

**CRITICAL THINKING IN INTENSIVE LANGUAGE PROGRAMS FOR  
INTERNATIONAL STUDENTS IN U.S. UNIVERSITIES**

by

**Eva Węgrzecka-Kowalewski**

Submitted to the Graduate Faculty of  
the School of Education in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy

University of Pittsburgh

2018

UNIVERSITY OF PITTSBURGH  
SCHOOL OF EDUCATION

This dissertation was presented

by

Eva Węgrzecka-Kowalewski

It was defended on

June 12th, 2018

and approved by

Dr. Patricia Crawford, Associate Chair and Professor,

Department of Instruction and Learning, University of Pittsburgh

Dr. Candace Skibba, Associate Director and Associate Teaching Professor,

Department of Modern Languages, Carnegie Mellon University

Dr. Najeeb Shafiq, Chair and Professor, Administrative & Policy Studies,

University of Pittsburgh

Dissertation Advisor: Dr. Richard Donato, Chair and Professor

Department of Instruction and Learning, University of Pittsburgh

Copyright © by Eva Węgrzecka-Kowalewski

2018

**CRITICAL THINKING IN INTENSIVE LANGUAGE PROGRAMS FOR  
INTERNATIONAL STUDENTS IN U.S. UNIVERSITIES**

Eva Węgrzecka-Kowalewski, PhD

University of Pittsburgh, 2018

This dissertation examines how critical thinking skills are addressed in university-level intensive language programs for international students in the United States. The theoretical framework for this study was built upon Vygotsky's sociocultural theory. Three research questions inquired about language instructors' ability to conceptualize critical thinking, integration of critical thinking into intensive language programs curricula and assessment tools, and obstacles in implementation of critical thinking in language instruction. Twenty-one instructors from intensive language programs for international students at six research universities in the Northeast part of the United States participated in this study. The data collection instruments were a questionnaire and follow-up interviews. A qualitative data analysis using a coding scheme revealed that the majority of the participants did not have a strong conceptualization of critical thinking and had difficulty in articulating critical thinking as a cultural construct. The analysis also revealed that the instructors from intensive language programs with re-designed curricula that included critical thinking as learning and instructional objectives reported a high success rate in preparing international students for academic challenges unlike the instructors from language programs that follow a traditional structure-oriented approach to language teaching. Some instructors from structure-oriented language programs reported that they developed their own critical thinking materials to infuse language instruction with critical thinking instruction. Other

than their programs' focus on language assessment, obstacles in implementing critical thinking into language curricula listed by the instructors included a lack of textbooks encouraging critical thinking, resistance from administrators and other instructors to re-design language curricula, students' lack of motivation to learn critical thinking, and difficulty of teaching and evaluating critical thinking. With no other studies existing on teaching critical thinking in intensive language programs in universities in the U.S., this study offers pioneering evidence and implications for (a) stronger implementation of critical thinking skills in language support programs for international students planning to pursue academic degrees, (b) re-conceptualization of the notion of academic literacy to include critical thinking, (c) development of critical thinking instructional materials and textbooks for language instruction, and (d) training in critical thinking instruction in teacher education programs and professional development initiatives.

## TABLE OF CONTENTS

<b>ACKNOWLEDGMENTS .....</b>	<b>XIV</b>
<b>PROLOGUE.....</b>	<b>XV</b>
<b>1.0 INTRODUCTION.....</b>	<b>1</b>
<b>1.1 STATEMENT OF THE PROBLEM.....</b>	<b>1</b>
<b>1.2 CRITICAL THINKING AS A CULTURAL CONSTRUCT .....</b>	<b>3</b>
<b>1.3 CRITICAL THINKING IN ACADEMIC LITERACY .....</b>	<b>4</b>
<b>1.3.1 Critical Thinking Associated with Academic Content.....</b>	<b>5</b>
<b>1.3.2 Critical Awareness of Academic Registers.....</b>	<b>5</b>
<b>1.3.3 Critical Thinking Associated with Genres and Contexts.....</b>	<b>6</b>
<b>1.3.4 Interaction with Texts Requiring Critical Thinking.....</b>	<b>7</b>
<b>1.4 STATUS QUO OF CRITICAL THINKING SKILLS IN ESL CURRICULA</b> <b>.....</b>	<b>8</b>
<b>1.5 ACADEMIC LITERACY AND CRITICAL THINKING: SUMMARY.....</b>	<b>9</b>
<b>1.6 STATEMENT OF PURPOSE .....</b>	<b>9</b>
<b>1.7 RESEARCH QUESTIONS.....</b>	<b>10</b>
<b>1.8 OVERVIEW OF THE DISSERTATION .....</b>	<b>11</b>
<b>2.0 LITERATURE REVIEW.....</b>	<b>12</b>

<b>2.1</b>	<b>CRITICAL THINKING: THE CORE OF ACADEMIC LITERACY AND CREATION OF KNOWLEDGE .....</b>	<b>12</b>
2.1.1	A Historical Perspective of Critical Thinking.....	12
2.1.2	Definitions of Critical Thinking .....	13
2.1.2.1	Dispositions of a Critical Thinker Embedded in Critical Thinking Definitions.....	14
2.1.3	Taxonomies of Critical Thinking Skills and Dispositions.....	18
2.1.4	Generic vs Content-Dependent Approaches to Teaching Critical Thinking .....	22
2.1.5	Critical Thinking Pedagogy .....	25
2.1.5.1	Instructional Elements Fostering Critical Thinking Skills .....	26
<b>2.2</b>	<b>SOCIOCULTURAL PERSPECTIVES ON CRITICAL THINKING.....</b>	<b>29</b>
2.2.1	Historical and Sociocultural Roots of the Western and Eastern Systems of Thought.....	30
2.2.2	Modern Day East-West Thinking Patterns.....	33
2.2.3	The Critical Thinking Debate: Can the Western Manner of Critical Thinking Be Truly Learned by Easterners?.....	36
2.2.4	Psychological and Cognitive Barriers for L2 Learners in Western Academic Settings .....	39
<b>2.3</b>	<b>CRITICAL ELEMENTS OF LANGUAGE INSTRUCTION IN L2 STUDENTS' DEVELOPMENT OF CRITICAL THINKING .....</b>	<b>41</b>
2.3.1	Mediated Experience in Academic Courses.....	42
2.3.2	Academic Classroom Culture and Oral Presentations .....	44

2.3.3	Critical Thinking Stimulated by Controversial Topics: Debating Controversial Topics.....	46
2.3.4	The Critical Role of Scaffolding Controversial Content.....	47
2.3.5	The Effect of Content and Context Familiarity on Critical Thinking.....	49
2.3.6	Discrepancies in Addressing Critical Thinking in ESL and Academic Courses.....	50
2.4	CONCLUSION: DIRECTIONS FOR IMPLEMENTING CRITICAL THINKING IN ESL/EFL CURRICULA.....	52
3.0	METHODOLOGY.....	54
3.1	INTRODUCTION .....	54
3.2	THEORETICAL FRAMEWORK.....	55
3.3	THE PURPOSE OF THE STUDY.....	56
3.4	A WORKING DEFINITION OF CRITICAL THINKING SKILLS.....	57
3.5	RESEARCH QUESTIONS.....	58
3.6	DESIGN OF THE STUDY .....	58
3.6.1	Timeline .....	58
3.6.2	Participants .....	59
3.6.3	Data Collection Procedures .....	59
3.6.4	Data Collection Instruments.....	60
3.7	RESEARCH METHODS.....	64
3.7.1	Validity and Reliability .....	64
3.7.2	Data Analysis Tools .....	65
4.0	FINDINGS .....	71

<b>4.1</b>	<b>RESEARCH QUESTION 1: HOW IS CRITICAL THINKING DEFINED BY INSTRUCTORS IN LANGUAGE SUPPORT PROGRAMS FOR INTERNATIONAL STUDENTS IN THE U.S.?</b> .....	<b>72</b>
<b>4.1.1</b>	<b>Instructors’ Definitions of Critical Thinking</b> .....	<b>72</b>
<b>4.1.2</b>	<b>Instructors’ Confidence in Their Understanding of Critical Thinking</b> ....	<b>75</b>
<b>4.1.3</b>	<b>Instructors’ Understanding of the Sociocultural Nature of Critical Thinking</b> .....	<b>76</b>
<b>4.1.4</b>	<b>Instructors’ Views on Explicit Instruction in Teaching Critical Thinking</b> .. .....	<b>85</b>
<b>4.1.5</b>	<b>Summary of Findings to Research Question 1</b> .....	<b>88</b>
<b>4.2</b>	<b>RESEARCH QUESTION 2: ARE CRITICAL THINKING SKILLS ADDRESSED IN LANGUAGE PROGRAMS? IF YES, HOW ARE THEY ADDRESSED?</b> .....	<b>89</b>
<b>4.2.1</b>	<b>Critical Thinking in Course Learning Objectives and Assessment Procedures</b> .....	<b>89</b>
<b>4.2.2</b>	<b>Evidence of Critical Thinking Instruction in Instructors’ Practice</b> .....	<b>94</b>
<b>4.2.3</b>	<b>Summary of Findings to Research Question 2</b> .....	<b>102</b>
<b>4.3</b>	<b>RESEARCH QUESTION 3: WHAT DO LANGUAGE INSTRUCTORS PERCEIVE AS OBSTACLES IN IMPLEMENTATION OF CRITICAL THINKING INSTRUCTION?</b> .....	<b>102</b>
<b>4.3.1</b>	<b>Summary of Findings to Research Question 3</b> .....	<b>106</b>
<b>5.0</b>	<b>DISCUSSION AND IMPLICATIONS</b> .....	<b>107</b>
<b>5.1</b>	<b>DISCUSSION OF THE FINDINGS</b> .....	<b>107</b>

5.1.1	Instructors' Incomplete Understanding of the Concept of Critical Thinking.....	107
5.1.2	Obstacles to Teaching Critical Thinking in Language Intensive Programs .....	109
5.1.3	Background in Critical Thinking.....	113
5.2	IMPLICATIONS AND RECOMMENDATIONS.....	113
5.2.1	Teacher Education and Professional Development in Critical Thinking Instruction.....	114
5.2.2	Teacher Training in Cultural Patterns of Critical Thinking .....	116
5.2.3	Intensive Language Programs' Curriculum Re-design .....	118
5.2.4	Textbooks and Instructional Materials .....	119
5.2.5	Considerations for a Thinking Language Curriculum .....	121
5.3	LIMITATIONS.....	122
5.4	FUTURE RESEARCH.....	123
5.5	CONCLUDING THOUGHTS.....	126
APPENDIX A	.....	127
APPENDIX B	.....	133
APPENDIX C	.....	134
APPENDIX D	.....	136
APPENDIX E	.....	138
APPENDIX F	.....	140
APPENDIX G	.....	151
BIBLIOGRAPHY	.....	154

## LIST OF TABLES

Table 1. Ennis’s Taxonomy of critical thinking dispositions and abilities.....	19
Table 2. Delphi Project: Core Critical Thinking Skills and Sub-skills.....	20
Table 3. Critical thinking skills process model for history/social sciences from the California Assessment Program.....	21
Table 4. Research questions and corresponding questionnaire items.....	62
Table 5. Critical thinking skills codes.....	66
Table 6. The coding scheme constructed for the analysis of the data.....	68
Table 7. Anticipated critical elements of language instruction.....	69
Table 8. Definitions of critical thinking.....	73
Table 9. Frequency of CT codes in CT definitions.....	74
Table 10. Instructors’ confidence in their ability to define critical thinking .....	75
Table 11. Critical thinking as a cultural construct .....	77
Table 12. Instructors’ views on importance of real life contexts, collaboration and mediation in teaching critical thinking.....	82
Table 13. Sociocultural elements in instructors’ teaching practices.....	84
Table 14. Sociocultural elements in theory vs in practice .....	85
Table 15. Need for explicit critical thinking instructions for international students .....	85
Table 16. Reasons in support of explicit critical thinking instruction for ESL students .....	87

Table 17. Reasons in support of explicit critical instruction for all students, including ESL .....	88
Table 18. Critical thinking addressed in instructors' courses .....	89
Table 19. Consistency in instructors' responses to critical thinking being represented in their curricula .....	90
Table 20. Consistency of responses to questions 9 and 16 .....	92
Table 21. Examples of critical thinking instruction guided by curricular objectives .....	95
Table 22. Examples of instructors' own contribution to critical thinking instruction .....	97
Table 23. Instructors teaching critical thinking as their contribution .....	99
Table 24. Critical thinking addressed in no consensus group.....	99
Table 25. Instructors' perception of students' readiness for academic programs.....	100
Table 26. Obstacles in implementation of critical thinking instruction.....	103

## DEDICATION

This dissertation is dedicated to:

my mother, who always believed in my wildest dreams;

my father, who taught me how to be a critical thinker and how to roll with the punches;

my children, Nelly and Kuba, whose love and support carried me through this long journey –  
remember, *you* can also make your dreams come true against all odds;

and Prof. Marguerite Ann Snow, my first professor on foreign soil who made me believe that I  
can aim high.

## ACKNOWLEDGMENTS

I would like to express my sincere gratitude to my advisor, Dr. Donato, for all his support, unwavering constructive criticism, immense knowledge, openness to new ideas, and unmatched dedication to providing feedback even in late night emails.

I am also grateful to the other members of my dissertation committee, Dr. Crawford, Dr. Skibba, and Dr. Shafiq, for their support and the insights that made this dissertation focused on what matters and more refined.

To all of my friends who were willing to hear about critical thinking and provide their feedback in our long discussions, who cheered me on all these years from the sidelines while I was running my lone marathon – thank you for all of your kind words, dinners before my deadlines, and loving emojis even when I did not have time for coffee together or to write back to you.

I also want to express my deepest thanks to all of the teachers who dedicated their time to participate in the study, who filled out my lengthy questionnaire, who were open to my many additional questions, and to my co-coder, Sherri, who dutifully went over every word of each response and did not hesitate to resort to question marks when in doubt.

## PROLOGUE

*The following scenario developed in a graduate course in early childhood education at a tertiary institution in the United States a few years ago. The classroom was filled with eager American and international students, all ears and ready to learn how to be caring child educators. The professor felt the positive vibes while she was handing out the syllabus on the first day of the course. She had taught this course multiple times and felt that the time-tested readings and thought-through assignments were going to make this semester smooth sailing for all students. A few international students had taken this course in previous semesters. All of them had had an excellent command of English and had managed all assignments on par with the rest of the students. Hence, she expected that this semester would not be different by any means. She went over the syllabus, answered the usual questions, and added additional clarification that years of experience have taught her to provide at the beginning of the course. The students took notes, nodded, and seemed all clear on what to expect in the course and what to prepare for the next session. The professor was slowly gathering her papers from the desk to the shuffle of the feet walking out the door when suddenly three Chinese students appeared in front of her, the syllabi in their hands. They looked very concerned. “Do you have a question about the course?” she said with a smile. “I will gladly explain if there is something confusing,” she added. The three students burst in unison, “We don’t understand what critical discussion is.” The lack of response and the frozen smile on the part of the professor must have baffled the students a bit.*

*“We will do everything, we will do all assignments, but we do not know what to do. Please give us directions and we will complete whatever you will ask us to do,” the eagerness to excel was very genuine in their voices. “I cannot teach critical thinking in a minute,” the professor thought as she felt a tinge of panic. “Thank you for telling me that you find it difficult. We will need to spend a bit more time explaining throughout the semester how to engage in critical discussion. You will probably learn the best how to do it when you hear these discussions from your classmates,” she tried to sound assuring without letting the students notice the sense of questioning her own conviction.*

- Dramatization of an actual conversation in a U.S. university classroom.

## **1.0 INTRODUCTION**

### **1.1 STATEMENT OF THE PROBLEM**

The number of international students pursuing higher level educational degrees in English speaking countries has been burgeoning in recent decades due to the open-door policy of Western institutions of higher education. Yet, international students who enter universities in English speaking countries should not be assumed to “have English-language college-level academic literacy in place” (Spack, 1997, p. 51) despite their high scores on the TOEFL or IELTS. These global tests and preparatory courses are not a reliable predictor of students’ academic success (Light, et al., 1987). They have forged the perception that academic language proficiency can be gained in a short period of time, and, as Turner (2004) asserts, “they distort students’ perceptions of the role of language in academic performance” (p. 97). Passing scores on the TOEFL and IELTS give international students false confidence that the proficiency in English which they have gained is sufficient by itself to become integrated into English-speaking academic communities. What these tests do not measure is students’ critical academic literacy, often referred to as critical thinking in disciplinary contexts or as critical thinking skills “embedded in academic literary practices” (Amua-Sekyi, 2015, p. 90). Thus, international students become admitted into academic programs, but they are not able “to adequately comprehend and produce academic texts” (Ewert, 2011, p. 5).

The struggle to participate successfully in the academic literacy practices of academic programs has been experienced not only by the newly admitted international students but also by the international students who have completed multiple years of college level ESL programs and who pursue academic degrees in English speaking countries. Academic difficulties have been encountered even by third and fourth-year international students in upper-level college courses (Helms-Park & Stapleton, 2003) and attributed to “limited experience with English academic texts and limited knowledge of [academic] literacy expectations” (Ewert, 2011, p. 6). Academic literacy requires a cultural “perspective accumulated over centuries” (Martin, 1990, p. 86) of intellectual inquiry. International students’ cultural capital, i.e. diverse cultural, linguistic, and social skills, often does not match the cultural, linguistic, social traditions of the universities they enter, and therefore these students may not share the same intellectual perspective (Gibbs, 1994; Robertson, Line, Jones, & Thomas, 2000; Holvikivi, 2007). Nevertheless, international students are expected to close the gap and “fit into an institution’s existing practices” (Sheridan, 2011, p. 130). As research indicates, international students continue to be challenged by this gap even in technological fields, which might be deemed culture-independent, and their educational outcomes are often below academic standards (Holvikivi, 2007).

In order to address the academic difficulties experienced by international students in academic programs in the United States, it is necessary to examine to what extent critical thinking is addressed by language support programs preparing international students for undergraduate and graduate studies in the US. The support for the argument of the central role of critical thinking in academic literacy comes from the vast literature on the meaning of higher education and of true scholarly work which emphasizes that without becoming critical thinkers

and independent scholars, students earn diplomas without developing their intellectual faculties (Kurfiss, 1988).

It is imperative to have a broad perspective on the complex skills which make the fabric of academic literacy into which critical thinking skills are intrinsically intertwined. Hence, in the following sections of this chapter, I will present a conceptual framework of critical thinking and the concepts and assumptions of critical thinking as a cultural construct and as an integral element of academic literacy, which inform the design, the research questions, and the methodology of the study.

## **1.2 CRITICAL THINKING AS A CULTURAL CONSTRUCT**

The standards of academic evaluation in English speaking countries have roots in the legacy of centuries-old intellectual inquiry established on the premise that “knowledge exists in and through critical thought” (Paul, 1992, p. 5) and that the ability to think critically is one of higher education’s revered goals (Jones, 2007a). Critical thinking is assumed to be the driving force behind the construction of deep knowledge by making connections beyond knowledge acquired from textbooks and lectures, without which learning does not amount to more than surface learning, and it is considered a core skill of academic literacy and intellectual inquiry in the search for truth and knowledge (Van der Wal, 1999; Neeley, 2005). Gaining entry into an English-speaking academic community and becoming a critical thinker may be challenging for some international students across all disciplines since students’ academic performance is evaluated “on the originality and quality of ideas” (Stapleton, 2002, p. 187). Such intellectual challenges stand in contrast to suppressed critical thinking, personal views, and opinions in

international students' home countries, such as Iran (Fahim & Sa'eepour, 2011), where memorization and rote learning is a standard academic practice, making it harder for these students to embrace the tenets of a critical approach in the academic culture of English speaking countries.

### **1.3 CRITICAL THINKING IN ACADEMIC LITERACY**

In academic settings, critical thinking is mostly referred to as logical thinking or as cognitive skills inherent to problem solving. Critical thinking encompasses acquiring new knowledge, transforming it, and using it in new contexts, thus building theoretical basis of each discipline (Amua-Sekyi, 2015; Jones, 2007b). In argument analysis in all academic fields, critical thinking is the cornerstone of understanding definitions, evaluating evidence, identifying assumptions, drawing conclusions, and considering implications.

The crucial role of clear critical thinking guidelines for students has been recognized by numerous educational researchers who call it an indispensable element of strong academic literacy programs (Scarcella, 2003; Gibbons, 2009; Comber & Simpson, 2002). Students, in general, cannot be expected to become critical thinkers by merely being in the presence of critical thinkers and scholars, or by being handed activities and assignments developed to promote critical thinking (Gyuris & Castell, 2013). In order to develop the rigors of critical thinking associated with academic literacy, students need to be apprenticed into the standards of critical thinking and must gain some theoretical knowledge about its foundations (van Gelder, 2005). Without understanding of subcomponents of academic literacy and the types of thinking

that they call for, the concept of critical thinking is reduced to generic skills without disciplinary context (Jones, 2007a).

### **1.3.1 Critical Thinking Associated with Academic Content**

Critical thinking requires familiarity with the epistemic culture of each discipline - the way each discipline conceptualizes knowledge - which results in different notions of critical thinking. For example, “critical thinking in economics is defined primarily as the use of economic tools whereas critical thinking in history is described from a range of perspectives” (Jones, 2007b, p. 84). Yet, regardless of the subject matter, in order to think like an expert in the field, students must develop deep knowledge of the field by “pursuing a coherent line of reasoning” (Gibbons, 2009, p. 21), which is the prerequisite for creative and innovative application of knowledge. Without developing such critical thinking, students may only amass “knowledge of isolated facts” (Gibbons, 2009, p. 21) and may not be able to participate in a discussion or take a critical stance towards newly acquired understandings. Content knowledge is perceived in academic disciplines not as a static phenomenon, but as subject to new discoveries and new realizations, often arriving from contradictory pieces of evidence. Hence, “an intellectually challenging program involves students in collaborative problem solving and ... in dealing with alternate views” (Gibbons, 2009, p. 28).

### **1.3.2 Critical Awareness of Academic Registers**

Even though international students may be highly proficient in face-to-face language, they may not be proficient in the academic standards which code knowledge in ways unfamiliar

to them (Gibbons, 2007). Each academic discipline has its own set of linguistic codes; these are either discipline-specific lexical units or discipline-specific meanings attached to lexical units shared by other disciplines. This disciplinary language differs from the ways we use language in everyday settings. Discipline terminology carries embedded meanings, or “assumed knowledge” (Gibbons, 2009, p.6), which provides conceptual shortcuts and paints big ideas with grammatical structures that are succinct when compared to expressing the same ideas in everyday language (Gibbons, 2009). Hence, the prerequisite for academic literacy development is acquisition of the language of academic disciplines. “Students who do not become fluent in the ‘language’ of academic domains are unlikely to achieve competence” (Jetton & Alexander, 2004, p.17) in academic fields. However, the ability to use subject-specific terminology is not equal to learning the meaning of new terms. The ability to use new terminology of a discipline is associated with understanding how lexical choices are dependent on context and understanding that the context is dependent, in turn, on content knowledge. Developing the command of academic register, therefore, requires critical thinking skills in order to see simultaneous connections between a concept, its origin, and its application to academic fields and everyday situations - in other words, between theory and its concrete realizations. Hence, “learning to control ... academic register is one of the most demanding challenges for EL [English language] learners” (Gibbons, 2009, p. 23).

### **1.3.3 Critical Thinking Associated with Genres and Contexts**

Familiarity with genres and context are crucial intellectual resources to build academic literacy, which requires a wide array of critical thinking skills. “When a text appears in a familiar context, individuals can draw upon their prior genre knowledge to develop a plan for dealing

with the current textual demand” (Johns, 1997, p. 27). Students need to become cognizant of suitable genres in new but similar contexts and to be able “to predict the text from the context, and the context from the text” (Halliday, 1992, p. 22 in Johns, 1997, p. 27). To be literate in specific genres, not only do readers or writers need to understand the surface lexical and textual structures but also “situational characteristics and social functions of the genres in which they engage” (Flowerdew, 2002, p.92). Namely, they must understand their own role, the context of a given text, and community values and assumptions. Awareness of the discipline-specific social context is instrumental in producing texts in a given genre, which need to reflect “values, priorities, and expectations prevailing within the larger field of the discipline” (Friedman & Medway, 1994 in Johns, 2002b, p. 239). Understanding the values and assumptions of the community of a given discipline provides the means for a writer to evaluate if the chosen rhetorical devices or genre conventions are appropriate and if they will achieve the intended goal. Genre features are culturally-sensitive, resulting, for example, in a wide range of narrative structures (Paulston & Tucker, 2003) or “different standards of evidence” (Meltzer & Hamann, 2005 in Gibbson, 2009, p. 6), and students must be critical readers and writers in order to interpret and employ genres accurately.

#### **1.3.4 Interaction with Texts Requiring Critical Thinking**

Interaction with texts is another set of complex critical thinking skills which underlie academic literacy. As captured by Heath (1985), becoming academically literate “is not the same thing as learning to read and write; it is learning to talk reading and writing” (p. 15). Academic readers and writers are expected to relate what they read to other texts by analyzing, comparing, contrasting, synthesizing, and producing their own texts in response. Reading any text requires

students to engage in critical reading to “situate it in context, to read between and behind lines, to develop a sensitivity to the rhetorical arts, to translate it to their personal life conditions, and thus adopt a critical angle on the text” (Canagarajah, 2002, p. 147). These skills of interacting with texts underpin academic literacy in all academic areas.

#### **1.4 STATUS QUO OF CRITICAL THINKING SKILLS IN ESL CURRICULA**

Numerous researchers have been advocating reformulating the concept of academic literacy, re-examining and changing some of the current teaching practices and institutional policies, developing new pedagogical tools, and redesigning English as a Second Language curricula (Spack, 1997; Hyland, 2002; Holvikivi, 2007; Peelo and Luxon, 2007; Johnson, 2008; Franken, 2012) in order to provide the learning environment that fosters cognitive engagement of international students and, concomitantly, maximizes their academic performance. However, there seems to be a lack of guidelines for the English language support programs for international students addressing re-designing language curricula with a critical thinking focus in the context of academic literacy. “The development of curricula distinguished by intellectual quality and the development of higher-order thinking has in reality rarely been a major focus of program planning for EL learners” (Gibbons, 2009, p. 2).

## **1.5 ACADEMIC LITERACY AND CRITICAL THINKING: SUMMARY**

Adaptation “to the linguistic and social milieu of their host environment and to the culture of their academic departments and institutions” (Braine, 2002, in Peelo & Luxon, 2007, p. 680) is demanding because it requires learning new principles, values, and norms of tacit knowledge and cultural know-how which govern the Western ways of communicating, acting, and thinking. Thus, in order to acquire academic literacy and to become proficient readers and writers, international students need to adopt thinking patterns that underlie academic performance across disciplines and modes of learning, specifically “the peculiar ways of knowing, selecting, evaluating, reporting, concluding, and arguing that define the discourse of [academic] community” (Bartholomae, 1985, p. 229). These thinking patterns, often referred to as critical thinking, are central to all aspects of academic literacy. The integral part of the process of learning how to become an academic thinker is congruent with what literacy researchers advocate: demonstration and practice, with ample time for processing, through which a learner can absorb both the cognitive content and the tacit cultural knowledge and rules of the academic community.

## **1.6 STATEMENT OF PURPOSE**

Based on the notion that critical thinking skills are a crucial element of academic literacy acquisition for international students studying at tertiary institutions in the United States, this study examined how critical thinking skills are addressed by language programs for international students at selected U.S. universities. Particularly, this study drew on data collected via surveys

and open-ended questionnaires to compare (i) the definitions of critical thinking skills employed by different university and college level English as a Second Language (ESL) programs, (ii) the examples of particular critical skills taught in each surveyed program, and (iii) how these skills are viewed by the ESL faculty as an integral part of academic literacy. The motivation to pursue this focus grew out of my own experiences as a university ESL instructor. Having taught advanced level courses ranging from reading to graduate research writing, I have realized how unprepared many international students are to take on the academic demands of various classes in their majors. I have also realized how crucial it is for university level language programs to shift their orientation from a predominantly linguistic-structural approach to language learning to a more encompassing sociocultural model of academic literacy, with critical thinking skills being foregrounded at its core. To my knowledge, no research study has examined how critical thinking skills are addressed in language bridge programs preparing international students for academic rigors and intellectual standards in the U.S. I intended to answer this question with this dissertation study.

## **1.7 RESEARCH QUESTIONS**

Given the absence of studies on how critical thinking is approached in language support programs for international students which aim to equip them with the academic literacy skills necessary for academic success in English speaking countries, I formulated the following research questions:

1. How is critical thinking defined by instructors in language support programs for international students in the U.S.?

2. Are critical thinking skills addressed in university level intensive language programs in the U.S.? If yes, how are they addressed?
3. What do language instructors in intensive language programs for international students in the U.S. perceive as obstacles in implementation of critical thinking instruction?

