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Defining Critical Thinking for the 21st Century World Language Classroom

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ABSTRACT

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Critical thinking has long been recognized as a valuable skill, both in education in general and within the world language teaching field specifically. In recent years, critical thinking has been identified as one of the 21st century skills that students need to succeed in modern society (Partnership, 2009). However, there is no clear, unifying definition of the term itself (Paul, 2004), and the definition of critical thinking is debated in many different fields without support from empirical data (Kuhn, 1999). Similarly, critical thinking has been often discussed in the literature as having great potential to facilitate language learning, and particularly to develop language proficiency (Gaskaree, Mashhady & Dousti, 2010; Heining-Boynton & Heining-Boynton, 1992; Hoch & Hart, 1991; Rojas, 2001; Williams, Lively & Harper, 1994). However, this discussion has not been centered around a single, clear definition or been supported by empirical research.

This study attempts to fill these gaps by exploring how currently practicing world language teachers define the term critical thinking. Definitions were gathered through a survey of K-16 world language teachers from across the United States and through interviews with individual beginning level German instructors at a large, private university in the western United States. Findings revealed three primary ways in which teachers define critical thinking: first, by identifying characteristics of critical thinking; second, by discussing the thought processes and skills used in the action of critical thinking; and third, by describing the topics about which critical thinking takes place, either on the micro-level, dealing with language itself, or on the macro-level, dealing with real-world issues and themes.

Based on these three areas of definition, several pedagogical implications were identified. As critical thinking is integrated as a 21st century skill into the world language classroom, the traditional roles of the teacher may need to transform, the content used in the classroom may need to change, and the activities in which students are asked to engage may likewise need to shift. The integration of these pedagogical implications into the world language classroom as a means to facilitate the development of advanced levels of language proficiency is also discussed.

Keywords: Critical thinking, higher-order learning, 21st century skills, language proficiency, Bloom's Taxonomy, Revised Bloom's Taxonomy, ACTFL Proficiency Guidelines

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CHAPTER 1: INTRODUCTION

One of the primary goals of education is to prepare students to contribute in meaningful ways to society (Partnership, 2009). Consequently, the content and structure of educational systems are often heavily influenced by the needs of the society they serve (Saltrick, 2007) and must to societal changes. Our modern world is constantly shifting in response to factors such as globalization and technological advancements. These frequent changes make it a challenge to know how best to prepare students for the future society in which they will live.

In 2006, several political, business, and educational groups met to address the question of how to prepare students to contribute to this ever-changing society. These groups administered a survey to corporate employers, asking them to determine what kinds of skills new employees need in today's workforce. The results suggest that as the world grows more connected through globalization and technology, students need different skills than they once did in order to succeed (McClendon, 2011).

One specific skill that the respondents of the 2006 survey noted would become critical in the near future was advanced levels of proficiency in languages other than English (McClendon, 2011). Because of globalization and advancements in technology, many companies have clients worldwide, and world language skills are quickly becoming a necessity. Today's real-world, often global-scale problems require communication and collaboration in order to deal with complex issues. This reality means that simply speaking a language is no longer enough. Individuals must achieve high levels of proficiency if they wish to use their language skills effectively (Malone, Rifkin, Christian, & Johnson, 2005), and achieving such levels requires critical thinking skills in addition to linguistic knowledge.

Statement of the Problem

In the United States, language proficiency is most often measured in terms of the American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines. For most non-native speakers, achieving a Superior level of proficiency as outlined by these guidelines may be a possible, although somewhat lofty, goal. Superior-level speakers are able to deal with both concrete and abstract content, including topics related to social and political issues. They are able to express their opinions on such topics and support their opinions through structured arguments. They are also able to hypothesize and explore alternative possibilities to situations. They are able to handle these tasks accurately, with full control of basic language structures, using extended discourse and extensive elaboration (ACTFL, 2012). Based on this description, it is clear that advanced levels of proficiency require learners to have sound control of both language *and* content.

Because using language skills in today's world demands high levels of proficiency, it is essential that the field seeks to understand how to design programs of language study to ensure that students are able to reach this goal (ACTFL, 2011). The Foreign Service Institute estimates that language learners need about 720 hours of language instruction in an ideal setting, such as an immersion program or time abroad, to reach advanced levels of proficiency in a language similar to English, such as French or German. More time is needed for languages such as Russian that are more difficult for native English speakers to acquire (Malone, Rifkin, Christian, & Johnson, 2005). A typical two-year classroom sequence, which is all that many U.S. high school students participate in, yields only about 180 hours of instruction, certainly not enough to reach Superior levels of proficiency (Malone et al., 2005). Moreover, several research studies have found that even at the end of a four-year college sequence, the vast majority of language

majors fail to reach advanced proficiency levels (see Magnan, 1986; Thompson, 1996; Swender, 2003).

Despite the clear need for language skills in today's modern world, many language programs are being cut across the United States. From 1997 to 2008, although language programs at the high school level stayed relatively stable, the number of language programs at the elementary level dropped from 31% to 25% and at the middle school level from 75% to 58% (Rhodes & Pufahl, 2010). Furthermore, there was little initiative expressed to add or grow existing programs. These trends are disturbing because, as noted earlier, one of the key factors needed to attain high levels of proficiency is time, and starting language instruction later only confounds the problem of reaching advanced proficiency levels. Although the ability to speak world languages at high levels of proficiency is a critical skill in today's workforce, due to declining numbers of language programs and existing programs that are not helping students reach the goal of high proficiency levels, our educational system is not fulfilling its role to prepare students for the world beyond the classroom.

One possible way to help address the issue of proficiency is to consider the role of 21st century skills in the world language classroom. The 21st Century Skill Set is a conceptual framework that lays out fundamental skills, themes, and literacies students need in order to participate in and contribute to today's society (Partnership, 2009). Academic content remains an essential component of the skill set, but the content serves as a vehicle to develop skills, rather than as an end product (McClendon, 2011).

Some of the key skills considered important in the 21st century workplace include creativity and innovation, critical thinking and problem solving, communication, and collaboration (Partnership, 2009). These skills are built into the framework around core subjects

such as English, world languages, the arts, math, science, and history. They are then placed into the context of interdisciplinary themes such as global awareness, financial literacy, and civic literacy. These themes are designed to promote deep transfer of learning as students make connections across core subjects to see how the concepts and skills they are being taught fit together and can be applied in real-world situations, thus making academic content relevant to the world beyond the classroom. The potential for themes to connect to the real world makes 21st century skills powerful in the world language classroom in terms of proficiency as well, because to reach high proficiency levels, students need to be able to address topics of current world interest (ACTFL, 2012). Making real-world connections in the world language classroom gives students the tools they need to use their language skills to contribute to society.

There is still much to be explored with regard to 21st century skills and their practical application in world language teaching and learning. ACTFL has linked 21st century skills and world language teaching by creating the 21st Century Skills Map. The skills map outlines the 21st Century Skill Set and connects them to world language teaching by providing ideas for activities that work to meet the ACTFL Proficiency Guidelines (ACTFL, 2011). This first step is helpful in seeing how 21st century skills and world language learning can work together, but further exploration is needed to explain how the skills and themes from the 21st Century Framework should be applied to world language pedagogy.

One specific 21st century skill that has often been discussed in conjunction with world language teaching is the skill of critical thinking (see Gaskaree, Mashhady, & Dousti, 2010; Heining-Boynton & Heining-Boynton, 1992; Hoch & Hart, 1991; Rojas, 2001; Williams, Lively, & Harper, 1994). Although critical thinking is recognized as a valuable skill in education in general and within the world language teaching field specifically, there is no clear, unifying

definition of the term itself (Paul, 2004). In fact, the definition of critical thinking is debated in many different fields without support from empirical data (Kuhn, 1999). Teachers are encouraged to integrate this skill into their curriculum and have been promised great benefits for doing so, but they have been "offered remarkably little in the way of concrete examples of what these skills are—what forms they take, how they will know when they see them, how they might be measured" (Kuhn, 1999, p 17). This lack of definition makes exploring the role of critical thinking in world language instruction a challenge.

Discussions about critical thinking in the world language classroom have addressed a number of aspects of language learning ranging from using higher-order thinking skills in order to bridge the gap between lower- and upper-level world language classes (Williams, Lively, & Harper, 1994) to classroom activities that can increase the amount of critical thinking taking place (Gaskaree, Mashhady, & Dousti, 2010; Heining-Boynton & Heining-Boynton, 1992; Hoch & Hart, 1991). However, these discussions have failed to clearly define what exactly critical thinking is, or to explore the relationship between critical thinking and language proficiency. Thus, a common definition of critical thinking is needed before this skill can be effectively implemented in our classrooms and its relationship to and effect on gaining higher levels of language proficiency can be explored.

Purpose of the Study

The purpose of this study is to explore current definitions of the term "critical thinking" as given by educators in the world language teaching field within the United States. The study also considers how these definitions can shape our understanding of the term, specifically how critical thinking may apply to helping students attain high levels of language proficiency.

Research Questions

To accomplish the purposes outlined above, this study was guided by three research questions:

1. How does the world language teaching field at large define the 21st century skill of critical thinking?
2. How do the instructors and supervisor of a specific German 101 program define critical thinking?
3. How do the findings from these definitions shape our understanding of the relationship between critical thinking and advanced levels of language proficiency?

Significance of the Study

Findings from this study may help contribute significantly to identifying and establishing a common definition of the term "critical thinking" as it applies to the world language teaching field. These findings can also help the field explore how integrating the 21st century skill of critical thinking into world language instruction may help reach the goal of advanced language proficiency so that learners can use their world language skills in today's world.

Overview of the Thesis

Below is a brief outline of each of the remaining chapters in this thesis, including a short description of what is included in each chapter.

Chapter 2 examines existing literature on the two primary topics relevant to this study—language proficiency and critical thinking. In Chapter 3 I describe the participants involved in the study, the sources from which data were collected, and the procedures used to collect the data. Finally, the chapter outlines the methods of data analysis used. Chapter 4 outlines the study's findings based on the three primary themes that emerged from the data: first, the identification of

common characteristics of critical thinking; second, the thought processes and skills used in the action of critical thinking; and third, the distinction between micro and macro critical thinking based on the things about which one thinks critically. Finally, Chapter 5 considers the implications of these findings by discussing in further detail how these findings affect world language pedagogy. The third research question is also answered, exploring how the definitions found in Chapter 4 shape our understanding of the relationship between critical thinking and advanced levels of language proficiency. The chapter concludes by describing the limitations of the study and by presenting directions for future research. With this outline in mind, I now turn to a discussion of the background literature.

CHAPTER 2: REVIEW OF LITERATURE

Chapter 1 described the need for high levels of language proficiency in today's modern world and outlined the challenges facing language programs today. These challenges include diminishing programs and programs that are not succeeding in helping students achieve high levels of proficiency. However, the 21st Century Skill Set, and particularly the skill of critical thinking, were presented as potential tools that may help in overcoming the challenges of attaining high levels of language proficiency. This chapter will explore existing research on the topics of language proficiency and on critical thinking before outlining again the research questions that guided the current study.

The Problem of Proficiency

To use language skills effectively in today's global world, high levels of language proficiency are needed (ACTFL, 2011; Swender, 2003). Language programs that have the goal of helping students develop their language abilities for use in real-world settings must have a way to define and measure the abstract concept of language proficiency. Language proficiency in the United States is most often discussed in terms of the American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines.[1] These guidelines define proficiency in terms of what language learners are able to do with their target language according to five major proficiency levels: Distinguished, Superior, Advanced, Intermediate, and Novice, with additional sub-levels at the Novice through Advanced levels (ACTFL, 2012).

[1] Other countries use other scales to measure language proficiency, such as the Common Framework of Reference for Languages that is used in Europe and for European languages. Although the ACTFL Proficiency Guidelines serve as the standard in the U.S., instructors of languages such as German often need to keep both references in mind when dealing with study abroad programs and official language credentials issued in and for German-speaking countries.

Each level of the ACTFL scale has four assessment criteria associated with it: functions or global tasks, context and content, accuracy and comprehensibility, and text type (Swender & Vicars, 2012). Rather than focusing primarily on form, the ACTFL Proficiency Guidelines consider global functional ability (ACTFL, 2012). Language learners become more proficient in a language as real-life tasks, linguistic structures, and vocabulary move toward automaticity and become available for use in a variety of different contexts (Heilenman & Kaplan, 1985).

As was mentioned earlier, most real-world positions require speakers who have achieved at *least* an Advanced level of proficiency, although most higher level positions and professions, including business executives, require Superior levels of proficiency (Swender, 2003). However, studies have demonstrated that not even half of most language learners can achieve this level after completing a post-secondary language program (Swender, 2003), and secondary programs are not setting students up to achieve this goal (Glisan & Foltz, 1998; Tschirner & Heilenman, 1998).

For example, a study completed in 2002 explored the proficiency levels of undergraduate foreign language majors (Swender, 2003). Junior and senior foreign language majors from five major liberal arts universities were given ACTFL Oral Proficiency Interviews. Only 2 percent of all majors achieved a proficiency rating of "Superior," and only 5 percent achieved an "Advanced High" rating, meaning that most language majors are not reaching proficiency levels required by most employers. If the Superior target is where learners need to end up, then applying a backwards approach to planning is appropriate to enable teachers to set their students up to achieve this goal. Understanding what the Superior level requires can help teachers to structure early levels of instruction to prepare students to reach this level and to use their language skills in the real world.

An analysis of the Superior level shows that speakers at this level need to have control of three main areas: linguistic structures, content/context, and cognitive skills. First, Superior speakers have full control of basic linguistic structures; there are no patterns of errors. There may be occasional errors in more complex or low-frequency structures, but the linguistic errors do not interfere with communication. Second, Superior speakers are able to participate fully in both formal and informal settings. They can talk about both concrete and abstract topics, and they are able to discuss personal topics as well as social and political issues. Finally, Superior-level speakers can apply their language to cognitive skills such as structuring and defending an argument or opinion, hypothesizing, and exploring alternative possibilities (ACTFL, 2012).

It is important to note that performing at the Superior level requires much more than just linguistic skills. Although control of the grammatical structures of the language is certainly an essential component, it alone is not enough to attain a Superior level of proficiency. Content also plays a critical role. In fact, some learners with good linguistic skills simply lack knowledge of the world around them. They are unaware of current events and have not thought about abstract issues such as health care or partisan politics (C. Thompson, personal communication, November 7, 2013). As a result, they are unable to apply their linguistic knowledge at a Superior level.
In addition to content and language, Superior speakers also have control of cognitive skills such as argumentation. The reality is that some learners may not have fully developed these skills even in their native language (C. Thompson, personal communication, November 7, 2013). Consequently, world language teachers may need to help students develop these skills in addition to helping them gain the linguistic structures and content needed to make meaning when applying the cognitive skills. Thus world language teachers' jobs, when their goal is for their

students to reach high levels of language proficiency, go far beyond teaching only the language itself.

However, careful planning is needed to make sure that the potential for developing Superior-level skills is harnessed in the world language classroom. One example of this issue was illustrated in a study by Donato and Brooks (2004) that explored the kinds of discourse taking place in a Spanish literature course. Typically, literature courses are expected to create situations for advanced language use, including sharing opinions and arguments, exploring alternatives, and hypothesizing, which are, as noted above, Superior-level language functions. However, when the discourse of the literature discussions was analyzed in terms of discourse structure, types of questions used by the teacher, the use of verb tenses, and student uptake, it was found that the teacher actually did most of the talking during class. Her questions were primarily display questions, which are questions to which the teacher already knows the answer and are often used as comprehension checks. The teacher also accepted one- or two-word responses from students, which limited their opportunities to practice advanced-level functions, including the required Advanced- and Superior-level text-types of paragraph-level speech and extended discourse. Although literature discussions about real content have the potential to incorporate advanced language goals, if backward planning for this goal has not been considered and prepared for, this potential may likely be lost.

Although some may argue that considering the applications of Superior-level proficiency in the beginning world language classroom is unreasonable, it is in fact quite possible to begin focusing on Superior-level cognitive skills early on, while adjusting the language, text type, and accuracy required of students. For example, the Superior-level cognitive skill of argumentation can be spiraled up through the levels so that students are developing this skill from the very

beginning. In the first year of language study, students might be asked to introduce a topic, state their opinion on the topic, give a reason for their opinion, and conclude by restating the topic. In the second year, students might be asked to introduce the same topic and give their opinion. Then, they support their opinion with three facts and explain the facts before concluding with an explanation about why their facts prove their opinion. In the third year, students would elaborate on the same topic by introducing the subject, stating their opinion and explaining it, citing facts to support their opinion, refer to other sources to support their opinion, address the opposite point of view, and conclude in a persuasive manner to reinforce their argument (Scott, 1991). Thus, the skill of argumentation is presented from the very beginning, but the language used to address the topic is kept simple. As students increase in language abilities, they increase the complexity of their arguments as well.

The idea of starting early and recycling and expanding skills over the course of a language program is especially important because it takes time to develop skills and to manipulate the language structures needed to express meaning as the cognitive skills are applied. Teachers often assume that once a concept has been "covered" in class, students have mastered it. However, in reality, students need much recycling of content, language, and skills before they have full control over any of the three in order to access their content, language, and skills in a functional way for real-life applications (Thompson, 2012). Thus, if the ultimate goal for students is Superior levels of proficiency, it follows that teachers need to design and plan for instruction from the very beginning that can get learners to those goals in terms of language and linguistic mastery, access to needed content, and cognitive skills.

Critical Thinking

Examining again the cognitive skills needed for Superior levels of proficiency—structuring and defending an argument or opinion, hypothesizing, and exploring alternative possibilities—suggests that one overarching ability that students need in order to develop these specific skills is the ability to think critically. The fact that critical thinking is a key component of the 21st Century Skill Set furthermore implies that this ability is one that students need not only in language learning, but also if they wish to use their language skills in the real world. However, despite the frequent discussion for the need of critical thinking in our education system and in world language learning, actually bringing this skill into learning and teaching poses several challenges, including the lack of a clear definition, a limited amount of empirical data on the topic, and a limited understanding of the role critical thinking does, can, and should play in world language learning specifically.

The Challenge of Defining Critical Thinking

Lack of a clear definition. One of the things that makes exploring critical thinking in education such a challenge is the fact that no clear, unifying definition of the term exists. Critical thinking is an ability that "everyone seems to know what [it] is, [but] very few people actually ever attempt to define it" (Atkinson, 1997, p. 74). Especially in education, teachers recognize that critical thinking is a supposedly important skill, and thus "feel obliged to claim both familiarity with it and commitment to it in their teaching, despite the fact that few have had any in-depth exposure to… the concept and most have only a vague understanding of what it is" (Paul, Elder, & Bartell, 1997, n.p.).

In fact, various scholars such as Paul (2004) have explained that when teachers are asked to provide a definition of critical thinking, they have a hard time articulating what they think

critical thinking is. In many different fields, teachers believe they should be teaching critical thinking, and perhaps many of them want to teach it, but they do not know exactly what it means to teach critical thinking, or how to do it. This lack of clarity and understanding about what critical thinking is suggests that instructors need to have a clear concept of critical thinking in mind before they attempt to teach it (Davidson, 1998).

However, if teachers are going to be expected to put critical thinking into practice, they should be provided with a clear definition and concrete examples of what it looks like (Kuhn, 1999). Although what critical thinking looks like in practice may vary based on the discipline, a definition of critical thinking should be broad enough to span many disciplines and should be situated within a developmental framework, grounded in empirical research. In order for such a definition to become a reality, researchers must focus on exactly what critical thinking entails.

Deciding exactly what critical thinking entails may be more complex than it appears on the surface. One of the challenges to defining the term is that there are many other similar, related terms that are often used in conjunction with critical thinking, such as metacognition, higher-order thinking, and problem solving (Johnson, 1992; Shermis, 1999). In fact, one key study on critical thinking known as the Delphi Report, cautioned that

> Not every useful cognitive process should be thought of as critical thinking. Not every valuable thinking skill is a critical thinking skill. Critical thinking is one among a family of closely related forms of higher-order thinking, along with, for example, problem-solving, decision making, and creative thinking. The complex relationships among the forms of higher-order thinking have yet to be examined satisfactorily. (Facione, 1990, p. 5)

Thus, not only is defining critical thinking itself a challenge, but defining the relationships between critical thinking and these other related terms must also be explored before a full, complete understanding of this skill can be achieved.

Despite the lack of a clear definition and the challenges in achieving such a definition, there are still commonalities in the literature with regard to how critical thinking is described and discussed. Key aspects of critical thinking form patterns that are repeated regardless of the source of the definition (Davidson, 1998). Although educators "may not be able to clearly define [critical thinking], they can recognize it when it occurs" (Resnick, 1987, p. 75). Examining selected definitions that do appear in the literature and the similarities in the ways in which critical thinking is discussed brings about a greater understanding of this concept.

Sample existing definitions. There are many different ways in which the literature has attempted to define the construct of critical thinking. Some definitions are more general while others tend to be applied to specific disciplines (Shermis, 1999). Representative samples of the definitions found in the literature are presented here to demonstrate both the wide range of definitions and the common patterns that emerge when different definitions are compared.

Fundamental to most definitions present in the literature, especially when critical thinking is applied to education, is the notion that "critical thinking is a skill that can be taught, practiced, and mastered" (Saltrick, 2007, p. 13). When critical thinking became an especially important concept with regard to education in the late 1980's, a group of experts from many different universities came together to define and describe critical thinking (Facione, 1990). The results of this study, known as the Delphi Report, defined critical thinking in general rather than specific terms, stating that:

> We understand critical thinking to be purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based. Critical thinking is essential as a tool of inquiry. (Facione, 1990, p. 2)

Similarly, Richard Paul, a scholar known widely for his work on critical thinking, defined critical thinking as "the art of thinking about thinking with a view to improve it" (Paul, 2004, n.p.). Critical thinkers analyze and assess the strengths and weaknesses of their thinking and find ways to improve it (Paul, 2004). These definitions suggest that critical thinking involves specific skills that are applied to making judgments, as well as an evaluation of the effectiveness of the critical thinking process.

The Partnership for 21st Century Skills defined critical thinking as a process that involves "effective reasoning, using systems thinking [i.e. analyzing how the parts and the whole work together], making judgments and decisions, and solving problems" (Partnership, 2009, p. 4), and provided further examples and descriptions for each of these four components. The ACTFL 21st Century Skills Map defined critical thinking specifically with regard to the discipline of world language teaching, considering the skill in terms of the role of the student: "Students as inquirers frame, analyze, and synthesize information as well as negotiate meaning across language and culture in order to explore problems and issues from their own and different perspectives" (ACTFL, 2011, p. 9). As with the Partnership's definition, sample examples and descriptions were provided, suggesting that critical thinking is complex enough that it may be difficult to integrate all of the components of critical thinking into a simple definition without additional explanation.

In many ways, these definitions are similar, and match other repetitions noted in the literature. When many other definitions are considered in addition to the sample ones outlined above, common patterns of consensus regarding critical thinking include the following:

> The ability and propensity to analyze complex issues and situations, to recognize and evaluate assumptions and alternative points of view according to acceptable criteria, to make sound inferences and to draw reasonable conclusions based on reliable information, and to make interdisciplinary connections and to transfer insights to new contexts. (Reed & Kromrey, 2001, n.p.)

Many of these aspects, including analysis, judgment based on criteria, and evaluations based on multiple points of view, are included in the definitions discussed earlier.

Commonalities in the literature. Often, the literature talks about critical thinking and even investigates it without ever explicitly defining it, perhaps due to the lack of a clear definition. The way that critical thinking is discussed in the literature, whether explicitly defined or not, reveals commonalities that seem to be fairly universal. Some of these commonalities included the "who," the "what," the "how," and the "why" of critical thinking.

First, in nearly all definitions and discussions, some reference was made to "who" was doing the critical thinking. In most instances it was implied that it is the students or learners who engaged in critical thinking (ACTFL, 2011; Kuhn, 1999; Partnership, 2009). In only a few cases was the teacher included as one who engages in critical thinking when planning instruction (Facione, 1990). Second, there was almost always something about which one must think critically. This "something" could be many things, ranging from information to beliefs to concepts, ideas, or evidence (ACTFL, 2011; Gaskaree, Mashhady, & Dousti, 2010; Paul, Elder, & Bartell, 1997; Partnership, 2012). Third, "how" students or teachers think critically about the

"what" was described in definitions by using verbs to describe actions teachers or students engage in during the critical thinking process. These actions included things such as analyzing, discerning, evaluating, explaining, framing, and inferring (ACTFL, 2011; Facione, 1990; Gaskaree et al., 2010; Kuhn, 1999; Paul et al., 1997; Partnership, 2012). Finally, the "why" of critical thinking was described in terms of the purposes for engaging in critical thinking, which included goals such as solving problems, answering questions, making decisions, making judgments, and becoming aware of personal thought processes (ACTFL, 2011; Facione, 1990; Kuhn, 1999; Paul et al., 1997; Partnership, 2012). In summary, when critical thinking was discussed in the literature, there was always the notion that someone engages in critical thinking about something specific. They use certain actions to think critically for a given purpose. This pattern appeared consistently throughout the literature when critical thinking was discussed.

There were also commonalities with regard to the role of critical thinking as it applies to teaching and learning. First, critical thinking was often discussed as a skill that, like reading and writing, is integrated with content to facilitate learning. Second, because critical thinking requires content, it is often interdisciplinary. Consider now the following elaborations on each of these commonalities.

In the first common feature, critical thinking was often presented as a skill that gets integrated with content to facilitate the learning process. Teaching about thinking itself is insufficient (Paul, 2004). Students must have something to think about before they can work to improve their thinking skills (Brown, 1997, as cited in Kuhn, 1999). Rather than teaching content in isolation and critical thinking in isolation, critical thinking can be integrated into core subject matter (Burbach, Matkin, & Fritz, 2004; Gaskaree, Mashhady, & Dousti, 2010). This integration

can occur in any academic discipline (Paul, 2004). In fact, critical thinking is perhaps most effectively taught when there is rich, discipline-specific content present (Facione, 1990).

As critical thinking is integrated into the existing curriculum, the academic content and the thinking skills become connected (Paul, 2004), and students are able to employ their critical thinking skills to learn the academic content, just as they use reading and writing to access academic content. Additionally, just as reading and writing skills are reinforced in many different disciplines, critical thinking can also be supported in many different disciplines (Facione, 1990, p. 18). As students develop their critical thinking abilities in school, they can then apply their skills to contexts and settings beyond the classroom, such as in technical and interpersonal situations (Facione, 1990).

The second common pattern that appeared in the literature was that because critical thinking requires content, critical thinking is often interdisciplinary in nature. Students integrate content and thinking skills not only within a single discipline, but they also apply their thinking skills to interdisciplinary content. As this integration takes place, students are able to make connections and become better thinkers (Ferguson, 2002). In fact, critical thinking was described as teaching students how to "coordinate knowledge and skills across disciplinary boundaries" (Barron, 2003, p. 408). As students see how thinking skills can be used to approach interdisciplinary topics, they are better able to take their thinking skills and apply them to real-world problems using the domain-specific knowledge they have gained (Facione, 1990). To this end, critical thinking has a common "who," "what," "how," and "why," and is a skill that can be integrated with content to facilitate the learning process.

Despite these many patterns and commonalities that exist when critical thinking is defined in the literature, the definitions discussed above demonstrate the amount of variance that

still exists among definitions. For example, should all definitions include affective dispositions and traits of critical thinkers as some definitions do? In other words,

> while much has been accomplished, critical thinking is a complex construct not easily limited to a single definition, and many areas of uncertainty and disagreement remain as cognitive scientists, educational researchers, and philosophers continue to pursue their own visions of critical thinking based in diverse research traditions. (Reed & Kromrey, 2001, n.p.)

The fact that there still remains no common, complete agreement on what critical thinking is and which aspects of it are important makes studying this skill empirically and applying it fully in the classroom a challenge.

Possible frameworks. Because of the lack of a clear definition of critical thinking, a number of different frameworks have been generated to help conceptualize the term. The literature frequently operationalizes the phrase "critical thinking" by applying a framework to theories or empirical studies rather than creating individual definitions (see, for example, Ferguson, 2002; Heining-Boynton & Heining-Boynton, 1992; Saltrick, 2007, p. 13; Shen & Yodkhumule, 2012). Although the frameworks presented here are by no means comprehensive, they provide a representative sample that highlights some of the different approaches and aspects to consider when trying to situate the term critical thinking in an operational framework.

As already noted earlier, the Delphi Report (Facione, 1990) defined critical thinking as having two dimensions: cognitive skills involved in the act of critical thinking, and affective dispositions that those engaged in critical thinking possess. According to their framework, there were six cognitive skills: interpretation, analysis, evaluation, inference, explanation, and self-regulation, each with associated sub-skills, which included actions like categorization, examining

ideas, assessing claims, drawing conclusions, presenting arguments, and self-correction. The affective dispositions considered critical thinkers' approaches to life in general, including traits such as inquisitiveness, flexibility, honesty, and fair-mindedness. These dispositions also accounted for critical thinkers' approaches to specific issues, problems, or questions, through traits such as clarity, orderliness, diligence, reasonableness, persistence, and precision. The experts noted that this framework represents an ideal, and it is unlikely that any one individual will possess all of the skills and dispositions outlined above. However, this framework again demonstrates the complexity involved in attempting to articulate the skill of critical thinking.

