had a reasonable awareness of CT based on Dewey's (1910) and Ennis's (1993) notions of CT as essentially reflective thinking that enables individuals to evaluate information and values to make informed judgments. The themes from Canadian perceptions of CT — *open-mindedness*, *questioning*, *analysis*, and *reasoning* — indicate their definitions of CT are also related to the upper three levels of Bloom's Taxonomy, which are predominantly identified as higher-order cognitive skills and procedures. In contrast, Iranian students' notions about the concept of CT represent various viewpoints. While two students generally understood the basic idea of CT, the other two participants had difficulties with this concept. Two key themes in this group — *analysis* and *reasoning* — are linked to higher-order thinking. However, the other primary categories — *criticism* and *self-expression* — are not active processes of effectively thinking about thoughts and actualizing subjects, according to Ennis's (1985) definition of CT.

The theme *analysis* articulated by one Canadian and one Iranian student shows that CT allowed them to analyze and synthesize information from multiple viewpoints. Based on Bloom's Taxonomy, 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 capacity to break down information and explore it from various perspectives to have superior clarity about information.

The *open-mindedness* theme illustrated by one Canadian participant highlights that through being an open-minded person, students can be more sympathetic to each belief and argument regardless of 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 approaches to an individual's existing knowledge. In fact, open-minded persons can learn new things and challenge their prejudiced beliefs to make a judgment by logic, reasoning, and evidence. Being open-minded permits students to consider flexibly, determine options, and discover innovative methods to achieve a certain mission. These elements are related to the synthesis level of Bloom's Taxonomy.

The *reasoning* is a further theme in the definition of CT expressed by one Canadian and one Iranian participant. The reasoning process is a fundamental part of CT investigated by researchers such as Scriven and Paul (1987) and Zara and Othman (2013). These scholars acknowledge that individuals could evaluate statements, assumptions, and arguments about subjects in ordinary situations through the reasoning process. For Keith and Mona, CT is defined as the ability to process and assess information to make a judgment. Their conceptions of CT are linked to the analysis level of Bloom's Taxonomy. The analysis represents the ability to reflect on complicated challenges by assuming the information that individuals gathered and organized.

Questioning is another theme in the definition of CT expressed by a Canadian participant. Questioning leads students to concentrate widely on thinking about the information and current knowledge to think critically. The capability

to question can create a questioning mind in much the same way as a critical mind. In other words, questions promote debates and facilitate forward-thinking. As Fahim and Bagheri (2012) explained, Socrates believed that students could achieve a profound understanding and thinking by questioning basic beliefs and assumptions to reflect different opinions. So, the ability to question and collect various perspectives is linked to the analysis level of Bloom's Taxonomy. The analysis develops students' motivation and makes them independent thinkers to make informed decisions.

Another theme that shows the meaning of CT from an Iranian student's perspective is *self-expression*. According to Kim and Ko (2007), self-expression is "expressing one's thoughts and feelings, and these expressions can be accomplished through words, choices or actions" (p. 326). Mali's definition of CT is linked to lower-order thinking of Bloom's Taxonomy, which is the realization 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 (Armstrong, 2010). Thus, Mali structures meaning through interpreting, summarizing, comparing, and explaining the content with limited or a lack of knowledge about the definition and purpose of CT.

Criticism is a narrow definition of CT from an Iranian participant's limited perspective. 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 refers to "the act of expressing disapproval of somebody or something and opinions about their faults or bad qualities" (Oxford Learner's Dictionaries, n.d.). This intersects with the notion that CT is 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. (Dewey, 1910; Ennis, 1985; Scriven & Paul, 1987; Sternberg, 1986). Amir's understanding of the concept of CT is also related to lower-order thinking of Bloom's Taxonomy, which is knowledge. The noteworthy point in Amir's view about the definition of CT relates to the cultural contexts discussed in the following section.

Critical Thinking in the Iranian Cultural Context

It is notable to reflect on and deconstruct the meaning of CT in the Persian language and Iranian culture. There is no word to define CT in Persian dictionaries (e.g., Dekhoda Dictionary, Mo'in Farsi Dictionary, or Amid Farsi Dictionary). According to the Dekhoda Dictionary, which is one of the most 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 English, which refers to using a person's mind to consider or reason about something. However, the word critical (*enteqād*/انتقاد) means "correction" or "description of the advantages and disadvantages of a poem or article or book" (Dekhoda 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, several Iranian scholars (e.g., Eghbali et al., 2021; Fahim & Bagheri, 2012; Fahim & Shakouri Masouleh, 2012; Hajhosseini et al., 2016; Hashemi et al., 2010) have provided further insights into the concept of CT based on its purpose for individuals' academic and social 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, especially in an academic context.