## **1.8 OVERVIEW OF THE DISSERTATION**

The introductory chapter frames critical thinking skills as underpinning skills of academic literacy and analyzes the multiple lexical, social, and cognitive aspects of academic literacy. Following the introduction, in Chapters 2 and 3, the literature review presents a broad view of critical thinking skills. Critical thinking is discussed from the perspective of language as a cultural construct which has an impact on our thinking. Such problematization of critical thinking skills implies that in their pedagogical approaches to critical thinking, ESL instructors and administrators need to perceive critical thinking as a cultural construct and adhere to the principles of how social practices are acquired. In Chapter 3, I present a detailed discussion of the research design and methodology chosen for the study. Chapter 4 includes the findings. Chapter 5 discusses the results. In the conclusion, I discuss recommendations and implications drawn from the study that may serve as guidelines for bridge language support programs for international students studying in universities and colleges in English speaking countries. These findings inform ESL instructors and administrators about integrating critical thinking into ESL curricula.

## **2.0 LITERATURE REVIEW**

### **2.1 CRITICAL THINKING: THE CORE OF ACADEMIC LITERACY AND CREATION OF KNOWLEDGE**

#### **2.1.1 A Historical Perspective of Critical Thinking**

The roots of understanding the importance of critical thinking as an educational objective can be traced to antiquity and the teachings of Socrates. Socrates' teachings are still alive in Socratic questioning, a critical thinking strategy taught in contemporary classrooms. Socratic questioning invites the consideration of various perspectives on an issue and the questioning of one's beliefs and the underlying assumptions behind statements. Socrates' tradition was continued by Plato, Aristotle, and the Greek skeptics - philosophers who looked for the truth beneath the surface by testing whether what appears to be is what really is. In the Middle Ages, Thomas Aquinas carried the torch of critical thinking tradition. In "Summa Theological," Thomas Aquinas documented his systematic quest for knowledge by considering and cross-examining all criticism of his ideas. During the Renaissance, many philosophers embraced the principles of questioning and doubt as a method of scientific inquiry leading to deeper thought and construction of knowledge, exemplified by Descartes in "Rules for the Direction of the Mind." Continued throughout the next centuries, critical thought opened doors to rejecting the

views of the world and nature and led to the ground-breaking discoveries of Boyle, Newton, Copernicus, Galileo, and Kepler. The thinkers of the French Enlightenment - Bayle, Montesquieu, Voltaire, and Diderot - extended critical thinking to the examination of the nature of the social and political world. They continued the intellectual pursuits of Thomas Moor and Machiavelli and proposed that any authority figure should be the subject of scrutiny (Paul, Elder, & Bartell, 1997).

In contemporary times, John Dewey, an American philosopher and educator, has been recognized as the father of modern critical thinking tradition (Fisher, 2001). Dewey (1938) believed that the main goal of education was learning to think critically by engaging in “active, persistent and careful consideration of a belief or supposed form of knowledge in the light of the grounds which support it and the further conclusions to which it tends” (p. 9). The conviction that “training in critical thinking should be the primary task of education” (Scriven, 1985, p. 11) is shared by many contemporary scholars and educators alike (Bean, 1996; Baron & Sterberg, 1987; Brown, 1998).

### **2.1.2 Definitions of Critical Thinking**

There is no generally agreed upon definition of critical thinking among philosophers, researchers, and educators. Since critical thinking skills have been widely addressed for centuries, a plethora of definitions and categories have been formulated to capture their essence, revealing the complexity of the concept of critical thinking. Over 1,000 personality traits associated with critical thinking have been named and a multitude of definitions of critical thinking can be found in the literature on critical thinking (Ruminski & Hanks, 2006).

Academics who represent the voice of authority on the subject of critical thinking stress the etymology of the word ‘critical’ as a prerequisite to define critical thinking accurately. The quintessence of what critical thinking signifies has been attributed to either (a) a Greek word *krinein* which means ‘to separate’ or ‘to choose,’ implying that deliberate inquiry is an inherent element of critical thinking (Barnet & Bedau, 1996) or (b) to two Greek words: *kritikos*, meaning discerning judgement and *criterion*, meaning standards. Together, *krienein*, *kritikos*, and *criterion* embrace thinking processes that are directed towards “discerning judgement based on standards” (The Foundation of Critical Thinking). These etymological attributes are at the core of various definitions of critical thinking that situate critical thinking in the discipline of philosophy and formal logic (Battersby, 1989).

Critical thinking is also defined in cognitive terms in the field of psychology, which identifies critical thinking as the driving force of human learning. The notion of critical thinking formulated by cognitive and developmental psychologists identifies critical thinking as complex analytical thought processing (Galeteaia & Thiessen, 2010). It is “the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions” (Halpern, 1989a, p. 5). Thus, critical thinking is conceptualized by psychologists as purposeful and goal-oriented thinking.

#### **2.1.2.1 Dispositions of a Critical Thinker Embedded in Critical Thinking Definitions**

Another dimension of the concept of critical thinking was identified by scholars who perceive spontaneous acts of critical thinking as a testament to one’s being a critical thinker, meaning that to think critically one needs to be disposed to do so. It was first brought to attention by Ennis (1985) in his definition of critical thinking that included not only critical thinking abilities but also dispositions to think critically. According to Ennis, “Critical thinking is

reasonable, reflective thinking that is focused on deciding what to believe or do” (p. 450). Such framing of critical thinking stresses that the core characteristic of critical thinking is being open to changing one’s position upon deeper examination of one’s thought process, or in Ennis’s terms, ‘self-regulation.’

Self-correction is also recognized as an intrinsic element of critical thinking in the definition generated by the Delphi Project committee on pre-college philosophy commissioned by the American Philosophical Association. A two-year project, the study was conducted by a panel of 46 American and Canadian critical thinking scholars representing various fields. The initiative for the project stemmed from the recognition by numerous scholars of the existing lack of consensus on what constitutes critical thinking and how to define critical thinkers. The experts of the Delphi Project viewed critical thinking as “purposeful, self-regulatory judgement which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgement is based” (Facione, 1990, p. 2). While the above statement is only a segment of their detailed definition, it conveys its central theme, namely that the goal of critical thinking is to execute a self-regulated judgement. The judgment is carried with consideration of evidence, concepts, methods, criteria, and contexts that frame the judgment and lead to interpretation, analysis, evaluation, and inference, provided that one’s cognitive critical thinking skills are accompanied by one’s openness to self-questioning. According to a panel of scholars of the Delphi Project,

The ideal critical thinker is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgements, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused on inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit. (Facione, 1990, p. 3)

The character traits associated with critical thinking disposition listed by various other scholars overlap with the taxonomy of dispositions in the Delphi Project despite many different ways in which they are phrased. Most researchers and educators agree that critical thinkers, as Baez (2004) proposes, habitually “examine, from multiple perspectives, issues that affect them and evaluate solutions to different problems” (p. 47), employing cognitive and metacognitive processes that require knowledge, interpretation, analysis, inference, evaluation, and reflection. Critical thinkers are also identified by being ready to question taken-for-granted assumptions (Santos & Fabricio, 2006), base their judgement on evidence, ask penetrating questions, distinguish between opinions and facts, and reflect on their ideas (Shuman & Post, 1997). Willingham (2007), identifies similar traits of critical thinking, namely as being open to “seeing both sides of an issue, being open to new evidence that disconfirms your ideas, reasoning dispassionately, demanding that claims be backed by evidence, and deducing and inferring conclusions from available facts” (p. 8). In general terms, a critical thinker is a skeptic who can reserve judgement, challenge assumptions, and change a position upon examining evidence when warranted by reason and who is willing to do so. Framing this disposition as willingness is stressed by Wade and Tavris (1993), who posit that mastering critical thinking skills does not equal being disposed to use them, an inherent characteristic of a critical thinker. Halpern (1999) also asserts that a critical thinker not only has developed critical thinking abilities but also acts on critical thinking traits “without prompting, and usually with conscious intent, in a variety of settings” (Halpern, 1999, p. 70).

The ability to consider issues from multiple perspectives and being open to understanding points of view and evidence that contradict one’s beliefs is perceived as the epitome of critical thinking by many experts in the field of critical thinking (Ennis, 1985; Ennis; 1987; Paul, 1990;

McPeck, 1990; Garrison, 1992). However, according to Richard Paul (1990), director of the Center for Critical Thinking and Chair of the National Council for Excellence in Critical Thinking, not being able to grasp, accept, and embrace conflicting arguments does not disqualify one from being a critical thinker. Paul posits that development of critical thinking is a process and takes place at a certain level or degree at any given point. As a result, critical thinking can serve various purposes, for example, to defend one's point of view or argument or to scrutinize one's position in light of other arguments. Thus, Paul differentiates between weak critical thinking, which is 'disciplined to serve interests of a particular individual or a group, to the exclusion of their relevant persons or groups' and strong critical thinking, which is "disciplined to take into account the interests of diverse persons or groups" (p. 33). It is a challenging task to become a critical thinker because humans are programmed by nature to be egocentric and irrational (Paul, 1990), which is the antithesis of critical thinking. "The mind does not naturally develop intellectual empathy. It is predisposed towards its opposite thinking within its own view point" (Elder & Paul, 2012, p. 31). Persistent practice in disciplined reasoning is required to develop intellectual courage, traits, and dispositions to become a critical thinker.

In sum, even though there is no universal consensus among philosophers, psychologists, and educators in different fields on what constitutes critical thinking skills, the underlying common thread that ties all the definitions together is that critical thinkers are independent and active thinkers who engage with others' ideas to evaluate them against solid evidence and who seek alternative ways of thinking. This understanding is reflected in one of the most widely-used tools to measure critical thinking, the Watson-Glaser Critical Thinking Appraisal, developed in 1925. The creators of the test, Watson and Glaser (2006), associated critical thinking with differentiating between inferences grounded in truth or fallacy, identifying unstated assumptions,

recognizing warranted and unwarranted conclusions, and “evaluating arguments as being strong and relevant or weak and irrelevant” (Hashemi & Ghanizedah, 2012, p. 39).

### **2.1.3 Taxonomies of Critical Thinking Skills and Dispositions**

Until Ennis’s taxonomy of critical thinking, the three skills of analysis, synthesis, and evaluation in Bloom’s taxonomy of higher order thinking served as the taxonomy of thinking skills in critical thinking instruction and assessment. Ennis (1985) found Bloom’s taxonomy imprecise and vague. The lack of precision resulted, for example, from assigning the rank of lower level thinking skills to *comprehension* and *application*. Ennis recognized such labeling as not precise because in their full and deep sense *comprehension* and *application* require critical thinking. Vagueness in Bloom’s taxonomy was attributed by Ennis to Bloom’s choice of notions to identify different thinking processes. Ennis perceived the notion of *analysis* especially vague and troubling because *analysis* requires different ways of thinking depending on the context and the field in which it is used.

Analysis of a chemical compound, analysis of an argument, analysis of one’s opponent weakness in a basketball game, analysis of a word, and analysis of a political situation in South Africa seem like such different activities that we must wonder just what in particular one is supposed to teach under the label ‘analysis’.  
(Ennis, 1985, p. 11.)

With the goal of creating a taxonomy of critical thinking skills reflecting the nature of critical thinking that he put forth in his definition, see section 2.1.2.1, Ennis proposed a taxonomy comprising 14 dispositions and 12 abilities. Table 1 presents an abbreviated version of Ennis’ taxonomy of critical thinking skills.

**Table 1.** Ennis's Taxonomy of critical thinking dispositions and abilities

---

DISPOSITIONS	<ol style="list-style-type: none"><li>1. Seek a clear statement of the thesis or question</li><li>2. Seek reasons</li><li>3. Try to be well informed</li><li>4. Use and mention credible sources</li><li>5. Take into account the total situation</li><li>6. Try to remain relevant to the main point</li><li>7. Keep in mind the original and/or basic concern</li><li>8. Look for alternatives</li><li>9. Be open-minded</li><li>10. Take a position when the evidence and reasons are sufficient to do so</li><li>11. Seek as much precision as the subject permits</li><li>12. Deal in an orderly manner with the part of a complex whole</li><li>13. Use one's critical thinking abilities</li><li>14. Be sensitive to feelings, level of knowledge, and degree of sophistication of others</li></ol>
ABILITIES	<ol style="list-style-type: none"><li>1. Focusing on a question</li><li>2. Analyzing arguments</li><li>3. Asking and answering questions of clarification and/or challenge</li><li>4. Judging the credibility of a source</li><li>5. Observing and judging observation reports</li><li>6. Deducing and judging deductions</li><li>7. Inducing and judging inductions</li><li>8. Inferring explanatory conclusion and hypothesis</li><li>9. Making value judgments</li><li>10. Identifying assumptions</li><li>11. Deciding on an action</li><li>12. Interacting with others</li></ol>

---

In addition to focusing on critical thinking abilities and dispositions, Ennis's taxonomy highlights strategical and tactical abilities necessary to employ critical thinking. For example, under the ability 'interacting with others', Ennis proposed (a) employing and reacting to fallacy labels, (b) logical strategies, (c) rhetorical strategies, and (d) presenting a position in argumentation. Intended as a model of a curriculum organization, Ennis's taxonomy also includes examples of responses or questions to stimulate critical thinking.

A comprehensive systematization of critical thinking skills and dispositions was proposed by the aforementioned Delphi Project. The scholars on the panel of the Delphi Project generated the taxonomy of critical thinking skills and sub-skills, also guided by their definition of critical thinking skills, see section 2.1.2.1. The abbreviated Delphi Project taxonomy of core critical thinking skills is presented in Table 2. The complete version of the taxonomy is in Appendix A.

**Table 2.** Delphi Project: Core Critical Thinking Skills and Sub-skills

SKILLS	SUB-SKILLS
Interpretation	Categorization Decoding Significance Clarifying Meaning
Analysis	Examining ideas Detecting arguments Analyzing arguments
Evaluation	Assessing claims Assessing arguments
Inference	Querying evidence Conjecturing alternatives Drawing conclusions
Explanation	Stating results Justifying procedures Presenting arguments
Self-regulation	Self-examination Self-correction

The Delphi experts also came to a consensus that “the good critical thinker can be characterized by certain affective dispositions or habits of mind” (Facione, 1990, p. 29) such as being open-minded, inquisitive, prudent in making judgements, and honest in facing one’s own

biases. A full list of these inherent qualities of the mind and character of a critical thinker identified by the Delphi Project experts is presented in Appendix B.

The importance of developing the character traits of a critical thinker is as equally important as developing the cognitive critical thinking abilities, stressed in the Delphi Report. However, while educators are encouraged to develop educational strategies and materials that facilitate the development of all critical thinking skills and abilities, experts note that the list of cognitive and affective abilities and dispositions is an ideal and not each cognitive skill and affective disposition should “be considered a necessary condition” (Facione, 1990, p. 29).

Simplified frameworks of critical thinking skills, addressing the same areas of thought processes, have been developed for the purpose of assessment of critical thinking, such as the coding scheme developed by the California Assessment Project (Kneeler, 1985, in Quellmaz, 1986, p. 93), see Table 3.

**Table 3.** Critical thinking skills process model for history/social sciences from the California Assessment Program

---

### California Assessment Program Critical Thinking Codes

---

#### Defining and clarifying the problem

- Identify central issues or problems.
- Compare similarities and differences.
- Determine which information is relevant.
- Formulate appropriate questions.
- Express problems clearly and concisely.

#### Judging information related to the problem

- Distinguish among fact, opinion, and reasoned judgement.
- Check consistency.
- Identify unstated assumptions.
- Recognize stereotypes and clichés.
- Recognize bias, emotional factors, propaganda, and semantic slanting.
- Recognize value orientations and ideologies.

#### Solving problems/drawing conclusions

---

**Table 3** continued

---

Recognize the adequacy of data.  
Identify reasonable alternatives.  
Tests conclusions or hypothesis.  
Predict probable consequences.

---

For instructors to be able to assess critical thinking as a tangible product, critical thinking skills in the California model were formulated as observable results of mental processes in students' performance. The Critical Thinking Process Model does not include the concept of 'argumentation' in the taxonomy of the critical thinking skills because writing an argumentative essay is one of the components of the assessment. "In the essays, students are not asked just to recognize strong and weak reasoning; instead, they are expected to explain their critiques of completed, but flawed, arguments or construct reasoned positions of their own" (Quellmalz, 1986, p. 92).

#### **2.1.4 Generic vs Content-Dependent Approaches to Teaching Critical Thinking**

Most educators agree that the highest level of developing critical thinking skills is when they can be transferred and used in contexts and situations other than the ones in which they were learned. However, whether or not critical thinking follows the same principles across disciplines has been the subject of a dispute since the times of Dewey (Moore, 2011). Though Dewey believed that the principles of thinking can be described in general ways applicable across disciplines, some experts in critical thinking caution that learning critical thinking may be limited by the standards and principles of a given discipline. One may not be able to execute reasonable judgement or evaluation within a different field than the one in which critical thinking was learned because of a lack of the content knowledge. Hence, expert knowledge is a

prerequisite to make right decisions, solve problems, or make claims. For example, McPeck (1981) posits that “the best assessments of arguments usually come from people with the most information about a subject and not from those merely skilled in argument analysis” (in Peckham, 2010, p. 57). McPeck supports his assertion with a quote from the authority on argument writing, Stephen Toulmin, according to whom there are endless forms and uses of argument and, depending on the field, different standards.

Arguments within any field can be judged by standards appropriate within that field, and some will fall short; but it must be expected that the standards will be field-dependent, and that merits to be demanded of an argument in one field will be found to be absent (in the nature of things) from entirely meritorious arguments in another” (Toulmin in Peckham, 2010, p. 58)

Misalignment of expert skills in critical thinking and a lack of expert field knowledge is illustrated by Peckham (2010) with his analysis of Paul’s critique of assertions made by writing experts about exemplary writing of eighth grade students. Paul (1990), a philosopher as well as an expert in informal logic and one of the leading theorists of the generic version of critical thinking, claims in his essay “Why Students and often Teachers Don’t Reason Well” that writing experts, including Charles Cooper, a co-editor of recognized books on writing assessment, do not recognize a lack of critical thinking in students’ writing. To illustrate, Paul cites an introductory vignette from one of the eighth-grade evaluation essays, a narrative gambit that gets the reader’s attention, recognized by the writing experts as exemplary:

‘Well, you’re getting to the age when you have to learn to be responsible!’ my mother yelled out. ‘Yes, but I can’t be available all the time to do my appointed chores! I’m only thirteen! I want to be with my friends, to have fun! I don’t think that it is fair for me to baby-sit while you run your little errands!’ I snapped back. I sprinted upstairs to my room before my mother could start another sentence. (Paul, 1990, p. 142)

Paul does not recognize any critical thinking merit in the above passage and claims that it should have been rated as a failure, not as an exemplary passage. His objections include criticism that “it

is clear that in this segment there is no analysis, no setting out of alternative criteria, no clarification of the question at issue, no hint at reasoning or reasoned evaluation” (p. 144). Peckham (2010) argues that Paul’s statement is an example of mistakes in thinking that would be recognized by writing teachers immediately because Paul failed to notice that the teachers were assessing students’ abilities to write in the genre of evaluation. “Paul is misled into thinking that he could apply the rules of philosophic discourse to writing instruction” (p.79). According to Peckham, Pauls’ mistake supports McPeck’s claim that critical thinking is field-dependent.

To defend the argument that teaching general critical thinking skills is possible and beneficial, Paul (1992) analyzed the flaws behind the ‘orthodox’ position on the content-only approach to critical thinking advocated by McPeck. The mistake in McPeck’s thinking, Paul asserts, is that “most problematic issues require dialectical thought which crosses and goes beyond any one discipline” (p. 509). Paul acknowledges that general thinking skills must be learned in the context of specific content, but if every single discipline had its own way of reasoning, then it would be impossible to communicate across disciplines and develop a global perspective.

The proponents of the generic approach to critical thinking and of general critical thinking courses highlight the broad applications of critical thinking skills taught in general courses. In his seminal article proposing the taxonomy of critical thinking dispositions and abilities, Ennis (1987) conjured up his serving as a jury member in a murder trial to point out how he had to rely on the skills in his own taxonomy during the jury deliberations. Ennis’s justification is supported by Blair’s (1988) assertions that general elements of argument, for example, examination and cross-examination, are core elements of a judicial process leading to discovering the truth. Other philosophers and educators have also supported a non-discipline-

based argument in favor of generic critical thinking courses. Siegel (1988) perceives an unquestionable benefit in general critical thinking courses because they teach the skills of reasoning, which are the basis of critical thinking in all disciplines. Logical thinking, in general, provides the basis for sound decisions in any context, or in Siegel's words, "what counts as a good reason in science...often counts as a good reason both in other fields and in countless everyday life contexts (p. 99).

The middle ground in the debate on generalizability versus content-specificity of critical thinking and the contexts in which they should be taught accordingly is represented by Kurfiss (1988). According to her, "Students can learn structural features of arguments, but they must also learn the forms and standards of evidence for each field they study" (p. 13). Because developing the thinking skills and the framework associated with argumentation is very beneficial for students' further academic work, Kurfiss advocates that instructors devote additional time to teach the characteristics of domain-specific reasoning as well as the structural features of arguments.

### **2.1.5 Critical Thinking Pedagogy**

The underpinning premise for a curriculum based on Paul's affective and cognitive strategies is that learning should be driven by understanding, not by knowledge. Knowledge is the natural result of understanding because "knowledge exists, properly speaking, only in minds that have comprehended and justified it through thought" (Paul, 1992, p. 300). It has longer lasting effects than superficial knowledge without deep understanding. Superficial knowledge is not true knowledge but just memorization, which can be easily forgotten. "Reasoning ... is the only means by which people acquire knowledge, master content, and solve problems" (Paul,

1992, p. 333). Learning guided by critical thinking leads to understanding and the ability to explain the obtained knowledge and reasons behind a decision and alternative paths. It develops intellectual curiosity that generates self-checking questions, such as Why? and What makes me think so?

To help educators reformulate critical thinking abilities and dispositions and articulate them as instructional objectives and learning objectives, Paul and Binker (1992) generated 35 critical thinking strategies, which they called dimensions of critical thinking. The authors provide a short description of the theoretical principle that underlies each strategy and a synopsis of examples of classroom applications of each strategy with short explanations of when and how it may be used in the classroom. The theoretical segments are included because Paul and Binker strongly believe that “one cannot do or teach critical thinking well without understanding why one should honor principles of critical thought, and to help overcome the tendency in education to treat insights and skills in isolation from each other” (p. 391). The 35 strategies are presented in Appendix C.

#### **2.1.5.1 Instructional Elements Fostering Critical Thinking Skills**

The literature on pedagogical approaches to critical thinking highlights several instructional practices as crucial to facilitating development of critical thinking skills. “The empirical literature shows that when critical-thinking instruction is done well, students are more disposed to think critically and become more able thinkers” (Halpern1993, p. 250). The prerequisite to successful critical thinking instruction is that it must be explicit. Halpern (1983), among other scholars, argues that critical thinking skills need to be taught explicitly because critical thinking skills cannot be expected to develop as a by-product of content courses. Therefore, Halpern advocates that explicit instruction in critical thinking be taught in courses

devoted solely to critical thinking or in subject matter courses. The claim that implicit critical thinking instruction by itself is not sufficient for the development of critical thinking abilities is also supported by a research study on critical thinking in the Oxford tutorial, a small reading discussion group seminar that evaluates students' essays (Cosgrove, 2011). The findings of the Oxford tutorial study suggest that "critical thinking strategies are more likely to be internalized by students if those strategies are taught explicitly and systematically" (p. 355).

The central instructional strategy present in the literature devoted to teaching critical thinking is inquiry. Research findings from studies on inquiry methods have confirmed that inquiry methods are effective in improving critical thinking skills (Kurfiss, 1988; Tien & Stacy, 1996). Inquiry methods can be used by instructors to correct students' misconceptions. To help students identify their misconceptions in their thinking, instructors may ask deliberate questions or use entrapment strategies to bring students' misconceptions to light and correct their paths of reasoning. "Misconceptions become apparent when students make predictions based on their schemas, then test their predictions against actual events" (Kurfiss, 1988, p. 34). The following universal elements that underlie critical thinking about any problem have been formulated by Paul (1995, p. 22) as questions that can serve as a guide for inquiry methods:

- What is the purpose of my thinking?
- What precise question am I trying to answer?
- What point of view am I operating within?
- What information am I using?
- How am I interpreting that information?
- What concepts or ideas are central to my thinking?
- What conclusions am I coming to?
- What am I taking for granted; what assumptions am I making?
- If I accept the conclusions, what are the implications?
- What would the consequences be if I put my thoughts into action?

Effective pedagogical techniques in teaching critical thinking, in addition to the method of inquiry, are comprised of various instructional strategies, such as (a) modeling (demonstrating

a task), (b) mentoring (assisting learners during the learning process), and (c) scaffolding (providing expert assistance and gradually removing it) (Ritchhart, 2015; Sternberg & Frensch, 1993; Swartz, 1989; Kurfiss, 1988; Quellmalz, 1987). The context of real-life applications while learning critical thinking skills has also been found beneficial not only for the development of critical thinking skills but also for future transfer. For example, De Bono's (1988) research indicates that students successfully transfer newly acquired critical thinking skills if those skills relate to their personal or professional lives.

Among instructional strategies, cooperative learning has also been recognized as a crucial element of critical thinking pedagogy. By working with others, students encounter different points of view, which provides them with an opportunity to engage in arguing. Cooperative learning may take various forms, for example, paired problem solving, simulations, debates, and critical reporting sessions (Howe and Warren, 1989). "It is an especially effective method to be used with any problem-solving task" (Klimoviene, Urboniene, & Barzdziukiene, 2006). Team work can provide a stimulating intellectual environment because it triggers metacognition associated with critical thinking (Ryder, 1994) and creates opportunities for students to be active participants (van Gelder, 2005). However, Paul (1992) cautions that if students do not rely on intellectual standards and if they do not work in a supportive manner, cooperative learning becomes 'cooperative mislearning' instead of being an insightful experience. Hence, students must not only "probe each other's thinking for its support and implications," but also "along the way, they must develop a sensitivity to what they and others are assuming" (Paul, 1992, p. 317).

## 2.2 SOCIOCULTURAL PERSPECTIVES ON CRITICAL THINKING

Learning critical thinking, just as learning in general, according to Vygotsky's (1978) theory of learning and social development, is the result of socialization and participation in a learning community. As a result, knowledge learned within a given community "cannot be separated from human interests, norms, and values" (Giroux, 1994, p. 201) that embed learning. Critical thinking takes place within a social, political, cultural, or economic reality. The strength of argumentation, one of the core critical thinking skills, comes from grounding one's thinking in reality by examining and cross-examining evidence and from identifying one's own assumptions as well as the audience's unstated assumptions. Hence, "when we reflect on a claim, we don't bring our knowledge and beliefs to bear in isolation. We always activate these in a social context" (Unrau, 1997, p. 23). As Bizell (1992) remarks, "persuasion is not based on idiosyncratic values but on what is shared" (p. 259).

To become acculturated into an academic community which upholds critical thinking as a cornerstone of construction of knowledge, one needs to acquire the "spirit of inquiry and critical consciousness" (Neely, 2005, p. 11). Because of epistemological differences between cultures, speakers of English as a second language face challenges in the process of learning how to think in academic settings and how to engage in academic criticism. International students enter Western institutions of higher education having developed thinking and learning patterns that are culture specific, and thus their way of constructing knowledge and perceiving the world may not have corresponding models in the cultural patterns of the host country. The research in cognitive strategies (D'Andrade, 1995) indicates that the challenge which international students face while striving to meet academic standards in English speaking countries may be compounded by their different ways of reasoning that result from upbringing in different cultural communities.

For example, “whilst they excel in the domains of scientific reasoning and thinking characterized by universal approaches and formulas, Chinese international students fail in the academic disciplines which are restricted by culturally specific reasoning” (Song, 2016, p. 34). In the disciplines that are not governed by Socratic tradition of critical thinking, students from China often out-perform Western students (Watkins & Biggs, 1996; Watkins & Biggs, 2001; Olsen & Burgess, 2006). However, it is the Western form of academic argumentation, which stems from rigorous Socratic debates, is governed by Aristotelian logic, and is characterized by skepticism, questioning, and the assumption that nothing is taken for granted (Durkin, 2011) that becomes a stumbling block for international students not accustomed to such reasoning. Therefore, it is paramount to keep in mind that “their perceived inability to demonstrate Western style of critical thinking is indicative of the existence of their own rival forms of knowledge” (Song, 2016, p. 38).

### **2.2.1 Historical and Sociocultural Roots of the Western and Eastern Systems of Thought**

The roots of cultural differences in human thinking have been primarily researched and documented in cultural cognition studies on people from the West and the East, mostly East Asia, with these cultures broadly contrasted as individual/analytical versus collectivist/contextual. The genesis of the difference in thought systems between Western and Eastern societies can be traced to antiquity. The Western tradition of academia and scholarly thinking rests on epistemological principles that value extending knowledge through critical inquiry; the Eastern tradition venerates harmony and social order. Drawing from the scholarship of humanities and social science scholars who maintain that the differences in the nature of thought result from the nature of the world people live in, Nisbett (2003) proposes that the

Western and Eastern philosophical orientations grew out of different social practices of ancient Greece and China. The philosophies in each of these traditions encapsulated “habits of thought that were already characteristic of their societies” (Nisbett, 2003, p. xxi) and were “an inevitable consequence of using different tools to understand the world” (p. xvii).