One framework presented by Hoch & Hart (1990) for use in the classroom, including the world language classroom, differentiated between critical thinking skills and critical thinking processes. According to this framework, there are eight critical/creative thinking processes: concept formation, principle formation, comprehension, problem-solving, decision making, research, composition, and oral discourse. Additionally, there are several categories of core thinking skills, each with sub-skills. These categories include: focusing skills, information gathering skills, remembering skills, organizing skills, analyzing skills, generating skills, integrating skills, and evaluating skills. The associated sub-skills include skills such as observing, encoding, classifying, summarizing, inferring, and verifying. This framework is useful because it differentiates between processes and skills, and includes some of the related terms frequently used in conjunction with critical thinking (Johnson, 1992) as part of the framework.

Perhaps the framework most commonly used to conceptualize and discuss critical thinking is Bloom's Taxonomy. Since it was first published in 1956, Bloom's Taxonomy has become one of the most well-known tools for evaluating thinking in education (Forehand, 2005). The original Bloom's Taxonomy established six levels of cognitive ability based on increasing

complexity: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation (Anderson & Krathwohl, 2001).

In 2001, the original taxonomy was revised to reflect a current understanding of education and cognitive development (Anderson & Krathwohl, 2001) and to make the original taxonomy more relevant for the 21st century (Forehand, 2005). In the Revised Bloom's Taxonomy (RBT), a distinction was made between the kind of knowledge students learn and the cognitive processes they use in order to gain this knowledge. Thus, the knowledge level in the original Bloom's Taxonomy became its own dimension, with four different kinds of knowledge: factual, conceptual, procedural, and metacognitive (Anderson & Krathwohl, 2001). The remaining nouns in the original Taxonomy were then transformed into verbs in the cognitive process dimension to emphasize the actions involved in thinking. Thus, "Knowledge" became "Remember," "Comprehension" became "Understand," "Application" became "Apply," and "Analysis" became "Analyze." The order of the final two verbs was reversed, so "Synthesis" became "Create" and was moved above "Evaluation," which became "Evaluate" (Anderson & Krathwohl, 2001).[2] In summary, the order of the original Bloom's Taxonomy from lower order to higher order thinking was: *Knowledge* → *Comprehension* → *Application* → *Analysis* → *Synthesis* → *Evaluation*; and shifted to become: *Remember* → *Understand* → *Apply* → *Analyze* → *Evaluate* → *Create* in the Revised Bloom's Taxonomy (Anderson & Krathwohl, 2001).

Unlike Bloom's original Taxonomy, the levels of the Revised Bloom's Taxonomy (RBT) are not meant to be mutually exclusive and some overlap among categories is to be expected

[2] Because the Revised Bloom's Taxonomy deals specifically with the 21st century, I chose to use the RBT rather than the original Bloom's Taxonomy in my study. Consequently, any responses in my data that mentioned "synthesis" were interpreted as "create." Additionally, because much of the field did not make the distinction between the types of knowledge learned by students, I focused primarily on the Cognitive Process Dimension rather than applying the Knowledge Dimension to the Cognitive Process Dimension as Anderson and Krathwohl (2001) describe.

(Anderson & Krathwohl, 2001). However, the categories are organized by increasing complexity, and the "higher-order cognitive processes" are defined as processes in which students cannot rely on memory alone to answer correctly. These higher-order processes are what many in the literature define as critical thinking, although some define critical thinking as a process that requires all the levels of the RBT (Shermis, 1999). In fact, the authors of the RBT themselves note that one reason why critical thinking does not appear in the RBT is because it is a complex process that will likely require the use of several different parts of the table (Anderson & Krathwohl, 2001). This insight suggests that the RBT may be especially helpful when trying to break down the complexity of the skill of critical thinking by exploring which parts of the table are used in definitions of the term.

The widespread recognition of both the original Bloom's Taxonomy and the Revised Bloom's Taxonomy (RBT) makes them useful tools for discussing critical thinking as it applies to curriculum and learning objectives. This framework provides common vocabulary that can be used to apply state and district standards across subject areas (Ferguson, 2002), especially since these standards often vary widely and can be vague (Anderson & Krathwohl, 2001). However, for such a framework to be truly effective in the classroom for teachers, research suggests that training is needed (Heining-Boynton & Heining-Boynton, 1992). Teachers who received specific training on teaching higher-order thinking skills as defined in terms of Bloom's Taxonomy are more likely to integrate such skills into their classes. Although the RBT is widely recognized, it remains less clear if teachers receive specific training on how to apply this framework to their teaching and curriculum planning.

What is most unique about the Revised Bloom's Taxonomy, aside from its widespread usage, is the fact that unlike the other frameworks described previously, this framework focuses

on all possible cognitive processes, rather than limiting the framework to only what constitutes critical thinking. Thus, the RBT can be a valuable tool because it allows for a simultaneous comparison of what critical thinking is and what is not. However, this framework alone is not enough to gain a complete understanding of critical thinking because it does not provide a complete definition of the term.

Empirical Studies Dealing with Critical Thinking

Because no clear, unifying definition of critical thinking exists, much of the literature dealing with critical thinking is theoretical in nature. This literature, as has been seen through many of the examples above, attempts to articulate the complexity of critical thinking, provide frameworks for conceptualizing the term, and describe critical thinking as it should appear in the classroom. However, a solid base of "relevant research [on critical thinking] has been either nonexistent or untranslatable into practice" (Kuhn, 1999, p. 17), thus perpetuating the challenge of defining critical thinking. Despite the lack of abundant research, there are still a few empirical studies that attempt to measure critical thinking as it actually appears in practice, and the findings of these studies do contribute to our understanding of critical thinking. Several of these empirical studies are described in further detail below.

One study by Paul, Elder, and Bartell (1997) looked specifically at university instructors and how they defined the term critical thinking. Faculty members at 38 public and 28 private colleges across California were interviewed for a total of 140 interviews in all. The instructors were interviewed using a protocol that included closed-ended questions and open-ended follow-up probes. Faculty were asked questions designed to elicit their personal concept of critical thinking. Many claimed that critical thinking was an important part of their teaching, but most could not clearly explain or give a definition of what critical thinking was. They felt that critical

thinking was an important skill that students needed to learn, but they were unsure of how to integrate critical thinking into their subject matter. Very few noted the importance of critical thinking in today's changing world.

Education faculty members were slightly more articulate on the subject, including the issue of integration, than were Arts and Sciences faculty. Often, faculty would mention terms related to critical thinking such as "assumption" or inference," but were unable to clearly define those terms. They believed that they instilled critical thinking skills in their students, and yet they failed to mention key components of that skill.

Those faculty members that were found to teach critical thinking effectively also had a clearly articulated definition of the term, even though the definitions often varied, suggesting that defining critical thinking using a specific, "correct" definition may be less important than having a clear personal definition. The study concludes that when faculty members lack a clear definition and conceptualization of the term "critical thinking," they are not able to effectively teach this skill to their students.

Consequently, the study makes several key policy recommendations. First, faculty need a clear definition of critical thinking to enable them to redefine their perceptions regarding critical thinking, and they need professional development to enable them to teach the skill of critical thinking. Second, there needs to be an expectation in the field to teach for critical thinking, and finally, there needs to be a means to assess critical thinking, both for students and for prospective teachers.

Other studies have investigated the effects of explicit critical thinking instruction when included in content-based courses on the development of students' skills. A study by Reed and Kromrey (2001) explored the effects of explicitly teaching a critical thinking model as part of a

content course. The study compared two groups, one of whom received explicit instruction in critical thinking as part of their history course, and the control group, who had the same subject matter content, but no explicit critical thinking instruction.

The critical thinking instruction was based on Richard Paul's 1995 model for critical thinking, which includes a focus on elements of good reasoning, an assessment of the quality of thinking, and essential dispositions of an effective critical thinker. In the experimental group, the model was taught explicitly, students received handouts with additional information on the model, they applied the model to out-of-class assignments, classroom discussions were based on the model, and students were trained to use reasoning to analyze primary historical sources. The control group received no explicit training and focused only on the subject matter content.

Students were given four tests to measure both critical thinking skills and historical content knowledge: a Document-Based Question (DBQ) from a previously-given Advanced Placement history exam, a critical thinking essay test, a critical thinking inventory, and multiple choice questions dealing with historical content knowledge. Three of the four tests—the critical thinking essay test, the critical thinking inventory, and the multiple-choice questions—were given as pre-tests. The DBQ was only given as a post-test because it required content knowledge that students had not yet learned at the beginning of the semester.

The experimental group scored significantly higher than the control group on both the DBQ and the critical thinking essay, both of which required them to think critically on historical and current issues. There was no significant difference on the test of content knowledge. The study results suggest that explicitly teaching critical thinking can be effective in improving students' thinking skills without costing students their understanding of content knowledge.

Similarly, another study by Burbach, Matkin, and Fritz (2004) measured the effectiveness of integrating critical thinking into discipline-based courses by following college students enrolled in a leadership course. Based on a review of related literature, the researchers of the study generated a list of classroom activities that actively engaged students in critical thinking. These activities included: journal writing, service learning, small groups, scenarios, case studies, and questioning. The researchers then integrated these activities into an introductory leadership course for all students enrolled in the course. A total of 80 participants participated in the study by taking a test commonly used to measure critical thinking at the beginning and end of the semester. The test measured three sub-skills of critical thinking: deduction, interpretation, and evaluation of arguments. Two of three sub-scores (deduction and interpretation) and the overall critical thinking score were significantly higher at the end of the semester than at the beginning, and the third sub-score (evaluation of arguments) approached significance. These findings further support the belief that critical thinking can be integrated effectively into discipline-based courses. The researchers also concluded that this integration should be a high priority because of the value employers place on the skill of critical thinking.

Empirical studies designed specifically with regard to critical thinking in the world language classroom were also limited. One relevant study by Shen and Yodkhumule (2012) is described briefly below. Of note is the fact that whereas the empirical studies outlined thus far have dealt with integrating critical thinking into teaching generally, this study considers the effect that specific methodological practices and approaches have on students' critical thinking.

The focus of the Shen & Yodkhumule (2012) study was on how the questions teachers asked facilitated students' critical thinking or not. If questions required students to manipulate knowledge, they facilitated critical thinking whereas questions that required students to merely

recall facts did not. The study examined common features of a Chinese teacher's questions and whether or not the teacher's questions facilitated higher-order levels of thought processes from students. Students' perceptions of the teacher's use of questions were also considered.

Data were collected over the course of three months from classroom observations and from selected interviews with students. The questions asked during classroom observations were analyzed based on the four higher levels of Bloom's Taxonomy: application, analysis, synthesis, and evaluation. Findings revealed that 79% of the questions asked were lower-order and dealt with factual recall, while only 21% dealt with higher-order skills. Most often, questions elicited factual recall and were related to students' prior knowledge. Only a few questions required students to evaluate and analyze. Students felt, based on their interview responses, that because so few higher-order questions were asked, it was not enough to make any actual improvement in critical thinking skills. The researchers also noted that teachers could work against themselves by asking a higher-order question but expecting or accepting a one-word answer rather than requiring students to elaborate, explain, or justify their answers. These findings suggest that teacher practices in class may be able to facilitate student engagement in critical thinking.

From these empirical studies, there are three key points that should be kept in mind as the discussion moves forward. First, if critical thinking is to be incorporated into the classroom, whether or not individual teachers have a clear definition of critical thinking for themselves may be more important than what the definition actually is (Paul, Elder, & Bartell, 1997). Second, it appears that critical thinking can be taught explicitly and integrated effectively into courses focused on content (Reed & Kromrey, 2001; Burbach, Matkin & Fritz, 2004). Finally, specific methodological practices may be able to increase the amount of critical thinking that students engage in (Shen & Yodkhumlue, 2012). At the same time, the majority of the literature discussed

thus far has dealt with disciplines other than world language learning. The next section of this literature review will explore what has been discussed with regard to critical thinking as it applies specifically to the world language classroom.

Critical Thinking and the World Language Classroom

The literature that explores critical thinking as it applies specifically to world language teaching and learning discusses three primary aspects of this relationship: first, how critical thinking is relevant to world language instruction; second, what critical thinking may look like in practice in the world language classroom; and third, how critical thinking can facilitate the development of language skills and proficiency. Although much of this literature is theoretical in nature, the insights described below provide a useful understanding of the importance of the relationship between critical thinking and world language learning as well as useful ideas for implementing this skill in world language classrooms.

The relevance of critical thinking in world language instruction. When critical thinking is discussed in the literature in connection with world language teaching and learning, it is often described as a way to justify world language instruction. Although many believe that learning a second language requires critical thinking skills, it is a less commonly held belief that the critical thinking skill itself can be taught and developed in the language classroom (Sanders, 2006). However, helping students, parents, and administrators understand the potential for teaching thinking in the world language classroom can help those stakeholders view world language education as more than just a "frill" (Hoch & Hart, 1991).

Part of the purpose of education, including language education, is to effectively prepare students for real life (Heining-Boynton & Heining-Boynton, 1992). To achieve this purpose, many states and districts have standards and goals that encourage or require real-life application

of academic curriculum (Hoch & Hart, 1991). Integrating critical thinking into the world language classroom reinforces this application by giving students opportunities to apply their language skills to real-world situations and topics.

Critical thinking facilitates content-based instruction (Heining-Boynton & Heining-Boynton, 1992), and the inclusion of content beyond the target language alone can be a useful tool when arguing in favor of the necessity of world language instruction. Talking *about* the language is not as effective as *using* the language for communication (Barron, 2003). Often, increasing the amount of higher-order thinking in a world language classroom means drawing on content from other disciplines such as math and science (Heining-Boynton & Heining-Boynton, 1992). As the world language classroom becomes interdisciplinary and focused on higher-order thinking skills, language teachers justify the relevance of world language instruction to parents and administrators because they are reinforcing core content from other critical subject areas. At the same time, language teachers are able to meet their learning objectives because through higher-order learning activities, teachers reinforce targeted language skills (Heining-Boynton & Heining-Boynton, 1992).

Critical thinking facilitates creative, everyday language use, which is a primary goal of the world language classroom (Gaskaree, Mashhady, & Dousti, 2010). As world language teachers "recognize, emphasize, and publicize those thinking strategies they promote in their teaching, [they help] other educators who have little experience with second language learning to understand the relationship" (Hoch & Hart, 1991, pp. 34-35). By demonstrating that world language teachers are able to naturally integrate the development of thinking skills into their curriculum as an important part of communication, they further validate the fact that world

language instruction is more than an elective subject area, but is just as valuable to helping students develop needed skills as is any other subject area.

Critical thinking in practice in the world language classroom. If integrating critical thinking skills into the world language classroom is one way to make language learning relevant and justifiable, how then does a teacher put these skills into practice? The ACTFL 21st Century Skills Map gives several specific examples of what critical thinking activities in the world language classroom may look like at the Novice, Intermediate, and Advanced levels of proficiency (ACTFL, 2011). These sample activities imply that critical thinking can be integrated into the language learning, even from the very beginning. However, the skills map provides no real practical tools to help teachers know how to implement critical thinking into their language curriculum, nor does it suggest how to evaluate existing materials and activities and adapt them to increase the amount of critical thinking the activities require. In many cases, increasing the amount of critical thinking should take only small adaptations, rather than a complete overhaul of curriculum—"many of our classroom activities that involve mainly recall need to be restructured only slightly to include higher-order skills" (Hoch & Hart, 1991, p. 31).

When seeking to make this shift, teachers can focus on three things to increase critical thinking: the kind of thinking they wish students to learn, the content already present in the classroom that can be used to facilitate this thinking, and how to organize lessons in order to teach the thinking (Hoch & Hart, 1991). Note that the thinking is not taught in isolation, but is presented as students apply thinking skills to content.

As was suggested earlier, one of the easiest ways to increase the potential for critical thinking in the world language classroom is to integrate academic content into language curriculum. The focus should be on teaching "language through content rather than language as

content" (Rojas, 2001, p. 327). Including content in a world language curriculum facilitates the integration of all types of language skills—reading, writing, speaking, and listening—with thinking skills, as well as with the content itself (Gaskaree, Mashhady, & Dousti, 2010).

Creating activities that require critical thinking can be done in several ways. Activities that engage students in critical thinking typically start with a topic or text (Gaskaree, Mashhady, & Dousti, 2010), providing the needed content described above. Students are then asked to identify a problem and explore possible solutions, a process which determines the kind of language students need to complete the task. Another way to look at critical thinking activities is that they are composed of three parts: cognitive activities that target specific skills, metacognitive activities so that students become aware of their own thinking, and the application of the skills students have learned (Hoch & Hart, 1991). Because critical thinking activities often rely on group work, the group activities can be managed when students are given a reason to participate in the activity and must produce some kind of product or outcome (Williams, Harper, & Lively, 1994).

In addition to these specific activity characteristics, classrooms that integrate higher-order thinking also have common attributes that help them shift to focus on student-centered learning. First, these classrooms connect the content to the students' personal experiences (Gaskaree, Mashhady, & Dousti, 2010). Students are engaged both cognitively and emotionally. The role of the teacher shifts from being the source of knowledge to co-constructing and creating knowledge with students. Teachers coach rather than teach (Rojas, 2001, p. 328), while students are given extensive opportunity to practice with the language. Students use what they already know, and they learn to take calculated risks with the language, and in return, they receive guidance and feedback from the teacher (Gaskaree et al., 2010). Teachers focus on student

readiness and learning styles, and provide options and choices to meet diverse needs. They create open-ended problems centered around the concepts being taught, and they use multiple modalities, collaborative group work, and varied forms of assessment (Rojas, 2001).

The literature suggests that putting critical thinking into practice in the language classroom is possible, even at beginning levels. It often requires small shifts to existing activities. Integrating content into the curriculum enables students to think critically about the content using the language itself, and thinking should be taught as applied to content. Additionally, the roles of the teacher and student shift to become more open and fluid as knowledge and needs are negotiated between both parties.

Critical thinking as a tool to build language proficiency. One of the concerns that was frequently addressed in the literature was the fact that many teachers believe that beginning world language students are not able to engage in critical thinking and higher-order thinking activities. However, the literature demonstrated that the reverse is true—critical thinking can be a useful tool to help build language proficiency.

Teachers sometimes express concerns at the need for students to have a linguistic foundation first before being asked to perform tasks that require higher-level thinking skills. Often, building this linguistic foundation means focusing on memorization, thereby limiting students to lower-order thought processes (Williams, Harper, & Lively, 1994). However, these lower-order skills are inherently dealt with when students are asked to engage in higher levels of thought (Williams et al., 1994). Although some memorization at beginning levels of world language instruction is to be expected, teachers need not be afraid to ask students to engage in higher-order thinking as well.

Critical thinking can happen at the very beginning levels of world language learning, even when students are limited to isolated words and phrases. Analysis and critical thinking can happen on the word-level (Williams, Harper, & Lively, 1994), since "higher-order thinking skills do not require high level language ability" (Heining-Boynton & Heining-Boynton, 1992). For example, in one activity a teacher could explain to students that each letter of the alphabet is worth a certain amount of target culture money. Students would then predict who would have the most expensive name, calculate the worth of their own names, and then compare their findings with their classmates (Heining-Boynton & Heining-Boynton, 1992). This activity would require students to engage at several of the upper levels of the RBT, but it would require little more target language vocabulary than the alphabet and numbers. Thus, using activities similar to this example, it is possible to engage students in higher-order thinking skills that are "developmentally appropriate" (Hoch & Hart, 1991), both linguistically and cognitively.

Teachers should not wait until students have already reached higher levels of language skills because it takes time to develop higher-order thinking skills. These skills are not gained incidentally as part of the educational experience (Heining-Boynton & Heining-Boynton, 1992); they must be deliberately developed. Just as it takes time to work toward proficiency and students need constant practice, students also need repeated practice in applying these thinking skills. Teachers should provide this practice from the beginning, because many students may not reach advanced levels of proficiency (Met, 1995, as cited in Rojas, 2001, p. 327). Waiting until students gain more language means that some students may never be given a chance to develop their thinking skills. In fact, integrating higher-order thinking skills into the world language classroom should come naturally since "teaching for proficiency involves many tasks that require higher levels of thinking, though [teachers] may not be aware of it" (Hoch & Hart, 1991, p. 34).

Although critical thinking can and perhaps should be included in beginning level world language classes, it also plays a pivotal role in crossing proficiency boundaries, such as the gap between Intermediate and Advanced levels of proficiency. Many students at the end of the introductory language sequence lack the necessary critical thinking and advanced discourse skills that are needed at the higher levels to engage in university courses focused on literary analysis and other academic content (Williams, Harper, & Lively, 1994). Integrating critical thinking skills into the world language curriculum throughout a language program can bridge this gap. Students can shift gradually from the concrete topics that they deal with initially to the abstract topics needed later on. They can be asked to express and support opinions, make analogies, and organize their discourse. Again, teachers will need to adapt their expectations and anticipate rudimentary discourse, but students will be engaging in meaningful conceptual exploration in the target language (Rojas, 2001) in preparation for Advanced- and Superior-level tasks in upper-level courses. Over time, as students practice and develop both linguistic and cognitive skills together, they will be prepared to perform at high levels of language proficiency.

Critical thinking as it applies to the world language classroom specifically can be useful in providing a justification for the necessity of world language instruction. It can also be a useful tool in facilitating the development of students' language proficiency. The literature also describes some characteristics of what the skill of critical thinking might look like in the world language classroom. One of the weaknesses with these theoretical descriptions is that they are built without being supported by empirical data or by being centered and grounded in a clear definition of what critical thinking is. This study seeks to explore if current definitions of critical thinking align with these theoretical descriptions and applications.

The fact that there are commonalities in the way that critical thinking is discussed in the literature suggest that establishing a clear definition is possible, but a unifying definition and a framework to discuss this skill and to help bring it into practice in the classroom is still needed. Additionally, the way that this skill is defined and applies specifically to world language teaching and learning also needs to be addressed further. The purpose of this study is to begin exploring how critical thinking is currently being defined in the world language teaching field and to consider some possible potential roles for this skill in world language teaching and learning, as shaped by the following research questions:

1. How does the world language teaching field at large define the 21st century skill of critical thinking?
2. How do the instructors and supervisor of a specific German 101 program define critical thinking?
3. How do the findings from these definitions shape our understanding of the relationship between critical thinking and advanced levels of language proficiency?

The process used in this study to gather data to answer these research questions will be outlined in Chapter 3.

CHAPTER 3: METHODOLOGY

As stated previously, the main focus of this study is to explore current definitions of critical thinking in the field of world language education. In this chapter, I will explain the methods used to conduct the study by first contextualizing the study and describing the study's participants. I will then describe the sources from which data were collected and the procedures that were employed to collect said data, before finally outlining the methods of data analysis that were used.

Explanation of Methodology

There are two primary approaches to research that are generally used in educational inquiry. Quantitative research is a systematic investigation of the relationship between variables, while qualitative research is a systematic attempt to describe and explain phenomena as they appear or occur naturally. Quantitative research is well suited to identify evidence of cause and effect or correlation and to test specific hypotheses and predict specific outcomes. Quantitative research, on the other hand, is intended to generate an understanding of an issue or problem and to explore perspectives on that issue (Mora, 2010).

The process used to gather and analyze data differs in quantitative and qualitative research. In quantitative research, research questions are generated initially, and data is collected and statistically analyzed to predict how the research questions can be answered. However, in qualitative research, a different type of open-ended, narrative data are collected (Maykut & Morehouse, 1994). The hypotheses themselves then emerge from the data set as the data are analyzed and explored.

One appropriate method for discovering qualitative findings is the constant-comparative method. This method is used to analyze data by comparing the data against themselves to

discover patterns and themes that emerge. First, the data are separated into "units of meaning," or stand-alone sections of data that can be understood without additional information (Maykut & Morehouse, 1994). Next comes the discovery phase, during which the researcher reads through all the data in order to compile many potential themes, concepts, or patterns. These themes, concepts, and patterns then become provisional categories to which the data are coded. During this initial coding, new categories may be added as needed. Next, the provisional categories are refined. During the refinement process, the data are reanalyzed until there is coherence within each existing category. Provisional categories may be collapsed during this phase, so the data are first expanded to include all possibilities, and then contracted to focus on what most clearly emerges from the data. As the researcher explores the data for patterns within individual categories and across categories, she develops a more complete picture of the emerging findings. Thus, the constant-comparative method involves continually comparing the data to themselves to allow the key findings of the study to become salient.

A constant-comparative method was chosen for this study in part because it is an accessible method of qualitative data analysis for beginning researchers. Additionally, the purpose of this study was to gain an understanding of the current definitions of critical thinking in the field at large and from specific language instructors. Because the constant-comparative method requires the researcher to compare the data against themselves, this method enabled me to sift through the data from a variety of different sources until the key aspects of the definitions of critical thinking became salient.

Context for the Current Study

This study originated as an exploration of critical thinking in a sample of German 101 classes at Brigham Young University. Classroom observations, textbook analyses, and

interviews with the course supervisor and the instructors all became sources from which data were collected as part of the original process.

However, as I began the study, I quickly realized that one of the biggest limitations was the lack of a clear definition of the term "critical thinking." Thus, I decided to narrow the focus of the study to explore only the definition of critical thinking and how it was articulated by world language teachers. To get a sense of where the sample of German 101 classes fit into the larger discussion of critical thinking in the world language teaching field as a whole, I developed and distributed a survey exploring practicing K-16 teachers' definitions of critical thinking. The purpose of this study then became understanding and exploring current definitions of critical thinking in the field, as shaped by the field-wide survey and the one-on-one interviews with the German 101 instructors and course supervisor.

Participants

Criteria for Inclusion in the Study

In an attempt to ensure that participants for the survey were representative of the field, world language teachers from across the country and from all levels of instruction were invited to participate, and a convenience sample of those willing to participate was used in the study. Participants were recruited through personal e-mail invitations, the professional listserv FLTEACH, and social media sites such as Facebook and Twitter.

Specific language instructors were also interviewed personally. These instructors were selected from all the German 101 student instructors teaching during the Winter 2013 semester at the university mentioned earlier. Two of the instructors from the five German 101 instructors

were chosen based on scheduling factors. The German 101 course supervisor also participated in the interviews.[3]

Sample

A total of 62 participants were involved in the study. In addition to the three interview participants located at the same large, private university in the western United States, 59 participants were involved in only the survey. These survey respondents were world language educators representing 19 different states from several different regions of the US, including the Northeast (CT, MA, MD, NH, NJ, NY, PA, VT), the Southeast (FL, KY, VA), the Midwest (IL, IN, MN, OH, WI), and the West (AK, CA, UT, WA). This sample of survey respondents was large enough to find patterns and draw meaningful conclusions from the data, and the interviews with individual instructors provided more focused insights into definitions of critical thinking.

Demographic Data on Participants

All of the participants in the study were world language educators from the United States. The survey respondents taught 11 different languages: Chinese, Croatian, English as a Second Language, French, German, Hebrew, Italian, Japanese, Korean, and Spanish. French was the most common language taught, with 58% of respondents teaching French. Forty-eight percent of respondents taught Spanish, followed by Italian with 8% and German with 7%. The interview participants all taught German. Some survey respondents reported that they taught multiple languages, which accounts for the fact that the above percentages are more than 100%. The interview participants taught only German.

In addition to representing multiple languages, the study participants also represented different levels of instruction. Sixty-three percent (N=38) of respondents taught at the K-12 level,

[3] The course supervisor was also a German 101 instructor during this semester, but he was interviewed specifically in his capacity as the course supervisor.

with 5% (N=2) of those teaching most often at the elementary level, 32% (N=15) at the middle school/junior high level, and 63% (N=24) at the high school level. Thirty-six percent (N=21) of respondents taught at the university level. Twelve percent (N=7) were student instructors, 2% (N=1) were adjunct or part-time faculty, and 22% (N=13) were full-time university faculty. Similarly, two of the three interview participants were student instructors, and their supervisor was a full-time university faculty member.

The study participants also represented a wide range of teaching experience. Eight percent of survey respondents had taught a foreign language for less than one year, 14% were still in their first three years of teaching, 14% had taught for between 4-10 years, 20% had taught for between 11-15 years, 12% had taught for between 16-20 years, and 32% had been teaching for more than 20 years. The student instructors who participated in the interviews each had one previous semester of teaching experience; their supervisor had been teaching at the university level for about 26 years.

Data Sources

As mentioned previously, data analyzed in this thesis came from two primary sources: a survey of current K-16 world language teachers, and individual interviews with the German 101 instructors and supervisor at BYU. The findings from these two sources were anchored in the literature regarding critical thinking, which provided a final point of comparison when analyzing the data. Each of the two data sources used to collect data from participants is described in further detail below.

Surveys

The survey was developed using the online website Qualtrics to facilitate the data collection process. There were about 25 questions total (see Appendix A), separated into two

question blocks. The first block of questions consisted of eight to ten questions[4] in which participants were asked to share basic demographic information such as the current state in which they were teaching, the number of years they had taught, the language(s) they taught, and the levels/kinds of classes they taught. There were also survey questions which were not analyzed for this thesis which were designed to gather background information about participants, including facts such as their average class size, their use of the target language in their classes, and their use of technology. This demographic and background information provided context for the other responses.

Questions in the second block elicited participants' views on the role of critical thinking in the foreign language classroom. These survey questions asked participants to list things they associate with critical thinking, to provide a written definition of critical thinking, and to sort common language teaching activities based on how much critical thinking they require of students. Participants were also asked to rank how important they felt critical thinking was in the foreign language classroom, how often they included critical thinking in their teaching, and how comfortable they were doing so. Three of the survey questions became especially relevant for the data analysis—Survey Question 21: "When you hear the term 'critical thinking,' what associations come to mind? (key words, topics, images, etc.)," Survey Question 22: "How would you define the term 'critical thinking'?, " and Survey Question 28: "What were your criteria for sorting the topics [i.e. classroom activities] above [based on the amount of critical thinking they require]?" These questions were highlighted as the primary sources of data because they best addressed the questions raised in this thesis in light of time limitations that prevented a more comprehensive analysis of the survey.

