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Cultural Intelligence in Foreign Language Classes

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ABSTRACT

This study examined the effectiveness of Indiana State University's Foundational Studies 2010 Non-Native Language Program for Spanish 101, in regard to its objectives and requirements for increasing students' cultural intelligence and therefore their success in an increasingly multicultural world. As of fall 2011, this program requires students to take two semesters of foreign language as a requirement for graduation. The study was based on the concept of cultural intelligence and its four components: cognitive, metacognitive, motivational, and behavioral; and the data was collected using the 20-item, four factor CQS (the CQ Scale). This assessment was created and validated by the researchers Ang, Van Dyne, Koh, Ng, Templer, Tay, and Chadnrasekar in 2004 (Shannon & Begley, 2008) and it is used to measure cultural intelligence.

The instrument was administered to students enrolled in six sections of Spanish 101 during the spring semester of 2012. The assessment was provided to students twice, once at the beginning of the semester and once at the end of the semester. The overall sample for this study consisted of 46 students for the pretest and 42 students for the posttest. The mean scores for all pretests and the mean scores for all posttests were compared to measure a change in cultural intelligence.

The results of this study revealed that there was a significant difference between students' pretest and posttest scores for three of the four factors of cultural intelligence: cognitive, motivational, and behavioral. A significant change was also observed in the motivational factor of cultural intelligence between female and male students.

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CHAPTER 1

INTRODUCTION

After the horrifying events of September 11, 2001, people from the Middle East started to face the brunt of negative comments and actions in many other countries (Associates, 2002). Arabs and Muslims, and people who appeared to be, experienced racial profiling and hate crimes. In the United States, the reinforcement of immigration laws in the name of the *war on terrorism* created situations of civil rights violations and increased hostility and negative stereotyping toward the Arab and Muslim populations among American citizens (Akram & Johnson, 2002). In fact, this tragic event not only brought to light the plethora of misunderstandings concerning international relations, but also people's lack of understanding of other cultures all over the world (Earley & Ang, 2003). This lack of understanding and negative perceptions about immigrants have an influence on the "success and satisfaction of immigrants and on the overall social climate;" (Esses, Dovidio, & Hodson, 2002, p. 71) positive attitudes would more likely encourage equality and fairness among people and negative attitudes could result in hostility and discrimination.

Media and technological advances offer the opportunity to know about international events and even help teach about other countries, religions, and cultures. Globalization is indeed bringing us closer; however, this does not mean that the world is flattening. Today, cultural differences are even more important to understand as we come closer and we interact more and

more with people from other countries and cultures (Cheng, 2007; B. Peterson, 2004; Van Dyne & Ang, 2008b). Research demonstrates that, in fact, this interaction carries challenges of diversity for people and organizations such as "multicultural domestic work teams, multinational work teams, global leaders, and those in overseas work assignments" (Ang et al., 2007, p. 2).

In fact, every day and everywhere we are surrounded by people from different cultural backgrounds. Due to the geographically isolated situation and economic position of the United States, many Americans believe that deeper cultural knowledge is not necessary; however, no matter the industry, at most workplaces individuals need to interact with coworkers or clients from other countries and ethnicities and may be required to travel around the world or even live abroad for business (B. Peterson, 2004). Students attending higher educational institutions who will soon enter the workforce need to be prepared to deal with different professional situations involving people from different cultures in order to be able to adapt and live in today's multicultural world (B. Peterson, 2004).

Statement of the Problem

Most colleges and universities in the United States embrace diversity in their mission statements by recognizing diversity's capacity to enrich higher education as well as its contribution in helping students live and succeed in an increasingly multicultural and co-dependent world (The Higher Learning Commission, 2003). In order to fulfill the ideal of diversity behind these mission statements, it is important to be aware of cultural intelligence. Cultural intelligence (CQ) stands for "a person's capability to function effectively in situations characterized by cultural diversity" (Van Dyne & Livermore, 2005-2011, "About CQ," para. 2). In today's world it is imperative for an individual to be able to manage different multicultural situations, participate in interactions with people from different cultural backgrounds, and

perform in culturally different work environments (Van Dyne & Livermore, 2005-2011). In the case of educational institutions, part of cultural intelligence is formed through the relationships between American and international students which increase both students' understanding and appreciation for different cultures and, in the long run, contribute to a prosperous global society by "improving diplomatic relations, increasing international awareness, and furthering multiculturalism" (Lee, 2007, p. 1). However, many colleges and universities do not always succeed in making diversity a reality by cultivating their students' cultural intelligence, creating a friendship/cooperation bond between American students and international students, and therefore making sure their students will be able to succeed in today's world. In fact, once international students are admitted to an educational institution, they do not receive the attention necessary and many encounter problems in creating relationships with professors, university staff, and even other students (Lee, 2007).