The ancient Greeks’ philosophical school of thought of Socrates, Plato, and Aristotle reflected the historical, political, and geographical nature of their homeland. The ancient Greeks lived in autonomous cities and lived relatively independent lives in rural areas. The topography of Greece, “mountains descending to the sea, favored hunting, herding, fishing, and trade.... These are occupations that require little cooperation with others” (Nisbett, 2003, p. 34). Not being restricted to living in any particular community, Greeks could focus on their own lives, and while other ancient societies lived under autocratic rules of a king or an emperor in fear of being sentenced to death for defying the ruler’s law, Greeks enjoyed freedom. This freedom and the sense of having control over their lives was the driving force, for example, in their long journeys to attend plays and poetry readings. Their strong sense of agency is reflected in one of their definitions of happiness which equates to “being able to exercise their power in pursuit of excellence in a life free from constraints” (p. 3). The Greeks’ tradition of debate also arose from their particular socio-political circumstances. Plato traced the origins of debate, which in ancient Greece permeated all public life and was the cornerstone of decision making, to the origins of a democratic legal system in the fifth century BCE in Syracuse (Perelman, 1992 in Scollon, 1999). Having no written records, the citizens in Syracuse had to go to court and convince the judges, their fellow citizens, of their right to their lands in order to reclaim the lands seized by tyrannical rulers. Thus were established the grounds for further development of democratic discourse and argumentation in the history of Western civilization.

The intellectual tradition of the East has roots in two philosophical schools: Confucianism and Taoism. Confucius taught that “when the Way [tradition] prevails in the Empire, the Commoners do not express critical view” (*Analects* XVI.2., Lau, 1983 in Scollon, 1999). The impetus to preserve social order in ancient China was the outcome of the fabric of their society. As an agricultural society, the Chinese lived interdependent lives in hierarchical systems of villages, clans, and extended families, which required being engaged “in multiple, complex relationships with other individuals” (Nisbett & Masuda, 2003, p 11163). The survival and success of their society in which individuals lived in very close relation to others depended on minimizing conflicts and creating social harmony, either while working in unison in rice fields or coordinating the flow of a widespread irrigation system (Nisbett, 2003). Their sense of collective agency was reflected in the ritual of visiting friends and family. Confucianism was a moral code of obligations and prescribed roles between family members and the emperor and his subjects. “Chinese society made the individual feel very much a part of a large, complex, and generally benign social organism where mutual obligations served as a guide to ethical conduct” (Nisbett, 2003, p.6).

Taoism, a philosophical tradition that values concrete perception and direct experience (Nakamura, 1988), historically blended with and complemented Confucianism and is the counterpart to the abstract rules that govern Western epistemology. Taoism provided the balance between opposing forces that exist in nature or between individuals. Its yin and yang symbolism represents the complementary forces that create a continuous flow between contradictions, with one contradiction not being complete without the other. It oriented the ancient Chinese towards accepting contradictions in nature and among themselves, appreciating mutual influence, and deriving one’s identity from surroundings that are subject to constant change, preserving the

order and harmony in the society. The Eastern mode of thought that grew from these traditions is epitomized by collectivism, consideration for others, holistic perception, and contextual decision making.

### **2.2.2 Modern Day East-West Thinking Patterns**

Modern day Western and Eastern cultures are not homogenous and can be classified into many subcultures, but, as Nisbett (2003) observes, they respectively share underlying common characteristics, justifying the claim that for over 2500 years each of these “two utterly different approaches to the world” (Nisbett, 2008, p. xx) has preserved its core, beliefs, and orientation. Research in cultural cognition has revealed observable culture-embedded Eastern and Western thinking patterns, which indicates that “there is substantial evidence that current practices of East and West differ in ways parallel to those of ancient times” (Nisbett & Matsuda, 2003, p. 11163).

Cultural psychologists have observed that the distinction between individual versus collectivist cultures parallels the distinction between analytical and holistic perception and reasoning. Matsuda and Nisbett’s (2001) study on American and Japanese university students’ descriptions of an underwater scene revealed that Americans were more likely to focus on a salient object, such as a fish, and describe its characteristics, whereas the Japanese were more drawn to depicting the scene, in this case a pond, and identifying more of its details. Westerners’ tendency to depict objects versus Easterners’ predilection for depicting contexts and focusing on the whole has also been confirmed by other studies on perception and cognition conducted by Masuda and Nisbett (2006). In their study, American, Chinese, Japanese, and Korean students underwent experiments recording their perception of changes in focal object information and contextual information by recording their reactions to still photos and animated vignettes. The

researchers built their study to continue the verification of differences between Asians and Westerners conducted earlier by Nisbett and his colleagues. After having considered all possible confounding factors that may have affected the responses and reactions of their participants, Masuda and Nisbett drew the conclusion that the data do “support the notion that it is differences in attention that underlie other differences in reasoning styles” (p. 393), described by cultural psychologists as the tunnel-vision of Westerners versus the holistic perception of Easterners.

Experimental evidence in the field of cultural psychology also indicates differences between Easterners’ and Westerners’ cognitive processing responsible for the classification of objects. Even though the representatives of Eastern and Western cultures demonstrated a wide array of responses in cognitive experiments conducted by Nisbett (2003) and Nisbett and Matsuda (2003), indicating that there are individual differences in cultural groups, two distinctive patterns of thinking emerged from their responses. Easterners have a tendency to classify objects into categories by relationships. When asked to identify which two objects are alike in an image consisting of a cow, a chicken, and hay, they group, for example, the cow and the hay together and leave out the chicken, reasoning that the cow eats the hay. Westerners, on the other hand, group the cow and the chicken together into the ‘animal’ category, using the similar properties of the objects as the rule governing categorization.

Recent studies in transcultural neuroimaging, a field bridging social psychology and cognitive neuroscience, have demonstrated that the differences in observable thought processing among people from different cultures have corresponding differences in neural activity. In cross-cultural neuroimaging experiments, using functional MRI (fMRI) and event-related brain potentials (ERPs) techniques, “researchers have measured neural activity in individuals from different cultural groups performing the same ‘cognitive tasks’” (Han & Northoff, 2008, p. 647).

The results of these experiments have been compiled into an overview by Han and Northoff (2008). Han and Northoff posit that the multiple findings of these studies indicate that the neural wiring of our brains, responsible for, among other functions, social cognition, perception, and attention, is dependent on the socio-cultural input it receives; hence, cultural upbringing permanently programs not only our minds but also our brains to think in a certain way. The brains of American and Chinese participants in neuroimaging studies display different neural connections in identifying descriptive traits relating to oneself and to a close relative. American participants' brains activated two distinctly separate neural areas for each concept whereas Chinese participants channeled both the information about oneself and about a close relative through the same neural center. Neuroimaging studies have also identified cultural differences in processing object-only tasks, with American participants showing much stronger neural activation when processing an object without any background. This difference in neural mapping corresponds to the two culturally distinctive cognitive styles observed by cultural psychologists: Western context-independent and Eastern context-dependent style. Such glimpses into the neural connections confirm that people from the West and people from the East may process and interpret the same reality in different ways.

Surface linguistic features reflect the differences between individualistic and collective thinking. For example, Chinese lacks an equivalent of the word "individual" in English; the word which would be the closest in meaning in Chinese is 'selfishness' (Nisbett, 2003). In Japanese, such words as "individual", "right," and "freedom" did not exist until they were introduced into the language in the 19<sup>th</sup> century (Yanabu, 1982 in Stapleton, 2001). A very different social orientation in Japanese that stresses politeness, respect, and comfort for the interlocutor results in

the Japanese tendency to ask for forgiveness in a situation that requires a simple “thank you” from a Westerner (Nisbett, 2003).

### **2.2.3 The Critical Thinking Debate: Can the Western Manner of Critical Thinking Be Truly Learned by Easterners?**

Rooted in the socio-cultural construct of critical thinking skills are the arguments cautioning second language educators about relying on critical thinking pedagogical approaches. Atkinson (1997) claims that teaching critical thinking skills to second language learners may not yield the expected results. Although his claim, he admits, is speculative in nature, it is motivated by the apparent lack of generalizability and transferability of thinking skills, demonstrated in testing by psychologists and in cognitive research. Atkinson draws further arguments refuting the efficacy of instruction in thinking skills in second language settings from the notion that critical thinking is a social practice; it is a form of intuitive learning which may be hard to teach explicitly. As a result, if it is taught explicitly, it may result in only short-lasting and nontransferable mental operations. Since social practices are governed by societal values and norms, questioning the existing status quo, a trait highly valued in the West, may be highly objectionable for societies which value conforming to the existing norms. Atkinson suggests that the Japanese, for example, are not inclined to critical thinking because they are socialized from early childhood to show conformity and empathy.

Atkinson is not alone in assuming that teaching the Western standards of critical thinking in second language classrooms may not be met with a lot of success. Other researchers caution that international students may resist adopting the evaluative stance of academic criticism and feel disoriented by unfamiliar academic demands in Anglophone countries (Cadman, 1997;

Ramanathan & Atkinson, 1999). Since academic criticism requires students to assume an evaluative stance as a writer, a rhetorical move that positions them in the role of a disciplinary authority, a role they are unfamiliar with, they may not perform successfully in that role (Dodson & Feak, 2001). Students whose academic discourse has been shaped by cultures in which evaluative and critical voices are suppressed may not easily understand the demands of academic criticism. Questioning authority, searching for faulty logic in the argumentation of well-established authors, offering alternative perspectives, or being on a quest to find new applications of existing knowledge are not intellectual attitudes of students who have not had the experience of searching for their own voices and understandings in the school systems in their homelands. Hence, international students should not be expected to easily perform the same critical thinking tasks as Western students (Atkinson, 1997; Ramanathan & Atkinson, 1999).

Numerous researchers and educators disclaim Atkinson's (1997) argument about Japanese incapability to think critically and maintain that students from non-Western cultures may benefit from pedagogical approaches promoting concepts of critical thinking skills that are Western cultural constructs. Drawing from her observations while teaching in Japan, Carroll (2004) asserts that Japanese students exhibit strong critical thinking skills in their own language in conversation outside the classroom "and sometimes during class" (p. 54), where they can be heard expressing personal opinions the same way Western students do. Davidson (1995), who teaches topic-based English and Critical Thinking courses in Japan, also observes that "Japanese commonly employ logical concepts in everyday discourse.... They find contradictions, reason to conclusions, and gather evidence to confirm hypotheses" (p. 48). Yet, "publicly, Japanese have some difficulty discussing ideas or explaining them" (p. 42), an intellectual barrier which has some roots in Zen Buddhism. The historical function of Japanese Zen was to suspend judgment

and instill unquestionable obedience of authority, as implied by the Zen imagery of “‘destroying’ or ‘extinguishing’ the mind” (van Wolferen, 1993 cited in Davidson, 1995, p. 42). It had a profound effect on the function of language, making it an imperfect vehicle for conveying one’s thoughts and feelings and resulting in the Japanese tendency for vagueness. Paradoxically, according to Davidson (1997), these qualities underlie a strong potential for critical thinking. The indirectness in Japanese conversation or writing comes from the expectation that the interlocutor or reader will be able to infer what is implied, which by itself is a high level critical thinking ability. Likewise, while the Japanese inclination for submissiveness and eagerness to agree with a different point of view is contradictory to the nature of critical thinking, it also espouses ‘dialogical’ thinking (Paul, 1992) and acceptance of opposing ideas, the cornerstone of the Western art of argumentation.

The empirical evidence which contradicts Atkinson’s (1997) characterization of Japanese critical thinking styles comes from Stapleton (2001) who, while acknowledging the sociocultural nature of critical thinking, demonstrates that Japanese students are capable of thinking critically in a manner consistent with Western norms. Stapleton examined writing samples of Japanese university students taking English writing courses. The results of the study indicated that elements of critical thinking were present in the writing samples. The degree to which critical thinking skills were displayed was associated with differing assumptions and familiarity with the topic to which the students were responding, yet even when writing about less familiar topics, participants provided support for their opinions. Stapleton contends that these results are a strong counterargument “to the claims of various scholars that Japanese learners do not think critically and should not be given instruction in critical thinking because it may interfere with social practices” (p. 529).

Studies on culturally-embedded cognition also support the argument that human cognition is adaptable to stimuli and that adults may develop new thinking patterns. Experimental cognitive studies provide data demonstrating how individuals may adopt context dependent or context independent cognitive strategies, which are not in their cultural cognitive repertoire, if they are probed with culturally orienting self-concepts of 'I' (context independent) and 'we' (context-dependent). Kuhnen and Oyserman (2002), building on the previous studies that demonstrated how participants from context-dependent cultures, when primed for context-independent self-knowledge, increased context-independent processing of information, provide evidence that the opposite is also true: increased context-dependent cognitive processing is possible in individuals from context-independent cultures if they are primed with interdependent self-knowledge. Based on these findings and those of other cognitive researchers (Cha, 2007; Kim & Markman, 2006), it may be concluded that "cultural differences are best conceptualized as differences in habits of thought... and that holistic and analytical ways of thinking can be differentially encouraged in their development and use by different cultural and situational constraints" (Buchtel & Norenzayan, 2009, p. 219). Although these empirical studies are very limited in the scope of the cognitive abilities they measure, test one particular type of information processing at a time, and do not offer a glimpse into longitudinal effects of such priming, they demonstrate that people can develop cognitive abilities that are necessary to think holistically or analytically and override the cognitive orientation of their home cultures.

#### **2.2.4 Psychological and Cognitive Barriers for L2 Learners in Western Academic Settings**

International students coming from cultures which value collectiveness over individual voices may encounter psychological and cognitive barriers when facing a task requiring critical

engagement. Instead of seeing academic criticism as a contribution to the realm of knowledge and thought, exposing the shortcomings of others' work may be perceived by international students as face-threatening and the premise of criticism may be interpreted as purely fault-finding (Taylor & Chen, 1991). Students from non-Western cultures may be inclined to use a tone of collaborative engagement and highlight how their own work confirms the existing knowledge and makes further contributions to the field rather than engage in direct criticism (Canagarajah, 2002). According to Hatcher (cited in Davidson & Dunham, 1996), Chinese and Japanese students' home cultures, which demand politeness over criticism, may be the reason for their consistently low scores on the Ennis-Weir Critical Thinking Essay Test, in which test takers are supposed to critique a multiple paragraph argumentative letter and point out reasoning fallacies, such as equivocation, irrelevancy, poor statistical sampling, and circular reasoning.

In academic courses, students who do not intuitively engage in analytical reasoning may organize the material and information according to principles that are not recognized as logical by their instructors. The predisposition to pay more attention to an object versus attending to the context may predetermine a student's judgement about causality of an event and may result in interpretations of a situation different from that which native speakers of English would expect. Nisbett (2008) provides an example of differences in style between American and Chinese newspapers covering a particularly egregious behavior of an individual, illustrating how extremely different these interpretations can be: Westerners tend to use decontextualized information about an individual involved and try to identify the particular characteristics that might be responsible for the individual's behavior whereas Easterners tend to analyze situational information, the outside influences, and extenuating circumstances. Creating a Western-style abstract argument apart from its context, engaging in a debate, framing a research project, or

participating in classroom discussions hence may require from international students not only learning new conventions of academic discourse but also a very different type of thinking.

The conflict between collective versus individual values in the academic context and understanding what constitutes the principles of scholarship is evident in numerous instances of plagiarism committed by international students (Park, 2004). Omissions of in-text citations and references in international students' writing often stem from a different perspective on knowledge as "belonging to society rather than individuals" (Duff, Rogers, & Harris, 2006, p. 675). In academic practices in collective cultures, students are not taught or required to explicitly acknowledge the source of the information they present, and this habit of borrowing from other authors without referencing their names has to be un-learned in order for international students to comply with the conventions of academic integrity in Western institutions of higher education. ESL courses that address the issue of plagiarism by teaching students to paraphrase without teaching them the underlying principles of academic integrity are not effective. International students need to be taught explicitly why plagiarism is a serious offense in order to grasp the concept of intellectual property and understand the principles of the underlying theory of academic literacy (Emerson, Rees, & MacKay, 2005).

### **2.3 CRITICAL ELEMENTS OF LANGUAGE INSTRUCTION IN L2 STUDENTS' DEVELOPMENT OF CRITICAL THINKING**

The studies on developing critical skills in a different cultural orientation have been designed to capture how international students develop critical thinking in the context of writing, reading, critical discussion, and class presentations. These modes of learning have been

positively associated with the development of critical thinking (Tsui, 1999). While experimental studies can document the immediate effect of critical thinking instructional interventions on students' performance, longitudinal studies provide researchers with insights into what conditions must be met in order for the process of learning critical thinking to have a lasting and positive effect on students' acquisition of academic literacy and resulting academic success. Researchers attempt to discriminate the conditions favoring learning and thinking, but these conditions cannot be isolated in educational settings and therefore appear in different combinations in research studies.

### **2.3.1 Mediated Experience in Academic Courses**

A longitudinal ethnographic case study conducted by Cheng (2006) of a Chinese student enrolled in an academic writing course taught by the researcher in a research-intensive U.S. university describes the conditions that enabled the student to acquire Western style skills of academic criticism. It also addresses how acquiring the skills of academic criticism is critical for international students to succeed academically. Cheng's study was designed to document the actual process of a learner's analysis of criticism in reading and writing when analyzing discipline-specific research articles. The study was framed by two research questions aimed at exploring how L2 speakers recognize and analyze academic criticism practices and characteristics of research articles and how these features are incorporated into the students' own writing. The writing course was structured around in-class analysis of examples of academic criticism in research articles, teacher-led classroom discussions, students' independent analysis, and feedback to their analysis from the instructor and from the class on a weekly or bi-weekly basis.

The design of the study enabled Cheng (2006) to have very detailed and specific observations about the participant's learning process. Chen attributes the student's successful engagement with academic criticism to a number of factors. The student in his study was highly motivated to learn English, had a genuine interest in learning academic criticism, and completed all of the assignments on time. Hence, he was able to benefit from the continuous mediation provided by the instructor in the form of co-constructing the student's rhetorical and linguistic skills of academic criticism unlike other students in the course who did not take advantage of all opportunities for mediation. The students who failed to develop strong critical academic skills in the course did not submit assignments on time and could not receive timely feedback. They also failed to engage with academic criticism because of having selected academic articles in the chosen academic field that did not contain explicit criticism of other scholars' work and that did not offer a model of academic criticism to follow. Hence, Cheng's findings indicate that there are external factors in addition to the mode of instruction which may affect students' engagement with academic texts and, as in the case of her study, success or failure to develop academic criticism skills. This is an important contribution to the field of academic criticism instruction for foreign students and an opening for future studies focusing on documenting students' experiences and developing effective interventions. As Cheng posits, "learning to engage in academic criticism may ... prove important to a student's immediate academic survival" (p. 280) for academic criticism assignments, such as article critiques, book reviews, or annotated bibliographies are common requirements in academic courses, which are viewed by professors as measures of students' critical thinking skills and intellectual abilities.

### **2.3.2 Academic Classroom Culture and Oral Presentations**

The research literature on international students' adjustment to Western academic culture suggests that for some international students, classroom participation or group work may not be a part of a classroom model in their home academic practice. International students are often accustomed to a different paradigm of group work, one of acquiescent participation towards a common goal in contrast to American students who challenge each other's ideas and do not shy from individual perspectives (Zhou et al., 2008; Sarkodie-Mensah, 1998).

In her longitudinal study on international students from China and Japan studying in Canada, Morita (2000) explores oral presentation, a standard classroom practice across disciplines in English speaking academic communities. Morita reveals how oral academic presentations (OAP) are complex cognitive and sociolinguistic phenomena and points out that the process of learning OAP is much more challenging for international students than previously assumed. Oral academic presentations, which require students to present an assigned reading, such as a journal article or a textbook chapter, and lead a class discussion, are an integral part of many academic courses. Morita analyzed oral academic presentations in two TESL courses, run as graduate seminars and offered by applied linguistics department at a Canadian university. The data were collected in 40 class sessions during the entire academic year. The participants were two instructors for the courses and 21 graduate students, including both native speakers and non-native speakers. Each student performed one or two OAPs in each class. All of 25 OAPs performed in the two classes were videotaped and analyzed.

To examine the cultural context and the participants' perspectives, the study was designed employing an ethnographic approach. Despite the limitations of the reliability and validity of an ethnographic approach, namely that the natural setting and the procedure cannot be

replicated, and external variables cannot be controlled, in addition to a small number of participants, Morita's study presents important insights into the processes of academic discourse socialization. Her detailed notes on participant observations and interviews capture the holistic picture of the students' learning process. The results of the study indicate that the difficulty of OAP for international students, in addition to their perception of their own linguistic skills and academic conventions as inadequate, stemmed from the fact that they were expected to be critical thinkers and critical readers of academic texts in order to situate the readings in the framework of the field and its current trends, acknowledge their own gaps in knowledge, and identify their own potential contributions to the field, none of which is in the repertoire of academic conventions in their home countries.

Personal engagement with the text, drawing from one's background knowledge and experiences, examining each other's epistemic stance, being open to other students' and instructors' reflections, and collaboratively constructing knowledge were some of the new ways of learning and participating for international students whose prior experience of a presentation entailed a mere summary of readings. Through the continual process of preparing for, observing, performing, and reviewing OAPs, students were involved in negotiations with peers and instructors and sometimes had to negotiate "conflicting identities within themselves" (p. 303). The findings of the study demonstrate that non-native speakers (NNS) can attain academic performance on par with native speakers (NS). According to Morita, "in spite of their language difficulties many NNSs were as successful as NSs were in performing OAPs. The NNSs were able to use a range of strategies and resources and were perceived as successful presenters by their peers and instructors" (p. 304).

### **2.3.3 Critical Thinking Stimulated by Controversial Topics: Debating Controversial Topics**

English writing classes in English as a Foreign Language programs have historically been structured around the traditional definition of literacy and have not included components addressing critical thinking. A study conducted by Yang and Gamble (2013) at a university in Taiwan examined the results of an innovative English writing course with a critical thinking component centered on controversial topics for freshmen majoring in disciplines other than English. Two compulsory freshman English and reading classes for non-English majors were randomly assigned as either an experimental or control group, both taught by one of the researchers. The experimental group, while following the same textbook as the control group, received supplemental activities and instruction which emphasized information literacy, critical reading, article critique, group debate and evaluation, and argumentative writing. In contrast, language instruction for the control group included reading comprehension, understanding structure of readings, summarizing and paraphrasing, listening comprehension, oral fluency and pronunciation, and process writing. The description of activities in each experimental group's module indicates that the students had opportunities to collaborate, peer revise, and critique each other. Except for the final module of writing for the control group that indicates peer review as a form of collaboration, there is no further indication of what peer collaboration activities were designed for the control group. It is also debatable if peer revision should be qualified as an activity in the spirit of social constructivism since peer revision is often limited to identifying grammatical mistakes and surface features of essay organization according to a rubric. Hence, without an equally detailed description of instructional activities in the control group, it is impossible to judge if both groups were taught using the same pedagogical approach and if the

reported significant improvement in critical thinking skills as well as English reading comprehension and writing in the experimental group as compared to the control group was solely the result of the critical thinking instructional strategies.

An outcome worth mentioning in Yang and Gamble's (2013) study is the experimental group's very positive feedback upon having learned and practiced the art of debating. The students had to collaborate to propose and defend a stance as well as question and rebut opposing teams' claims, a very novel experience, and yet they were open to learning how to think of a strong argument "despite an academic [home] culture often emphasizing passive learning and avoidance of confrontation" (p. 409). In their discussion of the course materials used with the experimental group, the researchers highlight the importance of using controversial topics that can stimulate discussions, collaboration, and co-construction of knowledge. The students' success in debating can also be attributed to a well-paced course design with each new skill becoming a scaffolding for the next one in the experimental group. Prior to being introduced to the principles of debating, students had been inducted from the very beginning into identifying sources of information, evaluating them, recognizing bias, using supporting data and judging their relevance to the topic. The modules in the control group did not reveal a similar structure of a progression of skills as steppingstones in ascending difficulties.

#### **2.3.4 The Critical Role of Scaffolding Controversial Content**

The assumption that critical thinking is stimulated by coming into contact with opposing points of view motivated Hashemi and Ghanizadeh's (2012) study, which explored the impact of discourse analysis on students' critical thinking in Reading Journalistic Texts courses at a university in Iran. The thorough literature review in the study linking critical discourse analysis

with critical thinking skills led the researchers to assert that “one of the strategies contributing to EFL learners’ critical thinking is exposing learners to texts such as news stories and reports that contain ideological assumptions and whose interpretation depends on the wider context, as well as on the sociocultural and political aspects” (p. 40). To examine this contention, the research questions inquired whether discourse analysis has a significant impact on EFL learners’ critical thinking, making inferences, recognizing unstated assumptions, deduction, interpretation, evaluation of arguments, and selection of journalistic materials for class presentation. The participants were university students attending a semester-long journalistic course. Both groups of students met the requirements of homogeneity in English proficiency and in critical thinking, as measured by the TOEFL and the Watson-Glaser Critical Thinking Appraisal (CTA), a valid and reliable instrument for measuring critical thinking. The procedure of the experiment was aligned with the research questions: the same textbook and the journalistic articles were identical for both groups. The experimental groups were supplemented with critical discourse activities based on Fairclough’s (1989) model.

Fairclough proposes a discourse analysis model that explores how ideological orientations are projected in discourse practices, texts, and events. The instructional approach with the experimental group was informed by two theories: Leontiev’s (1981) activity theory and Brunner’s (1976) model of scaffolding. Activity theory postulates that “what we do determines our cognition” (Hashemi & Ghanizadeh, 2012, p. 44). Scaffolding requires providing guidance and mediation by instructors, then gradually minimizing it until learners can learn independently. Because of the nature of novel and controversial topics selected for the course, in order to facilitate full development of multiple perspectives, scaffolding was an integral part of the instruction. The results of the study were obtained from two sets of data; in addition to a CTA

posttest, the students' presentations of a self-selected journalistic story at the end of the semester were analyzed by the researchers. The analysis of the presentations revealed that the students in the experimental groups chose topics that were more controversial in terms of ideological assumptions, value judgments, opinions, and biases. The statistical analysis of the quantitative data indicated a significant gain in the experimental group's ability to infer, recognize unstated assumptions, and interpret, but no significant gains in deduction and evaluation of arguments. Despite the limitations of the study, namely a limited number of available participants, lack of randomization, and a possible skewing effect of one of the researchers being the instructor in both courses, the statistical significance of the findings demonstrates that critical discourse analysis aided by mediation may be an effective tool in developing critical thinking skills in foreign language learners.

### **2.3.5 The Effect of Content and Context Familiarity on Critical Thinking**

The aforementioned Stapleton's (2001) research, discussed in the context of Japanese critical thinking, was aimed to define and measure critical thinking in Japanese argumentative writing in English. The study was motivated by the school of thought maintaining that "critical thinking is a clearly definable notion that can be empirically tested" (Davidson, 1998, Ennis & Weir, 1985, Siegel, 1990 in Stapleton, 2001, p. 512). The researcher collected writing samples of 45 randomly selected Japanese university students taking an English writing course at a university in Japan. Half of the students wrote about a familiar topic while the other half wrote about an unfamiliar topic. The essays were written on provocative topics to elicit argumentative responses.

The findings of Stapleton's (2001) study, computed into statistical data and summarized by means and standard deviations, revealed that the participants' writing about a familiar topic showed more depth of abstraction, greater number and variety of arguments, and greater evidence. When writing about unfamiliar topics, the participants chose to avoid abstraction and tried to "focus on literal objects" (p.532). Such lack of abstraction may be interpreted by a reader from an English-speaking country as evidence that Japanese students lack critical thinking skills "when in fact these skills are handicapped by their lack of any knowledge structure for the topic presented to them" (p. 532).

The critical role of background knowledge in students' ability to demonstrate critical thinking skills has been addressed by other educators and scholars as well (Chamot, 1995; Baez, 2004; Liaw, 2007). Carroll (2004) maintains that when expressing themselves in English, international students' conceptual thinking may be limited by low language proficiency or topics to which they cannot relate, yet, when provided with sufficient scaffolding which serves to deepen understanding of the topic, they may strongly engage in generating opinions and supporting them in a logical manner typical of Western-type argumentation

### **2.3.6 Discrepancies in Addressing Critical Thinking in ESL and Academic Courses**

Numerous researchers have observed that ESL courses in higher education do not stress the tasks and skills that are relevant to academic courses and do not instill critical thinking in international students (Leki and Carson, 1997; Bacha and Bahous, 2008). For example, many international students enter academic classes not having had sufficient preparation or experience in writing formal evidence-based papers, referencing their work, structuring their compositions depending on the type of information they are presenting, and critiquing academic articles.