The education system and cultural context are important in examining CT among Iranian students. The 1979 Revolution had a significant impact on education in Iran. This Islamic adaptation created the government's version of education, which was dramatically influenced by every Islamic law. A study by Fahim and Bagheri (2012) notes that some potential goals of nurturing CT among students are to teach them to familiarize themselves with conflicting beliefs, ask profound questions and acknowledge the fact that knowledge is always subject to change. Still, the scholars note that "it is never possible to question the beliefs and values in the name of fostering critical thinking" (p. 1125).

In such a traditional education system where students are supposed to memorize the materials and those who can remember more information obtain better academic achievement, there is no effort to consider CT. The lack of CT components in the system causes educated youth to become subservient citizens who are reluctant to question authority. Thus, there is little room in the curriculum to familiarize students with the idea of CT, and the education system cannot successfully offer an environment where learners can foster and practice this skill in an academic context. Accordingly, when Iranian students arrive at a Western university, they face challenges linked to a lack of CT and practicing it in an academic environment. Consequently, CT in higher education requires further attention, research, practice, and policy

reforms. Furthermore, universities must provide sufficient materials and resources for teachers and students about CT. Finally, curriculum designers need to develop culturally appropriate CT curricula for international students in order to succeed in higher education.

Limitations

This study aims to compare Canadian and Iranian international students' conceptions of CT during their post-graduate education in Canada. However, it is essential to point out that the study has limitations.

Firstly, in this study, Canadian students were from one program only, meaning that Canadian participants' voices do not represent all Canadian students' conceptions of CT across various programs. It is not fair to say that other students in different majors have similar conceptions and levels of understanding about CT.

Secondly, this study was conducted in a Canadian public mid-sized institution focused primarily on teaching, rather than a higher-ranked research university. In this sense, the findings might not be applied to describe Canadian and Iranian international students' perspectives in a top-tier university or community college, for example. So, future researchers can broaden the number of participants from different institutions to capture a more diverse range of experiences and points of view. This expansion can offer a broader understanding of how international students from different educational backgrounds and academic programs perceive and engage with CT.

The last limitation of this investigation is related to Iranian students' English language proficiency. As all participants were interviewed in English, it is possible that some Iranian students were unable to clearly and fully express their ideas about the topic due to a lack of language proficiency which in turn might have impacted the study's findings. According to Martirosyan et al. (2015), it usually takes longer for international students to reach academic norms in a second language (i.e., five to seven years) than to obtain the interpersonal interaction skills needed for daily communication (i.e., about two years). To address this limitation, future studies can consider incorporating language support measures to make sure that students can effectively communicate their ideas and experiences.

Implications

The results from the analysis demonstrate how the learning experience linked to CT among Iranian international students might be challenging in their western higher education. Such findings support the call for western higher education institutions to offer appropriate resources and opportunities to international students to nurture their CT. Moreover, this research results apply to wider western academic contexts such as the United States of America (USA) and the United Kingdom (UK). According to Duffin (2021), 914,095 international students studied in the USA in the 2020-21 academic year. This number is a slight decrease from the previous year, when 1.07 million international students studied in the USA, and is possibly due to the impact of the COVID-19 pandemic. Most international students in the USA are from China and India, totaling 317,299 students and 167,582 students, respectively (Duffin, 2021). Iran is ranked number 13 with 9,614 students, so this is a relatively small number of international students. Another report by Higher Education Statistics Agency (2022) illustrates that in the 2020-21 academic year, the UK welcomed 605,130 international students for educational purposes. As with the USA, Chinese students made up the largest group of international students, with the number 143,820. These countries and other western-tradition nations are attracting growing numbers of students, mainly from non-western cultural and educational contexts where students might be unfamiliar with CT.

Western nations and higher education institutions that welcome large numbers of international students must consider providing more intercultural components in program planning and curriculum design. Furthermore, instructors at colleges and universities need to pay attention to their students' academic preparedness regarding the concept of CT and ways to practice it in an academic setting. Also, this study encourages international students who suffer from a lack of CT awareness to share their situations with their instructors or academic staff and ask them to provide sufficient materials and connections to a wide array of practical situations in order to boost their CT.

Conclusion

This research investigated Canadian and Iranian graduate students' perceptions of CT during their studies at a mid-size public university in western Canada. Through narrative inquiry, the lived experiences of four Canadian and four Iranian international students were described in detail. Findings revealed that while all Canadian participants had sufficient

knowledge of CT, some Iranian students lacked this foundational skill and had difficulties grasping the concept. Thus, more attention must be given to building international students' CT conceptualizations. Results suggested that teachers must address the lack of CT preparedness through curriculum reforms. We recommend that practitioners, through a deep and nuanced understanding of Canadian and Iranian students' perceptions of CT, create lessons with intercultural awareness of CT to better support international students. This study has meaningful implications for faculty and staff who provide a program of study for non-western international students at western universities of higher education. It is important for teachers to pay attention to students' background knowledge and the cultural context of curriculum, teaching, and learning. Moreover, this study calls for actions from policymakers and curriculum developers in Canada and other western countries, such as USA and UK, to consider international students' educational and cultural backgrounds related to CT.

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