Purpose of the Study

In many colleges and universities, part of the diversity curriculum is incorporated in the liberal education programs, where the study of other cultures is undertaken (Hopkins, 1999). In fact, to reflect their interest and dedication to diversity, many educational institutions incorporate programs on different cultural studies such as Latino, African American, Asian, and Native American (Ukpokodu, 2010). In the case of foreign language programs, the focus does not rely only in the teaching of different foreign languages, but on the teaching of the culture of the countries where the target languages are official and used. At Indiana State University, the Foundational Studies 2010 Non-Native Language program incorporates objectives of communicative competencies, cultural awareness, sensitivity to diversity, and holistic application. The last three objectives help students function in a global society as they

acknowledge diversity and learn from and about different cultures. The purpose of this study was to determine if the Foundational Studies 2010 Non-Native Language program at Indiana State University succeeds in cultivating and increasing students' cultural intelligence through the objectives mentioned. In order to focus only on the effects of the Foundational Studies 2010 Non-Native Language program on the goal of cultural intelligence, the Foundational Studies 2010 goals of Global Perspectives and Cultural Diversity were excluded as its learning objectives are related to cultural awareness.

Need for the Study

As the concept of cultural intelligence just appeared 10 years ago, there are not many empirical studies showing the conceptual advancement of cultural intelligence in "cross-cultural transition and adaptation" (Ward, Fischer, Lam, & Hall, 2009, p. 85). In fact, the Cultural Intelligence Center (CQC) created and managed by Van Dyne and Livermore is interested in improving the understanding of the concept of cultural intelligence and encourages people involved in the education field to help develop this understanding. The CQC offers free use of the 20-item scale that measures cultural intelligence to researchers for educational purposes (Van Dyne & Livermore, 2005-2011) .

The concept of cultural intelligence has been reviewed at educational settings. Students who have traveled abroad and students who have not have been included in these studies. A study involving international students actively participating in a cross-cultural experience in New Zealand supported the four-factor structure chosen to measure cultural intelligence. Moreover, a study conducted to examine the effectiveness of a multicultural studies course using the 20-item scale (the study included a self-report and an observer-report questionnaire) to measure the cultural intelligence of the undergraduate students enrolled in it revealed that there was an

increase in all four factors of cultural intelligence (Klein, 2010). As we have seen, cultural intelligence has been assessed in educational settings. However, from the research, there was still a need for the study of cultural intelligence in a foreign language program. Van Dyne (personal communication, March 08, 2011) was also not aware of anyone who had used the cultural intelligence assessment in this type of program. It was hoped that this study could build on the work on cultural intelligence. Due to today's increasingly globalized world and the need for students to be prepared to face and succeed in it, a study that would examine the effectiveness of the program's objectives of cultural awareness, sensitivity to diversity, and holistic application was deemed necessary.

Significance of the Study

The significance of the study lay in determining the extent to which the Foundational Studies 2010 Non-Native Language program is attaining its objectives. Most importantly, it helped determined that the students who participate in it are really developing their cultural intelligences and are better prepared to succeed in today's multicultural world. Moreover, the results obtained from this study were intended to help the overseers of the program to reevaluate its success in improving or increasing students' cultural intelligence.

Definition of Terms

For the purpose of this study, *culture* is defined as "the customs, arts, social institutions, and achievements of a particular nation, people, or other social group" ("Culture," n.d.). As the culture studied in the Foundational Studies 2010 Non-Native Language program at Indiana State University is related to common topics such as popular issues, opinions, greetings, clothing, and food, the culture related to this study is *Little c* culture as opposed to *Big C* culture related to literature, art, architecture (B. Peterson, 2004).

Intelligence is defined as "the ability to acquire and apply knowledge and skills" ("Intelligence," n.d.).

Cultural intelligence (CQ) is not limited to a specific culture, and it refers to an individual's capability "to function effectively in situations characterized by cultural diversity" (Van Dyne & Livermore, 2005-2011, para. 2) and includes the awareness of the person's own cultural intelligence and the one of others.