Furthermore, they are not familiar with rhetorical discourses in various genres. For example, Zhu (2004) reports on the lack of overlap between the writing assignments required in business courses and those required of ESL students in the English for Academic Purposes courses. The findings in Zhu's (2004a) study indicate that the common characteristic of business academic writing, in addition to multiple types of genres, is addressing real-life tasks. In business courses students write to a broader range of audiences, "combine several rhetorical modes purposefully, and move from one to another smoothly within the same assignment" (p. 131). Since the quality of writing produced by business students has to be on par with the writing of business professionals, there is a strong emphasis on decision-making and problem-solving, which require critical thinking. In management courses, instructors stress persuasive writing, which needs to be consistent and offer plausible choices of action; therefore, critical thinking is a stated objective in the syllabi of many management courses. Business students are responsible for the content of their own writing, but their assignments often require collaboration with group members. They are also expected to identify multiple primary and secondary sources, collect qualitative and quantitative information for their assignments, analyze, evaluate, select the relevant information, and synthesize it. The extent to which they are able to complete assignments successfully depends on how well they understand "the instruction on an assignment, which can be quite lengthy and complex" (p. 130). In contrast, Zhu draws a comparison from Leki and Carson (1997) that in EAP courses students' writing is academic in nature since their audience is often an instructor or a peer. However, they are required to write in one rhetorical mode in response to a given prompt, often in a form of a short essay or a library research paper. Hence, they are not responsible for the content of their writing and do not need to employ a wide range of styles. Collaboration in EAP courses is often limited to working in peer response groups and providing

feedback to each other's papers. Based on his findings, Zhu recommends that English support programs, whose aim is to equip international students with academic literacy and which serve many business majors, might augment their curricula with assignments focusing on writing for professional audiences, working in teams, and developing analytical and problem-solving skills.

## **2.4 CONCLUSION: DIRECTIONS FOR IMPLEMENTING CRITICAL THINKING IN ESL/EFL CURRICULA**

The theoretical and empirical literature on critical thinking demonstrates that non-Western international students can successfully acquire the Western type of thinking that underpins academic literacy and academic success. Students from collectivistic cultures favoring holistic and context-dependent cognitive style should not be underestimated in their ability to learn analytical thinking, integrate ideas, apply critical thinking to a new context, assume an argumentative stance, and engage in critical discussion of multiple perspectives.

The studies discussed in this literature review reveal important implications concerning how colleges and universities should approach language support instruction for international students. Students are more likely to acquire critical thinking skills if they are in the apprenticeship-like learning situations, which require handling authentic academic tasks and provide an opportunity for experiential learning. International students who are enrolled in academic courses together with native speakers may show quick gains in critical engagement with academic texts and tasks when provided an opportunity to co-construct knowledge and hone their skills with the help of their peers and instructors who can model the desired outcomes. Hence, mediation and scaffolding of content and context in academic courses are necessary

conditions to create supportive environments for international students to acquire critical thinking strategies.

The studies also carry a few implications for ESL/EFL programs. The research findings indicate that the traditional orientation of ESL and EFL programs does not provide international students with a solid foundation for engagement with critical academic literacy in academic programs. If language teachers are to stimulate second language learners' critical thinking skills, they need to redesign classroom instruction towards more complex tasks that will move beyond recalling information in the form of summarizing and paraphrasing and will engage students in higher level thinking. Critical thinking instruction will be more effective if critical thinking in second language programs is tied to academic content and authentic academic tasks and materials. These tasks and materials need to be thought-provoking, biased, or ideologically framed so that multiple perspectives, discussions, and debates are naturally fostered in language classrooms. The insights from the literature on L2 and critical thinking also suggest that language programs should reformulate the concept of teaching and move from theory to practice, indicating that students will learn how to think critically in English speaking academic settings if they fully engage in critical thinking activities.

### **3.0 METHODOLOGY**

#### **3.1 INTRODUCTION**

Particular interest has been taken recently in critical thinking in second and foreign language acquisition, and researchers seem to agree on the importance of incorporating critical thinking into university level intensive language instruction for international students. They acknowledge the underpinning role of critical thinking in academic literacy and recommend that intensive language university programs for international students be re-designed to promote development of critical thinking skills through mediated thinking strategies instruction with the focus on practice (Leki and Carson, 1997). Re-designing university level language support programs is especially important for international students whose home academic literacy practices do not match the cultural and academic expectations of English speaking university communities. However, since critical thinking is a relatively new field in second language acquisition, there are no available studies, to my knowledge, which address general guidelines in ESL programs indicating whether and how critical skills are to be implemented and framed as a socio-cultural process. Thus, it is impossible to determine whether the initiative to restructure ESL programs has been underway and whether the ESL curricula reflect researchers' and educators' recommendation that critical thinking should be applied to all aspects of learning.

This study was informed by the current research in cognitive psychology and the transfer of critical thinking skills. Researchers in cognitive psychology have acknowledged that thinking skills may fail to transfer not only from an experimental situation to real life contexts but also from one academic environment to another as well as to real life if they are not systematically addressed (Detterman, 1993). Students who undergo instruction in rules of reasoning in a particular field have been documented to apply what they learned in educational setting to real-world situations after several months (Lehman & Nisbett, 1990). This observation supported the inquiry of this study as to whether instructional strategies facilitating critical thinking development are systematically addressed in the curricula of language intensive programs for international students in the U.S.

### **3.2 THEORETICAL FRAMEWORK**

This study was framed by Vygotsky's (1986) views of language and learning as inseparable from the development of human thought and from the social and cultural conditions in which they take place. From the perspective of the sociocultural theory, critical thinking skills, acquired in social processes through participation in cultural communities, are a part of the culture-embedded cognitive processes which embody all cultural notions and values of a given community. Language and human perception of the world are intertwined, and our perception of reality shapes our language. Second language learners, who need to learn new patterns of critical thinking associated with the English language and academic communities, need to become participants of English language academic communities, and must appropriate new ways of thinking about what they perceive as established and taken for granted.

The theoretical base for this study was also formed by the results of empirical studies that indicate that the most effective approach to developing critical thinking skills is explicit teaching combined with ample practice (Statkiewicz & Allen, 1983; Bangert-Drowns & Bankert, 1990). Critical thinking needs to be taught in an apprenticeship-like environment that provides immediate application of the skills in students' personal and academic lives (de Bono, 1983) and takes place over a long period of time (Gelven & Stewart, 2001; Langholz & Smaldino, 1989).

### **3.3 THE PURPOSE OF THE STUDY**

Drawing on previous findings, Vygotsky's sociocultural theory, and intending to address the gap in the literature on critical thinking in English as a Second Language programs, this study explored how critical thinking is addressed in ESL programs in the United States. In particular, this study addressed how critical thinking is defined, whether there is a consensus among ESL practitioners on the definition of critical thinking, whether it is addressed as a cultural construct, and whether it is explicitly stated as an objective in the ESL curricula of tertiary institutions. Moreover, this study also aimed at discovering whether the instructional strategies that ESL programs implement to promote critical thinking are framed by the sociocultural theory of language or by theories that view language as a finite set of lexical-grammatical structures to be acquired. This study also attempted to extrapolate any evidence that might suggest why, if discovered, critical thinking is not addressed in second language programs in the US. The findings provide an overview of procedures and techniques which nurture the development of critical thinking in ESL contexts. The programs which have successfully implemented critical thinking skills within the framework of learning as a social practice may

serve as models for other programs nationwide. The study looked not only at how critical thinking is understood and addressed by ESL instructors but also at whether the evolving nature of critical thinking competence, in light of the sociocultural theory of learning, is addressed in the responses to the questionnaire and present in the examples of the participants' instructional practices. The insights from the study may assist university and college English language support programs in developing instructional techniques to promote integration of critical thinking skills into ESL curricula.

### **3.4 A WORKING DEFINITION OF CRITICAL THINKING SKILLS**

While there is no generally agreed upon definition of critical thinking skills among researchers and educators, see Chapter 2, there is an overlap of skills which underlie the realm of critical thinking. I constructed a working definition of critical thinking for the purpose of this study to reflect these common features. My working definition states: *Critical thinking is an individual's ability to identify a problem and/or an issue, evaluate information based on available evidence, be aware of language in which issues are discussed, draw conclusions based on available evidence, perceive perspectives on the problem, and be self-critical during the process.* . This working definition is meant to serve as an umbrella notion to represent the ability and disposition to envision broad perspectives, question and evaluate existing knowledge and facts, and draw logical conclusions to arrive at new understandings, may it be a judgment or a decision to take action. It underscores the systemic nature of examination of the reality at hand as an integral characteristic of critical thinking and a natural inclination of a critical thinker to use reason to make his own judgment.

### **3.5 RESEARCH QUESTIONS**

This study was guided by the following research questions:

1. How is critical thinking defined by instructors in language support programs for international students in the U.S.?
2. Are critical thinking skills addressed in university level intensive language programs in the U.S.? If yes, how are they addressed?
3. What do language instructors perceive as obstacles in implementation of critical thinking instruction in university language intensive programs for international students?

### **3.6 DESIGN OF THE STUDY**

#### **3.6.1 Timeline**

The study was implemented in the two phases:

1. Phase one: designing and test piloting the data collection instrument during Summer and Fall 2016.
2. Phase two: collection of data via questionnaire and follow-up interviews during Fall 2016 and Spring 2017.

### **3.6.2 Participants**

The 21 participants of the study were full-time and part-time ESL instructors from six private research universities in the Northeast area of the United States. All of these schools have well-established English language support programs for international students, often referred to as academic English programs. International students are registered into academic English courses if their TOEFL scores fall below the threshold score required for admission into academic programs. While ESL programs offer courses for beginning level students, only the instructors who taught intermediate and advanced courses were invited to participate. Language support courses at the beginning level are designed for students to gain mastery of basic language structures and do not systematically target critical thinking since complexity of thought associated with critical thinking naturally progresses with higher language fluency.

### **3.6.3 Data Collection Procedures**

The data for this study were collected from voluntary participants who responded to an invitation to participate in the study. All of the data collected from the participants were anonymous, and the participants in the study are referred to by pseudonyms. The term of address (Mr. vs Ms.) are not intended to imply any gender differences in the findings. I sent the invitation, see Appendix E, to the chairs of ESL departments in 12 universities in the northeast area of the United States and requested that the invitation be forwarded to ESL instructors teaching in their programs. Twenty-five instructors from six universities responded to the invitation, constituting a 50% institution-level response. They received a letter explaining the purpose of the study, confidentiality of their participation, the absence of any risk involved, and

their right to withdraw at any point from the study, see Appendix F. They also received a questionnaire sent as an attachment. Only four participants did not complete the questionnaire, making the return rate of the completed questionnaire 84%. Additional data were collected in follow-up interviews to clarify the participants' statements in their questionnaire responses and to elicit further examples of their instructional practices.

### **3.6.4 Data Collection Instruments**

A questionnaire was designed to elicit data that would provide answers to the three research questions. The data from the questionnaire were supplemented by follow-up interviews. The questions in the questionnaire were driven by how critical thinking in academic settings has been problematized in the literature on critical thinking skills, see Chapter 2. Most of the survey questions were accompanied by open-ended questions, requesting to explain the close-ended answers. The formatting of the survey was such that the length of open-ended responses was unlimited. Since open-ended questions trigger more accurate answers than closed-ended questions (Beam, 2012), the open-ended segments of the questionnaire resulted in more precise and consistent answers. The participants were asked to define the nature of critical thinking and whether and to what extent critical thinking skills were a part of their instructional repertoire. They were also asked to define which particular skills they address in the courses that they teach. The open-ended questions of the questionnaire elicited responses to identify which instructional activities are already implemented to promote the development of critical thinking skills and to identify the reasons why critical thinking skills are not addressed in particular courses or programs.

The questionnaire, included in Appendix G, was the result of multiple revisions. Two instructors from a university level ESL program agreed to participate in the study to pilot test the questionnaire. I administered the questionnaire to both of them in person and took notes during their think-aloud response process. Based on these notes, I eliminated the questions that were redundant and rephrased the questions that were vague. I pilot tested the questionnaire a second time and made further revisions to phrase questions more succinctly without suggesting the direction of the answers. In conversations with the pilot testers, it also became apparent that I needed to add open-ended portions to most of the close-ended questions to elicit responses that would provide a concrete picture of how instructors conceptualize critical thinking and how critical thinking skills are addressed in their instructional practices. These additional questions inquired about built-in critical thinking instructional procedures in ESL curricula as well as curricular procedures to assess students' critical thinking skills. Upon further re-examination of the responses of the two pilot testing instructors, I decided that I needed to ask direct questions about the participants' perceived obstacles in implementation of critical thinking instruction and whether or not they felt that their students were sufficiently prepared for critical thinking assignments required in academic courses. None of this information was provided in the first and second round of testing the questionnaire due to a lack of direct questions. Throughout my conversations with the pilot instructors, I also realized that they had different understandings of critical thinking as a result of their personal and educational backgrounds. To address the role that formal or informal learning experience in critical thinking plays in conceptualization of critical thinking, I added a question inquiring about critical thinking training and the source of the participants' understanding how to teach critical thinking.

The final draft of the questionnaire contained 28 questions. To elicit robust data, some questions were cross-referenced and phrased differently while aiming to address the same aspect of critical thinking conceptualization or instruction. The last portion of the questionnaire elicited demographic data about the participants. The following table, Table 4, demonstrates the relationship between the questions in the questionnaire and the research questions, with some of the questionnaire questions informing more than one research question.

**Table 4.** Research questions and corresponding questionnaire items

Research question	Corresponding questionnaire items (question number)
1. How is critical thinking defined by intensive language programs for international students in the United States?	<p>1. I feel I know critical thinking skills well enough to define that concept for someone who may not know what it is (3)</p> <p>2. What all critical thinkers have in common is .... (4)</p> <p>3. Is the kind of critical thinking required in school any different than the kind of critical thinking that students need to perform in the real world? (5)</p> <p>4. Critical thinking skills are picked up by ESL students and do not need to be taught directly. (6)</p> <p>5. ESL students already have critical thinking abilities from previous educational experiences and do not need to have critical thinking instruction. (7)</p> <p>6. Critical thinking needs to be modelled by a teacher. (10)</p> <p>7. Critical thinking skills are culture sensitive. (11)</p> <p>8. Critical thinking needs to be taught in real-world contexts (12).</p> <p>9. Collaborative work can stimulate critical thinking more than working alone. (13)</p>
2. Which critical thinking skills are addressed in intensive language programs for international students in the United States?	<p>1. Describe what you would consider a typical thinking activity that your students engage in. (1)</p> <p>2. Critical thinking skills are integrated into the curriculum of ESL courses in which I teach. (9)</p>

Table 4 continued

---

	<p>3. Critical thinking needs to be modelled by the teacher (10 open ended)</p> <p>4. The curriculum of the course I teach has built-in procedures to assess students' critical thinking development (13)</p> <p>5. Writing assignments are among the most effective ways to develop critical thinking. (14)</p> <p>6. What are other ways of developing critical thinking? (15)</p> <p>5. The curriculum of the course I teach has built-in procedures to assess students' critical thinking development. (16)</p> <p>7. To what extent are critical thinking skills taught as a part of the ESL courses you teach? (20)</p>
<p>3. What do language instructors perceive as obstacles in implementation of critical thinking instruction in intensive language programs for international students in the United States?</p>	<p>1. Is critical thinking your own contribution to the ESL program? (9 open ended)</p> <p>2. The curriculum of the course I teach has built-in procedures to assess students' critical thinking development. (16 open-ended)</p> <p>3. Reasons why it may be difficult to integrate critical thinking into ESL curricula. (17)</p> <p>4. Based on # 17, would you agree that it is difficult to integrate critical thinking into ESL curricula?</p> <p>5. If there is a discrepancy between the percentage of critical thinking taught versus learned by students, to what reasons would you attribute this discrepancy (21)?</p> <p>6. Does instructors' collaboration or lack of it in your department have an impact on ESL students' developing critical thinking? (27)</p>

---

## 3.7 RESEARCH METHODS

### 3.7.1 Validity and Reliability

Qualitative methods were used to collect and interpret the data. The data were gathered through a survey method, a questionnaire, and semi-structured interviews. Having data drawn from more than one source strengthens the validation of the data, counters potential biases (Beam, 2012), and can be used to “supplement, validate, explain, illuminate, or reinterpret data gathered from the same subjects” (Bogdan & Biklen, 1998, p. 37).

The qualitative design provides a researcher with flexibility to adapt research methods of data collection and analysis, and according to Mills (1959; in Taylor & Bogdan, 1998), encourages craftsmanship. In qualitative research “there are guidelines to follow, but never rules. The methods serve the researcher; never is the researcher a slave to procedure and technique” (Taylor & Bogdan, 1998, p. 10). Hence, while analyzing the raw data, I was able to make decisions and adjustments between the inductive and the deductive analysis. The inductive approach refers to the process of identifying concepts and deriving themes from raw data, while the deductive approach refers to identifying the concepts and themes set by the researcher prior to data collection (Thomas, 2006) and which are reflected in the research questions.

I also made an effort to suspend my own judgement and put aside my values and preferences when analyzing data to let the insights from the data fall into unbiased patterns, a strive for objectivity expected from qualitative researchers (Taylor & Bogdan, 1998). During the follow-up interviews, I was especially aware of the complexity of using language as the data collection tool, referred to by Mehan and Wood (1975) as *reflexivity*, an idea encapsulated by Escher’s print of Drawing Hands, in which one hand is drawing the other (Taylor & Bogdan,

1998). The language used by a researcher shapes the responses of each participant, and each participant's responses prompt further questions and interpretations from the researcher. To limit the effect of shaping the interviewees' responses, I cautiously phrased my questions not to provide any hints of possible responses.

To counteract the possible limitations of self-reported data and to strengthen the reliability of the participants' responses, the questionnaire included multiple questions addressing the same issue. I also included open-ended questions to accompany close-ended questions. The open-ended questions served as a source of data and as a source of verification of trustworthiness of the close-ended responses. As a result, I was able to identify contradictions in the participants' responses and attain a more accurate picture of their conceptualization of critical thinking and critical thinking instructional practices. To further ensure trustworthiness of data analysis, the data were coded by two coders, myself and another language instructor.

### **3.7.2 Data Analysis Tools**

*Coding scheme.* The coding scheme for the purpose of this study was motivated by the discussion in the literature on critical thinking that highlighted the necessity to develop a broader understanding and to develop categories of critical thinking other than the six levels of cognition in Bloom's taxonomy, see Chapter 2. The first coding scheme to code the open-ended responses was a compiled list of critical thinking skills adapted from the works of Ennis (1993), Halpern (1989b, 1996), and Paul, Biker, Jensen, & Kreklau (1990), presented in Table 5.

**Table 5.** Critical thinking skills codes

---

Critical thinking skills compiled from the literature on critical thinking

---

Identifying the context of information  
Evaluating evidence  
Generating hypothesis  
Judging the credibility of information source  
Reading with a higher level of comprehension  
Using analogies and metaphors  
Inferencing  
Reflection  
Identifying and defining a problem,  
Restating/paraphrasing (interpretation)  
Drawing a logical conclusion  
Identifying the connection between cause and result  
Understanding the difference between an opinion and fact  
Identifying assumptions and counterarguments  
Creating coherent texts  
Creative thinking: redefining the problem and seeking different solutions  
Reflection.  
Insight  
Reading with a high level of comprehension  
Asking questions to clarify the meaning

---

For the purpose of the present study, I did not include thinking skills that are esoteric and difficult to capture, measure, and identify, such as ‘being open minded,’ one of the critical thinking skills on Ennis’s (1993) list, or subject specific skills, such as ‘recognizing the difference between correlation and cause’ (Halpern, 1996). The critical thinking codes were used by both coders in the first four completed questionnaires. The initial analysis of the applied codes did not produce the expected results of identification of patterns in the instructors’ responses. The questionnaires were coded with what appeared to be mostly single skill codes that would not allow me to collapse the coded responses into broad categories. It also became evident that the codes did not all carry the same level of specificity since some codes encompassed a wider range

of thinking processing than others, for example, ‘reading with a higher level of comprehension’ versus ‘understanding the difference between an opinion and fact.’

In search for a more accurate coding scheme, I used the Delphi Project’s list, see Chapter 2, of six core critical thinking skills and sixteen sub-skills to re-code the first four questionnaires. However, coding the questionnaires with the six core skills and sixteen sub-skills created a confounding picture resulting from the fact that the instructors associated the same skill with many different applications and contexts, or they referred to multiple skills by associating them with a different category which was not included in the list of codes. Another difficulty in using the categories from the Delphi Project to code the data became apparent when assigning the code ‘evaluation.’ The Delphi list associates ‘evaluation’ with the subskills ‘assessing claims’ and ‘assessing arguments’. However, the notion of ‘evaluation’ that emerged from the teachers’ responses in the questionnaires was associated not only with assessing arguments and their claims but also with other notions, such as ‘objectively assessing ...[one’s] knowledge and abilities to determine the correct course of action for a task.” Thus, the adopted tools from the literature did not provide the means to bridge critical thinking codes and the critical thinking skills in the teacher’s responses to identify overall themes and patterns.

Without capturing the general direction of the respondents’ thought processes about critical thinking, I could not establish the conceptual framework for the analysis. Hence, I constructed broader categories of six thematic codes that embraced the critical thinking skills as discussed in the literature and that included the underlying characteristics of critical thinking encapsulated by my working definition, see section 3.4. The six-theme list of codes, see Table 6, enabled the coders to capture the numerous manifestations of critical thinking in a more systematic manner.

**Table 6.** The coding scheme constructed for the analysis of the data

---

Six Thematic Critical Thinking Skills Codes

---

- I. Identifying a Problem or Argument and Finding and Defending a Solution or Perspective
  - II. Evaluating and Drawing Conclusions to Make a Decision or Form an Opinion
  - III. Identifying Various Perspectives and Relationships and Assuming Multiple Points of View
  - IV. Gaining New Knowledge, Understanding, and Creating New Ideas
  - V. Awareness of Language Forms and Linguistic Choices to Convey the Message
  - VI. Disposition to Be Logical, Skeptical, and Reflective
- 

The complete list of codes with examples of critical thinking skills identified with each thematic code is enclosed in Appendix H.

In sum, generating the six general thematic codes to be used as an analytical tool arose from the difficulty in creating a coherent pattern from a multitude of skills and subskills identified in the initial coding of the data while relying solely on the list of critical thinking skills generated from the literature and from the lack of descriptors matching the instructors' statements.

*Negotiating nuanced statements.* While the six-code coding scheme constructed for the purpose of this study enabled the coders to assign the codes with a high level of accuracy to create thematic patterns for each questionnaire, the coding process was not an automatic procedure of linking words appearing in the responses to the list of skills under each code, Appendix H. The skills listed under each code are not assumed to be an exhaustive list and can serve only as general guidelines. Thus, the coders had to rely on their own understanding of the

codes and had to think beyond the surface level statements about the skills conceptualized and reported by the respondents. The challenge in coding critical thinking skills by categories lies in the fact that there are many ways in which one skill can be realized and operationalized. For example, coding such statements as “critical thinkers detect nuances in ideas and situations” required disentangling the process involved in detecting nuances and negotiating the overall meaning of the statement. This particular statement was coded as representing code IV, Gaining Knowledge and Understanding.

*Critical thinking in instructional practice.* Table 7 illustrates the critical elements of language instruction, discussed in Chapter 1, which were anticipated to be in the respondents’ answers pertaining to their critical thinking instructional practices.

**Table 7.** Anticipated critical elements of language instruction

Critical elements of language instruction: data analysis codes	Possible sources:	Possible examples might include:
Modelling critical thinking for students with examples and stimulating questions	Instructional materials and written feedback to students’ work	A text given to students which exemplifies logical and effective ways of text organization (instructional materials)
Integration between reading and writing	Writing prompts and compositions written in response to readings	Examine the power and the purpose of the author’s language (prompt)  Explain (in writing) how the textual evidence shows what the author argues (teacher’s comment)
Stimulation of critical thinking with controversial content	Controversial topics of the written assignments	Write an essay in which you discuss the pros and cons of arranged marriages (prompt)
Scaffolding controversial content	Instructors’ written feedback to students’ work	Is this the only way that people may perceive this problem? (teacher’s comment)

**Table 7** continued

Discussion/argument types of assignments promoting critical thinking	Written prompts requiring a discussion and argumentation responses	Writing prompt asking students to construct a list of assumptions about a character.  Identify the strategies the author employs to build his/her argument and how they influence the audience.
--	--	---

---

Since the list was intended to provide a broad representation of critical thinking skills in language support programs preparing international students for further academic studies in English, it was not assumed to be an exhaustive list, and therefore may not include specific skills addressed by individual programs. Other skills and themes that emerged from the data analysis are addressed in Chapter 4

## 4.0 FINDINGS

The purpose of this study was to investigate how critical thinking is defined by university language instructors teaching international students in the United States, which critical thinking skills are addressed in their programs, and which instructional strategies and materials are used to promote the development of critical thinking in second language students. The investigation also aimed at identifying factors that can facilitate or deter critical thinking instruction in language support programs at the university level. To this end, this study examined relationships between the instructors' understanding of critical thinking, the demographic factors of the instructors (age, degree earned, and critical thinking professional development), the curriculum guidelines of the instructors' courses as reported by the instructors, and the instructors' critical thinking teaching practices. The analysis employs cross referencing the responses of the instructors to the questionnaire in light of the three research questions to identify patterns and connections. The analysis was guided by the working definition of critical thinking skills discussed in Chapter 3, which highlighted the disposition and ability to envision broad perspectives, question and evaluate existing knowledge and facts, and draw logical conclusions to arrive at new understandings, be it a judgement or a decision to take action. The results of the data analysis will be presented in three sections corresponding to the three research questions.

## **4.1 RESEARCH QUESTION 1: HOW IS CRITICAL THINKING DEFINED BY INSTRUCTORS IN LANGUAGE SUPPORT PROGRAMS FOR INTERNATIONAL STUDENTS IN THE U.S.?**

### **4.1.1 Instructors' Definitions of Critical Thinking**

To identify how the instructors defined critical thinking and their working definitions of critical thinking, I analyzed the open-ended portion of question 3 in the questionnaire. In addition, I analyzed the responses to the open-ended statement “What critical thinkers have in common is... “(question 4). These responses were compared to the working definition of critical thinking for the present study represented by five codes, I through V, in Chapter 3. The majority of instructors (19 out of 21 / 90%), provided a definition of critical thinking in the open-ended portion of question 3. One of the two instructors who refrained from providing a definition indicated “no opinion” about her ability to provide a definition. Both of the instructors who did not offer a definition of critical thinking completed the statement eliciting the instructors’ beliefs about what critical thinkers have in common (question 4). Defining a critical thinker is closely tied to defining critical thinking. Therefore, being able to provide a definition of a critical thinker without providing a definition of critical thinking signifies inconsistency and a contradiction in the instructors’ responses.

None of the instructors provided combined definitions of critical thinking and critical thinkers that included all six codes. However, if their definitions included five codes, they were considered as strong. As illustrated in Table 8, a strong definition of critical thinking was identified in the responses of 4 instructors (19% of all responses). Approximately half of the instructors (10 out of 21 / 48%) provided only moderate definitions of critical thinking, which

included references to three or four codes. Weak definitions were those to which one, two, or no codes were assigned, identified in seven responses (33% of the participants (see Table 8)).

**Table 8.** Definitions of critical thinking

	Strong Definition (5 codes)	Moderate Definition (3- 4 codes)	Weak Definition (2-0 codes)
Number of responses	4	10	7

This imposes the question as to why some of these teachers may have a weak understanding while some have a strong understanding of critical thinking skills. I will discuss this idea in Chapter 5.

The frequency of particular codes identified in the teachers' definitions of critical thinking is exhibited in Table 9. The most frequent domain of critical thinking mentioned by the instructors was Evaluation and Drawing Conclusions to Make Decisions (category II of the coding scheme), mentioned by 76% of the instructors. The Ability to Identify Perspectives and Relationships, category III, was the second most frequent critical thinking category, present in 67% of the responses. Gaining New Knowledge and Understanding (category IV) was mentioned in 48% of the responses. The least frequently named critical thinking categories were categories I, V, and VI. That is, identifying a Problem or an Argument (category I) was mentioned by 43% of the instructors in 6 full and 3 partial responses. Disposition to Be Self-critical (category VI) was present in 38% of the definitions, and Awareness of Language (category V) was mentioned only 3 times by 14 % of the instructors.

**Table 9.** Frequency of CT codes in CT definitions

Most to Least Frequent CT Codes	Times mentioned in the definitions	Frequency
II. Evaluation & Drawing Conclusions to Make a Decision	16	76%
III. Ability to Identify Perspectives & Relationships	14	67%
IV. Gaining New Knowledge & Understanding	10	48%
I. Identifying a Problem or an Argument	9	43%
VI. Disposition to Be Self-critical	8	38%
V. Awareness of Language	3	14%

Vague phrasing in the instructors' responses prevented both coders from coding some segments of their definitions as well as some of their completed statements in which they stated what critical thinkers have in common (questions 3 and 4). For example, the completed statement in question 4 provided by Mr. Vester, "the ability to go beyond the surface meaning or traditional approach in diagnosing a task," was not coded by either coder because both felt that his wording was vague. When asked to clarify his responses during the follow-up interview, Mr. Vester did not elaborate on his definition, and restated that he had indicated a very strong lack of confidence in his ability to define critical thinking.