[4] The actual number of questions for each respondent varied slightly based on their responses to the demographic information. See Appendix A for details.

Semi-structured Interviews

In the second source of data, semi-structured interview protocols guided each of the individual interviews with the student instructors and their supervisor. The protocols included open-ended questions and follow-up probes and differed slightly for the instructors and for the supervisor. The instructors and supervisor were interviewed at the beginning and the end of the study,[5] and a separate protocol was developed for the initial and the final interviews (see Appendices B, C, D, E). The initial interview protocols (see Appendices B, C) included foundational questions about the role of the German 101 course itself and the semester goals that the German 101 instructors and supervisor had for the course. These questions provided background and context for the rest of the responses. Most of the questions in the initial interview were designed to elicit participants' definitions of critical thinking and to explore their attitudes toward the role of critical thinking in the beginning German language classroom. As with the survey, the protocols asked participants to describe their associations with critical thinking, to give an actual definition of critical thinking, and to rank how important they felt critical thinking was in the German classroom, how often they incorporated it into their teaching, and how comfortable they were with including it in their teaching.

The final interview protocols served as a form of member-checking (see Appendix D, E), and the final interview questions focused on clarifying definitions of critical thinking that were provided in the initial interview. The protocols again asked participants to rank their opinions on the importance of critical thinking in the German language classroom, the frequency with which

[5] Interview participants were also involved in observations which were not analyzed as part of this thesis since in the final analysis their scope exceeded the focus of this study. Since these interview participants were observed during the course of the semester, they were interviewed again after these observations to evaluate if there was any change in definitions or attitudes over time.

they incorporated critical thinking into their teaching, and their comfort level with regard to including critical thinking in their teaching. Additionally, several of the same questions asked in the survey were included in the final interview protocols. These questions asked participants to sort common language learning activities based on the amount of critical thinking each activity required students to engage in and to rank their priorities when teaching when presented with a list of common priorities. The questions on the final interview protocols which were carried over from the survey provided a point of comparison between the two data sources.

Data Collection

Prior to beginning data collection, IRB approval for the study was obtained. The participants in the survey were presented with a consent form when they first navigated to the online survey. By reading the disclosure and clicking "I agree," these participants gave their consent to serve as participants in the study. The interview participants—the student instructors and the course supervisor—were asked to sign a consent form prior to being interviewed. All instruments used to collect data, including the survey and the initial and final interview protocols, were piloted prior to using them in the study.

The survey was made available online via Qualtrics. It was distributed to current world language teachers using social media sites such as Facebook and Twitter, the professional listserv FLTEACH, and through personal e-mail invitations. The survey was made available for just over two months, during which time the 59 respondents described previously completed the survey.

Both the instructors and the course supervisor for the German 101 classes at the university were interviewed at the beginning and end of the study. The instructors and supervisor were contacted individually to arrange a time for each interview, which took place at a time and

in a location convenient for the participants. The initial interviews with the instructors lasted between 30-35 minutes, and the initial interview with the supervisor lasted about 45 minutes. The final interviews lasted about 35 minutes each. Permission was granted to audio record each interview, and each interview was recorded using a digital voice recorder, a laptop computer, and Audacity software. The interviews were transcribed in their entirety prior to being analyzed.

Data Analysis

The survey provided me with the demographic data for the survey participants described above. A preliminary analysis of the rest of survey revealed that three questions were most relevant to the research questions of this study, and due to time constraints, the rest of the survey questions were not analyzed further. These three open-ended survey questions included Survey Questions 21 and 22, which asked respondents to list topics or concepts they associated with critical thinking and to provide a written definition of critical thinking, and Survey Question 27 which asked respondents to describe their criteria for sorting classroom activities based on their amount of critical thinking. The interviews with university student instructors of German 101 and their course supervisor were also analyzed to answer the research questions. As described earlier, the qualitative nature of these data meant that a constant-comparative method was appropriate for data analysis (Maykut & Morehouse, 1994). A more detailed description of the procedures used during this analysis follows.

Preliminary Preparation

Prior to beginning data analysis, the initial and final interviews with the two student instructors and the course supervisor were transcribed in their entirety for a total of six interviews (3 interviewees x 2 interviews (initial and final)). Each respondent was given a separate identifier, i.e., SI_1 and SI_2 for the two student instructors and *Sup* for the course

supervisor. Their responses were kept separate from one another and the lines from their individual interview transcripts were numbered and the respondents' answers were bolded to facilitate analysis.

The survey responses were prepared in a slightly different manner. First, data was transferred from the Qualtrics website into separate Word documents based on the survey questions. For this reason, all responses related to Survey Question 21 were identified by "CT assoc," those for Survey Question 22 by "CT def," and those for Survey Question 27 by "CT act." Responses to these survey questions were then further grouped according to the level at which the respondents taught, namely K-12, SI (student instructor) and Univ (university faculty). It is important to note that responses in each group for the survey questions were not separated by individual respondents. The grouped data in these documents were subsequently given line numbers to facilitate analysis. To illustrate, the identifier "CT def_K-12_25-27" referred to a response to Survey Question 22 provided by a K-12 teacher. This response was found in lines 25-27 of the Word document for this data transcript.

I made an initial pass through the data and the literature to generate a list of potential coding categories to be used in the formal analysis. During this pass, I simply read through the data and the literature to look for recurring themes that might become potential coding categories when attempting to define critical thinking. This pass enabled me to generate a list of 21 provisional categories as illustrated in Figure 1. I assigned each provisional category a color or emphasis (bold, italics, strikethrough, etc.) in preparation for open coding.

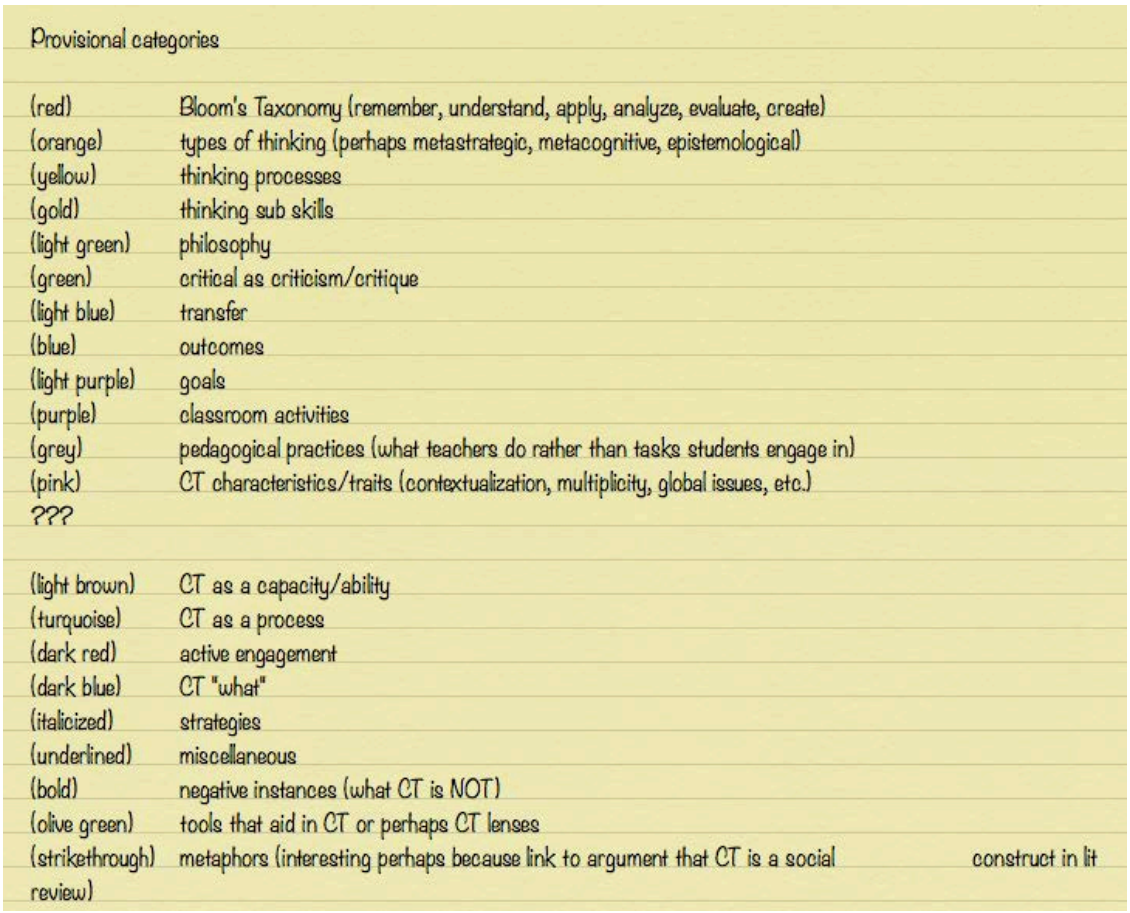


Figure 1. Provisional categories for data analysis

General Analysis of Survey Data

Using the provisional categories described and illustrated above in Figure 1, I open coded the survey responses to both the associations with critical thinking (Survey Question 21) and the definitions of critical thinking (Survey Question 22). I read through all survey responses to the two questions above and attempted to code each response or parts of each response to one of the provisional categories. As each section of data was coded, I changed the color of the text to correspond to the color associated with each provisional category. I also added comments, ideas, or questions I had as I read through the data using the Comment feature on Microsoft Word. A representative sample of this process is illustrated below in Figures 2 and 3.

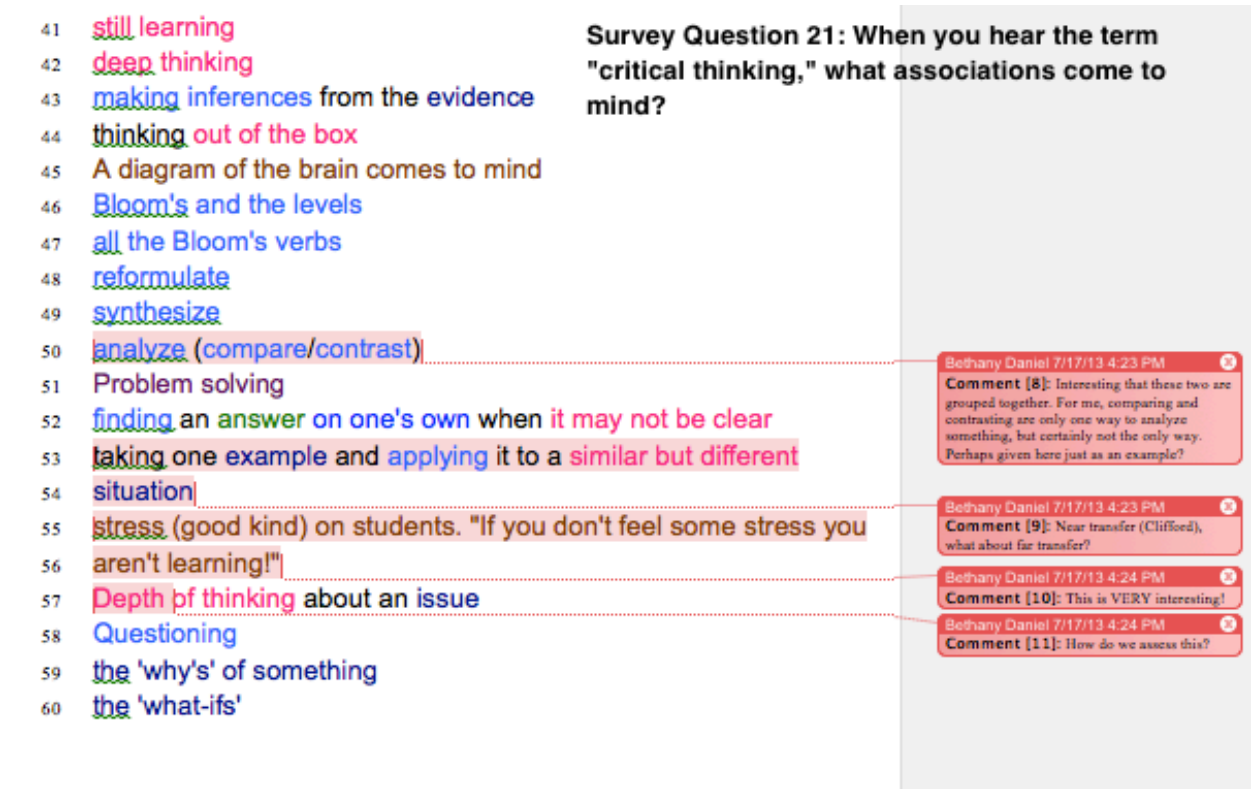


Figure 2. Sample of open coding: Survey Question 21 (associations)

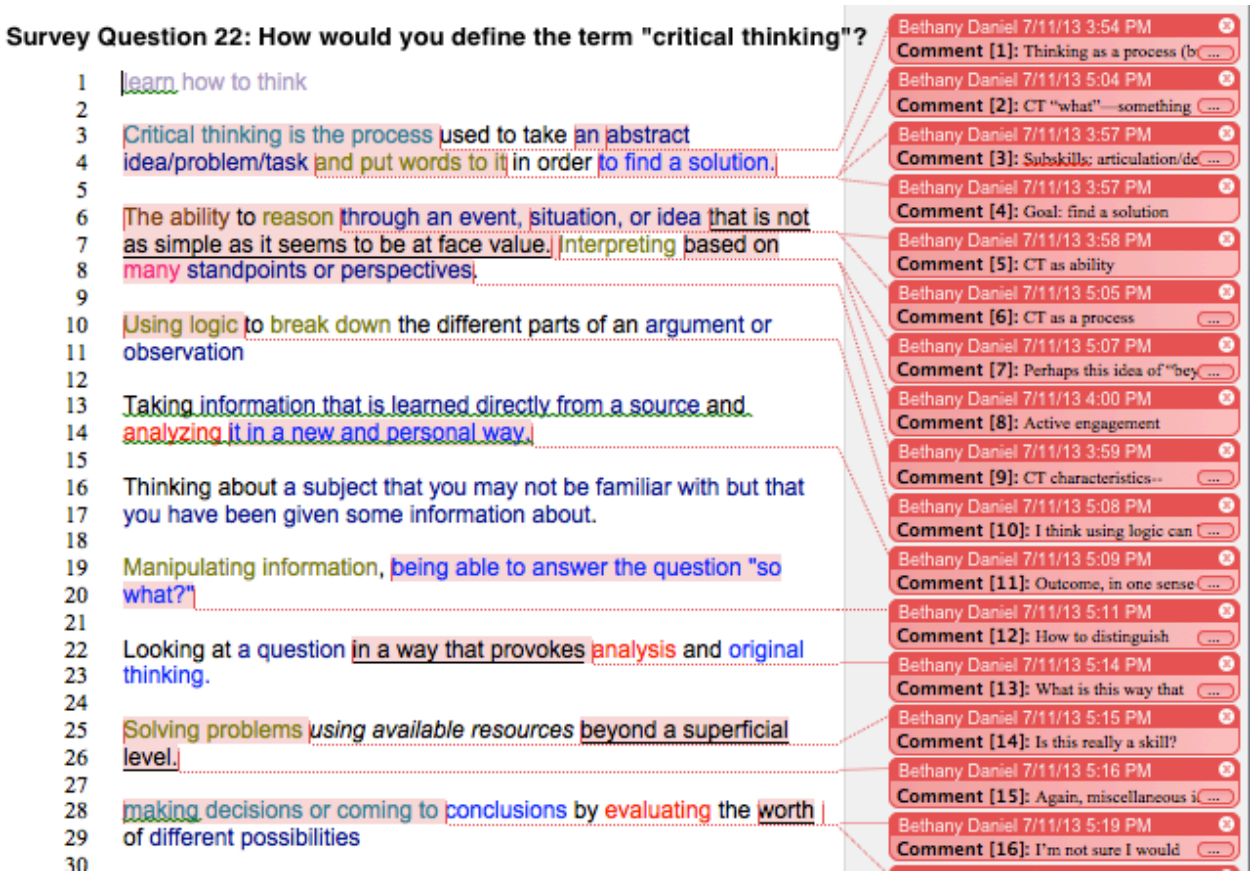


Figure 3. Sample of open coding: Survey Question 22 (definitions)

After the open coding was complete, I made another pass through the survey data. As I read through the data, it became clear that some of the provisional categories were irrelevant to the research questions at hand or were not supported by the data, while other categories overlapped significantly. Based on these observations, I created a list of 12 refined categories that best represented the data set. Again, I assigned each of these categories a color to be used as I further coded the data. The refined categories used appear below in Figure 4.

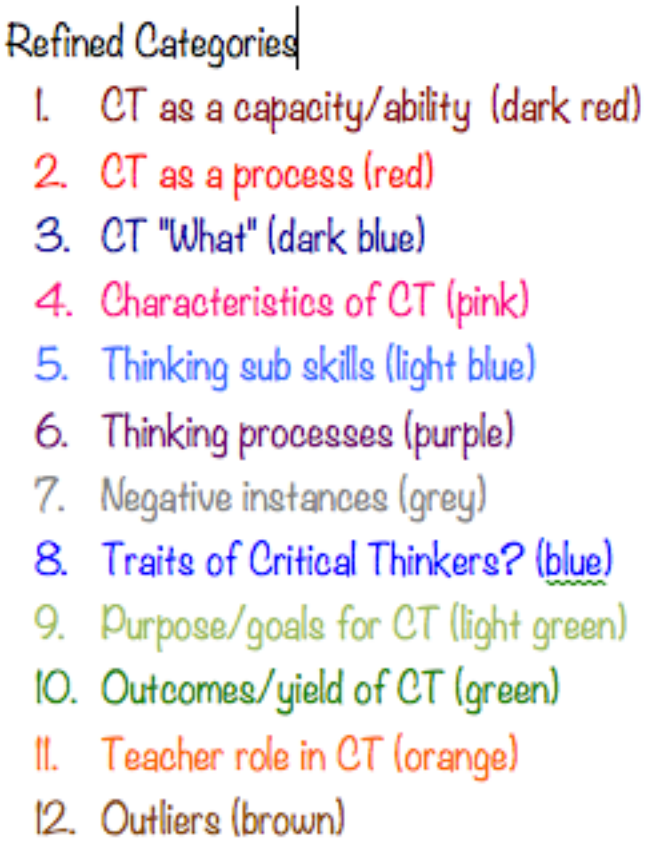


Figure 4. Refined categories used in data analysis

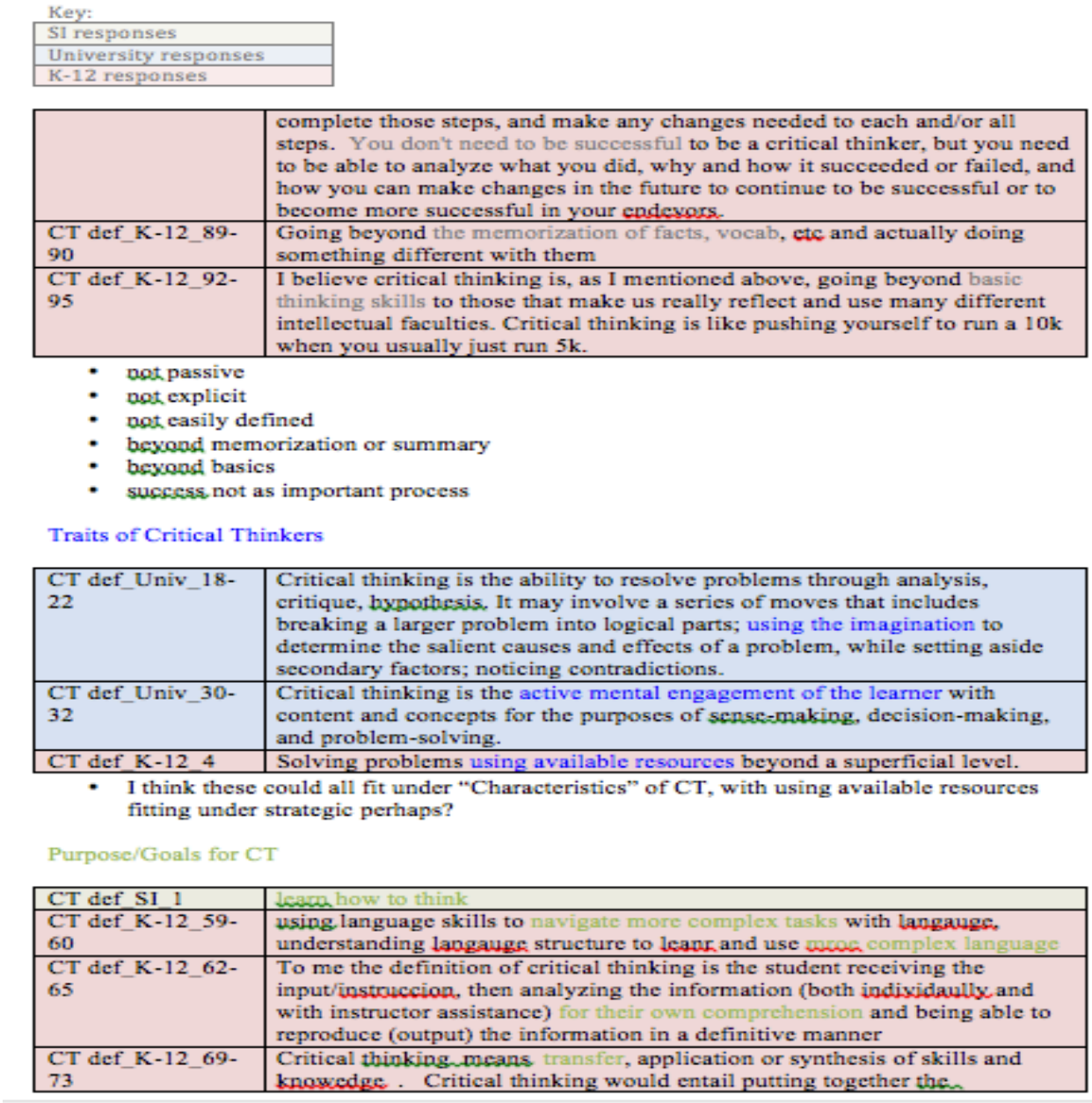
Once the refined categories were in place, I recoded the data from Survey Question 22 (definitions) to "pilot" the refined categories. A representative sample of this process is illustrated below in Figure 5. I again made notes of questions and patterns I observed using Microsoft Word's Comments feature. Specifically, when I coded something to Category 5, Thinking Sub-skills, which referred to the Revised Bloom's Taxonomy, I made a note of the sub-skill to which the data was referring. For example, next to "evaluating the worth of different possibilities" in the first response shown below in Figure 5, I inserted a comment with the sub-skill "judge" or "evaluate." This process was repeated for the survey responses at both levels of instruction (K-12 and University.)

Figure 5. Coding based on refined categories

The refined categories did an adequate job of representing the data, and no further revisions to the categories were made. Thus, the 12 refined categories outlined above in Figure 4 were the coding categories used for the remainder of the data analysis, for both the definitions of critical thinking and the survey respondents' associations with critical thinking.

After these categories were "piloted" with the survey responses to Survey Question 22 (definitions), the data from Survey Question 22 was reorganized into tables, as illustrated below in Figure 6. The purpose of the tables was to highlight specific sections of data from within a single survey response that had multiple categories associated with it. For example, in Figure 5 above, the single survey response in lines 13-14 coded to several different categories,

including “Critical Thinking as an Ability,” “Thinking Sub-skills,” and “Critical Thinking What.” In order to fully analyze the data in context, the entire survey response was recopied into the table for each separate category. The part of the response associated with that category was then highlighted in the respective category color. Thus, the same survey response could appear under several different categories with a different part of the response highlighted each time, with the portion highlighted corresponding to the category heading in which it appeared. It should be noted that the use of the tables also allowed me to distinguish the survey responses by color-coding the background of each table cell based on the level at which the respondent taught, i.e., K-12 (red background), student instructors at the university level (beige background) or university faculty (blue background). This distinction allowed me to search for patterns and differences across and within the levels at which the respondents taught. A representative sample of these tables appears below in Figure 6, organized by category with the relevant parts of each survey response highlighted in the corresponding category color complete with the cell backgrounds filled with the color corresponding to the level at which the respondents taught.



Key:

SI responses
University responses
K-12 responses

	complete those steps, and make any changes needed to each and/or all steps. You don't need to be successful to be a critical thinker, but you need to be able to analyze what you did, why and how it succeeded or failed, and how you can make changes in the future to continue to be successful or to become more successful in your endevors.
CT def_K-12_89-90	Going beyond the memorization of facts, vocab, etc and actually doing something different with them
CT def_K-12_92-95	I believe critical thinking is, as I mentioned above, going beyond basic thinking skills to those that make us really reflect and use many different intellectual faculties. Critical thinking is like pushing yourself to run a 10k when you usually just run 5k.

- not passive
- not explicit
- not easily defined
- beyond memorization or summary
- beyond basics
- success not as important process

Traits of Critical Thinkers

CT def_Univ_18-22	Critical thinking is the ability to resolve problems through analysis, critique, hypothesis. It may involve a series of moves that includes breaking a larger problem into logical parts; using the imagination to determine the salient causes and effects of a problem, while setting aside secondary factors; noticing contradictions.
CT def_Univ_30-32	Critical thinking is the active mental engagement of the learner with content and concepts for the purposes of sense-making, decision-making, and problem-solving.
CT def_K-12_4	Solving problems using available resources beyond a superficial level.

- I think these could all fit under "Characteristics" of CT, with using available resources fitting under strategic perhaps?

Purpose/Goals for CT

CT def_SI_1	learn how to think
CT def_K-12_59-60	using language skills to navigate more complex tasks with langauge, understanding langauge structure to learn and use more complex language
CT def_K-12_62-65	To me the definition of critical thinking is the student receiving the input/instruccion, then analyzing the information (both individually and with instructor assistance) for their own comprehension and being able to reproduce (output) the information in a definitive manner
CT def_K-12_69-73	Critical thinking means transfer, application or synthesis of skills and knowedge . Critical thinking would entail putting together the

Figure 6. Refined category tables—Survey Question 22 (definitions)

After I had completed the coding process for the survey responses to Survey Question 22 (definitions) using the refined categories, I felt confident enough with the categories that I was able to code the responses to Survey Question 21 (associations) using the refined categories and organize the responses into their appropriate tables simultaneously, without completing the "pilot"

step described above. A representative sample of the tables for Survey Question 21 (associations) appears below in Figure 7.

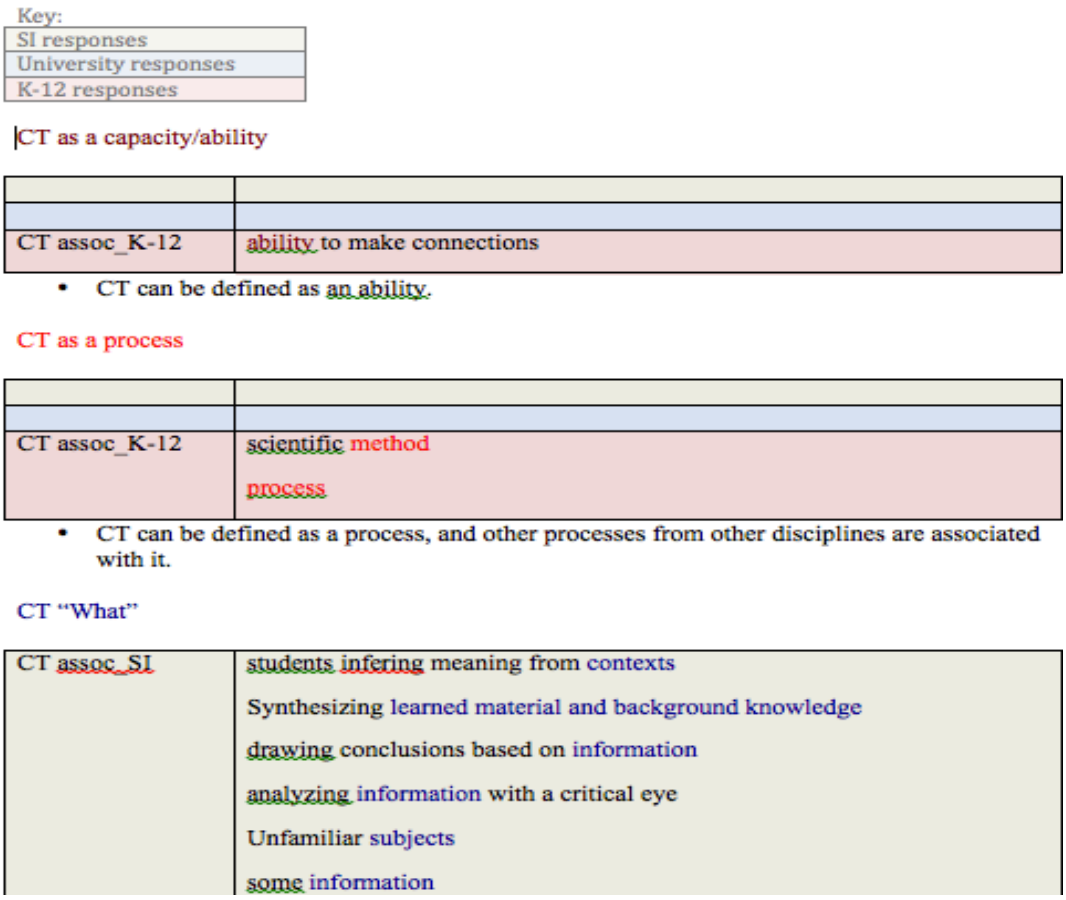


Figure 7. Refined category tables—Survey Question 21 (associations)

Following this final coding process, I read through the data in the refined categories again to begin to obtain a picture of the findings. I summarized the findings for each category for both Survey Question 21 (associations) and Survey Question 22 (definitions) using bullet points, as can be seen in Figures 6 and 7 above. Based on this synthesis, four coding categories emerged as sources that would yield the most interesting and fruitful findings, since time constraints limited a full analysis of all findings. These four categories were: characteristics of critical thinking, critical thinking sub-skills, critical thinking processes, and critical thinking "what," or in other

words, the things about which one thinks critically. Each of these four categories were then analyzed further, as described below.