Assumptions

For this study, it was assumed that each participant would respond honestly to each item of the pre- and posttest given. In the case of the Foundational Studies 2010 Non-Native Language program, it was assumed that each participant attained the objectives of communicative competences, cultural awareness, sensitivity to diversity, and holistic application.

Research Questions

The research questions posed for this study were

1. Does Spanish 101 influence cultural intelligence in U.S. students?
2. Does gender contribute to an increase in cultural intelligence? Does cultural intelligence increase more in female or male students?

Hypotheses

The hypotheses stated for this study were

1. There is no difference in the cultural intelligence of U.S. students measured prior to taking Spanish 101 and that measured at the completion.
2. There is no change in the cultural intelligence of female U.S. students and male U.S. students taking Spanish 101 at the times of testing (pretest and posttest).

3. There is no interaction between the two independent variables—time of testing and gender—that influences a change in cultural intelligence. All the mean changes and differences are explained by the main effects of the two factors.

Limitations

This study was limited to Indiana State University students enrolled in Spanish 101 and its complement, the Foundational Studies program. As of fall 2010, students are required to take one year of a foreign language, with the possibility of changing the target language after one semester. The validity of cultural intelligence as a contributor to predict cross-cultural adaptation has been questioned by studies related to the scores of cultural intelligence (Ward et al., 2009). Furthermore, this study was limited to class-learning activities and homework. Intercultural experiences undertaken by the students outside of the classroom, which might have influenced the results of this study, were not taken into consideration. These characteristics could limit the generalization of this study's results to other foreign language programs.

Delimitations

The Foundational Studies 2010 Non-Native Language program incorporates objectives of communicative competences, cultural awareness, sensitivity to diversity, and holistic application. Only the last three were taken into consideration in this study as they are related to cultural intelligence.

CHAPTER 2

REVIEW OF THE LITERATURE

In many colleges and universities around the United States, multiculturalism is incorporated into the liberal education curriculum. In the case of foreign language programs, the teaching of foreign languages goes hand-in-hand with the teaching of the culture of the countries where the target languages are official and/or particularly used.

History of the Foundational Studies 2010 Non-Native Language Program

At Indiana State University, the General Education 2000 program required students to complete two semesters of the same foreign language (in regards to Spanish the basic levels are referred as Spanish 101 and Spanish 102) in order to meet the Basic Studies program (now called Foundational Studies) requirement in this area (Department of Languages, Literatures, and Linguistics, 2010). Starting in the fall of 2011, students are still required to take two semesters of foreign language; however, students now have the possibility of taking two basic 101 levels of two different languages.

As taking a foreign language is required to graduate, the majority of the students are not interested in learning a foreign language (Campbell, 2008). Also, in these classes, the majority of the students have different levels of mastery of the Spanish language and its related culture due to differences in high school requirements and previous foreign language classes.

At Indiana State University, the Department of Languages, Literatures, and Linguistics states that "the programs offered . . . prepare students for active global citizenship by providing them with skills in world languages and the disciplinary tools of linguistics, cultural, and literary analysis" (Department of Languages, Literatures, and Linguistics, 2010, "Welcome to the Department," para. 1). The skills in world languages are provided to the students through the communicative skills objectives, which help students understand and/or express meaning through "listening, speaking, reading, and writing using appropriate grammar and vocabulary" (Calvin & Rider, 2010, p. 5). The program states the following standards for communicative skills:

1.1. Students are able to use spoken language to obtain information, express needs, feelings, opinions, and engage in basic conversation on topics related to functional needs and personal interest.

1.2. Students are able to understand sentence-length utterances on topics related to functional needs and personal interests.

1.3. Students demonstrate global comprehension of authentic texts related to functional needs and personal interests.

1.4. Students are able to use written language to fulfill specific simple tasks related to functional needs and personal interests. (Calvin & Rider, 2010, p. 5)

Moreover, the department attempts to cultivate its students' cultural intelligence as it states that "it foster[s] the cultural knowledge and sensitivity necessary for effective engagement with diverse populations in Indiana and throughout the world" (Department of Languages, Literatures, and Linguistics, 2010, "Welcome to the Department," para. 1). In fact, the teaching of culture in each of the foreign language classes offered by the department is incorporated in the

Foundational Studies 2010 Non-Native Language program, which includes objectives and standards of cultural awareness, sensitivity to diversity, and holistic application.