### 4.1.2 Instructors' Confidence in Their Understanding of Critical Thinking

The analysis of the instructors' responses to the close-ended portion of question 3 revealed a wide range of self-perceptions of their abilities to articulate a fully developed concept of critical thinking (see Table 10). The majority of the instructors (18 out of 21 / 86%) felt confident that they could define critical thinking, one instructor felt very confident, one instructor had no opinion about her confidence, and one instructor had a very strong lack of confidence. All of the instructors who participated in follow-up interviews indicated that they felt at least somewhat challenged by the task of defining critical thinking, found the topic to be very elusive, or they realized that they had never been asked before to articulate what critical thinking entails. For example, Mr. Stewart summed up his reflections by calling critical thinking "a slippery concept." One instructor, who taught in an English language program with a strong focus on critical thinking in East Asia, admitted that she had to pause and think before providing a definition of critical thinking. Her statement indicates, perhaps, why she defined critical thinking only partially on the questionnaire. While the majority of instructors were confident that they could define critical thinking, when questioned during the follow-up interview about their level of confidence in defining critical thinking, many instructors admitted being challenged to define this concept in concrete terms.

**Table 10.** Instructors' confidence in their ability to define critical thinking

---

Level of Confidence and Number of Instructors				
Strongly confident	Confident	Not confident	Strongly not confident	No Opinion
1	18	0	1	1

---

Later in the discussion section, I will compare the instructors' definitions of critical thinking with their level of confidence in being able to define critical thinking

#### **4.1.3 Instructors' Understanding of the Sociocultural Nature of Critical Thinking**

The responses to questions 6, 7, 10, 11, 12, and 13 in the questionnaire were examined to investigate the instructors' understanding of the sociocultural nature of critical thinking. Critical thinking belongs to the cognitive domain and, according to Vygotskian theory of learning discussed in Chapter 3, it is developed in social contexts. The cultural and social practice of learning cognitive skills requires cognitive skills to be viewed as a cultural construct that endows a learner with a particular view of the world, which may vary from one society to another and from culture to culture. The instructors' responses to the above-mentioned questions were analyzed to determine if they believed that critical thinking is a cultural construct and whether they provided any examples of culturally determined critical thinking. In addition, the nature of teaching critical thinking entails real-world contexts guided by the principles of mediation and modeling. Thus, instructors' responses to the questions pertaining to these socio-cultural elements of teaching were also analyzed.

*Critical thinking as a cultural construct.* When asked to take a position on whether or not critical thinking is culturally determined, item 11 on the questionnaire, the instructors had a wide range of responses in the close-ended segment of the question, illustrated in Table 11.

**Table 11.** Critical thinking as a cultural construct

---

Instructors Embracing or Rejecting CT as a Cultural Construct

---

Strongly Agree	Agree	Agree and Disagree	Disagree	Strongly Disagree	No Opinion/ Disagree
4	12	2	1	1	1

---

The majority of the instructors (16 out of 21 / 76 %) agreed, among whom 4 strongly agreed, that critical thinking is a cultural construct. In the open-ended segment of the question, the instructors who chose the option ‘agree’ or ‘strongly agree’ commented on how international students do not meet the expectations in academic performance due to cultural differences in the way critical thinking is carried out in their home cultures versus the U.S. or Western countries in general. Ms. Jazz, in multiple open-ended responses, reflected on freedom of expression as an inherent element of tacit cultural knowledge underlying academic intellectual pursuits in the US. She stated, “I don’t think every culture values freedom of expression as we do, which lessens the likelihood of students [from other cultures] feeling comfortable questioning what they read.”

Another finding emerged from the analysis of the responses to close- and open-ended portions of questions 6, 7, 10, 11, 12, and 13, provided by the three instructors who either disagreed with the statement that critical thinking skills are culturally sensitive (close-ended portion of question 11), had no opinion about it, or could not decide if they agreed or disagreed. In their open-ended responses to question 11, they wrote comments or provided examples that contradicted their ratings. Ms. Tain, who selected ‘disagree’ and ‘no opinion,’ contradicted herself in the open-ended portion by stating, “I think that critical thinking can be culture sensitive (if students have a strong belief about something like religion).’ Ms. Monroe strongly disagreed with the belief that critical thinking is culturally determined (question 11). She also contradicted

herself in the open-ended response to question 7, commenting on how many students are taught in their home countries not to question what they are taught and are expected to re-produce that knowledge. “I believe that ... many...have been in more traditional learn/show mastery of info type situations,” she reflected. These last two examples indicate that these teachers recognized that critical thinking is culturally determined even if their responses to the close-ended portion of question 11 indicated that they believed otherwise. All instructors provided similar examples that critical thinking is a cultural construct.

*Critical thinking as cultural construct themes.* The analysis of all open-ended responses related to critical thinking as a cultural concept (questions 6, 7, 10, 11) revealed four re-occurring themes.

*Cultural construct theme one.* The first theme that the instructors identified as a cultural barrier for international students is that critical thinking is an inherent element in American institutions of higher education and specific to American or Western academic culture (9 out of 21 instructors / 43 %). The instructors who, in their responses, focused on the type of thinking necessary in the American academic context stressed, for example, that it requires looking at an answer to a question from multiple angles, being open to providing many answers, or valuing freedom of expression. To underscore the specificity of thinking required in academic settings in the US, one instructor noted that while some ESL students may have acquired critical thinking that is involved in questioning in a family situation or shopping at a market (Ms. Reagan), academic college contexts in the US require a variety of different and more complex critical thinking skills than those. That comment aligned with Ms. Van Herpen’s observation that “students who have studied English in English speaking countries have a better understanding of critical thinking.”

*Cultural Construct Theme Two.* The second theme that the instructors identified as a cultural barrier was students' struggle with grasping the concept of acknowledging multiple perspectives. Sixteen instructors (76%) referred to this idea as international students' lack of ability or 'willingness' to explore varied points of view. In their comments, the instructors stressed that the challenge that some international students face while participating in discussions is that they are required to argue from opposite points of view or question what they read or hear. The instructors observed that arguing and questioning is especially challenging for the students who come from cultures which value rote learning and memorization. This lack of students' comfort to question what they read or hear was associated by the instructors with the lack of freedom of expression in students' home cultures and with strong religious beliefs which make students see only one side of an issue. Six instructors identified students from the Middle East and East Asia as the ones who are most challenged with tasks requiring offering a personal opinion or considering various perspectives. The multiple examples provided by these instructors are reflected by Ms. Drake's statement: "Saudis are taught not to question certain areas of doctrine (for example, that the man was created by Allah and did not evolve). Japanese students are taught not to give contrary opinions and are perplexed when asked to do so. Chinese students usually want to copy a model in writing and not to think too hard about structuring an argument." These comments reveal that instructors teaching academic English language courses view multiple perspectives and considering options as indispensable attributes of academic thinking. They also believe that their students from East Asia and the Middle East, or non-Western countries in general, are not accustomed to providing multiple perspectives.

*Cultural construct theme three.* Challenges in being able to conceptualize multiple perspectives is the third theme present in the instructors' responses, referred to as lack of

independent thinking, or as some instructors phrased it, “not thinking for oneself,” an attribute expected of students in academic settings. Fifteen instructors (71%) attributed the reason as to why some international students are not independent thinkers, unable to form their own opinions or question others’ statements, to their cultural upbringing and educational experiences. Ms. Reagan observed that some of her students from mainland China told her that “they have never really thought about what they believe before.” She has also noted that Arab students who have not traveled abroad and have not read extensively have difficulty differentiating between a fact and opinion. They do not seem to be interested in knowing why their answers were not right but simply want to know which answer is right. Ms. Reagan, who voiced other instructors’ similar observations about their students’ educational systems in their home countries, referred to Paulo Freire’s ‘banking’ system. In Freire’s ‘banking’ model of education, the teacher is viewed as an expert who deposits knowledge into students’ minds without encouraging them to think about what they are learning. Another instructor shared her insights on how these clashes of cultural values may be detrimental for students’ learning experience. She reflected that not only do these students feel uncomfortable analyzing and evaluating, which are core practices in academic courses, but “they see these practices as undermining a source of knowledge” (Ms. Brodsky).

A noteworthy example comes from Ms. Jazz who teaches one-month immersion courses with a focus on innovation and technology for college students enrolled in science related majors in their home countries. They are high intermediate to advanced English proficiency students, and it is assumed that they are familiar with the topics of the course but need to learn new vocabulary. “It has been in these classes where I have seen critical thinking to be a skill that needs to be further developed because the students seem to have a hard time questioning the possible negative effects that innovation and technology may have on society.”

*Cultural construct theme four.* The fourth theme of critical thinking as a cultural concept is related to rhetorical conventions in academic writing. Five instructors (24%) commented on culturally determined rhetorical conventions and how challenging these conventions are for international students. The instructors' remarks on rhetorical aspects varied from a passing mention that "writing patterns vary between cultures" (Mr. Vester), to specific issues related to quoting outside sources, plagiarism, and paraphrasing. These specific comments were concerned with some students not acknowledging the sources of the borrowed ideas and committing what is regarded in the US as plagiarism. The instructors noticed that this lack of rigor of citing outside sources among Chinese students, for example, is the result of the unstated assumption that when they write academic papers in China, none of the ideas that they present are going to be their original thoughts. Hence, there is no need for citation.

*Critical thinking and real-life contexts, collaboration, and mediation.* In the following section, I present the instructors' views on other sociocultural elements of critical thinking instruction compiled from the instructors' responses to question 12 on real life context, question 13 on collaboration, and question 10 on mediation. However, I will not include the instructor's comments pertaining to their practices since these will be presented in the next section.

The analysis of the open-ended responses to the questions about real life context, collaboration, and mediation did not indicate any major differences when compared to their opinions in the closed-ended segments of these questions. Therefore, to simplify further analysis, the responses "strongly agree" and "agree" were combined for the category "necessary for CT instruction" and "strongly disagree" and "disagree" were combined for the category "not necessary for CT instruction."

As illustrated in Table 12, only three out of 21 instructors disagreed with the statement that critical thinking skills need to be taught in real life contexts.

**Table 12.** Instructors' views on importance of real life contexts, collaboration and mediation in teaching critical thinking

	Necessary in CT instruction	Not necessary in CT instruction	Undecided (agree AND disagree)	No opinion
Real Life Contexts Q 12	18	3		
Collaboration Q 13	14	3	2	2
Mediation or Modeling Q10	20			1

The question of whether or not collaboration in the classroom is a necessary component in critical thinking instruction generated a wider variety of responses. The analysis of the responses on the topic of collaboration revealed that 14 instructors (67%) believed that collaboration is helpful in forging critical thinking. Three themes emerged among the responses supporting collaboration: (a) exchanges of opinions and perspectives are always stimulating and augment understanding (9 instructors), (b) collaboration offers feedback which stimulates thinking (4 instructors), (c) collaboration can be a source of modelling how to think critically (3 instructors). The two instructors who selected both 'agree' and 'disagree' as their response explained that while collaboration is a strong element of instructional practice, it does not always provide the best learning environment. Not all students may be actively involved in classroom collaboration because (a) they are not used to this form of independent work, or (b) they may be disinterested and disengaged, so they do not collaborate equally, or (c) have no original thoughts

to offer. The same words of caution were expressed by two instructors who thought that collaboration is a necessary element of the classroom but also noticed that some students may feel uncomfortable working with others either because of individual preferences or cultural upbringing. In such cases, the instructors suggested, collaboration may be counterproductive. Two of the three instructors who just disagreed with the idea of collaboration as an integral part of critical thinking instruction contradicted their ratings with the open-ended responses. Ms. McKay said that individuals can think critically on their own, but collaboration broadens perspectives. Mrs. Davis said that critical thinking can be developed individually but requires feedback. The third instructor, Mr. Hemingway, defended his choice of 'disagree' by saying that critical thinking must be acquired individually before asking students to work together. Asking students to work together to develop critical thinking is "putting the cart before the horse."

There was more agreement, 95%, among the instructors on the importance of mediation in teaching critical thinking. They stated in their open-ended responses that mediation in the form of modeling critical thinking and scaffolding difficult concepts is a critical element of teaching critical thinking.

*Real life contexts, collaboration, and mediation in instructors' practice.* The sociocultural elements which the instructors implement in their own practice are presented in Table 13.

**Table 13.** Sociocultural elements in instructors' teaching practices

---

Number of Instructors Citing Examples of Sociocultural Elements		
Real life contexts	10	48%
Collaboration	13	62%
Mediation and Modeling	17	81%

---

The sociocultural element most frequently referred to in the instructors' teaching practices was mediation and modeling (81%). The instructors stressed in their open-ended responses that modeling is a crucial tool to teach their students new concepts. The examples of mediation and modeling fell into three categories; (a) to explain the teachers' own thinking process/think aloud, (b) to ask questions that go beyond the text or a situation at hand, (c) to provide feedback to students' responses, and (d) to provide the students with a step by step list of tasks. The second most frequent sociocultural element was collaboration (62%). The examples of collaboration included debates, discussions, group projects and presentations. The least frequent sociocultural element was the inclusion of real life contexts (48%). The examples of real life contexts were of real life topics or topics that matter to students. A different response was given by Mr. Arty, who commented that teaching critical thinking skills through literature is actually preparing students to use critical thinking in real life, and therefore he felt he was teaching in real life contexts. When the instructors' responses related to their recognition of sociocultural elements in teaching practices in general were compared to the examples of their own practices, a discrepancy between theory and practice became apparent. The comparison of the instructors'

responses representing their understanding and application of sociocultural elements in teaching practices is presented in Table 14.

**Table 14.** Sociocultural elements in theory vs in practice

\Sociocultural Elements in Instructors' Responses		
	<u>In Theory</u>	<u>In Practice</u>
Real life contexts	86%	48%
Collaboration	76%	62%
Mediation or modeling	95%	81%

All three elements, real life contexts, collaboration, and mediation, were supported in the instructors' responses regarding teaching from a sociocultural perspective in general. However, they were not as frequently mentioned in examples of the instructors' teaching practices.

#### **4.1.4 Instructors' Views on Explicit Instruction in Teaching Critical Thinking**

Ninety percent of all participants expressed a belief that critical thinking has to be taught explicitly, as indicated by their close-ended responses to question 6 represented in Table 15.

**Table 15.** Need for explicit critical thinking instructions for international students

	Strongly Agree	Agree	Disagree/Strongly Disagree	No opinion
Number of instructors for or against explicit CT instruction	10	9	0	2

Ten instructors expressed strong belief, choosing the response “strongly agree,” that international students need explicit instruction in critical thinking. Nine instructors expressed moderate support, choosing the response “agree,” for the explicit instruction in critical thinking. The need for explicit instruction expressed in the instructors’ responses was tied to their views of critical thinking as a cultural concept. “Critical thinking skills taught in the US are specific to U.S. / Western culture, so they would need to be explicitly taught to ESL students” (Ms. Tate).

Other instructors also noticed the discrepancy between their own understanding of critical thinking due to their having been educated in the US and that of their international students. As a result, they felt that preparation for academic courses in the US required explicit instruction in critical thinking skills. The instructors’ belief that critical thinking needs to be taught explicitly was accompanied by numerous statements about instructional practices through which critical thinking can be taught explicitly. The instructors mentioned modelling and scaffolding as their main tools of mediation. The belief in a need for explicit instruction in critical thinking was not shared by two instructors. In both cases, it appeared that the instructors either did not understand what was meant by explicit instruction or that critical thinking was understood as an individual activity and any attempt to make critical thinking explicit to students denied them the opportunity to think for themselves.

***Reasons why critical thinking needs to be taught explicitly.*** The reasons provided in the open-ended segment of question 6 by the instructors in support of their opinion that critical thinking requires explicit instruction reflect their views about critical thinking as a cultural concept. Table 16 summarizes the reasons listed by the instructors in support of explicit critical thinking instruction. Their reasons encapsulated what international students need to learn in order to process information and to think in academic ways consistent with expectations in US

universities: (a) question all sources without accepting the information at face value, (b) be inquisitive and learn on your own, and (c) become aware of how language carries layers of meaning, most of which have cultural connotations.

**Table 16.** Reasons in support of explicit critical thinking instruction for ESL students

Reasons Pertaining to ESL Students Only	Number of Instructors
Critical thinking is a cultural construct not shared by all cultures	16
Their cultures do not encourage questioning texts or teachers and authorities (sources)	7
Their cultures stress rote learning and memorization and being inquisitive	3
Nuanced language is imbued with cultural connotations	1

A small number of instructors (5 out of 21 / 24%) commented that the explicit instruction in critical reading, critical writing, debating, and structuring arguments involves the same skills that a lot of students educated in the US need to learn when they enter college. According to those participants, while critical thinking is an integral element of the academic world, see Table 17, some students entering universities from the US educational system are not categorically independent learners and thinkers. Such views were congruent with the reservation expressed by two other instructors in the open-ended segment of question 11 in which they stated that even within US society there are sharp differences in the level of engagement in critical thinking.

**Table 17.** Reasons in support of explicit critical instruction for all students, including ESL

Reasons Pertaining to U.S. Educated and ESL Students	Number of Instructors
All freshman need CT training to know academic expectations to be academically successful	3
All students need practice in CT to disentangle nuanced language of ambiguities and contradictions	1
Some students are natural critical thinkers, some are not and need CT instruction	1

#### **4.1.5 Summary of Findings to Research Question 1**

The overall picture of the responses to questions related to Research Question 1 indicated that all participants identified some elements of critical thinking, and 29% of the instructors identified all elements. Instructors could identify the characteristics of critical thinking necessary to design effective instructional practices for developing critical thinking in language support programs. The majority of respondents (76%) also believed that critical thinking was a cultural construct and that international students may have been socialized into a way of thinking that was not consistent with the academic expectations in US universities. It is possible that this belief led some teachers (90%) to state that explicit instruction was necessary to prepare students for entrance into the US university community. The majority of participants recognized sociocultural elements of instructional practices, but only a few participants provide examples of implementing them in their educational practices.

**4.2 RESEARCH QUESTION 2: ARE CRITICAL THINKING SKILLS ADDRESSED IN LANGUAGE PROGRAMS? IF YES, HOW ARE THEY ADDRESSED?**

**4.2.1 Critical Thinking in Course Learning Objectives and Assessment Procedures**

Instructors’ responses to the close-ended portions of questions 9 and 16, indicating whether or not critical thinking was addressed in the curricula of the courses they taught, are presented in Table 18. The high percentage of teachers’ responses in the ‘agree’ category to the curriculum and assessment questions (Table 18) does not necessarily mean that critical thinking is actually addressed in the curricular guidelines of their programs, which is discussed later in this chapter.

**Table 18.** Critical thinking addressed in instructors’ courses

Number of Instructors Identifying Critical Thinking in Course Curricula							
	Strongly Agree	Agree	Agree/Disagree	Disagree	Strongly Disagree	No Opinion	No Opinion/Disagree
Question 9	3	14	2	2	0	0	0
Question 16	1	10	4	4	1	1	1

Question 9 inquired about critical thinking being integrated into the curricula of the instructors’ courses in general. Question 16 addressed curricular built-in procedures to assess students’ critical thinking development. These two questions complement each other, meaning that a well-designed language program with critical thinking in its learning objectives also addresses critical

thinking assessment procedures in the curriculum guidelines. However, the analysis of instructors’ responses revealed a discrepancy noted between the choices of their answers to question 9 versus question 16. More instructors (29%) agreed that critical thinking is represented in their curricula (17 instructors) when compared to the number of instructors who agreed that it is represented in the assessment instruments (11 instructors). When individual instructors’ responses to questions 9 and 16 were compared for each instructor, it was discovered that only 13 instructors (62%) were consistent in their responses, as illustrated in Table 19.

**Table 19.** Consistency in instructors’ responses to critical thinking being represented in their curricula

Responses to Close-Ended Portion of Questions about Curriculum and Assessment	
Consistent responses to curriculum guidelines and assessment questions (9 and 16)	Different positions in responses to curriculum guidelines and assessment (9 and 16)
13 (62%)	8 (38%)

As seen in Table 19, 38 % of the instructors indicated in their close-ended responses that they either teach critical thinking skills but do not assess them, or that they do not teach critical thinking but implement critical thinking assessment. To identify the cause of this inconsistency, the open-ended portions of the curriculum guidelines and assessment questions were analyzed. Through this analysis it was discovered that some of the close-ended “agree” ratings were not aligned with the open-ended responses to the same question. The analysis of the misaligned open-ended responses revealed that some instructors referred to textbooks or instructional interventions which they initiated as their curricular objectives and curricular assessment procedures. For example, seven instructors used their open-ended responses to make a statement about critical thinking addressed by their curricula based on whether or not the textbooks in their

courses addressed critical thinking. Six instructors discussed how they designed activities for students that promoted the development of critical thinking abilities. These inconsistencies indicated that the close-ended “agree” responses were not reliable and that critical thinking skills were not represented in the actual curricula of the courses these instructors taught. To further examine if any inconsistencies were associated with language programs rather than individual instructors, the close-ended and open-ended responses were clustered for each university.

*Institutional differences in representation of critical thinking in curricula.* When the instructors’ close-ended and open-ended responses to questions about curriculum and assessment were clustered by each university to examine the uniformity of their responses regarding the same program, another finding emerged from the analysis. The instructors from the same institution shared either the consistent or inconsistent characteristics of their responses. The instructors who did not change their position on their responses between the questions about curriculum and assessment and whose open-ended responses were aligned with the close-ended responses were from three universities, which equals 50% of the universities represented by the participants. All instructors from these three universities expressed consensus that their programs address critical thinking instruction and critical thinking assessment in language curricula. The other 50% of the instructors’ close-ended responses were not consistent or were not aligned with their open-ended responses, see Table 20.

**Table 20.** Consistency of responses to questions 9 and 16

Consensus or Lack of Consensus among Instructors Questions 9 and 16	
Consensus on CT in language curricula: All affirmative for close-ended questions 9 and 16 and aligned with open-ended portions	Different positions on CT in language curricula and misaligned responses in close and open-ended portions
University IV University V University VI	University I University II University III

Table 20 illustrates that all instructors from Universities IV, V, and VI expressed consensus that critical thinking was addressed in the learning objectives and in the assessment procedures of their curricula. Moreover, their close-ended ratings were aligned with their open-ended remarks, which strengthened the overall reliability of their responses. In contrast, the instructors from Universities I, II, and III did not express a consensus within their respective institutions regarding whether or not critical thinking is addressed in their curricula and assessment instruments. In addition to this lack of consensus in the close-ended responses to curriculum and assessment questions, the instructors' close-ended responses indicating that critical thinking was addressed in the curricular objectives or assessment were not aligned with their open-ended responses. Their open-ended responses lacked evidence to validate their close-ended ratings.

**Consensus group.** The consistent alignment between the close-ended and open-ended responses of the instructors from Universities IV, V, and VI is an indicator that critical thinking is systematically addressed in their programs. The instructors in the consensus group all responded 'strongly agree' or 'agree' that critical thinking was taught and assessed in their courses. Their open-ended responses matched their close-ended ratings. They reported that critical thinking was a strong element in the learning objectives of their courses designed for

academically bound students. These programs were characterized by addressing critical thinking throughout all levels. Another characteristics shared by the language programs at the three universities was a careful selection of the instructional materials to match the critical thinking learning objectives. This is exemplified in the voice of Ms. Spencer, “Each level includes SLOs that build critical thinking skills. [...] Because the texts must meet our SLO requirements, they have questions and tasks that encourage critical thinking.” The instructors in this group also mentioned that they go beyond the curricular instructional activities and enrich the program with their own critical thinking instructional practice. For example. Ms. Tate observed, “Critical thinking skills are in the textbook, the written curriculum, and my own teaching pedagogy.” Thus, the instructors’ comments reflected that critical thinking instruction is robust in their language programs.

*No consensus group.* The no consensus group exhibited a lack of consistency between the responses to the curriculum and assessment questions in misaligned close-ended and open-ended responses and close-ended ratings. The contradiction in their responses indicated that critical thinking is not addressed in their curricula of the language programs in Universities I, II, and III. The responses of the instructors in this group ranged from ‘strongly disagree’ to ‘agree’ within each university. Three instructors indicated that critical thinking is neither present in curricula as learning objectives nor in curricular assessment procedures. For example, Mr. Hemingway’s split ratings (agree/disagree) to both curriculum and assessment questions indicated that critical thinking was represented in the reading textbook but not in the curriculum guidelines for the advanced reading courses that he taught. The learning outcomes in his reading course curriculum notes state that students will be “able to read a variety of texts, skim and scan, show their understanding of the argument of a text by paraphrasing and summarizing, and use an

English language dictionary,” which, according to him, represent academic skills but not critical thinking skills.

The remaining instructors in this group selected ‘agree’ responses to indicate that critical thinking was represented in their curricula, curricular assessment instruments, or both. However, the analysis of the open-ended responses with examples of critical thinking instruction or assessment in curricular guidelines demonstrated a discrepancy between the instructors’ ratings and their open-ended responses. The open-ended responses were determined to be invalid examples of critical thinking instruction or assessment represented in their curricula based on four types of discrepancies: (a) identifying critical thinking instructional activities in textbooks in lieu of curricular objectives, (b) providing examples of their own contribution to critical thinking instruction as justification that critical thinking was addressed in the curriculum, (c) listing academic literacy skills, including knowledge of rhetorical conventions as an example of critical thinking addressed by curricular guidelines, and (d) providing vague statements such as “the role of the teacher to emphasize these skills is very important,” (Ms. Garbo), or “certain activities are created to challenge student critical thinking” (Ms. McKay).

#### **4.2.2 Evidence of Critical Thinking Instruction in Instructors’ Practice**

As indicated in the previous section, critical thinking was incorporated into the language curricula in 50% of the universities represented by the participants. The other 50% of the universities’ language programs did not include critical thinking directly in their curricula. This distinction between the universities guided the following analysis of examples of instructional practices identified in responses to questions 1, 10, 13, 14, 15, 16, and 20.

*Critical thinking instructional practices guided by language curricula (consensus group)*). The instructors from University IV, V, and VI provided examples of critical thinking instruction that overlap with all five codes of the coding scheme, presented in Chapter 3 (see Table 21). It is worth noting that this was equally true for each of these three universities. Some of the assignments require complex critical thinking involving various skills, but to simplify the presentations of the findings, each assignment or instructional practice is listed under only one code.

**Table 21.** Examples of critical thinking instruction guided by curricular objectives

CT Codes	Examples of Instruction and Assignments
I. Identify a Problem or Argument and Find a Solution	Present a problem/solution presentation. Participate in a debate. Defend the assigned position. Defend your argument with evidence. Identify counterarguments to a proposed solution. Write a persuasive essay.
II. Evaluate and Draw Conclusions to Make a Decision	Critique and evaluate texts. Propose thoughtful and realistic solutions in debates. Question claims in an argument. Evaluate credibility of a source.
III. Identify Perspectives and Relationships	Draw connection between various texts. Explain how the main character in a novel is different from a modern-day hero. Propose different solutions to challenges when transitioning to a new university. Use background knowledge of subject matter to make references.
IV. Gain New Knowledge and Understanding	Anticipate challenges when transitioning to a new university. Reflect upon these challenges. Infer meaning from texts. Evaluate text organization to derive meaning from an academic text. Infer the meaning from the tone of a writer of a speaker.
V. Awareness of Language Forms to Convey the Message	Discuss the writers' choice of rhetorical devices. Identify humor and irony in social media texts to decipher the meaning. Identify grammar in context, for example grammatical form in

Table 21 continued

advertisements

Revise academic assignments to pay attention to both form and meaning of grammatical structures.

Identify suprasegmental features that convey meaning (stress, intonation, pausing) in speaking

Chose quotes and sources that support the thesis to create coherent texts.

Identify which rhetorical style to use for a given assignment.

---

The instructors from Universities IV, V, and VI provided examples of critical thinking instructional practices in a variety of courses and levels, ranging from beginning to advanced English Proficiency. Courses for lower English proficiency students had simplified tasks tied to language acquisition objectives, for example, identifying grammar forms used in advertisements, such as on cereal boxes. Critical thinking at the lower level was connected more to language form and production. In courses for high proficiency levels, intermediate and above, the curricula are designed around content topics which require a variety of critical thinking skills to complete tasks. Debates and discussions were the most common mode of instruction mentioned by the instructors at the three universities. The instructors noted that students participating in debates learn how to think in the problem/solution vein, how to identify various perspectives of the same topic, how to identify underlying premises of each position of an argument, and how to offer counter arguments. Assignments requiring critical thinking to identify perspectives and various positions on a variety of issues were present in speaking, reading, and writing courses in this group of universities. The instructors' responses provided evidence that critical thinking was consistently represented in their curricula while students were provided language instruction throughout each program.