Characteristics of Critical Thinking

The data that were coded to the category "Characteristics of Critical Thinking" were further refined to identify specific characteristics mentioned in the survey definitions and associations. First, a pass was made through the literature to identify characteristics of critical thinking mentioned there. Next, the characteristics from the literature, Survey Question 21 (associations), and Survey Question 22 (definitions) were listed in three columns, each color-coded based on the source. (See Figure 8 for a representative sample.)

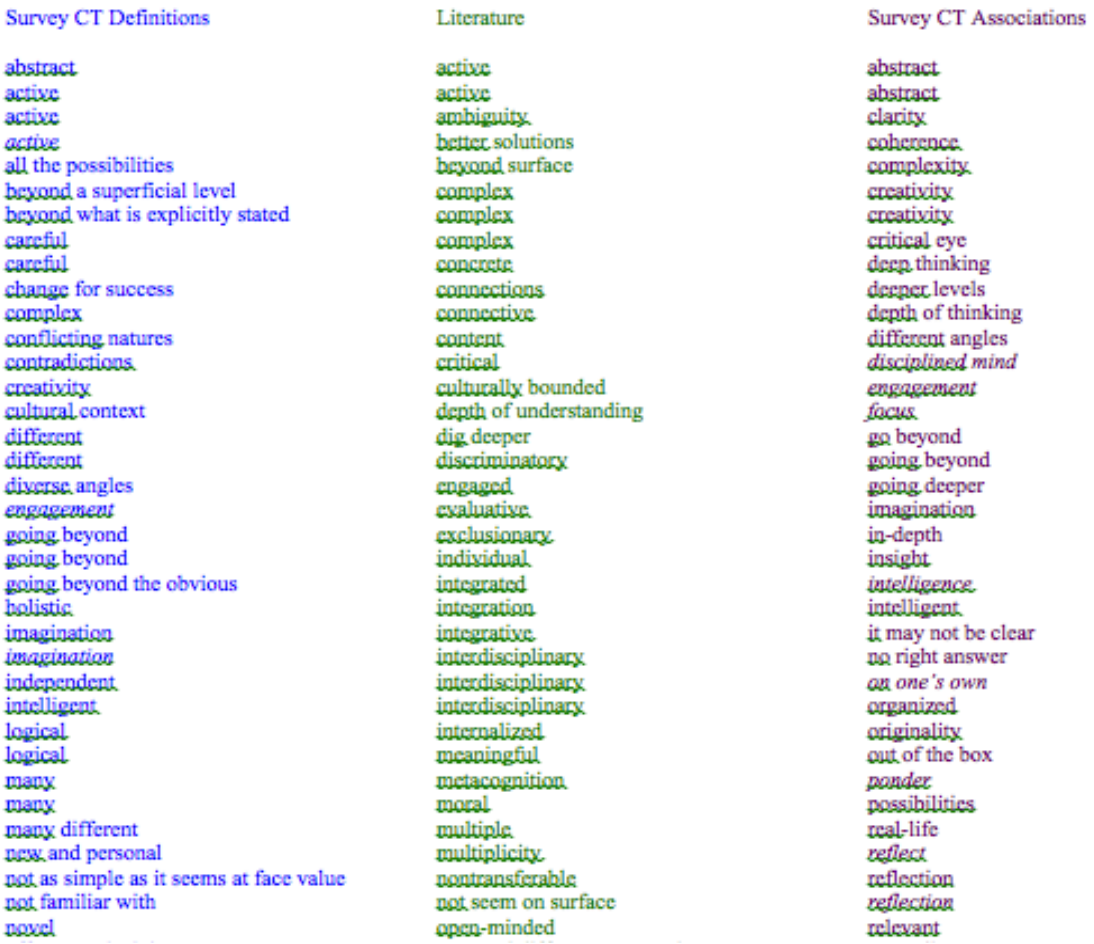


Figure 8. Characteristics of critical thinking frequencies

These lists were then sorted and like characteristics were grouped into 14 different categories: abstract, active, complex, conflict, creative, interdisciplinary, multiplicity, original, other, personal/individual, reasoned, reflective, relevant, and transferrable. (See Figure 9 for a representative sample.) These categories were further refined and collapsed until each category was mutually exclusive, resulting in a total of nine categories, which formed the basis for the nine characteristics of critical thinking identified and described further in Chapter 4. Because the categories were color-coded based on their sources, I was able to observe patterns of characteristics that appeared, for example, in the literature but not in the field, or vice versa. These differences are also described in Chapter 4.

Characteristics of CT

Abstract	abstract abstract abstract
Active	active active *active* *engagement* active active engaged *engagement*
Complex	beyond a superficial level beyond what is explicitly stated complex going beyond going beyond going beyond the obvious not as simple as it seems at face value underlying ambiguity beyond surface complex complex complex depth of understanding dig deeper not seem on surface complexity deep thinking deeper levels depth of thinking different angles go beyond going beyond

Figure 9. Characteristics of critical thinking categories

Critical Thinking Sub-skills

The category "Critical Thinking Sub-skills" was based on the literature connected with the Revised Bloom's Taxonomy (RBT),[6] a framework frequently used in both the literature and the data sources to describe the thinking process. This framework breaks the thinking process

[6] Because the purpose of this study is to explore critical thinking as a 21st Century skill, I chose to analyze specific data using the RBT rather than the original Bloom's Taxonomy. The RBT more fully incorporates our current understanding of cognition and was designed specifically for the 21st century (Anderson & Krathwohl, 2001, p. xxii).

down into six sublevels: Remember, Understand, Apply, Analyze, Evaluate, and Create.[7] Within each of these sublevels, specific verbs are listed as examples. Anderson and Krathwohl (2001) outline these verbs, which appear in Table 1 below.

Table 1

Verbs Associated with RBT Sublevels

Primary Sublevel of RBT	Associated verbs
Remember	recognize, identify, recall, retrieve
Understand	interpret, clarify, paraphrase, represent, translate, exemplify, illustrate, instantiate, classify, categorize, subsume, summarize, abstract, generalize, infer, conclude, extrapolate, interpolate, predict
Apply	execute, carry out, implement, use
Analyze	differentiate, discriminate, distinguish, focus, select, organize, find coherence, integrate, outline, parse, structure, attribute, deconstruct
Evaluate	check, coordinate, detect, monitor, test, critique, judge
Create	generate, hypothesize, plan, design, produce, construct
Source: Anderson and Krathwohl, 2001, pp. 67-68	

Many survey respondents associated or defined critical thinking in terms of specific verbs describing actions learners engage in when they think critically. These verbs were identified in the data and coded to the category "Critical Thinking Sub-skills." All verbs that were coded to this category were organized in a table and matched to an RBT sublevel using the verbs above in Table 1. (See Figure 10 for a representative sample.) Often, the verbs that respondents used applied directly to the RBT framework. For example, terms such as "analysis" and "understanding" are easily associated with their respective RBT sublevels. In other instances, the

[7] The original Bloom's Taxonomy had "Synthesis" as a primary sublevel; however, the RBT moved the term "synthesis" into the creating sublevel (Anderson & Krathwohl, 2001, p. 85). Consequently, I coded all "synthesis" responses as "Creating."

verbs used in the survey responses still described thinking processes, but more indirectly. For example, the survey response “coming up with an answer” (CT def_Univ_1-3) was matched with the sub-skill “generate.”

CT def_Univ_24-25	A reflection on something to discover if it is true or not, believable or not, summarize, analize, and reach a judgment.
CT def_Univ_27-28	The ability to assess information of conflicting natures in order to evolve new conclusions
CT def_Univ_34	Using the intellect to solve problems.
CT def_Univ_36	Using your analytical abilities to learn, so that what you learn becomes yours
CT def_Univ_38	Analyze Interpret what you have read or heard. Is it logical?
CT def_K-12_1-2	making decisions or coming to conclusions by evaluating the worth of different possibilities
CT def_K-12_6-9	I would define it as looking at things from a different perspective to look past the immediate meaning and delve into underlying meanings and messages. I also think that it can mean to look at it critically, meaning that it may be open to interpretation based on many different factors and schools of thought.
CT def_K-12_11	Searching for evidence to support a theory.
CT def_K-12_13-14	Being able to use information to understand a concept and apply that concept to various situations to discover meaning.
CT def_K-12_16-17	Examining how a concept or information relates to other concepts and knowledge
CT def_K-12_19	Using higher order of thinking skills, not just recalling vocabulary.
CT def_K-12_21-23	Being able to take information and make decisions based on a careful and thoughtful anaylsis of that information. Evaluating resources to determine their validity and pertinence.
CT def_K-12_25-27	Critical thinking is looking at a question/problem/issue from diverse angles and choosing a response/resolution after careful consideration of all the possibilities. Critical thinking is active, not passive.
CT def_K-12_29-32	In our context of teacahing a foreign language: it is when students learn by experience to think beyond what is explicitly stated. They could be inferring information or evaluating what they have heard/read. They do not accept it as given byut reason through to decide the quality of it.
CT def_K-12_38-39	Taking all the information presented and using it to formulate an opinion or conclusion

Figure 10. Coding of critical thinking sub-skills to RBT verbs

After the data were coded, they were organized into a separate table. The first column of the table gave the data source, the second highlighted the original data, and the third described the associated RBT verb. Each of these verbs were then linked to a primary sublevel. Thus in the example above, “coming up with an answer” (CT def_Univ_1-3) was matched with the sub-skill “generate,” which was in turn matched with “create.” The data were then sorted based on the

RBT primary sublevels. The responses were again color-coded based on the level of the survey respondents (K-12 or University) to facilitate finding patterns in the data. This process was repeated for both Survey Question 21 (associations) and Survey Question 22 (definitions). A representative sample of the charts appears below (Figures 11 and 12). The patterns that emerged from these findings are discussed further in Chapter 4.

Source	Original Data	Thinking Subskill	Bloom's Level
CT def_SI_10	break down the different parts	parse, deconstruct	ANALYZE
CT def_SI_12-13	analyzing	analyze	ANALYZE
CT def_SI_18	analysis	analyze	ANALYZE
CT def_Univ_8-9	analyze	analyze	ANALYZE
CT def_Univ_18-22	analysis	analyze	ANALYZE
CT def_Univ_18-22	breaking a larger problem into logical parts	parse	ANALYZE
CT def_Univ_24-25	analyze	analyze	ANALYZE
CT def_Univ_36	analytical abilities	analyze	ANALYZE
CT def_Univ_38	analyze	analyze	ANALYZE
CT def_K-12_16-17	relates	integrate	ANALYZE
CT def_K-12_21-23	analysis	analyze	ANALYZE
CT def_K-12_41-42	analyze	analyze	ANALYZE
CT def_K-12_56-57	analyzing	analyze	ANALYZE
CT def_K-12_62-65	analyzing	analyze	ANALYZE
CT def_K-12_75-81	analyze	analyze	ANALYZE
CT def_SI_10	using logic	use	APPLY
CT def_Univ_11-12	using thought and experience	use	APPLY
CT def_Univ_18-22	using	use	APPLY
CT def_Univ_34	using	use	APPLY
CT def_Univ_36	using	use	APPLY
CT def_K-12_13-14	use	use	APPLY
CT def_K-12_13-14	apply	apply	APPLY
CT def_K-12_38-39	using	use	APPLY
CT def_K-12_51	using	use	APPLY
CT def_K-12_59-60	using	use	APPLY
CT def_K-12_69-73	application	apply	APPLY
CT def_K-12_85	manipulating	use	APPLY
CT def_K-12_87	using	use	APPLY
CT def_K-12_89-90	doing	use	APPLY

Figure 11. Critical thinking sub-skills RBT table (associations)

Source	Original	Thinking Subskill	Bloom's Level
CT assoc_SI	analyzing	analyze	ANALYZE
CT assoc_SI	consider possibilities of meaning	differentiate, attribute	ANALYZE
CT assoc_SI	analysis	analyze	ANALYZE
CT assoc_Univ	analytical	analyze	ANALYZE
CT assoc_Univ	analyzing	analyze	ANALYZE
CT assoc_Univ	analysis	analyze	ANALYZE
CT assoc_Univ	analysis	analyze	ANALYZE
CT assoc_Univ	discrimination	discriminate	ANALYZE
CT assoc_Univ	analyze	analyze	ANALYZE
CT assoc_Univ	analyzing	analyze	ANALYZE
CT assoc_K-12	analysis	analyze	ANALYZE
CT assoc_K-12	analysis	analyze	ANALYZE
CT assoc_K-12	analyzing	analyze	ANALYZE
CT assoc_K-12	analysis	analyze	ANALYZE
CT assoc_K-12	analyzing	analyze	ANALYZE
CT assoc_K-12	analyze	analyze	ANALYZE
CT assoc_K-12	finding an answer	analyze	ANALYZE
CT assoc_K-12	examine	deconstruct	ANALYZE
CT assoc_K-12	analysis	analyze	ANALYZE
CT assoc_K-12	analytical	analyze	ANALYZE
CT assoc_K-12	analysis	analyze	ANALYZE
CT assoc_K-12	making connections	finding coherence	ANALYZE
CT assoc_K-12	analyzing	analyze	ANALYZE
CT assoc_K-12	make connections	finding coherence	ANALYZE
CT assoc_K-12	analysis	analyze	ANALYZE
CT assoc_K-12	analyze	analyze	ANALYZE
CT assoc_Univ	application	apply	APPLY
CT assoc_K-12	application	apply	APPLY

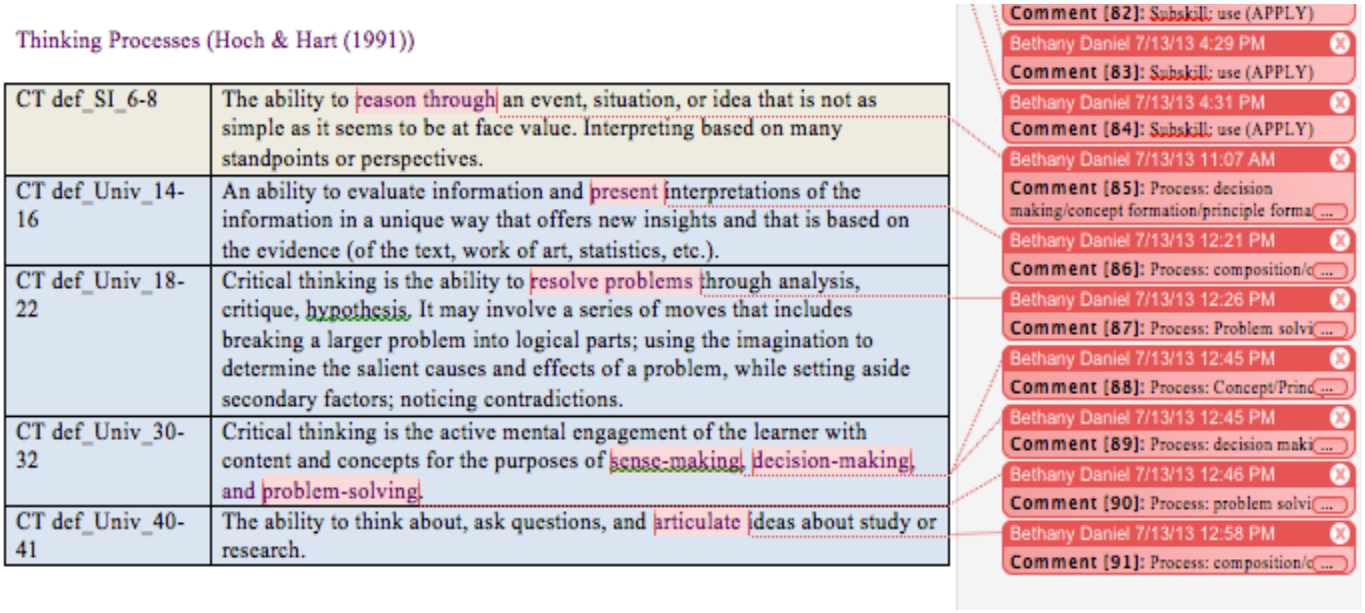
Figure 12. Critical thinking sub-skills RBT table (definitions)

Critical Thinking Processes

Not all references to actions that describe what learners *do* when they think critically could be accounted for using the Revised Bloom's Taxonomy (RBT). For example, many respondents mentioned actions such as decision-making and problem solving, neither of which can be discussed by using the RBT. An exploration of the literature provided an alternative framework for coding these outlying processes. Hoch and Hart (1991) outlined six thinking processes that include: concept/principle formation, comprehension, problem solving, decision-

making, research, and composition/oral discourse. References for actions related to critical thinking found in the survey data that could not be addressed using the RBT were coded to the category "Critical Thinking Processes" using the framework described by Hoch and Hart.

A process similar to the one described above for the category "Critical Thinking Sub-skills" was used to further refine the data in the category "Critical Thinking Processes." Each reference in the data was matched to a thinking process described by Hoch and Hart (1991). (See Figure 13 for a representative sample.)



Thinking Processes (Hoch & Hart (1991))

CT def_SI_6-8	The ability to reason through an event, situation, or idea that is not as simple as it seems to be at face value. Interpreting based on many standpoints or perspectives.
CT def_Univ_14-16	An ability to evaluate information and present interpretations of the information in a unique way that offers new insights and that is based on the evidence (of the text, work of art, statistics, etc.).
CT def_Univ_18-22	Critical thinking is the ability to resolve problems through analysis, critique, hypothesis. It may involve a series of moves that includes breaking a larger problem into logical parts; using the imagination to determine the salient causes and effects of a problem, while setting aside secondary factors; noticing contradictions.
CT def_Univ_30-32	Critical thinking is the active mental engagement of the learner with content and concepts for the purposes of sense-making, decision-making, and problem-solving.
CT def_Univ_40-41	The ability to think about, ask questions, and articulate ideas about study or research.

Figure 13. Coding of critical thinking processes

These data, from both Survey Question 21 (associations) and Survey Question 22 (definitions) were then organized into tables with the original data, its source, and the Hoch and Hart thinking process. These data were again color-coded based on the level of the survey respondents (K-12 or University) to facilitate the noticing of patterns within the data. These tables are illustrated below as Figures 14 and 15. The patterns and findings that emerged from this data set will be presented in Chapter 4.

Thinking processes (Hoch & Hart, 1991)

Source	Original Data	Thinking Process
CT assoc_SI	problem-solving	problem solving
CT assoc_Univ	presentations	composition/oral discourse
CT assoc_Univ	sense-making	concept/principle formation
CT assoc_K-12	decision-making	decision making
CT assoc_K-12	problem solving	problem solving
CT assoc_K-12	problem solving	problem solving
CT assoc_K-12	conceptualizing	concept/principle formation
CT assoc_K-12	problem solving	problem solving

Figure 14. Critical thinking processes table (associations)

Thinking processes (Hoch & Hart, 1991)

Source	Original Data	Thinking Process
CT def_SI_6-8	reason through an event…that is not as simple as it seems	concept/principle formation
CT def_Univ_14-16	present	composition/oral discourse
CT def_Univ_18-22	resolve problems	problem solving
CT def_Univ_30-32	sense-making	concept/principle formation
CT def_Univ_30-32	decision-making	decision making
CT def_Univ_30-32	problem-solving	problem solving
CT def_Univ_40-41	articulate	composition/oral discourse
CT def_K-12_1-2	making decisions	decision making
CT def_K-12_4	solving problems	problem solving
CT def_K-12_21-23	make decisions	decision making
CT def_K-12_44	problem solving and finding solutions	problem solving
CT def_K-12_75-81	make all the decisions	decision making

Figure 15. Critical thinking processes table (definitions)

Critical Thinking Topics

It is impossible for critical thinking to occur in a vacuum—learners must think critically about *something*. In the survey, many respondents described or listed things about which learners think critically. These things were collected into the category I referred to as "Critical Thinking 'What.'"

The analysis of the data in this category was guided by a question that emerged during the initial interviews with the German 101 instructors and their supervisor. The literature frequently referenced topics such as problems, questions, and issues when discussing the things about which critical thinking takes place. However, the initial interviews with the German 101 instructors and supervisor limited the mention of the things about which critical thinking takes place to the language itself. In the final interview, follow-up questions were asked to further explore this difference between the literature and the interview responses. During the discussion with interview participants, the idea of "macro critical thinking," or critical thinking about large-scale, real-world topics, concepts, and issues, as opposed to "micro critical thinking," or thinking critically about language as a system, emerged.

The data collected from the survey were then analyzed to see if it supported this potential finding. The literature was first coded to find references to the things about which critical thinking occurs. Then, the literature and the responses were coded to the category "Critical Thinking 'What'" for both Survey Questions 21 (associations) and 22 (definitions) were collected and color-coded. These responses were then sorted based on whether they fell under the "micro" category—concrete, static things, or the "macro" category—broader, dynamic things that can be negotiated or changed. A representative sample of the table with the sorted data appears below in Figure 16.

MICRO Static—exists	MACRO Dynamic—can change/be negotiated
Art	angles
Concepts (2)	Argument
Content	assumptions
Content (3)	background knowledge
contexts	Challenge
data	Concrete, real-world situations (3)
Discourses	Contentions
Evidence	Contradiction
evidence (2)	Culture
example	cultures
Facts	Event
Information (12)	experience
Information (2)	Idea (2)
information (4)	ideas
input (2)	Issue
Input (4)	issue
Language (3)	Issues
Language skills (including vocabulary) (4)	meaning
Language structures (2)	Meanings
learned material	Messages
literature	Personal experiences
math problems	Practices
Observation	Procedures
old vocab or verbs	Perspectives
reading, seeing—content/input	Possibilities
Research	Problem (7)
research	Problems (5)
Resources	Projects
structure	Question (3)
Study	Questions
subjects	questions (2)
target language structure and	reason (2)

Figure 16. Micro vs. macro critical thinking what

Word splashes were created using the website Wordle based on each column. Each object that appeared in the column was entered into Wordle the number of times it appeared in the data. For example, because evidence appeared three times, "evidence" was entered into Wordle three times. Wordle then generated a word splash in which the words are sized based on their frequency in the input. These word splashes appear in Chapter 4 as part of the study findings.

Another pass was then made through the interviews to highlight specific narrative examples of the differences between micro and macro critical thinking. I also read through

another survey question, Survey Question 28, "What were your criteria for sorting the topics [activities that require critical thinking] above?" because specific examples from these narrative survey responses further illustrated the two planes on which critical thinking occurs. The idea of micro vs. macro critical thinking is presented and discussed further in Chapter 4.

Analysis of Interviews

After the four data categories from the survey were analyzed as described above, findings emerged in three key areas: characteristics of critical thinking, the processes and skills used in the act of critical thinking, and the things about which critical thinking occurs. Another pass was made through the interviews with the individual university German student instructors and their course supervisor for the purpose of exploring similarities and differences between the interview data and the data from the survey of the field. Due to time constraints, the interviews were analyzed specifically for data related to the three themes described above. Details and examples relevant to the categories were then pulled out of the interviews to be included in the findings of the study. Thus, the interviews provided specific narrative examples that either supported or contradicted the general findings taken from the world language teaching field at large.

Conclusion

This chapter has described the participants involved in the study, the sources from which data was collected, the process used to collect data, and the methods used to analyze the data. From the data analysis, three primary aspects of critical thinking became salient—characteristics of critical thinking, the processes and skills used in the act of critical thinking, and the things about which critical thinking occurs. Findings for each of these three aspects will be described in detail in Chapter 4.

CHAPTER 4: FINDINGS

Chapter 3 outlined the process used to collect and analyze data for this study. This chapter will describe the key findings that emerged from the data as guided by the study's research questions. Recall that the primary goal of this study was to explore definitions of critical thinking in world language teaching, based on three research questions:

1. How does the world language teaching field at large define the 21st century skill of critical thinking?
2. How do the instructors and supervisor of a specific German 101 program define critical thinking?
3. How do the findings from these definitions shape our understanding of the relationship between critical thinking and advanced levels of language proficiency?

When analyzing the data to describe how critical thinking is defined, three key topics emerged: first, the identification of common characteristics of critical thinking; second, the thought processes and skills used in the action of critical thinking; and third, the distinction between micro and macro critical thinking. This chapter will highlight the findings of each of these three topics.

First, I will discuss nine common characteristics of critical thinking that became salient and are outlined in more detail below. However, as will become evident, there was not always strong alignment between the characteristics identified by the field and the characteristics discussed in the literature.

Second, I will consider the action of critical thinking both in terms of thinking processes and in terms of thinking sub-skills as described in Revised Bloom's Taxonomy (RBT). Although

not without its limitations, the RBT was commonly used in both the field and in the literature to conceptualize critical thinking.

Finally, I will present a possible framework for critical thinking suggested by the data: micro critical thinking vs. macro critical thinking. Micro critical thinking involves thinking critically about language as a system, while macro critical thinking involves thinking critically about large-scale, real-world topics, concepts, and issues.

Characteristics of Critical Thinking

Nine primary characteristics of critical thinking emerged from the data collected from the surveys and interviews, as well as from the literature consulted. These characteristics are outlined below in Table 2.

Table 2

Characteristics of Critical Thinking

1. Critical thinking is an **active** process.	**Active**
2. Critical thinking is **deep**.	**Deep**
3. Critical thinking is **multifaceted**.	**Multifaceted**
4. Critical thinking is **original**.	**Original**
5. Critical thinking is **reflective.**	**Reflective**
6. Critical thinking is **relevant**.	**Relevant**
7. Critical thinking is **self-directed**.	**Self-Directed**
8. Critical thinking is a **systematic** process.	**Systematic**
9. Critical thinking skills and their products are **transferrable**.	**Transferrable**

1. Critical thinking is an active process.

One fundamental aspect of critical thinking suggested by the data was that it is a condition which must be actively generated by learners. Several definitions highlighted this attribute. For example, one survey respondent noted, "Critical thinking is **active**, not passive" (CT def_K-12_25-27). Another respondent defined critical thinking as the "**active** mental engagement of the learner with content and concepts" (CT def_Univ_27-28).

The idea that learners actively engage in critical thinking was further represented in the interviews. Critical thinking is "something that has to come from the students…. The student has to **engage** in the critical thinking" (SI_2_Int_1_293-294; 296-297). Teachers facilitate critical thinking by "asking students to do the hard work…[and] not just giving them the translation and the meaning automatically.... Have the students come up with it" (Sup_Int_2_232-235). When students are actively engaged in thinking, teaching becomes more effective because, "If you get students thinking, then you are sharing the responsibility for learning with them, which is where it really belongs" (Sup_Int_2_232-234, 243-244). In other words, critical thinking is not something that teachers can bestow upon their students. Students must exert effort of their own to actively engage in thinking critically.

2. Critical thinking is deep.

The most common characteristic of critical thinking that appeared in the surveys, interviews, and in the literature was that of depth. Almost all the data was unanimous in stating that critical thinking is not a simple, surface process. This concept was most commonly expressed through the terms "deeper" and "going beyond." Survey respondents, especially those at the K-12 level, associated critical thinking with things like "**deeper** levels of thinking," "going **deeper**," "**deep** thinking," "**depth** of thinking," "in-**depth** analysis," and "thinking **deeply**" (CT

associations_K-12). This pattern also appeared in the interviews, where one instructor noted that "Critical thinking is not just a surface level thing….It's a **deeper** level" (SI_2_Int_1_186-187). More specifically, questions that require students to "dig **deep** and figure out" a response require critical thinking according to the other instructor (SI_1_Int_1_321). In most of the data, the term "deep" was not clearly defined. However, what "deeper" meant was elaborated further by one of the instructors in an interview. "It's a deeper level….It's actually revealing a bit of…who you are and how…you process, how your mind functions" (SI_2_Int_2_197-199).

Survey respondents also defined critical thinking in terms of going beyond surface level analysis or understanding. For example, the data suggested that critical thinking involves "**going beyond** what is explicitly stated" (CT def_K-12_6-9) or "**going beyond** the obvious" (CT def_K-12_67). For thinking to be critical, respondents implied that thinkers must "**go beyond** memorization of facts, vocab, etc." and they should "[**go**] **beyond** basic thinking skills" (CT def_K-12_92-95) to deal with "idea[s] that [are] not as simple as [they] seem to be at face value" (CT def_SI_6-8). According to both the interview and survey results, critical thinking is clearly more than simple, surface thinking, involving deep, complex engagement with the topics about which one is thinking. This aspect of critical thinking suggests that when learners engage in critical thinking, they go beyond memorization of teacher-given information to analyzing and synthesizing the information they are given.