Cultural awareness helps students to carefully inspect matters of cultural differences and critically think about their own culture by comparing and contrasting it to the target language and culture. The program states the following standards for cultural awareness:

2.1. Students demonstrate awareness of uniqueness of target culture(s) in its practices, perspectives and products.

2.2. Students reflect on and compare own culture with target culture with evidence of developing critical-thinking skills.

2.3. Students demonstrate understanding of interrelationship of language and culture. (Calvin & Rider, 2010, p. 5)

The objective of sensitivity to diversity helps students develop open minds and acceptance toward other languages and cultures through the following standards:

3.1. Students consider personal and societal prejudice beginning with the target language and culture(s) with evidence of developing critical thinking.

3.2. Students show evidence of applying sensitivity to cultural and language diversity beyond the classroom in the campus and civic community. (Calvin & Rider, 2010, p. 6)

The final objective of holistic application helps students relate and use the different knowledge and learning skills from the foreign language class in other disciplines and their lives. The following standards further explain this objective:

4.1. Students relate their knowledge of other disciplines with the target language and culture.

4.2. Students demonstrate skills in gathering and evaluating information, through library resources and technological media, about the target language and culture(s).

4.3. Students give presentations drawing on other disciplines and demonstrating knowledge of the target language and culture(s).

4.4. Students develop and apply learning strategies and study habits appropriate both to the study of languages and cultures and to other disciplines.

4.5. Students demonstrate evidence of becoming lifelong learners by using language for personal enjoyment, enrichment, and adaptation to a multilingual US and global community. (Calvin & Rider, 2010, p. 6)

Furthermore, in basic levels of Spanish, the syllabus states that students will "demonstrate an understanding of significant cultural traits of the Spanish-speaking world (customs, lifestyles, attitudes, geography, and famous people) and behave appropriately in frequently-encountered social situations" (Calvin & Rider, 2010, "Syllabus," p. 3). These realistic outcomes and the objectives of cultural awareness, sensitivity to diversity, and holistic application are attached to different requirements.

For each of the Spanish classes (101 and 102) students explore different aspects of the target-language culture during class and are assessed upon them throughout five exams and segments of three learning journals. Students are also required to attend and be involved in two different cultural events per class. Students report their cultural findings and feelings on these events through two critical-thinking essays. In the classes, students partake in cultural presentations as well. In Spanish 101, students have the opportunity to choose a traditional recipe from Spain or a Spanish-speaking country and share it in an oral report with their classmates. In

Spanish 102, students have the opportunity to present about a Spanish-speaking country or important Hispanic/Latino figure of their choice (Calvin & Rider, 2010).

This study examined the effectiveness of these objectives and requirements in increasing students' cultural intelligence and therefore preparing them to succeed in an increasing multicultural world. In order to examine only the effectiveness of the Foundational Studies 2010 Non-Native Languages program's objectives and requirements, it was important to exclude the Foundational Studies 2010 Global Perspectives and Cultural Diversity program, as some of its objectives are similar to the ones mentioned above. The awareness of cultures and worldviews and the comparison among cultures are mentioned as the learning objectives of this program (Office of General Education, 2011, "Non-Native Languages," para. 3).

Concepts behind Cultural Intelligence

The concepts of culture and intelligence have and continue to undergo extensive research in the field of organizational psychology. The construct of cultural intelligence is a fairly new concept within this field; it emerged in 2002 but is already attracting much attention and research. In today's highly multicultural world, cultural intelligence is becoming more and more important around different organizations, institutions, and work environments as individuals need to be able to interact with people from different countries and cultural backgrounds and adapt themselves to diverse cultural situations (Ng & Earley, 2006).

Understanding and Defining Culture

As defined in the Concise Oxford English Dictionary, culture is "the customs, ideas, and social behavior of a particular people or group" ("Culture," n.d.). Culturally, we are raised to think and behave in a certain way. Our communication styles (tone, inflections), body language, beliefs, worldviews, and much more are part of our cultural styles. Many of us are not conscious

of these cultural differences but they influence our attitudes and the rest of our lives (B. Peterson, 2004).