*Critical thinking instructional practices not guided by language curricula but present in instructors' practices (no consensus group).* Examples of critical thinking instruction

provided by instructors as their own contribution to the curricula that did not include critical thinking instructional guidelines are presented in Table 22. Similarly, to the consensus group, all five codes of critical thinking were identified in the instructors' responses, see Table 22.

**Table 22.** Examples of instructors' own contribution to critical thinking instruction

CT Codes	Examples of Instruction and Assignments
I. Identify a Problem or Argument and Find a Solution	Identify hidden contradictions in a literary text. Argue in your writing on the behalf of one of the explanations of an ambiguous passage in a story. What is not said in this text and why?
II. Evaluate and Draw Conclusions to Make a Decision	Evaluate which TOEFL questions to answer based on the allotted time. Differentiate between a fact and opinion. Rank ideas based on usefulness. Should we believe an X news article, or should we ask other questions? Assess the quality of a short story.
III. Identify Perspectives and Relationships	Compare several points of view and identify the opposing viewpoints and the reasons behind them. Raise questions about texts. Participate in a panel discussion. Identify the author's opinion. Express your opinion/personal reaction to a story. Participate in a discussion after listening to a lecture on a controversial issue. Discuss an ambiguous passage. Offer possible explanations. Would a news story with a different political leaning have the same headline about the same event?
IV. Gain New Knowledge and Understanding	Identify your gaps in knowledge, including cultural references. Predict what will come next in a text. Reflect on your own learning or performance.
V. Awareness of Language Forms to Convey the Message	Interpret academic genres. Decide which vocabulary affects meaning/ identify key vocabulary in a text. Decide from context which tense to use. Effectively organize information in an essay. Understand internal logic of a sentence

Identify positions or beliefs embedded in language.  
Identify sarcasm in a text.  
What aspect of the writing indicate the genre and the author's intention?

---

It is worth mentioning that while all five codes representing critical thinking were identified in the instructional practices initiated by the instructors, the codes were not equally distributed among the instructors in this group. Code I, critical thinking leading to identifying a problem and finding a solution, was identified only in the responses of one instructor, Mr. Arty. This finding will be discussed in light of personal backgrounds of the instructors in Chapter 5. Further analysis of the types of examples provided by the instructors in this group revealed that the majority of the critical thinking instruction was intended for individual writing assignments, group discussions, and panel presentations. Debates were not mentioned by the instructors in this group. The examples of critical thinking instruction were mostly drawn from reading and writing courses, ranging from high intermediate to advanced courses taken for credit. The majority of the instructors focused on disentangling nuanced messages in texts to identify the authors' positions and engaging students into thinking about alternative viewpoints.

Comparison of the distribution of the codes assigned to critical thinking instruction initiated by the instructors themselves among the three universities (I, II, and III) led to another finding. As may be seen in Table 23, 50% or less of language instructors at either of the three universities initiated instruction fostering critical thinking.

**Table 23.** Instructors teaching critical thinking as their contribution

Percentage of Instructors			
School	No Evidence of CT Codes	Evidence of All Five Codes	Evidence of One, Two, or Three Codes
University I	50%	0%	50%
University II	20%	40%	40%
University III	33%	17%	50%

The percentage of instructors whose responses indicated that they did not engage in critical thinking instruction ranged from 20% to 50% within each institution. The university with the highest percentage of instructors who did not engage in critical thinking instruction, University I, was also the university from which none of the instructors' critical thinking instruction embraced all five areas of critical thinking represented by the five codes. These findings point to the fact that despite the instructors' effort and beliefs that were engaging their students in critical thinking practices, they were not able to address critical thinking comprehensively and systematically without curricular guidelines. This finding is highlighted by the overall comparison of the number of instructors in the no consensus group addressing critical thinking in their instructional practice, Table 24.

**Table 24.** Critical thinking addressed in no consensus group

No Consensus Instructors Addressing Critical Thinking Universities I, II, III		
No Evidence of Codes I-V	Evidence of All Five Codes	Evidence of One, Two, or Three Codes
33%	20%	47%

As illustrated in Table 24, the percentage of the instructors from Universities I, II, and III who comprehensively addressed critical thinking in their practice, identified by the presence of all five codes in their responses, was 20%. These instructors indicated in their open-ended responses that their critical thinking pedagogy and the selection of instructional materials facilitating critical thinking instruction was their own contribution to the curricula of their programs. Critical thinking was addressed in a less systematic manner by 47% of the instructors in this group. Their responses indicated the evidence of one, two, or three areas of critical thinking of the coding scheme. A lack of evidence of critical thinking in instructional practice was discovered in the responses of 33% of the instructors in this group, even if some of them pledged that they included critical thinking in their lessons.

*Instructors’ perception of their students’ readiness for academic programs.* Intended to be built upon the instructors’ reflections of their critical thinking instructional practice in the previous questions, question 23 at the end of the survey inquired about the instructors’ perception of their students’ readiness for academic programs upon their having completed the language courses. The instructors’ responses to question 23 are presented in Table 25.

**Table 25.** Instructors’ perception of students’ readiness for academic programs

Percentage of Instructors by University Clusters				
	Yes	Only Some Students	No	Not Sure
Universities I, II, III	20%	13%	40%	27%
Universities IV, V, VI	100%			

As can be seen in Table 25, the majority of the instructors (80%) from Universities I, II, and III did not feel that their programs prepared international students for academic demands in university degree programs. Their open-ended comments supported their ratings, exemplified by a remark made by Ms. Davis who said, “we do little to ensure this,” meaning to ensure academic preparation of international students in her program. The 20% of the instructors who felt that their students were well-prepared for academic tasks were mostly instructors whose critical thinking instruction was their own contribution to their language curricula. In contrast, the instructors from Universities IV, V, and VI, who taught language courses with built-in critical assessment instruction, univocally agreed that the students who complete their programs are ready for the academic world. Their comments, such as “Our program is designed to support academically bound students,” (Ms. Walsh, University IV) and “Our program has a strong emphasis on preparing students to enter a US university” (Mr. Stewart, University IV), supported their ratings. Ms. Spencer’s (University VI) comment highlighted the strength of her program in preparing international students for academic demands and the students’ abilities to be independent learners. She said, “I observed an ESL class of upper-level matriculated students (juniors and seniors) and I was impressed by how well they handled the critical thinking tasks in the course.” These remarks about academic readiness of the students who complete language programs with curricula guided by critical thinking learning objectives point to the importance of critical thinking being addressed in the curricula of all language support programs preparing international students for university level studies in the US.

### **4.2.3 Summary of Findings to Research Question 2**

The analysis of the instructors' responses to Research Question 2, indicating which critical thinking skills were addressed in their curricula and in their practices, revealed that critical thinking was addressed in the curricula of 50% of the surveyed language programs. All of the instructors in these programs provided examples overlapping with all five codes of the coding scheme. The instructors also felt that the students completing their programs were well prepared for academic demands in academic programs in the US. While some instructors in the other 50% of the programs tried to address critical thinking in their practice on their own accord, only 20% of them addressed all five critical thinking areas, codes I-V, in their teaching practices. In addition, only 20% of the instructors from the programs that did not include critical thinking in the curricular objectives felt that the students matriculating from their language programs were prepared for academic work in US institutions of higher education.

### **4.3 RESEARCH QUESTION 3: WHAT DO LANGUAGE INSTRUCTORS PERCEIVE AS OBSTACLES IN IMPLEMENTATION OF CRITICAL THINKING INSTRUCTION?**

Instructors' open-ended responses to questions 9, 16, 17, 21, and 27 as well as follow-up interviews were analyzed to identify what language instructors perceive as obstacles in teaching critical thinking. The results are presented for the two university clusters already presented and analyzed in section 4.2. As previously noted, Universities I, II, and III represent institutions where all instructors responded that their language programs integrate critical thinking objectives

into their language curricula. Universities IV, V, and VI represent instructors whose responses indicated that critical thinking is not addressed in the curricula of their programs. The instructors' responses are represented in Table 26. Instructors in both groups reported obstacles to implementing critical thinking (see Table 26 below).

**Table 26.** Obstacles in implementation of critical thinking instruction

Perceived Possible Obstacles in Critical Thinking (CT) Instruction Implementation	
Schools	Obstacles and Number of Times Mentioned
Universities I, II, III	<ul style="list-style-type: none"> <li>Program's focus on language skills assessment (6)</li> <li>Lack of time under pressure to cover the content (5)</li> <li>Lack of textbooks encouraging critical thinking (5)</li> <li>Lack of teachers' experience and training in CT instruction (5)</li> <li>Students' low English level proficiency (5)</li> <li>Lack of willingness on the part of administrators to implement CT (2)</li> <li>Resistance from other instructors to incorporate CT (2)</li> <li>Students' lack of understanding the value of learning CT and a lack of motivation (2)</li> <li>Difficulty of teaching and evaluating CT (1)</li> </ul>
Universities IV, V, VI	<ul style="list-style-type: none"> <li>Vagueness of the concept of CT (1)</li> <li>Lack of confidence in how to define and assess CT (1)</li> <li>Lack of teacher training in CT (1)</li> <li>Lack of student motivation to challenge themselves to develop CT (1)</li> <li>More time needed for students with lower English proficiency (1)</li> <li>Hard to develop materials because CT is culturally dependent (1)</li> <li>Required continuous support for and feedback to students (1)</li> </ul>

As shown in Table 26, the perception of possible obstacles in implementing critical thinking instruction in language programs both differed and overlapped between the two groups of instructors. The instructors in the first group, Universities I, II, and III, listed obstacles that were tied to their curriculum and instructional outcomes that were expected by their programs. These instructors perceived the curriculum of their language program, favoring teaching towards

language assessment over developing critical thinking, as the main obstacle. As Mr. Vester stated, such curriculum design does not leave room for developing critical thinking because it focuses on the final product, students' scores and grades, rather than on analyzing and understanding the thinking process that leads students to their responses. Moreover, an insufficient amount of time to teach critical thinking was viewed by the instructors as a natural consequence of programs that focus on covering the content to be tested. Inadequate instructional materials, including textbooks, were also seen as hindering critical thinking instruction. The instructors also felt that what prevented them from implementing or promoting critical thinking instruction in their programs was resistance on the part of administrators and fellow instructors to revise the curriculum or replace current textbooks with ones that are written with critical thinking learning objectives in mind. Students' low English language proficiency and their lack of readiness for critical thinking instruction were also included among the factors that may impede critical thinking instruction. In addition, the instructors in this group expressed concern that critical thinking should not be taught to students with low English proficiency because they do not have enough language skills to express their thinking. In summary, instructors from these institutions believed that the lack of attention to critical thinking was derived from the nature of the curriculum and from the specific goals of their respective programs.

The instructors from Universities IV, V, and VI did not include any remarks regarding curriculum and did not specify course and program outcomes as impediments in addressing critical thinking during instruction. In contrast, they commented on how critical thinking may be difficult to teach because it is not an easy concept to define. As a result, teachers may lack confidence in understanding exactly what critical thinking means, how to teach it, and how to assess it. It was also noted in this group of instructors that teaching critical thinking is a

demanding task for teachers because they must provide systematic support and feedback to students' thinking processes. Low English proficiency was not viewed by the instructors in this group as a major impediment, but it was noticed that teaching critical thinking to students with lower English proficiency may require additional time. It was also reported that instructional critical thinking materials are not easily developed because what encompasses critical thinking may vary among cultures. In this group of institutions, we learn that theoretical constraints on teaching critical thinking may be internal, based on teachers' own lack of preparation and time required to work with students with lower English language proficiency. However, none of these were self-reported as actual obstacles in the instructors' teaching practices. These responses contrast sharply with institutions in group I where constraints were seen as externally imposed on the basis of curriculum, program goals, and expected outcomes and preventing instructors from implementing critical thinking instruction.

The instructors from both groups of universities reported two similar observations about perceived obstacles in teaching critical thinking. Both groups reported a lack of training and experience in teaching critical thinking. However, it was mentioned more frequently among the instructors from Universities I, II, and III (5 times) when compared to Universities IV, V, and VI (1 time). The instructors in both groups also observed that teaching critical thinking may be especially challenging when students ignore the feedback on their thought processes. Some teachers expressed frustration about students who do not value the feedback that the teachers provide, who do not understand the purpose of teachers' comments prodding them to think more deeply, and who insist on completing "tasks in a simple way that does not involve critical thinking" (Ms. Spencer).

### **4.3.1 Summary of Findings to Research Question 3**

Taken together, the analysis of instructors' responses in which they addressed possible impediments in implementation of critical thinking instruction in language support programs revealed multiple challenges. One challenge was a lack of representation of critical thinking in the curricular guidelines of the programs that focus on acquiring language proficiency and on teaching to the tests that students will need to pass to enter US universities, such as the TOEFL or IELTS. Time constraints, insufficient instructional materials and resistance to implementation of critical thinking instruction on the part of administrators and fellow instructors were perceived as other obstacles in these programs. Some instructors also perceived the difficulty in understanding the concept and assessment of critical thinking as an additional challenge in teaching critical thinking. It is interesting to note that both groups of instructors recognized teachers' lack of experience in teaching critical thinking and students' lack of attention to feedback concerning critical thinking processes as well as lack of understanding the goal of teachers' feedback as further possible challenges in teaching critical thinking.

## **5.0 DISCUSSION AND IMPLICATIONS**

This chapter is devoted to conclusions and implications drawn from the findings of the study. Recommendations for intensive language programs for international students, suggestions for future research, and limitations of the study are also addressed.

### **5.1 DISCUSSION OF THE FINDINGS**

Based on the findings of this study, conclusions can be drawn about the instructors' understanding of the concept of critical thinking, their practice of critical thinking in intensive language programs, and the obstacles to integration of critical thinking instruction with language instruction.

#### **5.1.1 Instructors' Incomplete Understanding of the Concept of Critical Thinking**

The findings of the study revealed that the majority of the participants' understanding of critical thinking skills fell into the moderate and weak categories. Contradictions in their responses indicated that they did not have a clear understanding of the intellectual standards underlying critical thinking or how critical thinking can be taught through the content of their courses. The majority of the instructors teaching in the intensive language programs in which

language curricula include critical thinking learning objectives demonstrated moderate conceptualization of critical thinking. This limited conception of critical thinking was reflected in their follow-up interviews. The participants remarked in the interviews that they felt challenged by the task of defining critical thinking, found the topic to be unclear, or that they had never before been asked to articulate what critical thinking entails. One of the instructors summed up his reflections by calling critical thinking “a slippery concept.” The instructors’ reflection in the follow-up interviews were in accord with the general comments in the literature on critical thinking, indicating that critical thinking is an elusive concept that cannot be easily defined if it has not been thoroughly thought through (Ennis, 1993; Facione, 1992; Halpern, 2003). This finding is also consistent with conclusions of other researchers who observed that college faculty have a limited conception of critical thinking (Paul, Elder, & Bartell, 1997). The lack of substantive concept of critical thinking among the participants of the study was equally present in the responses of the ones who were and were not confident about their ability to define critical thinking. A similar pattern has been found in the literature on critical thinking that indicates that even the faculty who embrace the importance of including critical thinking as an instructional practice may not fully understand the concept of critical thinking (Ennis, 1987; Paul, 1993). For example, Paul, Elder, and Bartell (1997) reported that only 19% of the faculty interviewed could define critical thinking, but 89% claimed that it was one of their primary teaching objectives.

It is noteworthy to point out that some of the teachers in the programs in which critical thinking skills were part of the curricula did not have a clear and complete understanding of the concept of critical thinking. Thus, it is possible that without a deep understanding of the concept of critical thinking, these instructors may only rely on teaching procedures associated with

critical thinking instruction rather than facilitate the development of critical thinking in their students. This presupposition is derived from the lack of key concepts associated with critical thinking in the open-ended responses and follow-up interviews of some of the instructors in language programs with critical thinking orientation. Even though they claimed that they taught critical thinking, some of them did not name identifying key assumptions, relevant data, arriving at valid and logical conclusions, or being precise as evidence of what they meant by critical thinking. Therefore, it leads us to wonder how critical thinking curricula are being taught and whether some of the instructors merely rely on the activities that textbooks prescribe. This doubt is analogous to the skepticism expressed by Paul, Elder, and Bartell (1997). Paul, Elder, and Bartell posit that the faculty who have not developed their understanding of any concept of critical thinking and, as a result, who cannot articulate the intellectual standards associated with critical thinking are “in no position to foster critical thinking in their own students or to help them to foster it in their future students – except to inculcate into their students the same vague views that they have” (p. 8).

Given that the respondents were language instructors, it is also noteworthy that the category ‘awareness of language’ was the least cited critical thinking category since thinking is constructed in language. While the instructors mentioned that they address nuanced meanings in readings and coherence in writing courses, they did not associate coherent language and clarity of expressions with critical thinking.

### **5.1.2 Obstacles to Teaching Critical Thinking in Language Intensive Programs**

The major obstacle to teaching critical thinking in language courses was voiced by the instructors from programs that do not include critical thinking in their educational goals. In their

opinion, the curricular design oriented towards acquisition of language structures, measured by test scores, and not towards transformational learning experiences is the barrier to implementation of critical thinking instruction. Such curricular guidelines list structural and rhetorical patterns as learning objectives and include assessment tools that measure students' achievement according to their ability to produce these patterns successfully. The emphasis on students' passing language tests as the benchmark of their academic success was viewed by the instructors as the antithesis to a thinking curriculum. These instructors' observations about the design of their language programs parallel the voices in the literature on language teaching and learning that document the lack of focus on critical thinking in language teaching approaches and methods (Richards & Rodgers, 2001).

Language curricula with the sole focus on linguistic and rhetorical structures do not offer a selection of textbooks with integrated critical thinking and language materials and instructional activities. Consequently, a lack of textbooks with critical thinking objectives and critical thinking instructional guidelines integrated with language curricula was perceived by the instructors as another major obstacle in teaching critical thinking. Insufficient and inadequate approaches to critical thinking in textbooks is a widespread phenomenon across disciplines and has been addressed in the literature on critical thinking. For example, Haas and Keenley (1998) report that "most textbooks are organized to cover content rather than to stimulate critical thinking; they encourage an encyclopedic, factual approach to course content" (p. 64). As a result, assessment instruments that complement such textbooks do not test students' critical thinking within a given discipline but simply test recall of facts and information.

Time constraints were also pointed out by the participants as a major obstacle in merging critical thinking instruction with language content. While it is possible to create a curriculum that

addresses critical thinking and language learning objectives simultaneously, it is a very time-consuming process since, as one instructor teaching in a program with a focus on critical thinking observed, existing materials are scarce. Shaping critical thinking curricula may also require an on-going team effort and substantial time commitment from all instructors, as it was reported by instructors from one of the intensive language programs. Limitations in time were reported as a major impediment in addressing critical thinking among the instructors who understand the importance of helping students learn in an active way on their own but who teach in programs that do not address critical thinking in their curricula. These instructors are constrained by the program requirements to cover the amount of language instruction and assignments prescribed by their curriculum guidelines and to adhere to the testing guidelines and procedures. Always under the pressure of time to meet these curricular requirements and to teach to the tests, some instructors feel that they neglect teaching students how to raise questions, think through solutions, and to think on their own. No research to my knowledge has been conducted on the relationship of teachers' time to the inclusion of critical thinking skills in the ESL curriculum.

Lack of support by supervisors and colleagues and lack of collaboration across colleagues were also indicated as obstacles in teaching critical thinking skills in language programs that do not include critical thinking in their learning objectives. A few instructors from one of these programs reported resistance from their supervisor to any suggestions to revise the curriculum or to replace the current textbooks. Initiatives of one of the instructors to improve the curriculum to make it more critical thinking oriented were also met with resistance from her colleagues. Resistance of college faculty to teaching critical thinking, stemming from their lack of understanding of critical thinking and life-long experience of simply handing down information,

has been documented by previous research (Haas & Keeley, 1998). Faculty's lack of openness to embrace teaching critical thinking has also been attributed to their unwillingness to risk new approaches to their teaching. Developing a new approach to challenge students to think critically requires developing a new teaching philosophy (Keeley et al, 1995) and is associated with possible failure, and as a result, low student evaluations (Costa, 1981; Svinicki, 1996).

Lack of collaboration from colleagues and their lack of willingness to share teacher-designed critical thinking materials can also be an obstacle to teaching critical thinking for teachers who do not have experience in teaching critical thinking but are eager to learn how to do it. While this obstacle was reported by one instructor from a program in which critical thinking was not included in curricular guidelines, her observations may pertain to other institutions and carry important implications for language intensive programs. The unwillingness to collaborate was interpreted by the instructor as a job security mechanism. Most of the language instructors in that program work part-time and sign contracts for one semester at a time. The supervisors pay close attention to students' evaluation of the instructors and offer new contracts to the instructors with the highest evaluations. Therefore, the instructors who have developed materials highly valued by their students are not interested in sharing them with colleagues. Since many language instructors in intensive language programs across the country are offered only part-time contracts, competition for job security may be a factor preventing collaboration among instructors and sharing materials. Because of the delicate nature of this matter, it may not be easily admitted by many instructors. Hence, the importance of this finding lies in the courage of the one instructor who decided to talk about it openly. Her insight about this hidden issue may open a discussion forum among supervisors and program directors. They may possibly consider

how competition among instructors in intensive language programs is a detrimental factor for the quality of student preparation for academic readiness.

### **5.1.3 Background in Critical Thinking**

The results of the study also suggest that having a background in critical thinking is a prerequisite to having a strong conceptualization of critical thinking and developing instructional practices. This conclusion was drawn from the analysis of the biographical profiles of the instructors who conveyed a strong conceptualization of critical thinking in their questionnaire responses. Some of these instructors had an educational training in critical thinking, including graduate level critical thinking studies and courses in critical thinking instruction embedded in master's degrees in TESOL. Other instructors highlighted having been brought up in families that stressed the importance of being a critical thinker in every aspect of one's life and, therefore, naturally integrate critical thinking into their instructional practices and view education in any subject as education for thinking. The lack of background in critical thinking indicated by the rest, and the majority, of the instructors is representative of a systemic lack of critical thinking training among college instructors, which may result in their inability to develop critical thinking in their students (Bowers, 2006).

## **5.2 IMPLICATIONS AND RECOMMENDATIONS**

The study was designed with anticipation that the results would provide suggestions for implementation of critical thinking instruction in intensive language programs for international

students. The findings of the study carry implications for teacher education, professional development programs, intensive language programs' curricula design, material development, and language teachers' instructional practices for a thinking curriculum.

### **5.2.1 Teacher Education and Professional Development in Critical Thinking Instruction**

The most important implication drawn from the findings may be the need for systemic training in explicit critical thinking instruction in teacher education programs for language instructors. Most language teachers need to gain experience in methods of critical thinking instruction stemming from understanding the nature of critical thinking. As indicated by this study, even the instructors who understand the general nature of critical thinking may not be able to implement critical thinking pedagogy and help their students learn how to think critically. As a result, they feel that their students are not ready to face academic challenges in higher education that require critical thinking skills. Thus, the results of the study suggest that all programs offering language teaching degrees and certificates as well as TESOL or foreign language programs include instructional modules and training for developing ESL students' critical thinking skills. It is also advised that language instructors who have completed their teacher training have an opportunity to gain knowledge and experience in teaching critical thinking by attending professional development programs and workshops in critical thinking. The training needs to be provided by teacher education faculty who have a clear conceptualization of critical thinking and who can provide explicit instruction in basic concepts and principles of critical thinking. "It is essential for those who teach the teachers to have at least baseline knowledge of the concept of critical thinking" (Paul, Elder, & Bartell, 1997, p. 6). These recommendations are aligned with the recommendations made by numerous researchers in the last two decades

(Fogarty and McTighe, 1993; White, 2001; Torf, 2005) to mandate critical thinking as an integral element of pre-service training for all teachers.

The biggest hurdle in critical thinking training is that learners must become sceptic of their own understanding and pre-conceived ideas about what it means to think critically. To develop a critical thinking orientation in students requires developing a critical stance towards one's own beliefs and assumptions. Therefore, developing critical thinking is a *gestalt*-like experience, involving the entire person because it is as much a psychological process as it is a cognitive process. Consequently, it is a process of developing new aspects of one's identity. Critical thinking instructors must be able to nurture the affective and cognitive aspects of a person and be emphatic to the human tendency to resist a change, perceived as a threat to one's identity. A critical thinking trainer must also be emphatic to students' possible feelings of being confused and off-balance associated with questioning one's status quo and keep in mind that critical thinking is promoted by well-managed emotions (Halonen, 1995).

The caveat behind critical thinking training is that its effectiveness is directly related (a) to the intrinsic motivation of attendees to be reflective about their own thinking process and (b) to the fact that developing attributes of a critical thinker in addition to developing ways of reasoning is not a quick process. The caveat should not deter institutions from initiating training since and sustained practice are necessary steps in critical thinking education and have been documented to facilitate critical thinking development (McPeck, 1981). If critical thinking instructors are not available, a starting point for institutions may be contacting the Center for Critical Thinking, which offers critical thinking training at annual conferences, seminars, and online. The Center for Critical Thinking can be accessed on the Foundation for Critical Thinking website.

## 5.2.2 Teacher Training in Cultural Patterns of Critical Thinking

The recommendation to provide training in cultural patterns for critical thinking was drawn from the multiple comments made by the participants about a lack of critical thinking skills in the academic performance of students from East Asia and some students from the Middle East. The instructors' frustration about not being able to help the students learn these skills was inferred from these comments. The complaints of the instructors in this study often mirror the views of other English-speaking instructors of students from countries with Confucian cultures, who "are often characterized as passive, dependent, surface/rote learners prone to plagiarism and lacking critical thinking" (Ryan & Louie, 2008, p. 67). Becoming aware that critical thinking is a socio-cultural construct and is conceptualized differently in different cultures will help instructors become more sensitive to cross-cultural issues dealing with critical thinking. Hence, I propose that the training in cultural patterns of logical thinking address differences in styles of thinking, discussed in Chapter 2.

The pivotal concept in training in cultural patterns of critical thinking should be the notion that there are many different styles of reasoning. To quote Bourdieu (1998), "reason did not fall from heaven as a mysterious and forever inexplicable gift...it is historical through and through" p. 130, translation from Bourdieu, 2000, p. 109). Language instructors who expect students to engage in debates, argumentative writing, or in a questioning style of thinking may benefit from understanding that students from China, for example, "might be more in favour of striking a compromise in order to maintain harmonious relationships," which is a logical way of thinking in their "social environment which treasures harmony" (Chan & Yan, 2008, p. 60). Likewise, learning about the Japanese philosophical stance of embracing the irregular, *wabi-sabi*, may provide language instructors insights into other ways of seeing patterns and connections

between seemingly unrelated concepts and an insight into a different way of thinking. Instructors and intensive language program designers need to realize that different cultural patterns of thinking may be understood by students in theory, as abstract principles, but without ample practice they may not easily employ these patterns in their academic work.

Language teachers, and all instructors teaching international students for that matter, may understand their students' struggle to write according to academic standards of US universities by reflecting on different thought and text organizations associated with different cultural patterns and values. How text organization and rhetorical patterns are an integral part of thinking in a cultural way is encapsulated by a quote from Yoshino's (2004) essay, "Well-intentioned Ignorance Characterises British Attitudes to Foreign Students":

It is particularly infuriating to hear problems with such rhetorical styles attributed to imagined inadequacies in the student's education in their home country. I have often had conversations in which it has been suggested to me that Oriental students come from backgrounds in which originality and critical thinking are valued less than acceptance of orthodoxy. Apart from the lack of critical thinking apparent in the use of the category Oriental, such analysis is misleading because it confuses differences in style of expression with a lack of academic rigour. What it fails to understand is that a prizewinning English academic essay translated word for word into Japanese is likely to be received as clumsy and ill thought out. (in Ryan & Louie, 2008, p. 73).

Learning critical thinking standards expected in the academic world in English speaking countries requires students from different cultures to develop new thought habits and attitudes, and to develop a new identity as a critical thinker. International students need time and practice to learn to identify the differences between thinking patterns associated with different cultural contexts. "If students are taught to be more 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" (Chan & Yan, 2008, p. 61).

Professional development courses and teacher education courses can highlight the complex processes in developing these new cognitive patterns in students, which may be unlike their own ways of thinking, critiquing, and arguing. Such training can also provide a platform to discuss

(a) sources of stronger support for international students and (b) instructors' understanding of what is involved in learning how to think critically in English speaking academic communities.

### **5.2.3 Intensive Language Programs' Curriculum Re-design**

Another recommendation indicated by the findings is that language intensive programs with curricula objectives stated in terms of language competency revise their philosophies and include critical thinking as an explicit teaching and learning goal. Unless teaching critical thinking becomes a mission embraced by language program directors and supervisors, critical thinking instruction may be reduced to incidental occurrences depending on instructors' interest, prior experience, personal engagement, and their ability to develop appropriate materials that can facilitate students' language acquisition and development of critical thinking simultaneously. Since development of critical thinking skills and attitudes needs ample contextualized practice and applications to real issues (Ennis, 1993), it needs to be addressed at all levels of language proficiency. Reforming language curricula to integrate the explicit teaching of critical thinking skills may be one way to help those students who struggle with academic courses in which critical thinking is required to complete assignments, participate in class discussions, and write papers that involve critical analysis of academic topics. This recommendation is in accord with the call for overall reformation of college level curricula, alleging that "the teaching of critical

thinking should be integrated into all courses and in all classroom areas: lectures, discussions, homework, writing assignments, and exams” (Bowers, 2006, p. 10).