3. Critical thinking is multifaceted.

Another prominent characteristic that appeared in the data was the fact that thinking critically usually involves, and perhaps must involve, multiple components. This concept was represented in the data by adjectives such as "many," "much," or "different." For example, survey respondents associated critical thinking with "considering **different** angles," "**varied**

input," or "**much** relevant input," and "taking time to consider **possibilities** of meaning" (CT assoc_Univ, K-12). The actual definitions of critical thinking that respondents provided continued this idea. For example, critical thinking was defined as "interpreting based on **many** standpoints or perspectives" (CT def_SI_6-8) and as "making decisions or coming to conclusions by evaluating the worth of **different** possibilities" (CT def_K-12_1-2). Another respondent defined critical thinking "as looking at things from a **different** perspective" (CT def_K-12_6-9). This idea also appeared in the interviews, where one participant noted that "people are more interested in talking when [talking about] my culture vs. the new culture…or within our own culture, **different** viewpoints on things that are going on" (Sup_Int_2_154-155).

Other definitions focused on the fact that critical thinking involves both multiple components to think about as well as multiple thinking processes: "Critical thinking is looking at a question/problem/issue from **diverse** angles" (CT def_K-12_25-27), and "Critical thinking is…[using] thinking skills …that make us…use **many different** intellectual faculties (CT def_K-12_92-95). Interview respondents echoed this idea, defining critical thinking as "taking **everything** that you've learned, and applying it to a situation…where you need to reach back and **pull things together** to create" ($SI_1_Int_1$_242-243). Critical thinking also requires students to "weave together all the **different** things [they've] been learning" ($SI_1_Int_2$_127-128).

Thus, the data suggested that one key aspect of critical thinking is synthesizing information taken from a variety of sources, often using multiple perspectives. Critical thinking is multifaceted, requiring students to connect multiple components, either within or across fields or domains.

4. Critical thinking is original.

The data also suggested that critical thinking is original. There were two facets to this characteristic. The first emphasized a creative aspect of originality, using the imagination and whimsy to create something new. At both the K-12 and university levels, survey respondents associated critical thinking with "**creativity**," "**imagination**," and "thinking **out of the box**" (CT assoc_Univ; CT assoc_K-12). One respondent stated that critical thinking "require[s] **creativity**" (CT def_K-12_41-42), and critical thinking was defined as "using the **imagination** to determine the salient causes and effects of a problem" (CT def_Univ_18-22). These responses emphasized the need for creativity during the critical thinking process.

Other data emphasized the originality of the critical thinking product; that is, what was produced as a result of critical thinking was new. For example, "Critical thinking would entail putting together the vocabulary and grammar skills learned in a **novel** way" (CT def_K-12_69-73). Another defined it as "looking at a question in a way that provokes analysis and **original** thinking" (CT def_SI_18). Other definitions included "constructing **new** meanings" (CT def_K-12_69-73), applying linguistic knowledge to "a **novel** or **creative** situation" (Sup_I_1_556), and "evaluat[ing] information and present[ing] information in a **unique** way that offers **new** insights" (CT def_Univ_14-16). Thus, one feature of critical thinking is that it brings into being something that did not exist before. The data seemed to suggest that critical thinking can be artistic and imaginative. However, critical thinking is also original in the sense that by engaging in critical thinking the learner is contributing something new to current knowledge.

5. Critical thinking is reflective.

Another characteristic that appeared frequently in the data was the reflective aspect of critical thinking. Many respondents associated critical thinking with related terms, such as

"**ponder**," "**reflect**," "**reflection**" and "intelligent **reflection**" (CT assoc_Univ, K-12). The respondents' definitions continued this trend, defining critical thinking as simply as "thinking **reflectively**" (CT def_K-12_56-57), or in more depth, such as "a **reflection** on something to discover if it is true or not, believable or not" (CT def_Univ_24-25). Other definitions included "using thinking skills that make us really **reflect**" (CT def_K-12_92-95) and "being able to take information and make decisions based on a careful and **thoughtful** analysis" (CT def_K-12_21-23). The survey respondents' use of the term "reflective" tended to suggest that critical thinking involves reflecting on the issue at hand and evaluating it in order to come to a conclusion and move forward. Similarly, one interviewee noted that the purpose for reflecting on the critical thinking process was so that students "know why they're doing what they're doing" (Sup_I_1_353-354). As in the literature, reflecting as a characteristic of critical thinking also tended to imply a reflection on the process that led one to arrive at the result of critical thinking.

6. Critical thinking is relevant.

Another characteristic that emerged from the data was the idea that critical thinking is relevant, not in the sense of personally relevant, but rather, relevant to things beyond the classroom. This characteristic appeared only minimally in the surveys and interviews, although it was frequently referenced in the literature. Respondents associated critical thinking with "making new knowledge based on much **relevant** input" and with "**real-life** connections" (CT assoc_Univ). One interviewee defined critical thinking as "being able to take what you've learned and use it in a **real-life** setting" (SI_1_I_2_63-64).

When the idea of relevance appeared in the literature, it went beyond the student or the classroom to emphasize the potentially interdisciplinary nature of critical thinking. The literature discusses the fact that in a world language classroom, the language itself becomes a vehicle

through which content is explored critically (Barron, 2003). The literature suggests that critical thinking occurs when students are able to use their existing knowledge and explore global, world issues to consider the effects of such issues on society (Gaskaree, Mashhady, & Dousti, 2010). The exploration of such global issues implies that students will need knowledge of content from many different disciplines such as geography, political science, and economics, in addition to their language knowledge. Thus the content and the language become relevant and applicable to students because the topics in class have meaning in the real world.

7. Critical thinking is self-directed.

According to the data, critical thinking is also something that is self-directed and that happens on an individual level. Survey respondents associated critical thinking with "finding an answer "**on one's own**," and "thinking for **oneself**" (CT assoc_K-12). One respondent defined critical thinking as "creating **independent** conclusions" (CT def_K-12_53-54), suggesting that the conclusions are not pre-determined by the teacher, but come from the learners themselves.

Other respondents defined critical thinking as "analyzing information in a new and **personal** way" and as "putting together the vocabulary and grammar skills learned in a novel way so that the learner takes **ownership** of the knowledge and applies it in a **personal** way" (CT def_K-12_69-73). Thus the self-directed aspect of critical thinking seems to have two sides. First, critical thinking is independent and not given to the learner by the teacher. Second, critical thinking is personal and must connect to something that students already know or to something that is meaningful for them.

Both of these sides of self-directed critical thinking were further elaborated in the interviews. Having critical thinking become an independent skill that learners can use without support from the teacher is important to continuing language learning. Self-directed critical

thinking is "very key to language learning…. If [students] want to continue on in learning a language, one of the most important things you can do is learn how to solve problems and how to answer **your own** questions" (SI_1_Int_1_423-426). Teachers can facilitate the development of skills that help learners to become self-directed critical thinkers.

Secondly, the interviews supported the idea that critical thinking is self-directed and individual in a personal sense, defining critical thinking as something that "usually requires the student to…think on their **own**, come up with their **own** ideas" (SI_1_Int_2_237-238), "[using] the language that they're learning to give their **own** ideas. That's why you're learning a language" (Sup_Int_2_148-149). Thus, critical thinking is also individual in that it connects to something meaningful and personal to the learners. Critical thinking as a self-directed process means that as learners connect content to their own lives and draw independent conclusions, they are able to become autonomous learners.

8. Critical thinking is a systematic process.

Another frequently appearing characteristic was that critical thinking is a systematic process. On the one hand, this process implied systematically applying reason or logic to a problem in order to reach a solution. Especially at the university level, survey respondents defined critical thinking as "gathering and assessing information to come up with a **reasoned** and **intelligent** response" (CT def_Univ_5-6), as "breaking a larger problem into **logical** parts" (CT def_Univ_18-22), and as "analyze/interpret what you have read or heard. Is it **logical**?" (CT def_Univ_38). Additionally, the term "critical thinking" as a whole was defined in the interviews as "being able to use reason and logic to solve problems or just come to a conclusion about something" (SI_2_I_1_185-186). As reason and logic are applied, learners come to an understanding of what they are trying to think critically about.

Another aspect of critical thinking as a systematic process that appeared in the data was the idea that the critical thinking process must be organized in some way. For example, survey respondents associated critical thinking with terms such as "**focus**," "**coherence**," "**organized reasoning**," and "**disciplining** the mind" (CT assoc_Univ). Survey respondents also included this aspect in their definitions of critical thinking, stating that critical thinking is "being able to take information and make decisions based on a **careful** and **thoughtful** analysis of that information" (CT def_K-12_21-23) and includes "choosing a response/resolution after **careful** consideration of all the possibilities" (CT def_K-12_25-27). The idea of critical thinking as an organized process also appeared in the interviews. Critical thinking was defined as determining how to accomplish a task "most efficiently or most accurately" (SI_1_I_1_254-255), which often comes through a systematic analysis of the task and possible ways to accomplish it. These responses suggest that the process of critical thinking often involves systematically applying logic or reason in order to understand something, and that critical thinking must be deliberate and organized in some way.

9. Critical thinking skills and their products are transferrable to other contexts.

The characteristic of transferability, although abundant in the literature, appeared only minimally in the data from survey respondents. One reference was present in conjunction with what respondents associated with critical thinking: "taking one example and applying it to a similar but different situation" (CT assoc_K-12).

This trait did not appear in the survey definitions of critical thinking, but it was referenced in the interviews with the German 101 instructors and supervisor. One interviewee defined critical thinking as "understand[ing] the [grammar] rule" and being "able to apply it in a novel or creative situation" (Sup_I_1_555_556). According to this interviewee, once a rule is truly

understood, learners should be able to transfer the rule to other situations in order to create with the language. In fact, critical thinking was defined in the interviews as an essential component of communication, and as a tool needed to be able to "find the right vocab[ulary]" and "ask the right questions", so even if it is a "different situation…[the learner] can apply the same patterns…used in the past" (SI_1_I_1_278-279). By developing this skill, learners can integrate new input into their existing knowledge, to be used in future situations. As one instructor noted,

> Good communication requires critical thinking…I think that one of the most important parts of critical thinking…is that it's adaptive, and that you take what you hear and you figure out how you can use that. And so as far as communication goes, you don't always know what you're going to hear…and so being able to adapt and solve new problems…that can really help students be more proficient (SI_1_I_1_436-442)

Ideally, this ability to adapt should transfer not only within a single language, but can also "apply…to other languages that you're learning" (SI_2_I_2_121-122).

In the literature, the transferability of critical thinking was not limited to just the language itself. Instead, students also transfer content knowledge gained in the target language to other contexts. As learners think critically, they gain knowledge and "[use] meta-skills across the boundaries of the world of work and the academic context" (Savin-Baden, 2000, p. 130, as cited in Barron, 2003). Ideally, learners connect their language skills not only to things beyond the classroom, but they use critical thinking skills to "orchestrate knowledge and skills across disciplinary boundaries" (Barron, 2003, p. 308). This orchestration enables students to make connections across disciplines in order to integrate concepts, thereby enabling critical thinking to take place.

Finally, critical thinking was described as transferrable in the literature because it is a skill, like reading and writing, that can be taught and reinforced in many different disciplines (Facione, 1990). Critical thinking as a skill itself should, the research concludes, cross disciplinary boundaries and be integrated across curricula, including language curricula (Paul, Elder, & Bartell, 1997; Reed & Kromrey, 2001). Thus, critical thinking is transferrable in that students often need content knowledge or skills from one domain in order to complete a critical thinking task in another domain.

Differences in Alignment

Overall, the characteristics of critical thinking that emerged from the data were consistent across both the literature and the survey and interview responses. However, there were a few notable differences between the field's responses regarding these characteristics and the characteristics that appeared in the literature. These differences are summarized below in Table 3.

Table 3

Characteristics of Critical Thinking: differences in alignment between the field and the literature

Characteristic	**Literature**	**Field (Surveys and Interviews)**
Active	YES	YES
Deep	YES	YES
Individual	YES	YES
Includes multiplicity	YES	YES
Original	MINIMAL	YES
Reflective	YES	YES
Relevant	YES	MINIMAL
Systematic	YES	YES
Transferrable	YES	MINIMAL

The literature made little mention of critical thinking as being original, both in terms of critical thinking involving creativity and in terms of critical thinking producing novel contributions. By contrast, there were two characteristics of critical thinking that appeared in the

field only minimally when compared to their frequent appearance in the literature. These characteristics included the relevant and transferrable nature of critical thinking. The field made no mention of critical thinking as being relevant in terms of being interdisciplinary, something that the literature emphasized heavily. Similarly, the interview and survey data mentioned critical thinking as a tool for linguistic transfer, but they did not apply critical thinking to contextual transfer beyond the world language classroom, which the literature did. These differences in alignment will be explored further in Chapter 5.

Processes and Skills Involved in the Action of Critical Thinking

Critical thinking was frequently defined in both the survey and in the interviews in terms of what learners *do* when they think critically. Many of the associations with and definitions of critical thinking collected from the surveys and interviews used verbs to describe critical thinking that referenced either the Revised Bloom's Taxonomy (RBT) or thinking processes outlined by Hoch and Hart (1991). Further exploring these responses yielded new insights into the definition of critical thinking.

Thinking Sub-skills (Revised Bloom's Taxonomy)

One of the most common ways the survey respondents and interview participants discussed critical thinking was by referencing the framework of the Revised Bloom's Taxonomy (RBT). Many of the survey respondents associated critical thinking with Bloom's Taxonomy in general. Other survey respondents and the German 101 course supervisor referenced Bloom's by connecting "higher-order" thinking and critical thinking, and both the survey respondents and interview participants described critical thinking in terms of actions that could be situated within the framework of the RBT. Exploring how each of these applications of the RBT appeared in the

survey responses and interviews provides insights into current definitions of critical thinking in the world language teaching field.

Discussing critical thinking in terms of the RBT in general. When survey participants listed their associations with critical thinking, they frequently referred to Bloom's Taxonomy in general. For example, associations included "Bloom's Taxonomy," "Bloom's and the levels," and "all the Bloom's verbs" (CT assoc_K-12). Of note is the fact that associating critical thinking with Bloom's Taxonomy in general only appeared in survey responses from participants at the K-12 level. By contrast, survey respondents at both the K-12 and university levels referenced both higher-order thinking and specific levels of the RBT in their associations and definitions, as will be seen. Associating critical thinking with Bloom's Taxonomy in general suggests that perhaps the terminology and frameworks to which world language teachers are exposed shape their definitions of critical thinking.

Discussing critical thinking in terms of "higher-order" thinking. Another frequent response in the surveys with regard to critical thinking was to associate it with or define it in terms of "higher-order" learning or thinking, referring again to Bloom's Taxonomy. Both university level and K-12 level survey respondents frequently associated critical thinking with "higher-order thinking" (CT assoc_Univ, K-12) or "higher-order learning" (CT assoc_Univ, K-12) in general, without referring to specific levels of the RBT. One survey respondent specifically defined critical thinking in these terms, stating that critical thinking was "using higher-order thinking skills" (CT def_K-12_19). In the definitions and associations from the survey, none of the respondents clarified what "higher-order" thinking meant. Therefore, for the purposes of analyzing the data, I interpreted "higher-order" to include the RBT levels "Apply," "Analyze," "Evaluate," and "Create."

The supervisor of the German 101 classes did not care for the term "critical thinking,"[8] preferring instead to talk in terms of "higher-order thinking" and Bloom's Taxonomy (Sup_I_1_264-266, 293) in his interviews. He defined critical or higher-order thinking by combining both the original and the revised Bloom's Taxonomies in his definition:

> You know, where you **understand** knowledge and facts, we're not to, quote "critical thinking" yet. We have to…get into…and not even **application** necessarily, because that can be very…algorithmic how you approach **application**. But when you start getting into **analyzing** and **synthesizing**, taking things apart, examining relationships…and then **synthesis** of ideas, and maybe even the **evaluation** of ideas….And I guess at the newer top end is even **creative**, and is even making your own, and so I buy very much into those kinds of things, and…those are the kinds of words I would use. I personally don't really like using the word "critical thinking." (Sup_I_1_295-305).

Thus, for the course supervisor, critical or higher-order thinking includes the levels of "Analyze," "Evaluate," and "Create" from the Revised Bloom's Taxonomy. A majority of survey responses and all three interviews made some reference to the RBT, either in their associations with or in their definitions of critical thinking. In some cases, the entire framework was referenced; in other cases, only higher-order processes were included. However, the frequency with which both the survey respondents and the interview participants referenced Bloom's Taxonomy in general and "higher-order thinking" specifically suggests that the RBT framework is a common tool used by world language teachers when conceptualizing critical thinking.

[8] The supervisor felt that critical thinking was a buzzword that focused too much on the "critical" aspect, implying an inherent social commentary that calls into question one's worldview, instead of referring primarily to complex cognitive processes (Sup_I_1_261, 277-285). To describe these thinking processes, he preferred the term " higher-order thinking" (Sup_I_1_291-293).

The RBT as a specific framework for discussing critical thinking actions. Another pattern that arose from the data regarding associations with and definitions of critical thinking was the use of specific verbs to describe the actions that are a part of the critical thinking process. In many cases, survey respondents and the interview participants discussed critical thinking by describing what learners *do* when they engage in critical thinking. For example, critical thinking was associated with actions such as "**synthesizing** learned material and background knowledge" (CT assoc_SI), "**making** new knowledge based on much relevant input" (CT assoc_Univ), and "**using** vocabulary to express an idea" (CT assoc_K-12). Similar verbs appeared in the definitions of critical thinking as well. The verbs employed in the definitions and associations corresponded to verbs listed on pages 67 and 68 of Anderson and Krathwohl (2001) that give examples of thinking skills at each of the sublevels of the Revised Bloom's Taxonomy. This list, as discussed in Chapter 3, reappears below.

Table 1

Verbs Associated with RBT Sublevels

Primary Sublevel of RBT	Associated verbs
Remember	recognize, identify, recall, retrieve
Understand	interpret, clarify, paraphrase, represent, translate, exemplify, illustrate, instantiate, classify, categorize, subsume, summarize, abstract, generalize, infer, conclude, extrapolate, interpolate, predict
Apply	execute, carry out, implement, use
Analyze	differentiate, discriminate, distinguish, focus, select, organize, find coherence, integrate, outline, parse, structure, attribute, deconstruct
Evaluate	check, coordinate, detect, monitor, test, critique, judge
Create	generate, hypothesize, plan, design, produce, construct
Source: Anderson and Krathwohl, 2001, pp. 67-68	

Recall that in the data analysis, the verbs that appeared in the survey respondents' associations with and definitions of critical thinking were matched to one of the verbs above and were then sorted based on the RBT sublevels. For example, in the data shown above, "**synthesizing**" and "**making**" were coded to the sublevel "Create," and "**using**" was coded to the sublevel "Apply." Examining the patterns that emerged from this analysis for both associations with critical thinking (Survey Question 21) and definitions of critical thinking (Survey Question 22) yielded insights that shape the understanding of current definitions of critical thinking.

Critical thinking associations: "Middle-order critical thinking." As explained above, the verbs survey respondents associated with critical thinking were matched to the verbs listed in the RBT and were sorted by major RBT level. Table 4, below, represents the breakdown of the different RBT levels that survey respondents referenced in their critical thinking associations and includes the number of responses that mentioned each level.

Table 4

Survey: Critical Thinking Associations Matched to RBT Levels

Survey: CT Associations	
RBT Level	*Number of Survey Responses*
Remember	0
Understand	20
Apply	8
Analyze	26
Evaluate	2
Create	7

As the above data illustrate, the most frequent associations of critical thinking with the RBT included variations on "Analyze," such as "analysis," "analytical," or "analyzing" (CT assoc_Univ, CT assoc_K-12). These responses were frequent at both the K-12 and university

levels. “Understand” was the next most frequent level associated with critical thinking. Many of the individual associations with critical thinking such as “inferring” (CT assoc_Univ), “compare/contrast” (CT assoc_K-12), and “deduce”(CT assoc_SI) were used by survey respondents to imply higher-order processes. However, when these verbs were compared to the RBT, they actually corresponded with the “Understand” sublevel, which is a lower-order level of thinking. Although the field defines critical thinking as engaging at the higher-order levels of the RBT, the specific verbs used by survey respondents to describe critical thinking do not correspond to those same higher levels.

Only a few responses from survey participants associated critical thinking with actions that coded to the highest RBT levels of “Evaluate” or “Create.” For example, there were only two references to “Evaluate” in the data (CT assoc_K-12), and three references from survey participants at the university level and one reference from the K-12 level that coded to “Create” (CT assoc_Univ, CT assoc_K-12). Thus, although many respondents associated critical thinking with higher-order thinking in general, many of the individual responses and specific verbs associated with critical thinking actually coded to “Understand” and “Apply.” These patterns suggest that critical thinking is in fact, perhaps most often associated with “middle-order thinking.”

This same discrepancy of using verbs from the lower levels of the RBT to talk about critical thinking also appeared in the interviews. For example, during one interview with the supervisor, he explained that in the German 101 classes, students are presented with grammar in two ways. The approach used by the textbook is a deductive one in which grammar rules are presented first, before having students apply the rules through drills. The approach used by the German 101 teachers uses a *Denkblatt*, or “Think sheet.” The *Denkblatt* is a worksheet that

presents students with data illustrating the same grammar rules presented in the textbook. However, the data is presented using bolding, underlining, columns, and other strategies to make the patterns in the rules salient for students. As students complete the worksheet, they respond to guiding questions that help them formulate the rule (Sup_I_1_457-475), thus engaging in an inductive process.

The supervisor noted that the *Denkblatt* was added to give students an opportunity to engage with the material at a higher level of thinking than the deductive approach offers (Sup_I_1_457-459), stating that the inductive approach is "better, higher-order thinking" (Sup_I_1_276). However, Anderson and Krathwohl (2001) mention this specific activity—"In learning a foreign language, infer grammatical principles from examples" (p. 67)—as an example of "inferring," a process at the "Understand" sublevel. Again, examples of critical thinking given by practitioners in the world language teaching field, when applied to the RBT, do not code to the higher levels of the RBT the field associates with critical thinking. Thus, it appears that there are some discrepancies between what critical thinking is associated with, how it is defined in the world language teaching field, and how the RBT is being applied to those definitions and associations and within the classroom.

Defining critical thinking: Using the RBT from top to bottom. When the verbs used in the definitions of critical thinking from the surveys were coded, different patterns emerged from those that appeared in the associations with critical thinking. The survey responses defining critical thinking as coded to the RBT are represented in Table 5 below and are compared with the survey responses of associations with critical thinking.

Table 5

Survey: Critical Thinking Definitions at each of the Bloom's Levels.

	Survey: CT Associations	Survey: CT Definitions
RBT Level	*Number of Survey Responses*	
Remember	0	4
Understand	20	19
Apply	8	17
Analyze	26	17
Evaluate	2	19
Create	7	16

As with the associations, many of the survey responses frequently defined critical thinking using verbs that coded to the "Understand" level, such as "interpret," "inferring," and "compare/contrast" (CT def_Univ_38; CT def_K-12_29-32; CT def_K-12_41-42). The "Apply" and "Analyze" levels were also frequently referenced (see for example: CT def_SI_18; CT def_Univ_8-9; 18-22; 36; 38; CT def_K-12_13-14; 21-23; 38-39; 59-60; 62-65; 75-81). This same pattern appeared in the interviews—the interview participants also defined critical thinking in terms of these "middle-order" levels of the RBT. For one student instructor, critical thinking was highly analytical, requiring students to "[look] at a word and [be] able to **decide** what role it plays [in the sentence]" (SI_2_I_1_252-253). This process could be categorized under the RBT level of "Analyze." Critical thinking was also defined as having students "take the knowledge that [they've] used and **apply** it" (SI_1_I_1_187-188), which would fall under "Apply."

However, unlike in the associations, *all* of the levels of the Revised Bloom's Taxonomy appear in the definitions of critical thinking. "Remember" and "Understand," although not considered "higher-order thinking," still appear in the definitions. Of note is the fact that it was primarily university-level respondents that defined critical thinking in terms of remembering, or at least included the remembering stage in their definitions. Additionally, both university and K-

12 survey respondents included many more references to the highest levels "Evaluate," and "Create" in their definitions of critical thinking than they did in their associations with critical thinking. The fact that participants referred to all the levels of the RBT in their definitions suggests the complexity of the critical thinking process.

A similar pattern appeared in the interviews. In multiple instances, the interviewees described critical thinking as a process that incorporated several levels of the RBT. For example, critical thinking requires students to "**understand** the rule…[and] be able to **apply** it in a novel or **creative** situation" (Sup_I_1_555-556), meaning that learners engage at the "Understand," "Apply," and "Create" levels. Critical thinking was also defined as "taking everything you've learned, and **applying** it to a situation…where you need to **reach back**, and **pull things** together to **create**" (SI_1_I_1_242-243), suggesting that students use RBT levels such as "Remember," "Apply," and "Create" when thinking critically. As was the case with the data from the surveys, the appearance of multiple levels of the RBT when describing critical thinking suggests that perhaps the complexity of the critical thinking process requires learners to engage at several levels of the RBT. The implications of these findings will be discussed further in Chapter 5.

Thinking Processes (Hoch & Hart, 1991)

Not all references to critical thinking in the definitions and associations could be accounted for using the Revised Bloom's Taxonomy. For example, many respondents mentioned actions such as decision-making and problem solving, neither of which can be accounted for by the Revised Bloom's Taxonomy. An exploration of the literature provided an alternative framework for coding these outlying processes. Hoch and Hart (1991) outlined six thinking processes that include: concept/principle formation, comprehension, problem solving, decision-making, research, and composition/oral discourse. The thinking processes mentioned in the

survey responses regarding associations with critical thinking and from the survey respondents' definitions of critical thinking were coded to the thinking processes described by Hoch and Hart (1991). These results appear below in Tables 6 and 7, respectively.

Table 6

Survey Respondents' Associations with Critical Thinking Processes

Source	**Survey Responses**	**Thinking Process (Hoch & Hart, 1991)**
CT assoc_Univ_1	presentations	composition/oral discourse
CT assoc_Univ_2	sense-making	concept/principle formation
CT assoc_K-12_4	conceptualizing	concept/principle formation
CT assoc_K-12_1	decision-making	decision making
CT assoc_SI_1	problem-solving	problem solving
CT assoc_K-12_2	problem solving	problem solving
CT assoc_K-12_3	problem solving	problem solving
CT assoc_K-12_5	problem solving	problem solving

Table 7

Survey Respondents' Definitions Including Critical Thinking Processes

Source	**Survey Responses**	**Thinking Process (Hoch & Hart, 1991)**
CT def_Univ_14-16	present	composition/oral discourse
CT def_Univ_40-41	articulate	composition/oral discourse
CT def_SI_6-8	reason through an event…that is not as simple as it seems	concept/principle formation
CT def_Univ_30-32	sense-making	concept/principle formation
CT def_Univ_30-32	decision-making	decision making
CT def_K-12_1-2	making decisions	decision making
CT def_K-12_21-23	make decisions	decision making
CT def_K-12_75-81	make all the decisions	decision making
CT def_Univ_18-22	resolve problems	problem solving
CT def_Univ_30-32	problem-solving	problem solving
CT def_K-12_4	solving problems	problem solving
CT def_K-12_44	problem solving and finding solutions	problem solving

As can be noted from the tables above, respondents at both the university and the K-12 levels associated and defined critical thinking in terms of these thinking processes. The most common thinking processes were decision-making and problem solving, but concept/principle formation and composition/oral discourse also appeared. Only at the university level did respondents note the need for composition/oral discourse as a way to present or articulate the results of the critical thinking process. This difference suggests that the level at which instructors teach may shape how they conceptualize critical thinking.

The thinking process of problem solving also appeared in the interviews with the student instructors and their supervisor; all three used problem solving when defining critical thinking. One student instructor associated critical thinking with problem solving, including knowing how to accomplish a task "most efficiently or most accurately" (SI_1_I_1_218-219). When this same student instructor defined critical thinking at the end of the study, he again referenced problem solving, stating that critical thinking involves "being able to take what you've learned and use it in a real-life setting or use it to **solve** a **problem**" (SI_1_I_2_63-64). The other student instructor defined critical thinking in terms of problem solving as well, stating that "a lot of [critical thinking] is being able to use reason and logic to **solve problems** or just come to a conclusion about something" (SI_2_I_1_185-186). Finally, although the supervisor did not care for the term "critical thinking" itself, he described the concept by referring to problem solving (Sup_I_1_248). As he later stated, "If there's a **problem** and you **solve** it, that…pretty well implies some good thinking (Sup_I_2_343-344). Problem solving was the most frequent thinking process associated with and defined in conjunction with critical thinking. Possible reasons for the usefulness of the framework of these thinking processes in addition to the role of the Revised Bloom's Taxonomy in conceptualizing and defining critical thinking will be discussed in Chapter 5.

Micro vs. Macro Critical Thinking

A final major pattern that emerged from the data was a distinction in the kinds of topics about which critical thinking occurs. As described in Chapter 3, both the survey and interview data illustrated two different levels of critical thinking that I have chosen to call "micro critical thinking" and "macro critical thinking." Micro critical thinking involves thinking critically about language as a system, while macro critical thinking involves thinking critically about large-scale, real-world themes, concepts, and issues. The German 101 supervisor summarized this difference, describing macro critical thinking as "discussions about big ideas, engag[ing] in questions about society, the culture, politics…[and considering] how [critical thinking] applies to the content" while micro critical thinking is "using my mind to learn language" (Sup_I_2_48-54, 165-175). Exploring the data regarding micro and macro critical thinking yields new insights into how the field conceptualizes and describes critical thinking, since it may be important to integrate both kinds of critical thinking discussed below.

What does one think critically about?

The data from all sources—the literature, the interviews, and the survey—made it clear that critical thinking cannot occur in a vacuum. That is, one must think critically about something. However, there was no clear consensus on what exactly this "something" was.

The literature regarding critical thinking frequently described the things about which critical thinking takes place in terms of topics such as problems, issues, or questions. However, after the initial interviews with the German 101 supervisor and instructors, I realized that their responses described learners as thinking critically primarily about the language alone. Thus, on the one hand, critical thinking was described as addressing broad, dynamic topics, or "macro"

things, while on the other, critical thinking was described as addressing more narrow, static topics, or "micro" things.

The survey responses discussing the things about which critical thinking occurs further illustrated these two sides. The responses mentioned both broad, macro-level topics and more static, micro-level topics. The frequencies of these responses are illustrated by the word splashes described in Chapter 3 and shown as Figures 17 and 18 below.

Figure 17. Word splash: Micro-level topics

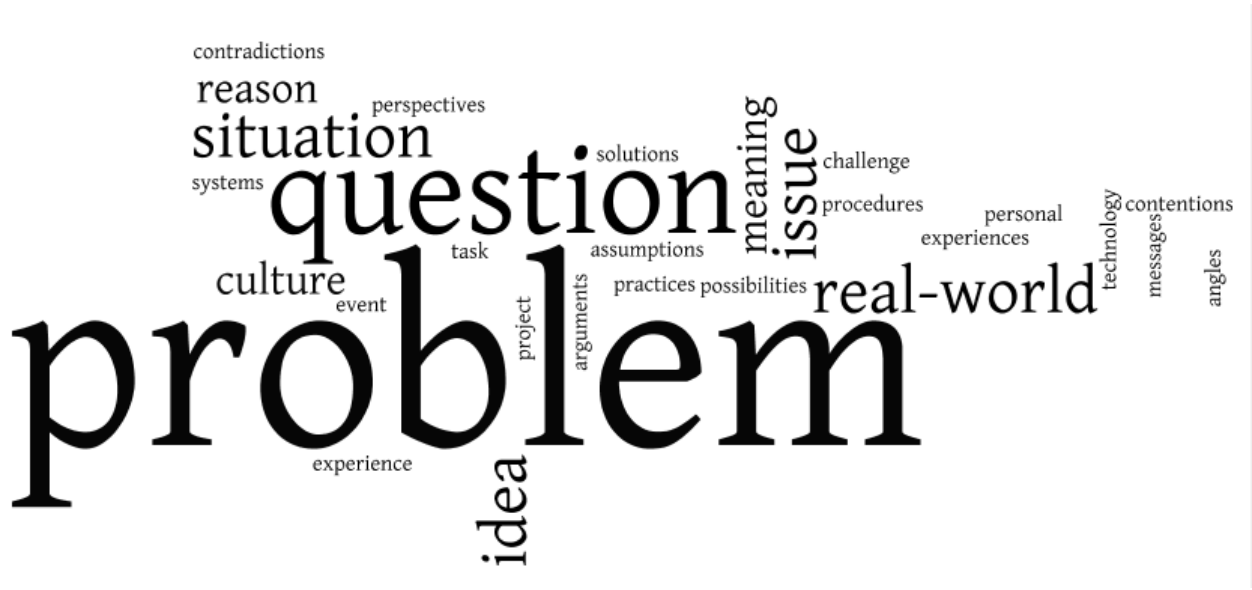


Figure 18. Word splash: Macro-level topics

At the micro-level, the most common survey response referred to the rather generic term "information." That is, learners often think critically about information that they are given. Other common responses were linguistic in nature, referring to the target language itself, including terms such as "language," "input," "structures," "content," and "vocabulary." The frequency of these responses suggests that in the language classroom, considering and analyzing the language itself as a system is an important topic about which learners think critically.

At the macro level, the survey responses were similar to those found in the literature and included broader themes. The most common response to the things about which learners think critically was "problem," followed by other dynamic topics such as "questions," "issues," "situations," and "ideas," grounded in the real world. The frequency of these responses suggest that although the language itself may serve as an important source about which learners will think critically, critical thinking need not be limited to the language alone in the language classroom.

Micro Critical Thinking

This contrast between micro and macro critical thinking was further explained in the interviews with the German 101 supervisor and instructors and from specific open-ended survey responses describing critical thinking activities. From these responses, two components of micro critical thinking became salient. First, micro critical thinking takes place through analysis of the language as a system. Second, micro critical thinking involves transferring that linguistic knowledge to other contexts to facilitate communication.

First, micro critical thinking involves thinking critically about the target language as a system. The German 101 supervisor described the critical thinking process as a way through which learners develop a formal understanding of the linguistic system of the target language.

> So I think that this formal knowledge through the critical thinking, they have to understand the parts, and how they work together. And how they work in the system….So in other words, we want them to know why they're doing what they're doing….And that's an awareness, that's a higher-order understanding that I consider to be a part of what we've agreed is critical thinking. (Sup_I_1_339-342, 353-357)

Thus, analyzing the language itself on a micro-level engages students in critical thinking and provides them with a formal knowledge of the target language as a system. One of the German 101 instructors described this process of analysis in further detail:

> As a class, if we kind of inspect a sentence or examine a sentence…then we have them look at all the aspects of a sentence. And so, we teach them like a little way that they can decipher what…each word's part in the sentence is. So things like that...or with reading, just having them look at the whole sentence and being able to pick out a word's meaning by context. (SI_2_I_1_315-326)

Again, students are engaged in thinking critically about the linguistic input and the components of the language to understand how the parts fit and work together within the whole. The supervisor and instructors gave several concrete examples of this process during the interviews. The supervisor described the following interaction that occurred during class:

> The other day, we were talking about countries. Switzerland, *die Schweiz*, it uses the article, ***die*** *Schweiz*, whereas other countries don't….In the phrase, the sentence we were using, *die Schweiz* has to become dative case, it has to become *in* ***der*** *Schweiz*. And a student noticed…. I think what the focus [of the activity] was actually the verb, to live. Living in Switzerland, right? So the lesson was about the verb "to live." But we just tossed out this verb, and everybody was using it…. But one student in the class said, "I thought it was *die Schweiz*." And noticed a difference. In the data. So…that's an example of critical thinking…on a micro kind of level. (Sup_I_1_374-401)

In the above example, students are engaging in critical thinking on a micro-level because they are focused on the component parts of the language itself. They notice differences in the data and analyze them to gain a formal understanding of how the target language works as a system.

Similar to the supervisor, one instructor defined critical thinking as "knowing how language works" (SI_2_I_1_249), and provided the following illustration as one example of what that means.

> How language works, knowing how language works, is critical thinking. Because that's like looking at a word and being able to decide what role that plays and things like that…. [T]he words we use are just kind of the surface. And so you look at a form, you look at any given word, and you can see what form it has, and by that you can tell what role it plays in the sentence. So that's just a deeper level of thinking about it rather than just the

> surface words. So you say, *Ich trage einen Rock*[9]…You can look at *ich*, so you can tell the function of the words, but *ich* is in the nominative case, so it's the subject….You can also look at the verb, *trage*, and it has the *ich* conjugation, so you can tell that way that *ich* is the subject. And then you can look at *einen*, and that's in the accusative, and so that will show you that it's the direct object. (SI_2_I_1_249-50, 267-272, 277-284)

Again, in these examples, the learners are focused on and are thinking critically about the language itself to gain an understanding of how the language works together as a whole. First understanding the target language as a system is, according to the interview participants, an essential step in helping learners communicate.

Thus, the second part of micro critical thinking facilitates this goal of communication, in that micro critical thinking involves transferring the formal linguistic knowledge gained through analysis of the target language to other contexts to facilitate communication. One instructor in particular emphasized how a linguistic understanding of the target language transfers to communication:

> In my experience, learning foreign languages, [critical thinking] is what you do a lot of the time. That's one of the most effective ways to learn, is you have something you want to say, you have something you want to achieve, like, "Oh I need to be able to order a pastry from this guy. How do I do that? What kinds of grammar do I need to use, what kind of vocabulary do I need to learn, what sorts of expressions do I need to have?"…things like that. And so I think critical thinking is absolutely vital in language learning…As students have the chance to practice critical thinking, then they can apply it later on…You know, find the right vocab, I can ask the right questions, and be able to,

[9] *Ich trage einen Rock* means 'I wear a skirt.'

> maybe it's a different situation, but I can apply the same patterns I used in the past. (SI_1_I_1_263-279)

Engaging students in micro critical thinking enables them to understand the component parts of the target language, such as grammar and vocabulary, and then prepares students to use those pieces for the goal of communication.

The German 101 course supervisor also gave an example of transferring the linguistic knowledge to communication.

> We had an activity [in the textbook] where they have a sort of elements of a phrase…. And they have to flesh it out as a whole sentence into a question, and ask their partner, who answers…These are all direct objects and the teaching point is the accusative case…Which is being modeled for them. It's already in the cue. But they have to flesh it out…. I had them just go on and ask more questions….So suddenly, they have to, maybe using analogy…they've got to come up with their own. Then…we went on to the next thing. I gave them a word cloud of the vocabulary in the chapter. All these nouns are there, the genders are there by color. But the accusative forms…are not there…so now they're responsible to come up with the accusative form and get it in the sentence…. So, I think that's a kind of critical thinking, to be able to do that…I mean, you have to think to do this. You have to understand the rule, you have to be able to apply it in a novel or creative situation. That's a thinking response. (Sup_I_1_521-557)

In this example, learners are focused on and are thinking about a specific linguistic concept—the accusative case. However, they are guided through applying this concept and eventually must generate it on their own, which the supervisor notes, is one possible example of critical thinking.

One final example from the survey responses synthesized these two components of micro critical thinking.

> [T]here are many elements to critical thinking that are either accomplished or founded in a properly constructed activity. Example: You have drilled the forms of "tener" in Spanish and then you show them "mantener" which they have never seen. Can they connect their previous experience to the new verb and successfully use it? I believe that is critical thinking in a grammar drill. (CT act_K-12_21-26)

In this example, learners have been presented with the verb conjugations for one verb and are asked to focus on this aspect of the target language. They are then invited to think critically in order to transfer that linguistic knowledge to a new context, ideally in preparation for communicating with those verbs.

In summary, the data suggest that in many cases, learners think critically about the target language itself, focusing on its parts and how they work together as a whole. Gaining a clear and formal understanding of the language through critical thinking and analysis then prepares students to apply and transfer that knowledge into their communication in the target language. The implications of micro-level critical thinking will be discussed further in Chapter 5.

Macro Critical Thinking

As the data from the survey responses suggest, critical thinking in the world language classroom need not be limited to a linguistic analysis of the target language alone. Learners in the world language classroom can also be invited to think critically about broad, real-world issues, questions, problems, and themes. In addition to discussing micro critical thinking, the interview and survey responses also highlight the possibility of thinking critically about these larger, macro-level topics. The survey and interview responses describe macro critical thinking

and also note that engaging students in thinking critically about macro-level topics is more motivating. The data also reveal two concerns about inviting students to think critically about macro-level topics. First, there is the question of whether or not such topics are possible for beginning-level learners to handle, and the second, related concern is the role of the target language in dealing with such topics.

Several of the responses from the survey describe learners as engaging in critical thinking about these macro-level topics. For example, some activities definitely require learners to engage in critical thinking by compelling learners to consider more than just the language itself.

> [These] activities require students to speak from a certain point of view or to apply knowledge to solve a problem, so they must be able to figure out the point of view (compare/contrast with others) and think about how to solve a problem, which is well beyond simply memorizing info[rmation]. (CT act_K-12_114-119)

Instead of thinking critically about the target language, learners are now asked to consider points of view, to compare and to contrast, and to deal with problems. They do more than ask learners to regurgitate memorized information.

> Activities that ask students to take a stance, solve a problem, or find a solution definitely encourage critical thinking because students must go beyond the basic "memorizable" principles of the language to evaluating how to use the language for an external reason. (CT act_K-12_3-6)

Thus, another attribute of macro-level critical thinking is that it requires students to move to language use for real-world purposes and applications. Thinking critically about broad, dynamic issues and problems "asks students to take what they know and have learned and to draw conclusions, to defend opinions, to explain why, to postulate consequences" (CT act_K-12_72-

74). When students engage in macro-level critical thinking, the language shifts from being the primary focus to becoming a tool through which meaning is expressed and real-world problems are solved.

One of the German 101 student instructors noted that the textbook used in their program encouraged macro critical thinking by inviting students to think critically about the target culture.

> They [the textbook] actually ask a lot of good questions to get the students thinking about…comparisons…just to get them thinking about different cultures, 'cause I think that once you get beyond the differences, the surface differences, that's already critical thinking because it's…a deeper level of thinking about it. It's not so much the what, but it's the why. (SI_2_I_1_362-363, 365-366, 374-379)

Again, learners are invited to move beyond the language itself to think critically about real-world content and topics. and consider how content applies to them personally.

One of the major advantages of inviting students to engage in macro-level critical thinking about broad real-world problems, questions, and issues revealed by the data was the fact that thinking about such topics is motivating for learners. One survey respondent expressed concern at the fact that focusing only on the language was not always motivating for students, stating that "It's not always easy to make students CARE about the content. For example, my students do not get very excited about prepositions of place" (CT act_K-12_90-92). In contrast, the German 101 supervisor pointed out that thinking about things other than the language does get learners engaged.

> People get more interested in talking when it becomes a question of opinion and values…and even if it's my culture vs. the new culture, or within our own culture,

different viewpoints on things that are going on. I think that's a great way to motivate language use. (Sup_I_2_152-156)

Thus, while discussing the language itself may be important, engaging students in thinking about and using their language to talk about more real-world problems and topics may help motivate students by connecting the target language to the world beyond the classroom. The German 101 supervisor further notes that the world language classroom is an especially rich environment for discussing such topics, "because we do have people coming in from…diverse backgrounds, it's a great opportunity in a language class to discuss and to get into those kinds of things [i.e. macro-level topics]" (Sup_I_2_140-142). Not only is it motivating for learners to think critically about macro-level things, but it also helps them think critically by exploring the diverse perspectives and opinions of their classmates that come from the different backgrounds of class members.

One of the primary concerns noted in both the interviews and in the survey was whether or not beginning-level learners are capable of engaging in critical thinking about macro-level topics. One of the survey respondents noted that "When you teach Level One language, it is sometimes hard to come up with activities that promote critical thinking. We spend a lot of time just trying to memorize vocabulary" (CT act_K-12_86-87). Similarly, the German 101 supervisor pointed out that although he didn't "exclude or avoid" macro-level critical thinking, he didn't get to it very often in German 101 because the focus of the course was on the language. He noted that "it's good if it [macro-level critical thinking] can happen. But it just can't happen out of thin air. It has to be built up from…forms and structures" (Sup_I_2_63-65). He then gave several examples of cross-cultural comparisons from the textbook he uses and noted that they could be used to engage students in macro-level discussion, but he pointed out that such discussion was difficult because the comparisons were abstract and also because there wasn't

time in the program to discuss such topics (Sup_I_2_65, 85). However, he did explain that " I really do do them more in 102 and even more in 201 and 202. The more you get into language, the more you're able to do that" (Sup_I_2_142-145). Thus, this leads to the question, can learners engage in thinking critically about broad, abstract macro-level topics at the very beginning language levels? And if so, how? These questions will be discussed further in Chapter 5.

One other concern that the supervisor also notes is that in many cases, trying to engage learners in such macro-level topics may result in the use of the native language.

> [W]ith critical thinking, they may, the teacher may choose to do that in English. And students will often choose not to answer the hard stuff cause they haven't learned that kind of language. And they'll often just go into English because you're asking a question about a worldview or something more abstract. (Sup_I_2_394-398)

Of note is the fact that one of his student instructors stated that he did use English to discuss abstract things like culture.

> I also do a lot of culture things in English. Like I'll tell them about Germany…just because I want them to really understand it. I mean, we read, we do cultural readings in German, and they pick out things that they get, but I think that it helps them…really learn to love the German culture if they understand what's happening and it's not stressful for them to think about….So I feel like that's an important part of language teaching too. Also show them the target culture. (SI_1_I_2_316-329).

Thus another question that emerged is what the role of the target language should be when dealing with macro-level critical thinking in the language classroom. These concerns and the implications for the world language classroom of defining critical thinking in terms of both micro and macro levels will be explored further in Chapter 5.

Conclusion

This chapter has examined the three primary findings of the study. First, the characteristics of critical thinking that emerged from the data were described. Next, what learners *do* when they think critically was discussed, and the role of the Revised Bloom's Taxonomy in dealing with those actions was also explored. Finally, the findings regarding the things about which learners think critically were described and the difference between micro and macro critical thinking was explored. The impact of these three findings on our understanding of and definition of critical thinking and the implications of these findings for language teaching and learning will be discussed in Chapter 5.

CHAPTER 5: DISCUSSION

Chapter 4 described the findings that emerged from an analysis of the data gathered from the study. This chapter will seek to describe answers to the research questions posed earlier. The chapter will also explore the pedagogical implications that these findings may have on language teaching and will propose some suggestions for further research on the topics of critical thinking and language proficiency.

Research Question 1 and Research Question 2: Defining Critical Thinking

Recall that the first two research questions dealt with how the world language field defined critical thinking and how a specific German 101 program's instructors and supervisor defined critical thinking. In general, the field and the specific language program defined the term in similar ways, mutually reinforcing the findings that emerged. For the purposes of this discussion, the two research questions will be addressed together, considering the common findings that emerged from both sources of data.

First, critical thinking was defined by describing characteristics of the skill. According to the data, critical thinking is an active, self-directed process in which learners engage. Learners go beyond the surface level of thinking and reflect in a systematic way on their thinking processes and on how the topic at hand applies to them personally. Critical thinking often deals with multiple sources of input and may require multiple thinking skills. Resulting in an original product, critical thinking ideally has applications to the real world, and the skill is transferrable, enabling learners to apply the skill in many different settings.

Second, critical thinking was defined based on the content about which learners are thinking critically. Thus, critical thinking happens on two planes, depending on whether the learner is invited to think critically about language, or about real-world or academic content.

When students think critically about language, they are engaged in micro-level critical thinking, which examines the target language as a system and enables learners to gain control of language structures for use in communication. When students think critically about academic content or real-world issues and problems, they are engaged in macro-level critical thinking, and they learn about culture, politics, society, and the world around them in addition to working with the target language.

The final way that critical thinking was defined in the data was in terms of the actions learners engage in when they think critically. These actions were most commonly described by using the framework of the Revised Bloom's Taxonomy, with critical thinking being defined as "higher-order thinking," or the levels "Apply," "Analyze," "Evaluate," and "Create" of the Revised Bloom's Taxonomy. In many instances, several different levels were a part of the same definition, suggesting that critical thinking is a complex skill that requires the inclusion and coordination of multiple levels of thinking.

Discrepancies in the Definitions

Despite the common patterns in definitions that emerged from the findings, a few discrepancies appeared as well. First, there were several concerns raised by study participants about asking students to engage in macro-level critical thinking at beginning levels. One concern was the fact that macro-level critical thinking is too difficult for beginning language learners. It was suggested in the interviews that learners should initially focus on the language to provide students with a linguistic foundation before working at the macro-level. A related concern was that without this linguistic foundation, if teachers were try to bring macro-level critical thinking into beginning levels, both learners and the teacher would need to resort to the use of the native

language. A final challenge mentioned was the lack of time needed to engage students at the macro-level. These potential problems will be addressed shortly.

Another discrepancy appeared in the application of the RBT to classroom activities. Although the field associated critical thinking with "higher-order thinking" in general, many of the individual responses and specific verbs describing the action of critical thinking actually coded to the middle levels of the RBT. This pattern suggests that in practice, much critical thinking may only be "middle-order thinking," instead of the "higher-order thinking" the field used in its definition. These differences suggest that the application of the RBT and the field's definitions of critical thinking should be reconsidered to strengthen the alignment between the two.

An additional discrepancy appeared as the action of critical thinking was described in terms of thinking processes such as problem solving and decision-making. Because the RBT was not able to account for all of these related critical thinking processes, a framework described in the literature by Hoch and Hart (1991) was used to analyze these additional processes. When the field defined critical thinking in terms of the thinking processes listed by Hoch and Hart (1991), there was a difference between the K-12 level respondents' definitions and the definitions of respondents at the university level. At the university level, respondents noted that a key process involved in critical thinking was a need to present and articulate the results of the critical thinking process through oral or written means. These emerging definitions and discrepancies have potential pedagogical implications in understanding possibilities for what critical thinking can look like in the world language classroom.

Pedagogical Implications: Critical Thinking in the World Language Classroom

Three key themes emerge from these definitions of critical thinking that may influence what goes on in the world language classroom. As the 21st century skill of critical thinking is integrated into world language education:

1. The **roles** of the teacher may need to transform.
2. The **content** used in the classroom may need to change.
3. The **activities** in which students are asked to engage may need to shift.

Transforming teacher roles. In a traditional classroom setting, instruction is teacher-centered. The teacher serves as the primary source of knowledge, and the students take a more passive role, where they memorize the knowledge the teacher imparts to them (Gaskaree, Mashhady, & Dousti, 2010). However, the understanding of critical thinking that comes from this study suggests that if teachers integrate critical thinking into their classrooms, their role may need to transform as they help students co-create knowledge, help students organize their thinking, and help facilitate autonomous learning.

As teacher roles transform to enable teachers to co-create knowledge with their students, teachers are no longer the primary source of knowledge. If critical thinking is defined as an active process that students must engage in, then students can no longer passively accept the knowledge being spoon-fed to them by the teacher. Instead, they must actively engage in thinking about the concepts presented to them. Integrating critical thinking into the world language classroom would actively involve students discovering possible answers for themselves.

Teachers can facilitate this discovery process by applying another characteristic of critical thinking, that of thinking systematically, which requires students to apply logic and reason in order to understand something. Teachers can structure activities in ways that invite

students to apply logic and reason to actively think their way to conclusions. Sometimes, there may be one correct answer for which teachers are looking for, such as when teachers are using an inductive approach to grammar instruction. In such situations, teachers can guide students through the application of logic and reasoning to lead them to discover the conclusion for themselves rather than simply providing students with the answers. In other cases, when students are discussing more global or content-based issues that go beyond a mere discussion of the language itself, e.g., current events, abstract concepts and themes such as friendship, there may be situations in which there is no single right answer. In these situations, teachers will need to be open to multiple answers that students may provide. Teachers can still require students to be systematic in applying logic and reasoning to arrive at their answers by asking students to explain their thought processes and to justify their answers while still accepting a variety of different responses from students.

Getting students actively engaged in systematically thinking their way to conclusions enables teachers to co-create knowledge with their students rather than simply providing them with pre-determined opinions and answers. This co-creation of knowledge may require teachers to adopt a more constructivist approach to learning, by employing pedagogical strategies such as cooperative learning that shifts the focus from a teacher-centered classroom to a student-centered one.

This shift may not come naturally to students because such an approach is not traditionally used in most educational settings, including the world language classroom. Consequently, teachers must also assume a role that enables them to help students organize their thinking and become comfortable with being actively engaged in applying logic and reason to co-create knowledge with their teachers. For teachers, this means that when students are engaged

in critical thinking, teachers' roles shift from giving correct answers to helping students become aware of their own thought processes. Teachers may need to systematically engage students in metacognitive activities that make students aware of their own thinking and help them see both strengths and weaknesses in their reasoning processes. Teachers may accomplish this goal by employing pedagogical methods such as strategy instruction and discussions that promote metacognitive awareness. As students engage in metacognition, they will be able to better monitor their own individual learning.

Helping students monitor and direct their own learning is key to the final role that may transform as critical thinking is included in world language education. Teachers can help facilitate student autonomy by integrating critical thinking into learning because critical thinking is self-directed. Critical thinking happens independently and results in answers that move beyond any pre-determined conclusions of teachers. Consequently, teachers may need to give up control of dictating exactly what students will learn because most of the learning may be taking place in ways that teachers may not be able to see.

However, the invisibility of the process and the difficulty of anticipating what the results may yield does not mean that teachers do not need to plan or prepare for critical thinking. Instead, teachers can invite students to engage in activities such as learning centers that require critical thinking and that provide students with individual choices to further develop students' abilities to become autonomous learners. Transforming teacher roles to facilitate student autonomy is especially significant because it is connected to another 21st century skill, that of initiative and self-direction (Partnership, 2009). This skill helps students determine their own learning goals, plan ways to reach those goals, and reflect on their progress as students understand how they learn individually and how to apply that knowledge to become lifelong learners (ACTFL, 2011).

Thus, integrating critical thinking into the world language classroom may also help students develop initiative and self-direction as teachers worked to facilitate autonomous learning.

In a language classroom, the transformation of teacher roles to help students co-create knowledge, organize their thinking and become autonomous learners by fostering critical thinking may be especially important because the ultimate goal of the world language classroom is to prepare students to use the target language in real life. In these real-world situations, students will need to function independently, without teacher support and with the ability to think critically.

Changing classroom content. In addition to transforming teacher roles, incorporating the understanding of critical thinking revealed by this study also involves changing the classroom content students are invited to consider. Traditionally, language instruction is driven by the textbook and focuses primarily on grammar and vocabulary (Gaskaree, Mashhady, & Dousti, 2010). However, recall that the field defined the topics about which one thinks critically on two different levels: micro critical thinking takes place about the language itself, while macro critical thinking takes place about real-world topics and issues. Since the data suggest that there are two different planes on which critical thinking takes place, it is worthwhile to consider why a classroom that incorporates the 21st century skill of critical thinking should change classroom content from focusing on the only language to including content that enables students to engage in macro-level critical thinking as well.

Focusing on the language itself, or engaging students in micro-level critical thinking, is an important part of language instruction. One concern that study participants had regarding macro-level critical thinking was that students would not be able to engage at the macro level without a solid linguistic foundation. Inviting students to think critically at the micro-level about

the language provides students with this necessary groundwork. However, limiting classroom content to the target language alone suggests that students will only ever have an opportunity to engage in micro-level critical thinking. Consequently, classroom content may need to shift in order to ensure that students have opportunities to engage in critical thinking at both the micro and macro levels.

One way that classroom content may need to shift to better facilitate critical thinking is by providing students with multiple examples of content. Critical thinking was identified as being multifaceted, suggesting that critical thinking involves the synthesis of information from a variety of sources and perspectives. The implication of this characteristic for classroom content is that teachers should provide students with multiple sources of input. On the micro-level, this input may translate into multiple examples of a grammar principle or multiple representations of vocabulary. On the macro level, classroom content may include a poem, a picture, and a comic strip, all centered on the same theme or topic.

Classroom content can be changed by planning ways to include both the Connections and the Comparisons goal areas of the Standards for Foreign Language Learning. As students are invited to think critically when given multiple sources of input, they will likely naturally make connections between these different sources, thus participating in the Connections goal area. Similarly, students will likely begin to compare and contrast the different sources of input, thus engaging in the Comparisons goal area. The Comparisons standards themselves offer possibilities on both the micro—"demonstrate an understanding of the nature of language"—and the macro—"demonstrate an understanding of the nature of culture"—levels (ACTFL, 1996). Planning content that facilitates the inclusion of both of these goal areas can help to ensure that students engage in both micro and macro critical thinking.

As students engage in critical thinking on both the micro and macro levels, students will be prepared to transfer what they learn to a variety of settings and situations. On the micro-level, students think critically about the language and are then able to apply the linguistic knowledge they gain to communicate in different contexts. On a macro level, students use knowledge gained from thinking critically to solve problems by transferring knowledge across discipline boundaries. Thus, although micro critical thinking is important, limiting students to that level alone may be insufficient.

Planning classroom content that incorporates the Connections goal area of the Standards for Foreign Language Learning can help students engage in thinking critically at the macro level by integrating real-world content into the curriculum. As students manipulate interdisciplinary content using the target language, they are able to "connect with other disciplines and acquire information" (ACTFL, 1996). Much literature supports this interdisciplinary approach and provides examples of how it can be done in a world language classroom (see, for example, Heining-Boynton & Heining-Boynton, 1992; Hoch & Hart, 1991; Williams, Harper, & Lively, 1994). As students acquire information, both about how the target language works and about interdisciplinary topics, they can then transfer that knowledge and apply it for use in a variety of different contexts.

To further ensure that classroom content facilitates macro-level critical thinking, such content may need to change to include topics that have real-world relevance. One of the characteristics of critical thinking was that it was relevant, meaning that it has applications to the real world. The world beyond the classroom is not limited to talking about language, so the world within the classroom may need to change to include topics in addition to language as well. In a language classroom, language can become a vehicle through which real-world content is

explored. Thus, content and language can become relevant and applicable to students as the topics explored and discussed have meaning in the real world and engage students in thinking critically at the macro level.

Teachers can increase real-world application and relevance by changing classroom content in ways that include the Communities goal area of the Standards for Foreign Language Learning. As teachers find ways for students to use their target language skills "within and beyond their school setting" (ACTFL, 1996), the community comes into the classroom and the classroom can expand beyond itself. Students will see the relevance of what they are learning because they will use their language to accomplish something that has meaning in the real world. Engaging in activities that have real-world purposes will require students to consider relevant themes and issues beyond the target language itself, thereby facilitating macro-level critical thinking.

Increasing the amount of critical thinking taking place in the world language classroom may require changes to classroom content such as providing students with multiple sources of input and making content transferrable and interdisciplinary. These changes will help ensure that students have opportunities to think critically at both the micro and macro levels.

Shifting classroom activities. Traditionally, activities in the world language classroom are drill-based, focused on memorizing and regurgitating the information. The understanding of critical thinking that emerged from this study suggests that when critical thinking is integrated into the world language curriculum, classroom activities may need to shift in order to go beyond merely memorization.