#### **5.2.4 Textbooks and Instructional Materials**

One of the main obstacles preventing the instructors in this study from implementing a critical thinking approach in their language courses was identified by the instructors as a dearth of textbooks and materials with critical thinking goals for English language learners. One instructor voiced a concern that the grammar textbooks he was using included texts that defied critical thinking (Mr. Hemingway). Because many of the participants commented on the shortage of textbooks appropriate for their students, I recommend that the publishers and instructional materials developers for English language learners make continuing efforts to integrate critical thinking instructional materials with English language instruction for all proficiency levels for college bound international students.

The paucity of critical thinking textbooks for language learners may result from the difficulty of merging language instruction with critical thinking objectives. Therefore, one of my recommendations is for in-program development of instructional materials to infuse critical thinking objectives into a language curriculum. Designing a new thinking curriculum for various levels of language development that would reflect a logical progression of language and critical thinking skills across the curriculum requires time and commitment on the part of administrators and instructors. For example, the instructors from a program that is successfully teaching critical thinking as an integrated skill in their language curriculum stressed that they have collaborated to re-design their curriculum materials and that they meet regularly to hone their curriculum and materials. Thus, it is highly recommended that directors of intensive language programs initiate

long-term collaboration among the instructors to design instructional materials that integrate English language proficiency and critical thinking if no textbooks or materials are available.

Engaging students who are English language learners in critical thinking starting at a lower English language proficiency can help them develop a strong foundation for argumentative writing and academic courses in general. A set of instructional routines that can be adopted for various levels of English proficiency can be accessed on Visible Thinking - Harvard Project Zero (<http://www.pz.harvard.edu/>). The routines were designed by Harvard University researchers to create cultures of thinking in classrooms and can be used in writing, speaking, and even grammar courses for English language learners. For example, asking questions such as “What makes you think so?” can lead students to think about the reasons behind their opinions. Routine class discussions preceding writing assignments are essential for students to process new information, calling for an integrated skills approach. “To learn a new idea, one must talk it, write it, and think it into his system” (Paul, 1997, p. 37). While language learning objectives cannot take a second place in an intensive language program, students’ oral and written responses can serve as the basis for grammar instruction, accompanied by textbook instructions and exercises. Teaching language skills in the context of students’ oral or written statements focuses language learning on meaning-making rather than on memorization of grammar rules.

Creating a negotiated syllabus, to which students contribute self-selected materials and negotiate them with the instructors (Clarke, 1991), is another approach to re-designing instructional materials. The negotiated syllabus approach provides educational experiences that stimulate critical thinking through the selection process and engage students in critical thinking more effectively because students choose the topics that they find interesting. In real life, people engage in thinking about, debating, or arguing for what they feel passionate about. Therefore,

making room in the syllabi for student generated materials may add the element of engagement with critical thinking instruction, often missing in dispassionate classroom analysis in critical thinking lessons (Giroux, 1994).

### **5.2.5 Considerations for a Thinking Language Curriculum**

Redesigning intensive language programs to engage students in critical thinking requires weaving the elements of argument and the principles of inquiry into the curricula. To learn how to build a strong argument, students need to practice divergent thinking by striving to understand and possibly accept diverse points of view. They need to become aware that what they decide as right or wrong depends on their own underlying assumptions, which may prevent them from acknowledging and understanding opposing points of view. To help students become strong critical thinkers, according to Kurfiss (1988), instructors “must encourage students to take the point of view of others, even when students object” (p. 67). Yet, instructors need to be vigilant and sensitive to students’ not being ready to be pushed too fast and too hard. While it is true that “students grow as thinkers when they are asked questions that require them to justify and support their opinions instead of providing a quick, flippant response” (Kolencik & Hillwig, 2011, p.15), instructors need to employ empathy and cultural sensitivity to make their students feel challenged intellectually but safe emotionally.

Most of the instructors in this study believed that writing assignments, in addition to debates, are the most effective ways to engage students in critical thinking. However, as it was noticed by some of the participants, the pitfall of writing courses may lie in teaching students formulaic writing by making them pay more attention to text organization and rhetorical patterns rather than the message conveyed in the text. A common shortcoming of argumentative writing

courses, for example, is their focus on “mechanics of analyzing arguments” (Kurfiss, 1988, p. 67). Instead of evaluating arguments as well as examining their own stance on debatable issues, students in argumentative writing courses are often asked to synthesize arguments in course texts and learn a list of logical fallacies. Hence, writing courses may risk becoming reduced to an array of summary-like assignments rather than the source of personal and intellectual growth for students. The goal of argumentative writing courses should be to offer students a forum to think about (a) all sides of an argument, (b) the motivations behind it, (c) which side of the argument students position themselves on, (d) their own motivation and their ability to produce adequate support for their positions. Helping students become aware of how to build knowledge necessary to support argumentation effectively will help them create habits of the mind of critical thinkers who can judge the trustworthiness of their own and others’ thought.

### **5.3 LIMITATIONS**

The limitations of the study pertain to the size of the sample and to the nature of the data. The results of this study were drawn from a small sample of institutions and teachers. While most of the findings obtained through the surveys and interviews paralleled the issues related to critical thinking instruction in the literature, it is very probable that a bigger sample would have shed more light on how critical thinking instruction is implemented in language programs or what constraints prevent the implementation. Even though the data were collected anonymously, the participants might have been hesitant to disclose any information that they perceived as shedding negative light on their programs, colleagues, or supervisors. For example, the statement about a supervisor’s and other teachers’ resistance to selecting textbooks and instructional

materials with a focus on critical thinking skills was obtained during a follow-up interview and accompanied by comments that the interviewee felt uncomfortable about making such negative statements. However, for the sake of being truthful in a research study, she decided to forego of her resistance to disclose this information. The information from a different participant about her colleagues not being willing to share their sought-after materials because of the competition within her department for student evaluations was also disclosed during a follow-up interview. The instructor asked for confirmation that it was a confidential testimony. Therefore, it can be assumed that other participants might have also been reluctant to share any information about obstacles in implementation of critical thinking instruction if they perceived this information to be a negative reflection of their institutions.

#### **5.4 FUTURE RESEARCH**

This study of a small number of schools in relation to all intensive language programs in the country yielded some invaluable information that could be applied to future research. For future research I propose four ideas that I would like to pursue. First, if I were to replicate the study, I would broaden the number of participating school and instructors. I would also make revisions to the assessment tool because of the reactions to the questionnaire of the participants in the study. A questionnaire with fewer questions might prove to be a more effective tool. A few of the participants complained that it was too long and answering all open-ended questions was too time-consuming. Therefore, elimination of the questions that overlap or the ones that did not yield new or essential information might generate a better data collection tool. The questionnaire can also be improved by re-stating some of the questions more directly to elicit data about

teachers' instructional practices instead of their views in general. Therefore, in a future study, I would be more vigilant about stating questions more directly and asking questions to elicit information about assessment. In addition, including another instrument to collect data, such as classroom observations, would strengthen the study and provide first-hand verification of critical thinking instruction in language courses. Data analysis might also provide deeper insights by employing a panel of experts rating participants' responses.

Second, this study identified that instructors' backgrounds in critical thinking plays an important role in their instructional practices. Further research is needed to establish if teaching experience and faculty status in the program (having full time position vs adjunct position and teaching at other institutions) may also be factors affecting instructors' engagement with critical thinking instruction.

Third, future studies could be also developed to look closely at the relationship of the teaching practices of those teachers who claim that they teach critical thinking skills but articulate only a narrow or incomplete understanding of the concept of critical thinking. In the findings, it was discovered that among the 13 instructors who claimed that they taught and assessed critical thinking, only four had a strong conceptualization of critical thinking. We need more research studies to examine whether the instructional practice of these instructors reflects their incomplete conceptualization of critical thinking. Future studies may also examine the instances of effective critical thinking instruction in language programs delivered by instructors who may not articulate a strong definition of critical thinking but have developed an intuitive approach to teaching critical thinking skills.

Fourth, cross-cultural studies on how international students feel about learning critical thinking skills from the Western perspective could inform the design of intensive language

curricula and instructional materials. These studies would be especially informative if they included students who have completed intensive language programs with a focus on critical thinking and who have completed degree programs in an English-speaking country. Not only could these students shed light onto how they personally felt about critical thinking instruction as part of their language programs, they could also reflect on the strengths and weaknesses of their intensive language programs in preparation for the challenges they encountered in academic courses. Tracing these students' academic achievement in degree courses could be an indicator of their degree of academic readiness. Moreover, reflections of international students who have studied critical thinking taught from the Western perspective and their comparison of what they have learned to their own cultural patterns of critical thought might expand our understanding of the way critical thinking is carried out in other cultures.

Fifth, other studies could look at the best cases of how teachers assist students in developing critical thinking skills while simultaneously helping them to improve English language proficiency. Exemplary practices of critical thinking instruction integrated with language instruction would provide models of critical thinking components embedded into language curricula. Examples from experienced language instructors would address the deficit in the research literature on implementation of critical thinking instruction in intensive language programs. Presenting the profiles of these accomplished instructors might provide insights into the standards of reasoning that they teach and adjustments of these standards to students' English language proficiency levels. Observational data from their interactions with students and students' performance might provide examples of instructional methods to teach students, for example, what questions to ask in a decision-making process, how to judge the value of sources of information, or how to draw applications in different contexts. In sum, these practices could

exemplify how to teach students to differentiate between critical and uncritical thinking while mastering a foreign language in actual lessons

## **5.5 CONCLUDING THOUGHTS**

As an ESL teacher with a long history of instruction and interest in critical thinking, I have benefitted from conducting this study in numerous ways. The study has broadened my understanding of sociocultural dimensions and the complexity of the concept of critical thinking. I have also gained insights into the importance of explicit critical thinking instruction and the need to address explicit approaches to critical thinking instruction in teacher education. As a result, this study has kindled my interest in designing professional development workshops. I also hope that this study will encourage other researchers to pursue this line of research more vigorously than it has been presented in the literature.

## **APPENDIX A**

### **A.1 INTERPRETATION**

To comprehend and express the meaning or significance of a wide variety of experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures or criteria.

#### **1. CATEGORIZATION:**

- a) To apprehend or appropriately formulate categories, distinctions, or frameworks for understanding, describing or characterizing information.
- b) To describe experiences, situations, beliefs, events, etc. so that they take on comprehensible meanings in terms of appropriate categorizations, distinctions, or frameworks.

#### **2. DECODING SIGNIFICANCE:**

- a) To detect, attend to, and describe the informational content, affective purport, directive functions, intentions, motives, purposes, social significance, values, views, rules, procedures, criteria, or inferential relationships expressed in convention-based communication systems, such as in language, social behaviors, drawings, numbers, graphs, tables, charts, signs and symbols.

#### **3. CLARIFYING MEANING:**

- a) To paraphrase or make explicit, through stipulation, description, analogy or figurative expression, the contextual, conventional or intended meanings of words, ideas, concepts, statements, behaviors, drawings, numbers, signs, charts, graphs, symbols, rules, events or ceremonies.
- b) To use stipulation, description, analogy or figurative expression to remove confusing, unintended vagueness or ambiguity, or to design a reasonable procedure for so doing.

## A.2 ANALYSIS

To identify the intended and actual inferential relationships among statements, questions, concepts, descriptions or other forms of representation intended to express beliefs, judgments, experiences, reasons, information, or opinion.

### 1. EXAMINING IDEAS:

- a) To determine the role various expressions play or are intended to play in the context of argument, reasoning or persuasion
- b) To define terms
- c) To compare or contrast ideas, concepts, or statements
- d) To identify issues or problems and determine their component parts, and also to identify the conceptual relationships of those parts to each other and to the whole

### 2. DETECTING ARGUMENTS:

Given a set of statements, descriptions, questions or graphic representations, to determine whether or not the set expresses, or is intended to express, a reason or reasons in support of or contesting some claim, opinion or point of view

### 3. ANALYZING ARGUMENTS:

Given the expression of a reason or reasons intended to support or contest some claim, opinion or point of view, to identify and differentiate:

- a) The intended main conclusion
- b) The premises and reasons advanced in support of the main conclusion
- c) Further premises and reasons advanced as backup or support for those premises and reasons intended as supporting the main conclusion
- d) Additional unexpressed elements of that reasoning, such as intermediary conclusions, unstated assumptions or presuppositions
- e) The overall structure of the argument or intended chain of reasoning
- f) Any items contained in the body of expressions being examined which are not intended to be taken as part of the reasoning being expressed or its intended background

### A.3 EVALUATION

To assess the credibility of statements or other representations which are accounts or descriptions of a person's perception, experience, situation, judgment, belief, or opinion; and to assess the logical strength of the actual or intended inferential relationships among statements, descriptions, questions or other forms of representation.

#### 1. ASSESSING CLAIMS:

- a) To recognize the factors relevant to assessing the degree of credibility to ascribe to a source of information or opinion.
- b) To assess the contextual relevance of questions, information, principles, rules or procedural directions.
- c) To assess the acceptability, the level of confidence to place in the probability or truth of any given representation of an experience, situation, judgment, belief or opinion.

#### 2. ASSESSING ARGUMENTS:

- a) To judge whether the assumed acceptability of the premises of a given argument justify one's accepting as true (deductively certain), or very probably true (inductively justified), the expressed conclusion of that argument.
- b) To anticipate or to raise questions or objections, and to assess whether these point to significant weakness in the argument being evaluated.
- c) To determine whether an argument relies on false or doubtful assumptions or presuppositions and then to determine how crucially these affect its strength.
- d) To judge between reasonable and fallacious inferences;
- e) To judge the probative strength of an argument's premises and assumptions with a view toward determining the acceptability of the argument.
- f) To determine and judge the probative strength of an argument's intended or unintended consequences with a view toward judging the acceptability of the argument;
- g) To determine the extent to which possible additional information might strengthen or weaken an argument.

## A.4 INFERENCE

To identify and secure elements needed to draw reasonable conclusions; to form conjectures and hypotheses; to consider relevant information and to deduce the consequences flowing from data, statements, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation.

### 1. QUERYING EVIDENCE:

- a) In particular, to recognize premises which require support and to formulate a strategy for seeking and gathering information which might supply that support.
- b) In general, to judge that information relevant to deciding the acceptability, plausibility or relative merits of a given alternative, question, issue, theory, hypothesis, or statement is required, and to determine plausible investigatory strategies for acquiring that information.

### 2. CONJECTURING ALTERNATIVES:

- a) To formulate multiple alternatives for resolving a problem, to postulate a series of suppositions regarding a question, to project alternative hypotheses regarding an event, to develop a variety of different plans to achieve some goal.
- b) To draw out presuppositions and project the range of possible consequences of decisions, positions, policies, theories, or beliefs.

### 3. DRAWING CONCLUSIONS:

- a) To apply appropriate modes of inference in determining what position, opinion or point of view one should take on a given matter or issue.
- b) Given a set of statements, descriptions, questions or other forms of representation, to deduce, with the proper level of logical strength, their inferential relationships and the consequences or the presuppositions which they support, warrant, imply or entail.
- c) To employ successfully various sub-species of reasoning, as for example to reason analogically, arithmetically, dialectically, scientifically, etc.
- d) To determine which of several possible conclusions is most strongly warranted or supported by the evidence at hand, or which should be rejected or regarded as less plausible by the information given.

## **A.5 EXPLANATION**

To state the results of one's reasoning; to justify that reasoning in terms of the evidential, conceptual, methodological, criteriological and contextual considerations upon which one's results were based; and to present one's reasoning in the form of cogent arguments.

### **1. STATING RESULTS:**

To produce accurate statements, descriptions or representations of the results of one's reasoning activities so as to analyze, evaluate, infer from, or monitor those results.

### **2. JUSTIFYING PROCEDURES:**

To present the evidential, conceptual, methodological, criteriological and contextual considerations which one used in forming one's interpretations, analyses, evaluation or inferences, so that one might accurately record, evaluate, describe or justify those processes to one's self or to others, or so as to remedy perceived deficiencies in the general way one executes those processes.

### **3. PRESENTING ARGUMENTS:**

- a) To give reasons for accepting some claim.
- b) To meet objections to the method, conceptualizations, evidence, criteria or contextual appropriateness of inferential, analytical or evaluative judgments.

## **A.6 SELF-REGULATION**

Self-consciously to monitor one's cognitive activities, the elements used in those activities, and the results educed, particularly by applying skills in analysis and evaluation to one's own inferential judgments with a view toward questioning, confirming, validating, or correcting either one's reasoning or one's results.

### **1. SELF-EXAMINATION:**

- a) To reflect on one's own reasoning and verify both the results produced and the correct application and execution of the cognitive skills involved.
- b) To make an objective and thoughtful meta-cognitive self-assessment of one's opinions and reasons for holding them.
- c) To judge the extent to which one's thinking is influenced by deficiencies in one's knowledge, or by stereotypes, prejudices, emotions or any other factors which constrain one's objectivity

or rationality.

- d) To reflect on one's motivations, values, attitudes and interests with a view toward determining that one has endeavored to be unbiased, fair-minded, thorough, objective, respectful of the truth, reasonable, and rational in coming to one's analyses, interpretations, evaluations, inferences, or expressions.

## **2. SELF-CORRECTION:**

Where self-examination reveals errors or deficiencies, to design reasonable procedures to remedy or correct, if possible, those mistakes and their causes.

## **APPENDIX B**

### **APPROACHES TO LIFE AND LIVING IN GENERAL**

- \* Inquisitiveness with regard to a wide range of issues
- \* Concern to become and remain generally well-informed
- \* Alertness to opportunities to use critical thinking
- \* Trust in the processes of reasoned inquiry
- \* Self-confidence in one's own ability to reason
- \* Open-mindedness regarding divergent world views
- \* Flexibility in considering alternatives and opinions
- \* Understanding of the opinions of other people
- \* Fair-mindedness in appraising reasoning
- \* Honesty in facing one's own biases, prejudices, stereotypes, egocentric or sociocentric tendencies
- \* Prudence in suspending, making, or altering judgements
- \* Willingness to reconsider and revise views where honest reflection suggests that change is warranted approaches to specific issues, questions, or problems
- \* Clarity in stating the question or concern
- \* Orderliness in working with complexity
- \* Diligence in seeking relevant information
- \* Reasonableness in selecting and applying criteria
- \* Care in focusing attention on the concern at hand
- \* Persistence though difficulties are encountered
- \* Precision to the degree permitted by subject and circumstances

## **APPENDIX C**

### **THIRTY-FIVE DIMENSIONS OF CRITICAL THINKING: STRATEGIES FOR INSTRUCTORS**

#### **AFFECTIVE STRATEGIES**

1. Thinking independently
2. Developing insight into egocentricity or sociocentricity
3. Exercising fairmindedness
4. Exploring thoughts underlying feelings and feelings underlying thoughts
5. Developing intellectual humility and suspending judgement
6. Developing intellectual courage
7. Developing intellectual good faith or integrity
8. Developing intellectual perseverance
9. Developing confidence in reason

#### **COGNITIVE STRATEGIES -- MACRO-ABILITIES**

10. Refining generalizations and avoiding oversimplifications
11. Comparing analogous situations: transferring insights to new concepts
12. Developing one's perspective: creating or exploring beliefs, arguments, or theories
13. Clarifying issues, conclusions, or beliefs
14. Clarifying and analyzing the meaning of words or phrases

15. Developing criteria for evaluation: clarifying values and standards
16. Evaluating the credibility of sources of information
17. Questioning deeply: raising and pursuing root of significant questions
18. Analyzing or evaluating arguments, interpretations, beliefs, or theories
19. Generating or assessing solutions
20. Analyzing or evaluating actions or policies
21. Reading critically: clarifying or critiquing texts
22. Listening critically: the art of silent dialogue
23. Making interdisciplinary connections
24. Practicing Socratic discussions: clarifying and questioning beliefs, theories, or perspectives.
25. Reasoning dialogically: comparing perspectives, interpretations, or theories
26. Reasoning dialectically: evaluating perspectives, interpretations, or theories

### **COGNITIVE STRATEGIES – MICRO-ABILITIES**

27. Comparing and contrasting ideals with actual practice
28. Thinking precisely about thinking: using critical vocabulary
29. Noting significant similarities and differences
30. Examining or evaluating assumptions
31. Distinguishing relevant from irrelevant facts
32. Making plausible inferences, predictions, and interpretations
33. Giving reasons and evaluating evidence and alleged facts
34. Recognizing contradictions
35. Exploring implications and consequences.

## **APPENDIX D**

### **AN INVITATION TO PARTICIPATE IN THE STUDY SENT TO EACH COLLEGE/UNIVERSITY**

Dear .....

I am a doctoral student at the University of Pittsburgh in Language, Literacy, and Culture Program. Since I have been an ESL instructor for many years, I have decided to devote my doctoral thesis to issues related to English language learners. I would like to ask your permission to send a survey to your department to collect anonymous responses from ESL instructors teaching intermediate and higher-level courses in reading, writing, speaking, or integrated skills.

The survey will be a paper and pencil version, so I would deliver it personally or I would mail it. The scope of my doctoral thesis is to look at how critical thinking is addressed in college and university level ESL courses, what instructional strategies promote it, and why it may be difficult to teach critical thinking to ESL learners. In addition, the second data source I have proposed to collect will come from artifacts: samples of students' writing with teachers' comments and teachers' instructional materials which would illustrate how teachers help their students think through their composition process. Hence, I would like to request at least two copies from each instructor of their students' work, with the names of the students whited out to make the data anonymous, and samples of teachers' hand-outs. Once all the surveys have been completed and samples collected, I would come to your site to pick them up in person, so no extra effort to mail them would be required.

I do not have any funding for the study; hence, I cannot offer any incentives to participate other than personal satisfaction from making a contribution to a very important area of the ESL

field. This is going to be a pioneering study since, to my knowledge, there have not been any other studies in the United States examining similar research questions.

Your college would be one of six universities or colleges in the tristate area: Pennsylvania, Ohio, and West Virginia. It is not my intension to evaluate your program. I hope that from this vast amount of data some themes will emerge that may assist university and college English language support programs in developing instructional techniques to promote integration of critical thinking skills into ESL curricula.

I look forward to hearing from you.

With best regards,

Eva Wegrzecka-Kowalewski

## **APPENDIX E**

### **CONSENT TO PARTICIPATE IN A RESEASRCH STUDY**

**TITLE:** Critical Thinking in Language Support Programs for International Students in American Colleges and Universities

**INVESTIGATOR:** Eva Wegrzecka-Kowalewski, doctoral student  
University of Pittsburgh  
5513 Wesley W. Posvar Hall  
230 South Bouquet Street  
Pittsburgh, PA 15260  
412-302-3679

**ADVISOR:** Dr. Richard Donato, Department Chairperson  
Instruction and Learning, School of Education  
University of Pittsburgh  
412-648-3131

**SOURCE OF SUPPORT:** This study is being performed as partial fulfillment of the Requirements for the doctoral degree in Education at the University of Pittsburgh.

**PURPOSE:** You are being asked to participate in a research project that seeks:

1. to gain insights into how second language college and university ESL instructors define critical thinking skills
2. to gain insights how critical thinking skills are taught in college and university level ESL courses

You are invited to participate in the study by responding to a 30-40 minute

questionnaire with additional open-ended questions. You would also be asked to make copies of some instructional materials used with your students to illustrate thinking processes, and copies of at least two students' written assignments with your comments, which would address their thinking process.

As a researcher, I agree to meet the following conditions:

1. I will collect the data from the questionnaire and report the data as accurately as possible. During the course of the study and after, the data will be securely stored.
2. I will not use your name or the name of your school at any point of information collection or in my papers.

**RISKS AND BENEFITS:** There are no risks greater than those encountered in everyday life. Also, there are no direct benefits to you.

**COMPENSATION:** You will not be compensated for participating in this project.

**CONFIDENTIALITY:** Your name will not appear on any survey or research instruments. No identity will be made in data analysis. Your responses will be identified by a number or a pseudonym. All written materials and consent forms will be stored in a locked file in the researcher's home. Your responses will only appear in statistical data summaries. All materials will be destroyed at the completion of the research.

**RIGHT TO WITHDRAW:** You are under no obligation to participate in this study. You are free to withdraw your consent to participate at any time. If you decide to withdraw from the project, your portion of the data will be destroyed.

**SUMMARY OF RESULTS:** A summary of results of this research will be supplied to you, at no cost, upon request.

**VOLUNTARY CONSENT:** Participation in this study is voluntary. You may withdraw from the study at any time.

## **APPENDIX F**

### **CRITICAL THINKING SKILLS IN LANGUAGE PROGRAMS FOR INTERNATIONAL STUDENTS IN THE U.S.**

## **QUESTIONNAIRE**

The answers in this survey will provide data for a doctoral research study conducted by the researcher administering the survey.

All respondents will be assigned pseudonyms to ensure that all data will be presented anonymously.

All responses will be kept confidential.

**“COGITO ERGO SUM”**

**“I THINK: THEREFORE, I AM”**

Rene Descartes (1637, “Discourse on the Method”)

**QUESTIONNAIRE**

Please put an X to the right of the opinion you select as your response to the questions/statements that require a choice between “Yes” and “No” and those that require a choice from the options “Strongly agree,” “Agree,” “Disagree,” “Strongly disagree,” or “No opinion.”

Write “Cannot decide” only if you feel very strongly that you cannot decide between “Agree” and “Disagree.”

PLEASE ANSWER ALL QUESTIONS (AS THOROUGHLY AS YOU CAN) UNTIL YOU REACH “*THE END - THANK YOU*”

1. Different courses focus on different skills (reading, writing, listening, and speaking). This division of courses might engage students in different ways of thinking. Please describe what you would consider a typical thinking activity your students engage in: different courses you have taught in this program– levels intermediate and up (please provide the title of each course):
2. Rank order the following tasks, which ESL students may be required to perform in *academic courses* in English language colleges and universities, in the order in which they require the most critical thinking (1- the highest; you may rank some tasks at the same level). Please feel free to add your own examples of other tasks if you think these do not sufficiently represent academic the tasks that require critical thinking.

\* paraphrasing \_\_\_\_\_

\* writing and speaking grammatically correct sentences \_\_\_\_\_

\* using extensive and precise vocabulary \_\_\_\_\_

\* converting information from a paragraph to a graph \_\_\_\_\_

\* differentiating between fact and opinion \_\_\_\_\_

\*. OTHER: \_\_\_\_\_

3. Would you agree with the following statement?

*I feel I know critical thinking skills well enough to define that concept for someone who may not know what it is.*

Strongly agree      Agree      Disagree      Strongly Disagree      No opinion

*If you answered “Strongly agree” or “Agree,” please provide your working definition of critical thinking.*

4. How would you complete the following statement?

*What all critical thinkers have in common is ...*

5. How would you answer the following question:

*Is the kind of critical thinking required in school any different from the kind of critical thinking that students need to perform outside of classrooms and in the real world?*

YES

NO

*Could you please elaborate on your answer?*

6. There are many opinions about teaching critical thinking skills. Which opinion would you choose regarding the following statement?

*Critical thinking skills are picked up by ESL students in their classes and do not need to be explicitly taught.*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

*Please explain or share your observations that led you to this conclusion.*

7. Do you think that this a valid statement that *ESL students already bring critical thinking abilities to the classroom from their previous educational experiences and do not need to have direct critical thinking instruction?*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

*Why do you feel this way?*

8. *Critical thinking skills should be addressed at every ESL level and integrated into ESL courses and curriculum.*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

*If you agree, please give a brief explanation how they can be addressed at various levels.*

*If you disagree, please explain at which level they should be addressed and why they should not be addressed at other levels.*

9. *Critical thinking skills are integrated into the curriculum of the ESL courses in which I teach.*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

*Please explain if critical thinking instruction is your own contribution or it is an integrated part of the curriculum and textbooks, and what types of critical thinking do the textbooks and curriculum address?*

10. Do you agree with the statement: *Critical thinking needs to be modelled by a teacher?*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

*Could you provide a few examples of how you model (or might model) critical thinking?*

11. Based on your observation, do you think that *critical thinking skills are culture sensitive, that is, they are viewed and understood differently from culture to culture?*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

*Could you provide an example or two?*

12. Is this an accurate statement: *Critical thinking needs to be taught in real-world contexts? (For example, listening to political debates, reading newspaper editorials, visiting a museum). In other words, real-world contexts are the most stimulating approach to engage students in critical thinking.*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

*Please add a brief explanation why we do or we do not need real-life context to teach critical thinking.*

13. How would you evaluate this statement?

*Collaborative work can stimulate critical thinking more than working alone.*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

*Could you elaborate on your response and possibly provide some examples?*

14. Based on the experience from all the courses you have taught, would you agree that *writing assignments are among the most effective ways to develop critical thinking?*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

*Please explain why you think it is or it is not.*

15. *What are other efficient ways of developing critical thinking?*

16. How would you evaluate the following statement: *The curricula of the courses in which I teach have built-in procedures to assess students' critical thinking development?*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

*Please list and/or describe these built-in procedures*

17. Can you think of *the reasons why it may be or is difficult to integrate critical thinking skills into ESL curricula* (for example: lack of adequate textbooks, lack of time, etc.) ?