When considering the kinds of thinking that a classroom activity requires, the Revised Bloom's Taxonomy (RBT) described earlier can be applied. According to the findings of this

study, critical thinking is often defined as "higher-order thinking," or thinking that involves the levels of Apply, Analyze, Evaluate, and Create from the RBT. The findings also suggest that critical thinking may involve multiple levels of the RBT. Thus, to ensure that critical thinking is a part of classroom activities, these activities can be assessed using the RBT to confirm that they do require students to use multiple levels of the taxonomy and engage at higher-order levels of thinking.

Shifting classroom activities to ensure that students are engaged at higher levels of the RBT does not mean that the lower-level processes need be ignored altogether. As with the coordination of micro- and macro-level content, first engaging students in activities at the lower levels of the RBT may be important to ensure that students have the requisite skills needed to perform at the higher levels (Ferguson, 2002). However, remaining at these lower levels is insufficient, especially because as students are invited to engage in higher-order thinking processes, the lower-level skills are reinforced because the higher levels subsume the lower levels (Williams, Harper, & Lively, 2004).

Instead, activities may need to shift to ensure that the culminating activities engage students at the highest levels of the RBT, while formative activities may engage students at lower and middle levels of the RBT to prepare students for the culmination. Activities that require evaluating and creating will likely be complex, and especially in the beginning language classroom, teachers will need to scaffold students and prepare them to reach such a goal. Including activities that require lower and middle levels of the RBT can be an effective way to provide this scaffolding as long as the end goal of the highest levels of evaluating and creating are kept in mind.

Focusing on the end product and using a backwards planning approach may help to overcome one of the discrepancies found in the study between study participants' definitions of critical thinking and their application of the Revised Bloom's Taxonomy. The data suggested that much of what was identified as critical thinking, or higher-order thinking, in reality never went beyond "middle-order thinking," or analysis and application. One possible reason for this ceiling is because the definitions often described thinking about the language specifically, or in other words, thinking about micro-level content. For example, one survey respondent described transferring an understanding of the conjugations of the Spanish verb *tener* to a new, unfamiliar verb *mantener* as an example of critical thinking (CT act_K-12_21-26). This scenario is an example of critical thinking, but it is limited to the middle-order levels of the RBT "Analyze" and "Apply." As long as such an example involves classroom activities that move beyond this analysis of the target language to allow students to use this understanding to create, then critical thinking will be ensured as students are engaged at multiple levels of the RBT and reach its highest levels.

Similarly, teachers often cite an inductive approach to presenting grammar as a way to integrate critical thinking into the language classroom. This approach certainly can involve thinking critically and moves students beyond memorizing at the "Remember" level. However, the RBT lists an inductive analysis of the target language as an activity that engages students at the "Understand" level. Again, such teaching methods are useful, but providing students with opportunities to use the language structures they learn about inductively in order to evaluate and create will guarantee critical thinking by engaging students in multiple levels of the RBT and ensuring that students truly engage in higher-order thinking.

The verbs used in conjunction with the RBT level "Create" give some idea of how classroom activities may need to shift. Verbs associated with the "Create" level include generate, hypothesize, plan, and design. These verbs all describe complex processes that generate some kind of product produced for a purpose. They seem to imply going beyond just communicating with the target language, but instead using the target language to accomplish something, perhaps with a real-world base. Students will likely need content beyond the target language itself to complete tasks that require generating, hypothesizing, planning, or designing. Thus, one way to shift classroom activities to include more critical thinking is by requiring students to create products.

Another way to shift classroom activities may be through considering the kinds of thought processes in which students are asked to engage. These processes, as outlined by Hoch and Hart (1991) may include problem solving and decision-making, composition, and oral discourse. Problem solving and decision-making typically require multiple steps, including identifying a problem, proposing possible solutions, establishing criteria for the desired outcome, evaluating the possible solutions based on the criteria, implementing the solution, and evaluating its effectiveness. Composition and oral discourse imply generating a product to explain and articulate the critical thinking, problem solving, or decision-making process. Thus, shifting classroom activities to include such thinking processes will likely ensure that students use multiple levels of the RBT and in the culminating stages of such activities reach the highest levels of "Evaluate" and "Create."

Three characteristics of critical thinking—that critical thinking is deep, reflective, and original—further reinforce these shifts to classroom activities discussed above. First, critical thinking is deep. It involves going beyond the surface level of memorizing in order to

hypothesize, infer and synthesize. Because critical thinking is deep, when students engage in critical thinking, they move beyond the lower RBT levels of "Remember" and "Understand" to engage in higher-order thinking. Shifting classroom activities to include critical thinking can invite students to think at this deeper level. Second, critical thinking is reflective. It is an evaluative process that involves looking at past experiences and decisions to know how to move forward. Not only is "Evaluate" one of the higher orders of the RBT, but reflecting and evaluating is also an important part of problem solving and decision-making. Integrating classroom activities that include problem solving and decision-making may be an effective way to increase the amount of critical thinking taking place. Finally, critical thinking is original. According to the data, it involves creating a product that can be imaginative or that contributes new insights to the task at hand. This characteristic is particularly relevant because it is related to the 21st century skill of creativity and innovation (ACTFL, 2011). As students think critically and produce original and creative products that reflect their critical thinking processes, they are able to become meaningful contributors to the world right now. Shifting classroom activities to include the production of original products automatically invites students to engage in thinking at the "Create" level of the RBT.

In summary, activities in the world language classroom may need to shift in order to facilitate the inclusion of critical thinking. If critical thinking is defined as higher-order thinking in terms of the Revised Bloom's Taxonomy, then classroom activities should ensure that students are invited to engage at all the levels of the RBT, and especially at the top levels of "Evaluate" and "Create." Requiring students to create products, integrating macro-level content into classroom activities, and including problem solving and decision-making as part of classroom

activities are all strategies that can increase the amount of critical thinking taking place in the classroom as students use multiple levels of the RBT.

Putting it into practice. Integrating the pedagogical changes outlined above into the world language classroom need not be complicated or difficult. In many instances, simple adaptations to common activities can be made to increase critical thinking. For example, one topic regularly dealt with in the beginning language curriculum is talking about houses and city life, and a task often associated with this topic is "Describe your home." To increase the amount of critical thinking in this activity for a university-level beginning language class, first the basic task can be situated in a real-world context: "You and your partner are looking for an apartment in Aix-en-Provence, France. You want to find the perfect apartment, but you have a budget. You can't spend more than 800€/month. Your goal is to stay within your budget and still get as many amenities as you can. What amenities will be most important for you and what will be less important when trying to stay in your budget?" This task is now more relevant and makes the language a tool to accomplish a goal beyond the walls of the classroom itself.

Such a task may be too complex for students to complete without scaffolding. Thus, the teacher can break down the task into a series of smaller activities. First, students make a list with their partner of things they must have in the apartment (such as a kitchen, 2 bedrooms, etc.), and things they would like to have (such as a downtown location, a nice view, etc.). Students look at authentic real estate ads online and choose three apartments that are in their price range. Next, students write sentences describing each of the three apartments, listing what the apartment does have and what it does not. Students then compare what each apartment has/does not have to their wish list they created earlier. Finally, students decide which apartment they would choose and give three reasons for their decision. They may also present their decision to the class.

This activity will necessitate the shifts discussed earlier, as teacher roles transform, the content changes, and the activity itself changes from the traditional approach of simply describing the students' homes. Teachers who ask students to engage in such a task will not be providing students with pre-determined answers or outcomes. Instead, they will be helping students use reason and logic to make a decision regarding which apartments are better for their needs. Teachers will facilitate the learning process and provide expert knowledge when needed, but they will also need to accept that there is more than one ideal apartment for students to choose. They can help students become aware of the thought processes they used to arrive at their decision by requiring students to explain and justify their apartment choice.

The content of this activity includes macro-level content because students are focused on topics such as choosing an apartment that have relevance in the real world. Students will explore multiple examples of authentic real estate ads and will be exposed to the target culture as well, i.e., what amenities do typical apartments in the target culture include. Micro-level content will be needed to complete the activity. Indeed, understanding how aspects of the target language such as negation work is key to successfully completing the activity. However, the sub-tasks are initially kept simple, with students responding in single words, and are then expanded to complete sentences. At the same time, the activity is not limited to focusing on the language. Instead, language becomes the tool through which meaning is expressed.

The activity itself, in its culminating stage, will require students to evaluate and to generate a plan for their apartment, thereby engaging students in the highest levels of the Revised Bloom's Taxonomy. However, even the component parts that prepare students for the final stage require the use of other levels of the RBT such as "Understand" and "Apply" and "Analyze." Ultimately, this activity is an example of decision-making, and it is therefore logical that such an

activity would necessitate the use of multiple levels of the RBT. Although this activity requires higher-order thinking, because the language is kept simple, students are able to engage in critical thinking about meaningful topics even at the beginning levels of language study.

Research Question 3: Critical Thinking and Language Proficiency

The pedagogical implications described above become especially interesting when viewed through the lens of language proficiency. One of the challenges with current world language instruction is that many programs are not getting students to the proficiency levels they need to achieve in order to use their language skills in real-world contexts. Research suggests that most real-world jobs require language proficiency at the Superior level according to the ACTFL Proficiency Guidelines (Swender, 2003). If the goal of the language classroom is Superior-level proficiency, then a backwards planning approach is appropriate to consider how teachers can set students up for success in attaining this possible, albeit lofty, goal.

Recall that Superior-level proficiency can be broken down into three different components: control of the linguistic structures of the target language, the ability to use the target language in a variety of contexts to discuss a wide range of content, and cognitive skills such as argumentation, hypothesizing, and exploring alternative possibilities (ACTFL, 2012). The understanding of critical thinking that has emerged from the findings of this study can be applied to these three components in order to better understand the relationship between critical thinking and language proficiency.

Linguistic Control

The first component of Superior-level proficiency is linguistic control, meaning that speakers at this level have full control of basic linguistic structures, and there are no patterns of error. There may be occasional errors in more complex or low-frequency structures, but these

errors do not interfere with communication. Integrating critical thinking into the language classroom can facilitate students' abilities to gain the linguistic control needed for the Superior level.

As teachers' roles transform from that of the primary source of knowledge about the target language to that of an expert, teachers can invite students to think critically, actively thinking their way to conclusions about how the target language works. The teacher guides students through activities that invite them to go beyond the surface level to a deeper understanding of the language as a system. Activities shift from traditional ones that invite students to memorize and regurgitate information about the target language to activities that invite students to systematically apply logic to infer grammatical principles for themselves by analyzing and applying, requiring higher levels of thought from students than just memorizing. As students actively create for themselves an understanding of how the linguistic structures of the language work, they will be able to more easily monitor their language usage, thus becoming more self-directed language users. Monitoring their own usage is likely to enable them to reinforce the control they have over basic language structures.

The data suggest that in order for students to think critically, content must also be relevant and engaging to students. Although helping students develop linguistic control requires focusing on micro-level content, teachers may be able facilitate this control by engaging students in critical thinking about relevant content as a way to highlight and employ the target language structures. As micro-level target linguistic structures are embedded in meaningful macro-level texts, perhaps authentic in nature, students may be more likely to think critically about how the micro-level language structures work to convey meaning, further developing their control over linguistic structures.

The result of integrating critical thinking into the language classroom by guiding students through actively analyzing the target language as it appears in meaningful content will enable students to develop a solid understanding of how the target language works as a system. This understanding will provide a solid foundation that can be built upon and recycled as students continue in their language studies to support their developing linguistic control. Thus, when students reach the Superior level, they will be able to access their control of linguistic structures to accurately express their meaning.

Content/Context

Superior-level speakers are characterized in part by their ability to participate fully in conversations that occur in both formal and informal settings. They are able to talk about both concrete and abstract topics that deal both with them personally as well as more global, social and political issues (ACTFL, 2012). Reaching the Superior level requires the ability to use the target language in different contexts and the ability to talk about many different kinds of content. When these abilities are the ultimate goal of the language classroom, teachers can start early to give students opportunities to use the language in different settings and to develop opinions and thoughts about many different topics.

Creating different contexts for students to use and practice their language skills could be accomplished in part by shifting classroom activities in such a way that they require critical thinking. These shifts may include adding real-life purposes, requiring students to create products, and providing students with real-life audiences. Activities, such as the one illustrated earlier, could have a real-world basis instead of being limited to the classroom. For example, an activity that requires students to write and send a business letter would require different language and different knowledge of cultural conventions than an activity that requires students to write

and send an e-mail to a peer in the target culture. Completing these activities would enable students to see examples of how the target language is used in different contexts, in both an informal and a formal setting. Both of the above examples also require students to create products. As students create products, they are engaged in the highest levels of the RBT, and are thus engaged in critical thinking. Furthermore, actually requiring students to send their letters to a real audience facilitates critical thinking by making the classroom activities relevant to students and transferrable to the real-world, providing useful practice in using communication for real purposes in preparation for the variety of contexts that are required for Superior-level functional ability.

Similarly, if students must develop opinions and thoughts about many different topics to be able to deal with Superior-level content, then understanding current events and other content beyond the language is needed. Integrating macro-level content into the language classroom can help facilitate this development in students and becomes especially important to move beyond the structure of the language itself. Ideally, integrating macro-level content will involve presenting students with multiple perspectives on the same topic and inviting them to think critically about it, so that students are able to truly develop an opinion by comparing different points of view and by considering how different audiences and contexts shape the content that is produced. Sources and ideas for this content can be found within the 21st century skills framework itself, the Common Core Standards, and the new AP themes, which are designed specifically for world language classrooms.

Dealing with such content will be complex for students. Thus, the teacher's role to provide support becomes especially important. Teachers will likely need to provide their expert knowledge of both content and linguistic knowledge to make input comprehensible to students

and to scaffold students' developing linguistic control. Teachers can help students to express original ideas through this scaffolding, and can also help students feel comfortable taking risks. Finally, teachers can keep realistic expectations and can help students keep their own expectations realistic. Preparing students for Superior-level proficiency by tackling real-world content means that students may need to simplify the expression of their ideas using the linguistic control that they do have. Teachers and students should recognize that having realistic expectations when discussing macro-level content does not mean linguistic perfection (Williams, Harper, & Lively, 1994). The result of helping students develop opinions and knowledge about real-world content from the very beginning is that by the time students reach Superior levels they will have thought about these topics and will have some kind of meaning to express, instead of being left with nothing to say despite having full control of linguistic structures (C. Thompson, personal communication, November 7, 2013).

Cognitive Skills

One of the most notable characteristics of the Superior proficiency level is the application of certain cognitive skills to language abilities and real-world content. These cognitive skills include argumentation, hypothesizing, and exploring alternative possibilities.

Such cognitive skills are complex and difficult, and some argue that developing such skills at beginning levels of language learning is unrealistic. However, if students need to develop these skills to reach Superior levels of proficiency, then ideally these critical thinking skills should be developed starting early on. The literature reviewed earlier gave numerous examples of how higher-order thinking skills can be integrated into language classrooms from the very beginning (Heining-Boynton & Heining-Boynton, 1992; Hoch & Hart, 1991). Activities that require critical thinking at these levels may mean that students simplify they language they

use to complete such activities. When the cognitive demands of an activity are high, the teacher may need to lower the linguistic demands of the activity in order to avoid frustration. At the same time, an activity that has low cognitive demands and low linguistic demands could result in student boredom rather than student engagement, meaning that the activity did not work to build students' skills in any way. Thus balance is needed to prevent boredom while still developing skills according to students' abilities.

To develop the cognitive skills required for Superior levels of proficiency, students will need something to have an opinion about or something to hypothesize about, meaning that students will need macro-level content to be able to develop such skills. At the same time, as students' language abilities improve, there are often specific language structures that are closely related to these cognitive skills. For example, the conditional mood is often used when hypothesizing. This relationship means that to fully develop the cognitive skills and to be able to express ideas at the Superior level, time will need to be spent with micro-level content developing these language structures. These structures are not required for the cognitive skills, however, and students can begin developing the cognitive skills early on. As students develop and practice their cognitive skills from the beginning, over time the cognitive demands of doing such an activity will be reduced, and teachers will be able to increase the linguistic demand, thereby maintaining the needed balance of ease and challenge and avoiding both boredom and frustration.

Thus, one important role of the teacher in helping students develop the cognitive and critical thinking skills needed for Superior proficiency is maintaining this appropriate balance in what is demanded of students. The teacher plays an essential role in providing the scaffolding and support to balance the demands of activities that develop cognitive skills and to adapted the

needed linguistic skills. In some cases, students may not have the needed cognitive skills even in their native language, and teachers may need to help build these cognitive skills.

As teachers work to develop cognitive and critical thinking skills, linguistic ability, and content knowledge in tandem, students will not need to play "catch up" in any given area as they strive to reach the Superior level. The result of integrating cognitive skills into beginning levels of language learning is that students' cognitive skills and their linguistic abilities will grow together over time, preparing them for their ultimate goal of Superior-level proficiency. A summary of this discussion of how the pedagogical implications and definitions of critical thinking revealed in this study can be applied to the language classroom to facilitate the development of Superior-level language proficiency appears below in Figure 19.

If the ultimate goal of language instruction is to enable students to reach Superior levels of language proficiency to use language skills in the real world, then *all* the components of the Superior level should be developed step by step from the beginning through constant spiraling and recycling of linguistic skills, content, and cognitive skills. Integrating the understanding of critical thinking gained from this study can facilitate the development of each of the Superior components. Students should not be expected to accomplish everything all at once, but employing a balanced approach will result in students who can think critically and who are prepared to use their language skills to function in the real world.

	Pedagogical Implications of Critical Thinking				
Superior-level components		**Transforming Teacher Roles**	**Changing Classroom Content**	**Shifting Classroom Activities**	**Results**
	Linguistic Control	Teachers… • guide co-creation of knowledge • lead students to actively think their way to conclusions about how language works • facilitate autonomous, self-directed learning	Content… • is relevant and engaging • includes micro-level content embedded in meaningful macro level-content	Activities… • require logic to systematically reason through how language works as a system • require analyzing and applying appropriate structures, not just memorizing and regurgitating	Students access linguistic content to express meaning
	Content/Context	• scaffold understanding • reward expression of meaning, not linguistic perfection • facilitate student originality	• includes multiple examples of macro-level content • allow students to explore different perspectives on real-world topics and issues • recycles themes and topics to invite continued reflection and development of opinions	• apply to real world • explore different contexts (i.e. business letters vs. personal e-mails) • require the creation of products • engage students in problem solving, decision-making, and evaluating solutions	Students think about real-world content and develop opinions to express
	Cognitive Skills	• facilitate the development of cognitive skills • build non-existing cognitive skills	• applies cognitive skills at micro-level to provide linguistic foundation • applies cognitive skills at macro-level to further develop skills	• relate superior-level skills to RBT levels of Evaluate and Create • balance cognitive demands with linguistic demands for success	Students apply cognitive skills to content using linguistic skills

Figure 19. Building Superior-level proficiency through critical thinking.

Limitations

Although data from this study yielded meaningful findings, the study has a number of limitations that affect the generalizability and reliability of the study. This section will describe some of the key limitations that impacted the study and its findings.

Generalizability

Recall that there were a total of 62 participants involved in the study. While this sample size was large enough to see patterns emerge and draw meaningful conclusions, it was still small enough and not representative enough to generate conclusions that can be applied to the field at large. First, only 19 different states were represented, and often there was only a single respondent from a given state. Second, teachers who teach at the elementary and middle school levels were underrepresented; most of the K-12 respondents taught high school. Finally, because the study was distributed through social media and listservs, the respondents who did participate in the study were likely more professionally engaged than perhaps the field as a whole, meaning that the participants were not representative of all teachers everywhere and may have been more aware of and familiar with issues such as language proficiency and 21st century skills, including critical thinking.

Validity

As a researcher, I tried to be rigorous and thorough in my analyses by triangulating the data in two different ways, both between the data sets themselves (the survey associations with critical thinking, the survey definitions of critical thinking, and the interviews), and across data sources (the survey, the interviews, and the literature from the field). However, despite these efforts, there were still three areas of data collection and analysis that could have issues with validity.

First, the student instructors involved in the interviews were unaccustomed to being interviewed and seemed, on some occasions, to try and give me answers that I "wanted" to hear. I tried to overcome this issue by probing past their initial responses to see further into their insights and by basing my analysis on responses that appeared in the interviews multiple times, but my presence as a researcher may have influenced the responses of the participants in the interviews.

Second, my analysis of the survey responses was based on my interpretation alone, because of the nature of collecting data through a survey. I was unable to clarify responses with the respondents themselves, and without this member checking, the reliability of the analysis is challenged because it is based on my interpretation alone.

Similarly, my analysis and application of the Revised Bloom's Taxonomy was based solely on my interpretation of the responses from both the interviews and the surveys. Although I did my best to apply the RBT framework as outlined in Anderson and Krathwohl (2001), the data analysis is based on my subjective conclusions and different findings could emerge if the application of the RBT framework to definitions of critical thinking were negotiated with the teachers and survey respondents themselves.

Suggestions for Future Research

The purpose of this study was to explore current definitions of critical thinking as it applies to world language teaching. Although several common patterns emerged, there is, as the literature suggests, still a need for a clear definition of critical thinking as it applies to language teaching and learning. Research in looking for this definition could explore several of the issues raised in this study, including the role of the RBT in defining critical thinking, as well as the distinction between macro and micro critical thinking and the implications of this distinction on

language teaching and learning. Having an elaborated description and articulation of what critical thinking looks like in practice in language teaching and how to assess this skill would facilitate more empirical research on critical thinking in the world language classroom. Ideally, such research would include measuring the effects of teachers who integrate critical thinking into their language curriculum on their students' language proficiency.

Several of the limitations described above provide avenues for future research on the topic of critical thinking and may help in arriving at an agreed upon definition of critical thinking as it applies to language teaching and learning. The survey used in this study drew from a fairly small sample size. It might be valuable to give a similar survey to more participants. Including more participants would allow differences that seemed to appear in this data to become more salient. For example, there were differences between the literature and practicing teachers with the way that some of the characteristics of critical thinking were applied. Additionally, there were some differences that appeared across levels—i.e. differences between University level respondents and K-12-level respondents, that seemed to be of interest, but there was not enough data in this study to draw conclusions about those differences. Finally, more individual interviews with a wider range of teachers would also yield useful insights on how critical thinking is defined by individual teachers, because, as noted earlier, one of the limitations of the survey format is that further understanding and meaning cannot be negotiated with respondents. Individual interviews on this topic would allow for this depth of understanding.

Conclusion

This study has examined existing definitions of critical thinking as articulated by current world language teachers. Definitions were gathered through a survey of world language teachers from across the United States and through interviews with individual instructors at a single

university. Based on these definitions, critical thinking was defined in three ways: in terms of characteristics of critical thinking, in terms of the processes and skills used in the action of critical thinking, and in terms of the topics about which one thinks critically.

These definitions formed the foundation of several pedagogical implications, and as critical thinking is integrated into the world language classroom, teacher roles may transform, the content used in the classroom may change, and the activities in which students are asked to engage may shift. These pedagogical changes may facilitate the development of skills needed to reach Superior-level language proficiency, by enabling students to improve their linguistic skills, gain an understanding of real-world content, and develop cognitive skills, all of which are needed for the Superior level. In sum, although a further understanding of critical thinking is needed, the current understanding may have important implications for improving language proficiency when this skill is integrated into world language teaching and learning.

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APPENDICES

Appendix A: Survey of Current World Language Teachers

Critical Thinking in the Foreign/World Language Classroom

Q1 Critical Thinking in the Foreign Language/World Language Classroom

This survey is part of a research study being conducted by Bethany Daniel, MA candidate at Brigham Young University, exploring the role of critical thinking in the beginning foreign and world language classroom. The study is part of a master's thesis being mentored by Dr. Laura Smith, associate professor of German at BYU. You are invited to participate because you are currently teaching a foreign or world language. Your participation in this study will require you to complete the following survey consisting of approximately 25 questions (depending on your responses and background). The survey should take no more than 15-20 minutes to complete. Your participation will be completely anonymous and you will not be contacted again in the future. The survey involves minimal risk to you. It is hoped that through your participation, researchers will be able to understand how foreign and world language teachers define and use critical thinking in the classroom. Your participation is completely voluntary. Even if you agree to complete the survey, you do not have to answer any question that you do not want to answer for any reason. If you have further questions about this project, or if you have a research-related problem, you may contact Bethany Daniel at brdaniel@byu.net or Dr. Laura Smith at laurasmith@byu.edu.

If you have any questions about your rights as a research participant, you may contact the IRB Administration at A-285 ASB, Brigham Young University, Provo, UT, 84602; irb@byu.edu; (801) 422-1461. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

By clicking "I agree" below, you affirm that you have read and understand the above consent and are willing to have your responses recorded for use in the study. Furthermore, you agree that you desire of your own free will to participate in the study. Thank you for your help!

- o I agree (1)

Q3 Which foreign language(s) have you taught? (Check all that apply.)
- ❑ American Sign Language (ASL) (1)
- ❑ Arabic (2)
- ❑ Chinese (3)
- ❑ French (4)
- ❑ German (5)
- ❑ Greek (6)
- ❑ Hebrew (7)
- ❑ Hindi (8)
- ❑ Italian (9)
- ❑ Japanese (10)
- ❑ Korean (11)
- ❑ Latin (12)
- ❑ Portuguese (13)
- ❑ Russian (14)
- ❑ Spanish (15)
- ❑ Other (please specify) (16) _____

Q44 Please indicate the state in which you currently teach.

Q15 Please check all degrees you have received, then enter the field or specialization in the boxes below. (i.e.: Bachelor's degree: Major = Spanish Teaching Bachelor's degree: Minor = English; etc.)
- ❑ Bachelor's degree: Major (1) _____
- ❑ Bachelor's degree: Minor (2) _____
- ❑ Master's degree: Field (3) _____
- ❑ Master's degree: Specialization (4) _____
- ❑ EdD: Field (5) _____
- ❑ EdD: Specialization (6) _____
- ❑ PhD: Field (7) _____
- ❑ PhD: Specialization (8) _____
- ❑ Other (please specify) (9) _____

Q16 Have you ever been certified to teach in K-12 schools?
- ❍ Yes (1)
- ❍ No (2)

If No Is Selected, Then Skip To Please indicate your current position

Q17 How did you earn this certification?

- ❍ Part of an accredited teacher preparation program (i.e. part of a University Bachelor's or Master's degree program) (1)
- ❍ State licensing via post-baccalaureate program (2)
- ❍ State licensing via Alternative Route to Licensing (ARL) or Lateral Entry (3)
- ❍ Other (please specify) (4) _____

If Part of an accredited teach... Is Selected, Then Skip To Please indicate your current position
If State licensing via post-ba... Is Selected, Then Skip To Please indicate your current position
If State licensing via Alterna... Is Selected, Then Skip To Please indicate your current position
If Other (please specify) Is Not Empty, Then Skip To Please indicate your current position
If Other (please specify) Is Empty, Then Skip To Please indicate your current position

Q4 Please indicate your position for your primary source of employment.

- ❍ Pre-school Teacher (1)
- ❍ K-12 Student Teacher / Intern (2)
- ❍ K-12 Part-time Teacher (3)
- ❍ K-12 Full-time Teacher (4)
- ❍ Community / Junior College Faculty (5)
- ❍ Student Instructor at a university (6)
- ❍ Adjunct / Part-time University Faculty (7)
- ❍ Full-time University Faculty (8)
- ❍ Other (please specify) (9) _____

If K-12 Student teacher/Intern Is Selected, Then Skip To Please indicate the level of instruct...
If K-12 Part-time teacher Is Selected, Then Skip To Please indicate the level of instruct...
If K-12 Full-time teacher Is Selected, Then Skip To Please indicate the level of instruct...
If Community/Junior college fa... Is Selected, Then Skip To At which level do you most often teach?
If University student instructor Is Selected, Then Skip To At which level do you most often teach?
If Adjunct/Part-time universit... Is Selected, Then Skip To At which level do you most often teach?
If Full-time university faculty Is Selected, Then Skip To At which level do you most often teach?
If Preschool teacher Is Selected, Then Skip To Please indicate how many years you ha...

Q5 Please indicate the level of instruction you most often teach.

- ❍ Elementary (1)
- ❍ Middle school / Junior high (2)
- ❍ High school (3)

If Elementary Is Selected, Then Skip To In which contexts do you currently te...
If Middle school/Junior high Is Selected, Then Skip To In which contexts are you currently t...
If High school Is Selected, Then Skip To In which contexts are you currently t...

Q6 In which contexts do you currently teach? (Check all that apply.)

- ❑ Foreign Language Exploratory (FLEX) (1)
- ❑ Foreign Language in Elementary School (FLES) (2)
- ❑ Partial Immersion (50% in target language, 50% in native language) (3)
- ❑ Full Immersion (more than 50% in target language) (4)
- ❑ Utah Dual Immersion (5)
- ❑ Other (please specify) (6) _____

If Foreign Language Explorator... Is Selected, Then Skip To Please indicate how many years you ha...
If Foreign Language in Element... Is Selected, Then Skip To Please indicate how many years you ha...
If Partial Immersion (50% in t... Is Selected, Then Skip To Please indicate how many years you ha...
If Full Immersion (more than 5... Is Selected, Then Skip To Please indicate how many years you ha...
If Utah Dual Immersion Is Selected, Then Skip To Please indicate how many years you ha...
If Other (please specify) Is Not Empty, Then Skip To Please indicate how many years you ha...
If Other (please specify) Is Empty, Then Skip To Please indicate how many years you ha...

Q7 In which contexts are you currently teaching? (Check all that apply.)