*Please elaborate on these reasons:*

18. Based on your answers to # 17, would you agree with the following statement: *It is difficult to integrate critical thinking into ESL curricula?*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

19. Would you agree with this statement: *I have received preparation in teaching critical thinking in my certificate/degree program, in-service programs at my school, or professional development workshops?*

Strongly agree      Agree      Disagree      Strongly disagree      No opinion

*Please explain where and how you have received critical thinking skills training. If you have not received any training, what is the source of understanding how to teach critical thinking?*

20. *To what extent are critical thinking skills taught as a part of the ESL courses you teach?* Mark your response with a T in the appropriate box. Think of these boxes as a continuum, so you may put your mark closer to one end or the middle of the percentage range.

*To what extent are the skills that are taught actually learned by students?* Mark your response with an L in the appropriate box, under the percentage on the continuum.

ESL LEVEL and COURSE	100% - 5%	74% -50%	49% -25%	24%-1%	0%
Intermediate writing					
Intermediate reading					
Intermediate speaking					
Intermediate grammar					
Advanced writing					
Advanced reading					
Advanced speaking					
Advanced grammar					
Integrated skills bridge course					
Other course:					

Please list the specific skills taught and instructional strategies (what you make students do) in teaching represented by the percentage T which you selected:

SKILLS:

STRATEGIES:

21. *If there is a discrepancy between the percentage of critical thinking being taught versus being learned by students, to what reasons would you attribute this discrepancy?*

22. *Would you say that you have observed critical thinking skills taught in one course are transferred to other courses?*

*What do you attribute your “No” or “Yes” answer to?*

23. *Do you feel that overall the ESL students who complete the ESL program in which you teach are sufficiently prepared to think critically in order to be successful in academic programs?*

24. *If your answer is “No” to question 23, what would you suggest might be done differently in order for ESL students to acquire stronger critical thinking required in academic courses?*

25. *If you feel that your program prepares international students to think critically enough to be successful academically in the US (you answered “Yes” to question 23), what makes it successful? What suggestions would have for other language support programs in the US?*

26. *Do you collaborate with your colleagues teaching the same students in other courses on regular basis? Are you familiar with the topics and assignments in their other courses?*

27. *Do you feel that instructors’ collaboration or lack of it in your department may have an impact on ESL students’ developing critical thinking and readiness for academic coursework?*

28. *After completing the survey, do you have any final thoughts or reflections about teaching critical thinking in ESL programs?*

DEMOGRAPHIC DATA ABOUT YOU:

Your age -

Years of teaching ESL -

Years of teaching university/college level ESL-

Years of teaching at the present site -

PART TIME?

FULL TIME?

Courses most often taught –

How many courses do you teach at this site?

If you teach a course labeled a bridge course, how is it different from a non-bridge course?

If you teach a course labeled as integrated skills course, please describe how it is integrated:

In which professional development workshops, etc., do you participate and how often?  
Have any of these workshops helped you teach your students how to think critically?

Have you taught overseas/ in a different country? What type of program? How long? Did the curriculum in that program include critical thinking? Was it effective?

### YOUR EDUCATION/ESL QUALIFICATIONS

- a. TESOL certificate -
- b. MA in TESOL -
- c. Ph.D. in a related field -                      Field -
- d. Other :    (explain)-

### DEMOGRAPHIC DATA ABOUT YOUR STUDENTS

What are the reasons why international students are enrolled in the ESL program at your site?

Are they recipients of a scholarship?

Their government scholarship?

What nationality is the most populous group?

Rank the other groups in order from the most to the least populous:

*THE END - THANK YOU!*

## **APPENDIX G**

### **THE CODING SCHEME: SIX THEMATIC CRITICAL THINKING CODES**

#### **I. Identifying a Problem or Argument and Finding and Defending a Solution of Perspective**

1. Identifying or predicting a problem
2. Identifying an argument and a counterargument
3. Planning or predicting an argument or a counterargument
4. Identifying the premise of an argument
5. Finding a solution
6. Defending a solution
7. Identifying a connection between cause and result
8. Identifying a need for a new interpretation

#### **II. Evaluation and Drawing Conclusions to Make a Decision**

1. Identifying the context of information
2. Evaluating evidence or texts
3. Identifying the difference between an opinion and fact
4. Drawing a logical conclusion
5. Judging credibility of information sources
6. Identifying bias
7. Making a choice having evaluated the available information
8. Interpret the text

### **III. Identifying Perspectives and Relationships**

1. Comparing opinions and their premises
2. Identifying the premises in arguments and counterarguments
3. Identifying counterarguments
4. Identifying relationships between similar and different points of view
5. Converting information presented in prose into a graphic form
6. Identifying the purpose or audience of a text
7. Using analogies and metaphors
8. Identifying context
9. Identifying a connection between cause and result or effect

### **IV. Gaining New Knowledge and Understanding**

1. Insight
2. Reflection
3. Inference
4. Application of knowledge to a new context or situation
5. Predicting challenges in new situations
6. Conceptual thinking – from an example to a concept
7. Identifying connections between concepts and texts
8. Formulating one’s own opinion and position on an issue
9. Understanding abstract, nuanced concepts, such as irony, humor, clichés, and idioms that require going beyond the surface meaning of words

### **V. Awareness of Language Forms and Linguistic Choices that Convey Meaning**

1. Restating or rephrasing in interpretations and revisions
2. Creating coherent texts
3. Using rhetorical moves to create  
Persuasive speech in arguments
4. Understanding abstract, nuanced concepts, such as irony, humor, clichés, and idioms that require going beyond the surface meaning of words

## **VI. Dispositions to Be a Critical Thinker**

1. Identifying your own lack of knowledge
2. Being Skeptical
3. Being Open-minded

## BIBLIOGRAPHY

- Amua-Sekyi, E., T. (2015). Fostering critical thinking in large classes: An investigation into literary practices on undergraduate courses. *International Journal of Research in Humanities, Arts, and Literature*, 3(5), 89-102.
- Atkinson, D. (1997). A critical approach to critical thinking in TESOL. *TESOL Quarterly*, 31(1), 71-94.
- Bacha, N. N., & Bahous, R. (2008). Contrasting views of business students' writing needs in an EFL environment. *English for Specific Purposes*, 27, 74-93.
- Baez, C. P. (2004). Critical thinking in the EFL classroom: The search for a pedagogical alternative to improve English learning. *Ikala, Revista de Lenguaje y Cultura*, 9(15), 45-80.
- Bangert-Drowns, R. L., & Bankert, E. (1990, April). *Meta-analysis of effects of explicit instruction for critical thinking*. Paper presented at the meeting of the American Educational Research Association, Boston, MA.
- Barnet, S., & Bedau, H. (1996). *Critical thinking, reading, and writing: A brief guide to argument*. Boston, MA: Bedford Books of St. Martin's Press.
- Bartholomae, D. (1985). Inventing the university. In M. Rose, (Ed.), *When a writer can't write: Studies in writer's block and other composing process problems* (pp 134-15). New York, NY: Guilford Press.
- Battersby, M. (1989). Critical thinking as applied epistemology: Relocating critical thinking in the philosophical landscape. *Informal Logic*, 11(2), 91-100.
- Blair, A. (1988). The generalizability of critical thinking: The evaluation of sources. In S. P. Norris (Ed.), *The generalizability of critical thinking: Multiple perspectives on an educational ideal* (pp. 125-137). New York, NY: Teachers College Press.
- Bourdieu, P. (1998). *Méditation pascaliennes*, Paris, France: Seuil.
- Bourdieu, P. (2000). *Pascalian meditations*. Translation R. Nice, Cambridge, UK: Polity Press.

- Bowers, N. (2006). Instructional support for the teaching of critical thinking: Looking beyond the red brick walls. *Critical Thinking*, 1,10-25.
- Brown, K. (1998). *Education, culture, and critical thinking*. Brookfield, VT: Ashgate.
- Bruner, J. S. (1976). *Towards a theory of instruction*. Cambridge, MA: Harvard University Press.
- Buchtel, E. E., & Norenzayan, A. (2009). Thinking across cultures: Implications for dual processes. In J. Evans & K. Frankish (Eds.), *In two minds: Dual processes and beyond* (pp. 217-238). Oxford, UK: Oxford Scholarship Online.
- Cadman, K. (1997). Thesis writing for international students: A question of identity? *English for Specific Purposes*, 16(1), 3-14.
- Canagarajah, A. S. (2002). *Critical academic writing and multilingual students*. Ann Arbor, MI: University of Michigan Press.
- Carroll, M. (2004). Japanese cannot think critically. Or can they? *Essential Teacher*, 54-56.
- Cha, O. (2007). 'I' see trees, 'we' see forest: Cognitive consequences of independence vs interdependence. *Dissertation Abstracts International: Section B: The Sciences and Engineering*, 67(7), 4155.
- Chamot, A. U. (1995). Creating a community of thinkers in the ESL/EFL classroom. *TESOL Matters*, 5(5), 10-11.
- Chan, H. M., & Yan, H. K. T. (2008). Is there a geography of thought for East-West differences? In M. Mason (Ed.), *Critical thinking and learning* (pp. 44-64). Malden, MA: Blackwell.
- Cheng, A. (2006). Analyzing and enacting academic criticism: The case of an L2 graduate learner of academic writing. *Journal of Second Language Writing*, 15, 279-306.
- Clarke, D. E. (1991). The negotiated syllabus: What is it and how is it likely to work. *Applied Linguistics*, 12(1), 13-28.
- Cosgrove, R. (2011). Critical thinking in the Oxford tutorial: A call for an explicit and systematic approach. *Higher Education Research and Development*, 30(3), 343-356.
- Costa, A. L. (1981). Teaching for intelligent behavior. *Educational Leadership*, 39, 29-32.
- D'Andrade, R. (1995). *The development of cognitive anthropology*. Cambridge, UK: Cambridge University Press.
- Davidson, B. W. (1995). Critical thinking education faces the challenge of Japan. *Inquiry: Critical Thinking Across the Disciplines*, 14(3), 41-53.
- Davidson, B. W., & Dunhama, R. L. (1996, July 18-31). *Assessing EFL students' progress in critical thinking with the Ennis-Weir Critical Thinking Essay Test*. Paper presented at the

International Conference on Critical Thinking and Educational Reform, Rohner Park, CA.

De Bono, E. (1983). The direct teaching of thinking as a skill. *Phi Delta Kappan*, 64, 703-708.

Detterman, D.K. (1993). The case for prosecution: Transfer as an epiphenomenon. In D. K. Detterman & R. J. Stenberg (Eds.), *Transfer on trial: Intelligence, cognition and instruction* (pp. 1-24). Norwood, NJ.: Ablex.

Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston, MA: Heath.

Dewey, J. (1938). *Experience and education*. New York, NY: Collier.

Dodson, B., & Feak, C. B. (2001). A cognitive modeling approach to teaching critique writing to nonnative speakers. In D. Belcher & A. Hirvela (Eds.), *Linking literacies: Perspectives on L2 reading-writing connections* (pp. 186-199). Ann Arbor, MI: University of Michigan Press.

Duff, H., Rogers, D. P., & Harris, M. (2006). International engineering students-avoiding plagiarism through understanding the Western academic context of scholarship. *European Journal of Engineering Education*, 31(6), 643-681.

Durkin, K. (2011). Adapting to Western norms of critical argumentation and debate. In L. Jin & M. Cortazzi (Eds.), *Researching Chinese learners: Skills, perceptions and intercultural adaptations* (pp. 274-291). New York, NY: Palgrave Macmillan.

Elder, L., & Paul, R. (2012). Critical thinking: Competency standards essential for the cultivation of intellectual skills, Part 4. *Journal of Developmental Education*, 35(2), 30-31.

Ennis, R. H. (1985). Goals for a critical thinking curriculum. In A. L. Costa (Ed.), *Developing minds: A resource book for teaching thinking*. Alexandria, VA: Association of Supervision and Curriculum Development.

Ennis, R. H. (1987). A taxonomy of critical thinking dispositions and abilities. In J. Baron & R. Sternberg (Eds.). *Teaching thinking skills: Theory and practice*. New York, NY: W. H. Freeman.

Ennis, R. H. (1993). Critical thinking assessment. *Theory into Practice*, 32(3), 179-186.

Ewert, D. E. (2011). ESL curriculum revision: Shifting paradigms for success. *Journal of Basic Writing*, 30(1), 5-33.

Facione, P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction. Research findings and recommendations prepared for the Committee on Pre-college Philosophy of the American Philosophical Association*. Newark, DE: American Philosophical Association.

- Fahim, M., & Sa'eepor, M. (2011). The impact of teaching critical thinking skills on reading comprehension of Iranian EFL learners. *Journal of Language Teaching and Research*, 2(4), 867-874.
- Fisher, A. (2001). *Critical thinking: An introduction*. Cambridge, UK: Cambridge University Press.
- Flowerdew, J. (2002). A genre in the classroom: A linguistic approach. In A. Johns (Ed.), *Genre in the classroom: Multiple perspectives* (pp. 91-102). Mahwah, NJ: Lawrence Erlbaum.
- Fogarty, R., & McTighe, J. (1993). Educating teachers for higher order thinking: The three-story intellect. *Theory into Practice*, 32(3), 161-169.
- Foundation of Critical Thinking. (n.d.) Retrieved from <https://www.criticalthinking.org/>
- Franken, M. (2012). Re-situation challenges for international students 'becoming' researchers. *Higher Education*, 64, 845-859.
- Galetcaia, T., & Thiessen, L. (2010). Who is the real owner? Or how a simple Pepsi-Cola story can help students build critical thinking skills. *TESL Canada Journal*, 28(1), 115-126.
- Gelven, D. R., & Stewart, B. R. (2001). Developing critical thinking skills of tech prep students using applied communications. *The Journal of Technology Studies*, 27(2). doi.org/10.21061/jots.v27i2a.5
- Gibbs, G. (1994). *Improving student learning: Theory and practice*. Oxford, UK: Oxford Centre for Staff Development.
- Gibbons, P. (2007). Mediating academic language learning through classroom discourse. In J. Cummins & C. Davison (Eds.), *International handbook of English language teaching* (pp. 701-718). New York, NY: Springer.
- Gibbons, P. (2009). *English learners, academic literacy, and thinking: Learning in the challenge zone*. Portsmouth, ME: Heinemann.
- Giroux, H. (1994). Towards a pedagogy of critical thinking. In K. Walters (Ed.), *Re-thinking reason: New perspectives in critical thinking* (pp. 199-204). New York, NY: SUNY Press.
- Haas, P. F., & Keeley, S. M. (1998). Coping with faculty resistance to teaching critical thinking. *College Teaching*, 46(2), 63-68.
- Halpern, D. J. (1989a). Teaching critical thinking for transfer across domains. *American Psychologists*, 53(4), 449-455.
- Halpern, D. F. (1989b/ 2003). *Thought and knowledge: An introduction to critical thinking*. Mahwah, NJ: Erlbaum.

- Halpern, R. (1996). *Thinking critically about critical thinking*. Mahwah, NJ: Lawrence Erlbaum.
- Halpern, D. F. (1999). Teaching for critical thinking: Helping college students develop the skills and dispositions of a critical thinker. *New Directions for Teaching and Learning*, 80, 69-74.
- Han, S., & Northoff, G. (2008). Culture-sensitive neural substrates of human cognition: A transcultural neuroimaging approach. *Nature Reviews Neuroscience*, 9(8), 646-654.
- Hashemi, M. R., & Ghanizadeh, A. (2012). Critical discourse analysis and critical thinking: An experimental study in EFL context. *System*, 40, 37-47.
- Halonen, J. S. (1995). Demystifying critical thinking. *Teaching of Psychology* 22(1), 75-81.
- Helms-Park, R., & Stapleton, P. (2003). Questioning the importance of individualized voice in undergraduate L2 argumentative writing: An empirical study with pedagogical implications. *Journal of Second Language Writing*, 12, 245-265.
- Holvikivi, J. (2007). Culture and cognition in information technology education. *European Journal of Engineering Education*, 32(1), 73-82.
- Hyland, K. (2002). Specificity revisited: How far should we go now? *English for Specific Purposes*, 21, 385-395.
- Jetton, T. L., & Alexander, P. A. (2004). Domains, teaching, and literacy. In T. L. Jetton & J. A. Dole (Eds.). *Adolescent literacy research and practice* (pp. 15-39). New York, NY: Guilford.
- Johns, A. (1997). *Text, role, and context: Developing academic literacies*. Cambridge, UK: Cambridge University Press.
- Johnson, E. M. (2008). An investigation into pedagogical challenges facing international tertiary-level students in New Zealand. *Higher Education Research & Development*, 27 (3), 231-243.
- Jones, A. (2007a). Multiplicities or manna from heaven? Critical thinking and the disciplinary context. *Australian Journal of Education*, 51(1), 84-103.
- Jones, A. (2007b). Looking over our shoulders: Critical thinking and ontological insecurity in higher education. *London Review of Education*, 5(3), 209-222.
- Keeley, S. M., Shemberg, K. M., Cowell, B., & Zinnbauer, B. (1995). Coping with student resistance to critical thinking: What the psychotherapy literature tells us. *College Teaching*, 43, 140-145.
- Kay, P., & Kempton, W. (1984). What is the Sapir-Whorf Hypothesis? *American Anthropologist*, 86 (1), 65-79.

- Kim, K., & Markman, A. B. (2006). Differences in fear of isolation as an explanation of cultural differences: Evidence from memory and reasoning. *Journal of Experimental Social Psychology, 42*(3), 350-364.
- Kolencik, P. L., & Hillwig, S. A. (2011). *Encouraging metacognition: Supporting learners through metacognitive teaching techniques*. New York, NY: Peter Lang.
- Kuhnen, U., & Oyserman, D. (2002). Thinking about the self influences thinking in general: Cognitive consequences of salient self-concept. *Journal of Experimental Social Psychology, 38*(5), 492-499.
- Kurfiss, J. K. (1988). *Critical thinking. Theory, research, practice, and possibilities*. Washington, DC: Association for the Study of Higher Education.
- Langholz, J., & Smaldino, S. E. (1989, February). *The effectiveness of a CBI program for teaching problem solving skills to middle level students*. A paper presented at the annual meeting of the Association for educational Communications and Technology. Dallas, TX. (ERIC Document Reproduction Service No. ED 308 825).
- Lehman, D. R., & Nisbett, R. E. (1990). A longitudinal study of the effects of undergraduate training on reasoning. *Developmental Psychology, 26*, 431-442.
- Leki, I., & Carson, J. (1997). 'Completely different worlds': EAP and the writing experiences of ESL students in university courses. *TESOL Quarterly, 31*(1), 39-39.
- Leontiev, A. N. (1981). *Problems of the development of mind*. Moscow, Russia: Progress Publishers.
- Liaw, M-L. (2007). Content-based reading and writing for critical thinking skills in an EFL context. *English Teaching & Learning, 31*(2), 45-87.
- Light, R. L., Xu, M., & Mossop, J. (1987). English proficiency and academic performance of international students. *TESOL Quarterly, 21*(2), 251-261.
- Martin, J. (1990). Literacy in science: Learning to handle text as technology. In F. Christie (Ed.), *Literacy for a changing world* (pp. 79-117). Hawthorn, Victoria: ACER.
- Mason, A. (1995). By dint of: Student and lecturer perceptions of lecture comprehension strategies in first-term graduate study. In J. Flowerdew (Ed.), *Academic listening: Research perspectives* (pp. 199-218). New York, NY: Cambridge University Press.
- Matsuda, P. K. (1999). Composition studies and ESL writing: A disciplinary division of labor. *College Composition and Communication, 50* (4), 699-721.
- Matsuda, T., & Nisbett, R. (2001). Attending holistically vs. analytically: Comparing the context sensitivity of Japanese and Americans. *Journal of Personality and Social Psychology, 81*, 922-993.

- Matsuda, T., & Nisbett, R. E. (2006). Culture and change blindness. *Cognitive Science*, 30, 381-399.
- McPeck, J. E. (1981). *Critical thinking and education*. New York, NY: St. Martin's Press.
- McPeck, J. E. (1990). *Teaching critical thinking*. London, UK: Routledge.
- Moore, T. J. (2011). *Critical thinking and language: The challenge of generic skills and disciplinary discourses*. London, UK: Continuum.
- Morita, N. (2000). Discourse socialization through oral classroom activities in a TESL graduate program. *TESOL Quarterly*, 34(2), 279-310.
- Nakamura, H. (1988). *The ways of thinking of Eastern peoples*. New York, NY: Greenwood Press.
- Neeley, S. D. (2005). *Academic literacy*. New York, NY: Pearson.
- Nisbett, R. E. (2003). *The geography of thought: How Asians and Westerners think differently and why*. New York, NY: The Free Press.
- Nisbett, R. E., & Masuda, T. (2003). Culture and point of view. *Proceedings of the National Academy of Sciences*, 110(19), 1113-11170.
- Olsen, A, & Burgess, Z. (2006). The comparative academic performance of international students. *International Higher Education*, 42(42), 11-12.
- Park, C. (2004). Rebels without a cause: Towards an institutional framework for dealing with plagiarism by students. *Journal of Further Higher Education*, 28, 291-306.
- Paul, R. (1990). *Critical thinking: What every person needs to survive in a rapidly changing world*. Rohnert Park, CA: Center for Critical Thinking and Moral Critique, Sonoma State University.
- Paul, R. (1992). Critical thinking: What, why, and how. *New Directions for Community Colleges*, 77, 5-24.
- Paul, R. (1993). *Critical thinking* (3<sup>rd</sup> ed.). Santa Rosa, CA: Foundation for Critical Thinking.
- Paul, R., Blinker, A., Jensen, K., & Krekalu, H. (1990). *Critical thinking handbook: A guide for remodeling lesson plans in language arts, social studies, and science*. Rohnert Park, CA: Foundation for Critical Thinking.
- Paul, R., & Elder, L. (2009). *The miniature guide to critical thinking: Concepts and tools*. Dillon Beach, CA: Foundation for Critical Thinking.
- Paul, R., Elder, L., & Bartell, T. (1997). *California teacher preparation for instruction in critical thinking: Research findings and recommendations*. Sacramento, CA: California Commission on Teacher Credentialing.

- Paulston, C. B., & Tucker, G. R. (Eds). (2003). *Sociolinguistics: The essential readings*. Malden, MA: Wiley-Blackwell Publishers.
- Peckham, I. (2010). *Going North thinking West: The intersection of social class, critical thinking, and politicized writing instruction*. Logan, UT: Utah State University Press.
- Peelo, M., & Luxon, T. (2007). Designing embedded courses to support international students' cultural and academic adjustment in the UK. *Journal of Further and Higher Education*, 31 (1), 65-76.
- Quellmalz, E.S. (1987). Developing reasoning skills. In J. B. Baron & R. J. Stenberg (Eds.). *Teaching thinking skills: Theory and practice* (pp. 86-105). New York, NY: W. H. Freeman.
- Ramanathan, V., & Atkinson, D. (1999). Individualism, academic writing, and ESL writers. *Journal of Second Language Writing*, 8, 45-75.
- Richards, J., & Rogers, T. (2001). *Approaches and methods in language teaching*. Cambridge, UK: Cambridge University Press.
- Robertson, M., Line, M., Jones, S., & Thomas, S. (2000). International students, learning environments and perceptions: A case study using the Delphi technique. *Higher Education Research and Development*, 19(1), 89-102.
- Ruminski, H., & Hanks, W. (2006). Critical thinking. In W. G. Christ (Ed.), *Assessing media education: A resource handbook for educators and administrators* (pp. 167-90). New York, NY: Routledge.
- Ryder, R. J. (1994). Using frames to promote critical writing. *Journal of Reading*, 38(3), 210-218.
- Santos, D., & Fabricio, B. F. (2006). The English lesson as the sight for the development of critical thinking, *TESL-EJ*, 10(2), 1-23.
- Sarkodie-Mensah, K. (1998). International students in the US: Trends, cultural adjustments, and solutions for a better experience. *Journal of Education for Library and Information Science*, 39(3) 214-222.
- Scollon, S. (1999). Not to waste words or students: Confucian and Socratic discourse in the tertiary classroom. In E. Hinkel (Ed). *Culture in second language teaching and learning*, Cambridge, UK: Cambridge University Press.
- Shen, F. (1989). The classroom and the wider culture: Identity as a key to learning English composition. *College Composition and Communication*, 40(4), 459-465.
- Sheridan, V. A holistic approach to international students, institutional habitus and academic literacies in an Irish third level institution. *Higher Education*, 62, 129-140.

- Siegel, H. (1998). *Educating reason: Rationality, critical thinking, and education*. New York, NY: Routledge.
- Song, X. (2016). 'Critical thinking' and pedagogical implications for higher education. *East Asia*, 33, 25-40.
- Spack, R. (1997). The acquisition of academic literacy in a second language: A longitudinal case study. *Written Communication*, 14 (1), 3-62.
- Stapleton, P. (2001). Assessing critical thinking in the writing of Japanese university students. *Written Communication*, 18(4), 506-548.
- Statkiewicz, W. R., & Allen, R. D. (1983). Practice exercises to develop critical thinking skills. *Journal of College Science Teaching*, 12(4), 262-265.
- Sternberg, R. J. (1987). Questions and answers about the nature and teaching of thinking skills. In J. Baron & R. J. Stenberg (Eds.), *Teaching thinking skills: Theory and practice* (pp. 250-262). New York, NY: Freeman.
- Svinicki, M. D. (1996). When teachers become learner. *The National Teaching and Learning Forum*, 5, 1-4.
- Swartz, R. J. (1991). Structured teaching for critical thinking and reasoning in standard subject area instruction. In J. F. Voss, D. N. Perkins, & J. W. Segal (Eds.), *Informal reasoning and education* (pp. 415-450). Hillsdale, N.J.: Erlbaum.
- Taylor, G., & Chen, T. (1991). Linguistic, cultural, and subcultural issues. *Applied Linguistics*, 12, 319-336.
- Taylor, S. J., & Bogdan, R. (1998). *Introduction to qualitative research methods: a guidebook and resources*. New York, NY: Wiley and Sons.
- Thomas, D. (2006). A general inductive approach for analyzing qualitative evaluation data. *American Journal of Evaluation*, 27(2), 237-246.
- Tien, L. T., & Stacy, A. (1996). *The effects of instruction on undergraduate students' inquiry skills*. Paper presented at the meeting of the American Educational Research Association, New York, NY.
- Tsui, L. (1999). Courses and instruction affecting critical thinking. *Research in Higher Education*, 40(2), 185-200.
- Turner, J. (2004). Language as academic purpose. *Journal of English for Academic Purposes*, 3, 95-109.
- Unrau, N. (1997). *Thoughtful teachers, thoughtful learners*. Scarborough, Ontario, Canada: Pippin.

- van Gelder, T. (2005). Teaching critical thinking: Some lessons from cognitive science. *College Teaching*, 53(1), 41-46.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher thinking processes*. Cambridge, MA: Harvard University Press.
- Vygotsky, L. S. (1986). *Thought and language*. Cambridge, MA: MIT Press.
- Wade, C., & Tavis, C. (1993). *Psychology*. New York, NY: Harper Collins.
- Watkins, D. A., & Biggs, J. B. (Eds.) (1996). *The Chinese learner: Cultural, psychological and contextual influences*. Hong Kong: Comparative Education Research Centre; Melbourne, Vic.: Australian Council for Educational Research
- Watkins, D. A., & Biggs, J. B. (Eds.) (2001). *Teaching the Chinese learner: Psychological and pedagogical perspectives*. Hong Kong: Comparative Education Research Centre, The University of Hong Kong; Camberwell, Vic.: Australian Council for Educational Research.
- Watson, G. B., & Glaser, E. M. (2002). *Watson-Glaser Critical Thinking Appraisal*. London, UK: The Psychological Corporation.
- Watson-Gegeo, K. A. (2004). Mind, language, and epistemology: Towards a language socialization paradigm for SLA. *The Modern Language Journal*, 88 (3), 331-350.
- White, W. F. (2001). Critical thinking and teaching attitudes of preservice teachers. *Educational Leadership*, 122(3), 443-459.
- Willingham, D. T. (2007). Critical thinking: Why is it so hard to teach? *American Educator*, 27, 8-19.
- Yang Y-T C., & Gamble, J. (2013). Effective and practical critical thinking-enhanced EFL instruction. *ELT Journal*, 67(4), 398-412.
- Zhou, Y., Jindal-Snape, D., Topping, K., & Todman, J. (2008). Theoretical models of culture shock and adaptation in international students in higher education. *Studies in Higher Education*, 33(1), 63-75.
- Zhu, W. (2004). Writing in business courses; An analysis of assignment types, their characteristics, and required skills. *English for Specific Purposes*, 23, 111-135.