- ❑ Introductory / Exploratory (1)
- ❑ Level 1 (2)
- ❑ Level 2 (3)
- ❑ Level 3 (4)
- ❑ Level 4 (5)
- ❑ Level 5 (6)
- ❑ Advanced Placement (AP) Language, Literature, or Culture (7)
- ❑ Concurrent Enrollment (high school & university credit) (8)
- ❑ Heritage or Native Speakers (9)
- ❑ Immersion (10)
- ❑ International Baccalaureate (IB) (11)
- ❑ Other (please specify) (12) _____

If Introductory/Exploratory Is Selected, Then Skip To Please indicate how many years you ha...
If 1 Is Selected, Then Skip To Please indicate how many years you ha...
If 2 Is Selected, Then Skip To Please indicate how many years you ha...
If 3 Is Selected, Then Skip To Please indicate how many years you ha...
If 4 Is Selected, Then Skip To Please indicate how many years you ha...If 5 Is Selected, Then Skip To Please indicate how many years you ha…
If Advanced Placement (AP) Lan... Is Selected, Then Skip To Please indicate how many years you ha...
If Concurrent Enrollment (High... Is Selected, Then Skip To Please indicate how many years you ha...
If Heritage or Native Speakers Is Selected, Then Skip To Please indicate how many years you ha...
If Immersion Is Selected, Then Skip To Please indicate how many years you ha...
If International Baccalaureat ... Is Selected, Then Skip To Please indicate how many years you ha...
If Other (please specify) Is Not Empty, Then Skip To Please indicate how many years you ha...
If Other (please specify) Is Empty, Then Skip To Please indicate how many years you ha...

Q8 At which level do you most often teach?

- ❍ Introductory (100-200 level) (1)
- ❍ Upper-division (300-400 level) (2)
- ❍ Graduate (500 level and above) (3)

If Upper-division (300-400 level) Is Selected, Then Skip To What is the primary content covered i...
If Graduate (500 level and above) Is Selected, Then Skip To What is the primary content covered i...
If Introductory (100-200 level) Is Selected, Then Skip To Please indicate how many years you ha...

Q9 What is the primary content covered in the courses you most often teach? (Check all that apply.)

- ❑ Composition / Writing (1)
- ❑ Culture (2)
- ❑ Grammar (3)
- ❑ Linguistics (4)
- ❑ Literature (5)
- ❑ Pedagogy (6)
- ❑ Translation (7)
- ❑ Other (please specify) (8) _____

If Composition/Writing Is Selected, Then Skip To Please indicate how many years you ha...
If Culture Is Selected, Then Skip To Please indicate how many years you ha...
If Grammar Is Selected, Then Skip To Please indicate how many years you ha...
If Linguistics Is Selected, Then Skip To Please indicate how many years you ha...
If Literature Is Selected, Then Skip To Please indicate how many years you ha...
If Pedagogy Is Selected, Then Skip To Please indicate how many years you ha...
If Translation Is Selected, Then Skip To Please indicate how many years you ha...
If Other (please specify) Is Not Empty, Then Skip To Please indicate how many years you ha...
If Other (please specify) Is Empty, Then Skip To Please indicate how many years you ha...

Q10 Please indicate how many years you have been teaching a foreign language.
- ❍ Current student teacher / intern (1)
- ❍ Less than 1 year (2)
- ❍ 1-3 (3)
- ❍ 4-10 (4)
- ❍ 11-15 (5)
- ❍ 16-20 (6)
- ❍ 20+ (7)

Q18 Which of the following professional development opportunities do you regularly participate in? (Check all that apply.)
- ❑ Attend departmental or inservice trainings (as job requirement) (1)
- ❑ Attend professional conferences and workshops (ACTFL, ASCD, ISTE, regional / state meetings, etc.) (2)
- ❑ Member of professional organization (ACTFL, ISTE, NEA, local language organizations, etc.) (3)
- ❑ National Board Certification (4)
- ❑ Read blogs about professional topics (5)
- ❑ Read professional journals (i.e. CALICO, Foreign Language Annals, Language Educator, MLJ, etc.) (6)
- ❑ Read professional listservs (FLTeach, Ñandu, etc.) (7)
- ❑ Read newspaper or magazine articles about professional topics (8)
- ❑ Read social media on professional topics (Twitter, Google+, etc.) (9)
- ❑ Research or training in Second Language Acquisition (SLA), at least 3-4 courses (10)
- ❑ Take graduate / continuing education courses (11)
- ❑ Other (please specify) (12) _____

Q19 To which of the following professional development opportunities to you often contribute? (Check all that apply.)
- ❑ Collaborate with colleagues (1)
- ❑ Create and share teaching materials (2)
- ❑ Mentor colleagues (3)
- ❑ Mentor students (4)
- ❑ Maintain a professional blog (5)
- ❑ Participate in academic research (6)
- ❑ Post on professional listservs (7)
- ❑ Post professionally-related content on social media sites (Twitter, Google+, etc.) (8)
- ❑ Present at meetings or trainings (at the department or district level) (9)
- ❑ Present at professional conferences or workshops (at the local, state, or national level) (10)
- ❑ Publish in professional journals, books, etc. (11)
- ❑ Serve in leadership positions in professional organizations (at the local, state, or national levels) (12)
- ❑ Other (please specify) (13) _____

Q21 When you hear the term "critical thinking", what associations come to mind? (key words, topics, images, etc.)

Q22 How would you define the term "critical thinking"?

Q23 On a scale of 1 to 5, how IMPORTANT do you believe critical thinking is in the foreign language classroom?

	Not at all important (1)	Somewhat unimportant (2)	Neither important nor unimportant (3)	Somewhat important (4)	Extremely important (5)
Critical thinking in the foreign language classroom is... (1)	❍	❍	❍	❍	❍

Q24 On a scale of 1 to 5, how COMFORTABLE are you with incorporating critical thinking into your teaching and classroom activities?

	Not at all comfortable (1)	Somewhat uncomfortable (2)	Neither comfortable nor uncomfortable (3)	Somewhat comfortable (4)	Extremely comfortable (5)
Comfort level (1)	❍	❍	❍	❍	❍

Q25 On a scale of 1 to 5, how OFTEN do you try to integrate critical thinking into your classroom activities?

	Never (1)	Several times a year (2)	Several times a semester (3)	Several times a month (4)	Several times a week (5)	Every day (6)
Integration of Critical Thinking (1)	❍	❍	❍	❍	❍	❍

Q30 Drag and drop the classroom activities on the left into the most appropriate category on the right.

Definitely encourages critical thinking	Can encourage critical thinking	Does NOT encourage critical thinking
_____ Debates (1)	_____ Debates (1)	_____ Debates (1)
_____ Discussions (2)	_____ Discussions (2)	_____ Discussions (2)
_____ Games and puzzles (3)	_____ Games and puzzles (3)	_____ Games and puzzles (3)
_____ Grammar drills (4)	_____ Grammar drills (4)	_____ Grammar drills (4)
_____ Information gap activities / Paired activities (5)	_____ Information gap activities / Paired activities (5)	_____ Information gap activities / Paired activities (5)
_____ Interviews (6)	_____ Interviews (6)	_____ Interviews (6)
_____ Jigsaw activities (7)	_____ Jigsaw activities (7)	_____ Jigsaw activities (7)
_____ Journal writing (8)	_____ Journal writing (8)	_____ Journal writing (8)
_____ Lecture (9)	_____ Lecture (9)	_____ Lecture (9)
_____ Problem-solving (10)	_____ Problem-solving (10)	_____ Problem-solving (10)
_____ Projects (11)	_____ Projects (11)	_____ Projects (11)
_____ Real-world tasks (12)	_____ Real-world tasks (12)	_____ Real-world tasks (12)
_____ Reading logs (13)	_____ Reading logs (13)	_____ Reading logs (13)
_____ Role plays (14)	_____ Role plays (14)	_____ Role plays (14)
_____ Scenarios and case studies (15)	_____ Scenarios and case studies (15)	_____ Scenarios and case studies (15)
_____ Seat work (16)	_____ Seat work (16)	_____ Seat work (16)
_____ Service learning (17)	_____ Service learning (17)	_____ Service learning (17)
_____ Simulations (18)	_____ Simulations (18)	_____ Simulations (18)
_____ Small group work (19)	_____ Small group work (19)	_____ Small group work (19)
_____ Summarizing a text (20)	_____ Summarizing a text (20)	_____ Summarizing a text (20)
_____ Translation (21)	_____ Translation (21)	_____ Translation (21)
_____ Worksheets (22)	_____ Worksheets (22)	_____ Worksheets (22)

Q32 What were your criteria for sorting the topics above? Ex: Activities that ask students to... definitely encourage critical thinking because..., etc.

Q13 Please answer the following questions regarding target language use in your classroom.

	Less than 25% of the time (1)	25-49% of the time (2)	50-74% of the time (3)	75-90% of the time (4)	More than 90% of the time (5)
I conduct my class in the target language... (1)	❍	❍	❍	❍	❍
My students use the target language in class... (2)	❍	❍	❍	❍	❍

Q14 For which of the following things do you use the students' native language? (Check all that apply)

	Never (1)	Sometimes (2)	Usually (3)	Always (4)
Classroom managment (1)	❍	❍	❍	❍
Cultural explanations / discussion (2)	❍	❍	❍	❍
Explaining assignments (3)	❍	❍	❍	❍
Grammar instructions / clarifications (4)	❍	❍	❍	❍
Strategy instruction (Circumlocution strategies, reading strategies, writing strategies, etc.) (5)	❍	❍	❍	❍
Test preparation / review (6)	❍	❍	❍	❍
Other (please specify) (7)	❍	❍	❍	❍

Q26 How often do you integrate technology into your classroom instruction?

	Never (1)	Several times a year (2)	Several times a semester (3)	Several times a month (4)	Several times a week (5)	Every day (6)
I include technology in my teaching... (1)	❍	❍	❍	❍	❍	❍

Q29 How comfortable are you with integrating technology into your classroom instruction?

	Non-user (1)	Novice (2)	Experienced user (3)	Very proficient user (4)	Expert, highly-skilled user (5)
I consider myself a... when integrating technology into my classroom. (1)	❍	❍	❍	❍	❍

Q27 How often do you have students use technology in class to consume information?

	Never (1)	Several times a year (2)	Several times a semester (3)	Several times a month (4)	Several times a week (5)	Every day (6)
Students use technology in my classroom to consume information... (1)	❍	❍	❍	❍	❍	❍

Q28 How often do you have students use technology in class to create a product or to share information?

	Never (1)	Several times a year (2)	Several times a semester (3)	Several times a month (4)	Several times a week (5)	Every day (6)
Students use technology in my classroom to create or share information... (1)	❍	❍	❍	❍	❍	❍

Q35 Drag and drop the activities on the left to rank them in their order of importance to you when teaching a language course.

Very important	Somewhat important	Not at all important
_____ Assess comprehension of course material (1)	_____ Assess comprehension of course material (1)	_____ Assess comprehension of course material (1)
_____ Conduct class in the target language (2)	_____ Conduct class in the target language (2)	_____ Conduct class in the target language (2)
_____ Cover curriculum and/or textbook (3)	_____ Cover curriculum and/or textbook (3)	_____ Cover curriculum and/or textbook (3)
_____ Drill students on course material (4)	_____ Drill students on course material (4)	_____ Drill students on course material (4)
_____ Explore a theme (5)	_____ Explore a theme (5)	_____ Explore a theme (5)
_____ Facilitate student communication in the target language (6)	_____ Facilitate student communication in the target language (6)	_____ Facilitate student communication in the target language (6)
_____ Give answers, explanations, or information (7)	_____ Give answers, explanations, or information (7)	_____ Give answers, explanations, or information (7)
_____ Incorporate students' interests and perspectives (8)	_____ Incorporate students' interests and perspectives (8)	_____ Incorporate students' interests and perspectives (8)
_____ Involve students in creating, discovering, and physically moving around the classroom (9)	_____ Involve students in creating, discovering, and physically moving around the classroom (9)	_____ Involve students in creating, discovering, and physically moving around the classroom (9)
_____ Manage student behavior (10)	_____ Manage student behavior (10)	_____ Manage student behavior (10)
_____ Provide feedback (11)	_____ Provide feedback (11)	_____ Provide feedback (11)
_____ Use native language	_____ Use native language	_____ Use native language

to ensure student comprehension (12)	to ensure student comprehension (12)	to ensure student comprehension (12)

Q40 Is there anything you feel I should have asked or anything you would like to share regarding critical thinking in foreign language teaching and learning?

Q34 You have reached the end of the survey. THANK YOU for taking the time to participate!

Appendix B: Initial Interview Protocol--Instructors

Introduction

Thank you for agreeing to complete this interview. Remember that the purpose of this interview is not to evaluate your teaching beliefs, techniques, or abilities. I am only interested in understanding your beliefs about beginning language learning. My questions are designed to get a sense for these beliefs and will provide a context for observing what you do in your classes.
I want you to know that I consider the things you might tell me today to be confidential. They will not be shared with anyone except the researchers involved in the study. If at any time, you'd like me to stop the tape, just let me know.
I will take some notes about our conversation, but with your permission, I would like to tape record our conversation too. After the interview, I will transcribe sections of our conversation so I can think more carefully about them. However, I will not include any personally identifying information in my final report. If I need to quote you, I will use a fictitious name when doing so.
Do you have any questions?
«Start recording with date and name»
Is it okay with you that I record our conversation?

Part A—Instructor Role (10 minutes)

To begin, I would like to understand a bit about the class you teach and how you see your role as an instructor.

1. How long teaching German 101?

2. Other teaching experience? *Yes/No*

What: □ MTC

□ Church/Sunday school

□ K-12 experience

□ TA for another class: _____

□ Other:

SEE and

SAY

3. **End goal** of the semester for students?
   □ Speak German…
   □ Read…
   □ Write…
   □ Listen…
   □ Understand…
   □ Culture…
   □ Other:

SEE and

SAY

4. How do you view your **role as a teacher**?
   □ Teach grammar, vocab, etc.
   □ Model pronunciation, etc.
   □ Facilitate
   □ Guide
   □ Motivate
   □ Share knowledge
   □ Other:

4a. Example:

5. Does this **role change** over the semester? *Yes/No*

5a. Example of **how** (or how it does not):

6. **How** help students **reach** semester **goals**?

6a. Example:

7. Do you ever **change** or **adapt** textbook **activities** and course **materials** for your students to better reach these goals? *Yes/No*

7a. How often:

1 (never) 2 3 4 5 (everyday)

7b. Example of **how changed**: (Extension, "So if I understand, you adapt the vocabulary, etc.)

8. Do the **activities** you do **change** at all over the semester as students become **more proficient**? *Yes/No*

8a. Example:

Part B—Critical Thinking (20 minutes)

Now, I'd like to discuss your opinions about critical thinking in general, and specifically how critical thinking appears in your classroom. Remember, there are no right or wrong answers. I'm only interested in understanding your beliefs about this topic.

1. **How** would you **define** critical thinking:

2. When you hear the **term** "**CT**", what kinds of things do you **associate** with it?

SEE and SAY

3. Do you think **CT should** play a **role** in **language teaching** and **learning**? *Yes/No*

3a. **Why/why not**?

4. Based on your **definition** of CT, **(which was…)** is it **possible** to have **students** engage in **CT** in **German 101**?
Yes/No

4a. Why/why not:

5. How often incorporate CT into **class activities**:
1 (never) 2 3 4 5 (every day)

6. Give me an **example** of an **activity** that asked students to **engage** in **CT**:

6a. What were students **asked** to **do**?

6b. **How** did students **respond**?

6c. In your opinion, was this activity **more** or **less successful** than other activities that may not have included CT?

6d. Why/why not?

7. In your opinion, does the **textbook include CT** activities? *Yes/No*

7a. Give an **example** that **does/does not**?

8. In your opinion, how **important** is CT?
1 (not at all) 2 3 4 5(very important)

8a. Why?

9. How **comfortable** do you feel **incorporating CT** into your **classroom**:
1 (not at all) 2 3 4 5(completely comfortable)

9a. Why?

SEE and

SAY

10. What do you think is the **biggest obstacle** to including **CT** in the beginning **language classroom**?

Conclusion

Is there **anything else** you would like to **add** about your views on critical thinking and your classroom and teaching?

Do you have any questions for me?

Thank you for being willing to participate in this interview. I appreciate your time and insights.

Appendix C: Initial Interview Protocol—Supervisor

Introduction

Thank you for agreeing to complete this interview. Remember that the purpose of this interview is not to evaluate your teaching beliefs, your program, or your approach. I am only interested in understanding your beliefs about beginning language learning. My questions are designed to get a sense for these beliefs and will provide a context for observing what goes on in the German 101 classes.
I want you to know that I consider the things you might tell me today to be confidential. They will not be shared with anyone except the researchers involved in the study. If at any time you'd like me to stop the tape, just let me know.
I will take some notes about our conversation, but with your permission, I would like to tape record our conversation too. After the interview, I will transcribe sections of our conversation so I can think more carefully about them. However, I will not include any personally identifying information in my final report. If I need to quote you, I will use a fictitious name when doing so.
Do you have any questions?
«Start recording with date and name»
Is it okay with you that I record our conversation?

Part A—Supervisor Role (10 minutes)

To begin, I would like to understand a bit about the German 101 course and the role of the instructor in that course.

1. **End goal** of the semester for students?

SEE and

SAY

- □ Speak German…
- □ Read…
- □ Write…
- □ Listen…
- □ Understand…
- □ Culture…
- □ Other:

2. Briefly describe the **initial training** you give student instructors?
   - **Goal/PURPOSE**
   - **Topics**
   - Activities

2a. **Continued training**? Yes/No
   - If so, **describe**:

2b. How often do you **observe** the instructors during the semester?

3. What is the **role of the student instructors in their classroom as a teacher?**
- □ Teach grammar, vocab, etc.
- □ Model pronunciation, etc.
- □ Facilitate
- □ Guide
- □ Motivate
- □ Share knowledge
- □ Other:

SEE and

SAY

3a. Example: **functioning effectively/less effectively in this role**

4. Does this **role change** over the semester? *Yes/No*

4a. Example of **how** (or how it does not):

5. **Expect instructors** help students **reach** semester **goals**?

5a. Example:

6. How much **freedom** do Sis have to **adapt** lesson plans to their individual classes?
1 (no freedom) 2 3 4 5 (total freedom)

6b. Example of **how** seen **instructors changed**: (Extension, "So if I understand, you adapt the vocabulary, etc.)

7. Do you feel the **activities** in the classroom **change** at all over the semester as students become **more proficient**? *Yes/No*

7a. Example:

Part B—Critical Thinking (20 minutes)

Now, I'd like to discuss your opinions about critical thinking in general, and specifically how critical thinking appears in the German 101 classroom. Remember, there are no right or wrong answers. I'm only interested in understanding your beliefs about this topic.

1. **How** would you **define** critical thinking:

SEE and SAY

2. When you hear the **term** "**CT**", what kinds of things do you **associate** with it?

3. Do you think **CT should** play a **role** in **language teaching** and **learning**? *Yes/No*

3a. **Why/why not**?

4. Based on your **definition** of CT, **(which was…)** is it **possible** to have **students** engage in **CT** in **German 101**?
Yes/No

4a. Why/why not:

5. How often INTEND incorporate CT into **class activities**:
1 (never) 2 3 4 5 (every day)

6. How often ACTUALLY incorporate CT into **class activities**:
1 (never) 2 3 4 5 (every day)
6a. Why this difference? (If there)

7. In your opinion, does the **textbook include CT** activities? *Yes/No*

7a. Give an **example** that **does/does not**?

8. Give me an **example** of an **activity** observed **instructors** that asked students to **engage** in **CT**:

8a. **What** were students **asked** to **do**?

8b. **How** did students **respond**?

8c. In your opinion, was this activity **more** or **less successful** than other activities that may not have included CT?

8d. **Why/why not**?

9. How **comfortable** do you think **instructors** are with **incorporating CT** into their **classrooms**:
1 (not at all) 2 3 4 5(completely comfortable)

9a. **Why**?

10. What do you think is the **biggest obstacle** to including **CT** in the beginning **language classroom**?

11. In your opinion, how **important** is CT in the language classroom?
1 (not at all) 2 3 4 5(very important)

11a. In your opinion, how **important** do the **INSTRUCTORS** think CT is?
1 (not at all) 2 3 4 5(very important)

11b. **Why**?

SEE and

SAY

Conclusion

Is there **anything else** you would like to **add** about your views on critical thinking and the German 101 program?

Do you have any questions for me?

Thank you for being willing to participate in this interview. I appreciate your time and insights.

Appendix D: Final Interview Protocol--Instructors

Introduction

Thank you for agreeing to complete this interview. Remember that the purpose of this interview is not to evaluate your teaching beliefs, techniques, or abilities. I am only interested in understanding your beliefs about beginning language learning and critical thinking. My questions will be a follow-up of our earlier discussion.
I want you to know that I consider the things you might tell me today to be confidential. They will not be shared with anyone except the researchers involved in the study. If at any time, you'd like me to stop the tape, just let me know.
I will take some notes about our conversation, but with your permission, I would like to tape record our conversation too. After the interview, I will transcribe sections of our conversation so I can think more carefully about them. However, I will not include any personally identifying information in my final report. If I need to quote you, I will use a fictitious name when doing so.
Do you have any questions?
Start recording with date and name
Is it okay with you that I record our conversation?

PART A—Critical Thinking

I'd like to start with some questions about critical thinking specifically. Remember, there are no wrong or right answers. Please answer as honestly as possible.

1a. Has your **participation** in this study **changed** or influenced what you've done in your **classroom** this semester at all? (Preparation, presentation of activities, etc.)

1b. If not, why not? / If so, how?

SEE and SAY

2a. In your opinion, how **important** is CT?
1 (not at all) 2 3 4 5(very important)

2b. **Why**?

3a. How **comfortable** do you feel **incorporating CT** into your **classroom**:
1 (not at all) 2 3 4 5(completely comfortable)
3b. **Why**?

5a. **How often** incorporate CT into **class activities**:
1 (never) 2 3 4 5 (every day)

SEE and

SAY

6. Give me an **example** of an **activity** that asked students to **engage** in **CT**:

6a. **What** were students **asked** to **do**?

6b. **How** did students **respond**?

6c. In your opinion, was this activity **more** or **less successful** than other activities that may not have included CT?

6d. **Why/why not**?

7a. As I've thought about your definitions of critical thinking, it seems that you see critical thinking as coming primarily from the student. Is this the case? Are there things that a teacher can do to encourage students to think critically during class?

7b. If so, what are those kinds of things?

8a. Please sort the classroom activities into the three boxes. **(HANDOUT 1)**

8b. What were your criteria for sorting the topics?

Boxes:
Definitely encourages critical thinking
Can encourage critical thinking
Does NOT encourage critical thinking

Activities:
Debates
Discussions
Games and puzzles
Grammar drills
Information gap activities/Paired activities
Interviews
Jigsaw activities
Journal writing
Lecture
Problem-solving
Projects
Real-world tasks
Reading logs

Role plays
Scenarios and case studies
Seat work
Service learning
Simulations
Small group work
Summarizing a text
Translation
Worksheets

PART B—Follow-up Questions

To finish, I have just a few follow-up questions to clarify and supplement what I've observed in your classes this semester.

1a. How much time, would you estimate, do you **conduct class** in German? (**HANDOUT 2**)

1b. How much of the **time** do your **students** use **German** in class? (**HANDOUT 2**)

Questions 1a and 1b: Target Language Use

	Less than 25% of the time	25-49% of the time	At least 50% of the time	51-89% of the time	More than 90% of the time
I conduct my class in the target language…					
My students use the target language in class…					

2a. For what **kinds** of things do you use English in the classroom?

□ Classroom management
□ Cultural explanations/discussion
□ Explaining assignments
□ Grammar instructions/clarifications
□ Reading/listening passage translations
□ Strategy instruction
□ Test prep/review

SEE and

SAY

□ Vocabulary translations
□ Other: _____

2b. How do you decide when to **switch** into **English**? What kinds of **factors influence** this decision?

3a. How **often** would you say that you **adapted** or **changed** the **textbook** this semester?

1 (never) 2 3 4 5 (every day)

(3b. Example of **how changed**:)

SEE and SAY

4a. Can you please **rank** these **activities** in their **order of importance** to you? **(HANDOUT 3)**

4b. Why did you put X as a **top priority**?

Question 4a: Please rank the following activities in their order of importance to you.

- Assess comprehension of course material
- Conduct class in the target language
- Cover curriculum and/or textbook
- Drill students on course material
- Explore a theme
- Facilitate student communication in the target language
- Give answers, explanations, or information
- Incorporate students' interests and perspectives
- Involve students in creating, discovering, and physically moving around the classroom
- Manage student behavior
- Provide feedback
- Use native language to ensure student comprehension

INDIVIDUAL QUESTIONS

5. Instructor 1: How do you typically treat the **reading passages** in the book? Can you tell me more about the **video project** at the end of the semester? What is the purpose/goal?

5. Instructor 2: You have a small class this semester. Has the **size** of your **class affected** how you **teach** at all? Have you done **anything differently** this semester from last semester because of your class size?

10. Is there anything you'd like to **add** about your **beliefs** regarding **critical thinking** or your **experience in this study**?

THANK YOU FOR YOUR PARTICIPATION

Appendix E: Final Interview Protocol—Supervisor

Introduction

Thank you for agreeing to complete this interview. Remember that the purpose of this interview is not to evaluate your teaching beliefs, techniques, or abilities. I am only interested in understanding your beliefs about beginning language learning and critical thinking. My questions will be a follow-up of our earlier discussion.
I want you to know that I consider the things you might tell me today to be confidential. They will not be shared with anyone except the researchers involved in the study. If at any time, you'd like me to stop the tape, just let me know.
I will take some notes about our conversation, but with your permission, I would like to tape record our conversation too. After the interview, I will transcribe sections of our conversation so I can think more carefully about them. However, I will not include any personally identifying information in my final report. If I need to quote you, I will use a fictitious name when doing so.
Do you have any questions?
Start recording with date and name
Is it okay with you that I record our conversation?

Part A—Follow-up Questions

I'd like to begin with just a few follow-up questions to clarify and expand on what we discussed in the last interview. Remember, I'm not looking for anything specific, nor am I disagreeing with anything you've said earlier. These questions are simply intended to dig into your earlier responses.

1. You mentioned that you prefer the term "thinking" and perhaps more specifically "higher-order thinking" over the common term "critical thinking". You defined higher-order thinking as "being able to analyze or synthesize a problem or set of data" or as going beyond application to take things apart and look at the relationships. Most of the examples you gave me dealt with this on a linguistic level, words and word parts, cases, etc.
   Does it ever happen that students engage in higher-order thinking and analyze a problem that isn't linguistic or dealing with language forms? Can you give me an example?

2. You said that one of the limitations of using the term "critical thinking" was that it caused the focus to be on the "critical" aspect, which often asked one to reevaluate one's worldview. Can you tell me more about this?

3. As I read through and thought about your definitions, it seems that you see critical thinking as coming primarily from the student. Is this correct?
   Are there things that a teacher can do to encourage students to think critically during class? If so, what are some of those things?

4. When discussing why some SIs, because of inexperience perhaps, shy away from using more "critical thinking", you talked about higher-order thinking being an easier

way to teach because it deals with "real learning." What did you mean by "real learning"?
Why do you believe higher-order thinking an easier way to teach?

5. You talked about supplementing the deductive grammar instruction in the textbook with the inductive reasoning approach of the *Denkblatt*. Why do you have both approaches? Is there a reason why you start with the *Denkblatt* and then move to the textbook as opposed to the other way around?

PART B—Survey Answers

Next, I'd like to have you respond to some questions that are on a survey I'll be

administering, just to have a point of comparison.

1a. Please sort the classroom activities into the three boxes. (HANDOUT 3)

1b. What were your criteria for sorting the topics?

Boxes:
Definitely encourages critical thinking
Can encourage critical thinking
Does NOT encourage critical thinking

Activities:
Debates
Discussions
Games and puzzles
Grammar drills
Information gap activities/Paired activities
Interviews
Jigsaw activities
Journal writing
Lecture
Problem-solving
Projects
Real-world tasks
Reading logs
Role plays
Scenarios and case studies
Seat work
Service learning
Simulations
Small group work
Summarizing a text

Translation
Worksheets

2a. What is your target for language use in the German class? Do you discuss a specific goal in training, etc.?

2b. How much of time would you estimate the SIs conduct class in German? (HANDOUT 1)

2c. How much of the time do the students use German in class? (HANDOUT 1)

Questions 2b and 2c: Target Language Use

	Less than 25% of the time	26-49% of the time	At least 50% of the time	51-89% of the time	More than 90% of the time
The instructors conduct class in the target language…					
The students use the target language in class…					

2d. For what kinds of things do the SIs use English in the classroom?

□ Classroom management
□ Cultural explanations/discussion
□ Explaining assignments
□ Grammar instructions/clarifications
□ Reading/listening passage translations
□ Strategy instruction
□ Test prep/review
□ Vocabulary translations
□ Other: _____

SEE and

SAY

2e. What kinds of factors influence their decision to switch to English?

3a. Can you please rank these activities in their order of importance to you in the German 101 class? (HANDOUT 2)

3b. Why did you put X as a top priority?

Question 3a: Please rank the following activities in their order of importance to you.

- Assess comprehension of course material
- Conduct class in the target language
- Cover curriculum and/or textbook
- Drill students on course material
- Explore a theme
- Facilitate student communication in the target language
- Give answers, explanations, or information
- Incorporate students' interests and perspectives
- Involve students in creating, discovering, and physically moving around the classroom
- Manage student behavior
- Provide feedback
- Use native language to ensure student comprehension

4. Is there anything you'd like to add about your beliefs regarding critical thinking or your experience in this study?

THANK YOU FOR YOUR PARTICIPATION