When we travel abroad and/or when we interact with people from a different country, most of the time we just notice the outer layer of the new encountered culture, that is, what can be perceived by our senses such as language, food, clothing, different types of art, and gestures. However, underneath this outer layer reside many important characteristics of the culture such as beliefs, thoughts, rules, and motivations that are not easily perceived. These outer and inner layers represent the differences among cultures that in today's culturally mixed world play an important role as we interact with people from other cultures every day. In fact, being aware of our different cultural styles can prevent disagreements. A deeper knowledge of the differences between our own cultures and different ones helps us understand people's behaviors, think about our own, and adapt them in order to achieve better intercultural relations (B. Peterson, 2004).

Due to advancements in technology, today's world is *shrinking* and becoming more globalized. The different types of media connect people around the world and businesses are expanding internationally. However, even though this world *connection* and *closeness* increases, cultural differences still exist. In fact, as the world becomes more internationally connected, many more cultural differences will become visible as we interact with other countries and their people (B. Peterson, 2004).

Understanding and Defining Intelligence

The concept of intelligence continues to be researched by scholars of every field, and it remains undefined. Intelligence has various important aspects, however. In regard to mental functioning, intelligence is thought to exist in the cognitive sphere, where researchers focus on

metacognition, the process of studying knowledge, and cognition, the process of attaining knowledge through thinking, experiencing, and sensing (Earley & Ang, 2003).

For motivational theorists, intelligence focuses on the individual's motivation to attain cognition. These theorists believe that motivation is the mental energy that drives a person toward thought, emotion, and behavior. For sociologists, intelligence represents a function of culture and society as our values and what we believe determine the nature of intelligence. For these theorists, the interaction between the individual and the environment determine the model of intelligence and what intelligent behaviors mean in different cultural settings. For behavioral theorists, intelligence exists in the individual's behavior as in the mental functioning (Earley & Ang, 2003).

For a while, it was believed that intelligent behavior was just encountered in academic settings and measurable linguistic and logical-mathematical tasks. However, today there is a rising interest in *real-world* intelligence, and this has allowed researchers to identify other types of intelligences (Earley & Ang, 2003; Van Dyne & Ang, 2008a). For example, Howard Gardner proposed that individuals have different forms of intelligences and that each one is presided over by different parts of the human brain (Earley & Ang, 2003). In his theory of *multiple intelligences*, Gardner suggested that there is more to intelligence than the factors of intelligence measured in an IQ test (B. Peterson, 2004). In fact, he defined seven categories of intelligence: linguistic, logical-mathematical, spatial, musical, body/kinesthetic, interpersonal, and intrapersonal. These intelligences are independent of each other and are not developed at the same time or in the same degree in every person. Linguistic, logical-mathematical, and spatial intelligences are the intelligences measured traditionally by intelligence tests. Linguistic intelligence refers to the different characteristics of spoken and written language, logical-

mathematical relates to analytical ability and abstract reasoning, and spatial intelligence refers to an individual's ability to integrate and manipulate spatial information. Musical, body/kinesthetic, interpersonal, and intrapersonal are forms of intelligence usually ignored by researchers. Musical intelligence refers to an individual's ability to create and manipulate significances fabricated by sound and body/kinesthetic relates to the use of the body to control objects. Finally, interpersonal intelligence refers to how a person controls him or herself and intrapersonal intelligence relates to how a person controls others (Gardner, as cited in B. Peterson, 2004). There are three more intelligences: naturalist (ability to classify flora and fauna), spiritual (capability to question existentialism), and moral (capacity of following a particular culture and value system), which still need research to be validated (Earley & Ang, 2003).

Cultural intelligence is connected to Gardner's multiple intelligence theory as it relates most closely to the intelligence categories of linguistic, spatial, intrapersonal, and interpersonal (B. Peterson, 2004). Cultural intelligence is also attached to all of the above definitions of intelligence as it is actually composed of four components: cognitive, metacognitive, motivational, and behavioral (Ward et al., 2009). Also, like general intelligence, cultural intelligence values the interaction between individual and environment. In fact, for the main authors of cultural intelligence, intelligence is viewed as a trait of the person, the context, and the interaction of both. The theory of cultural intelligence is conceptualized from this interaction and can be defined as a situated intelligence where a person's adaptive behaviors interact with a new cultural setting (Earley & Ang, 2003).

Understanding and Defining Cultural Intelligence

There is a plethora of research conducted about intelligence; however, investigation on intelligence from a cultural viewpoint is still scarce. The concept of cultural intelligence was

only created and introduced to the educational areas of social sciences and management in 2003 (Earley & Ang, 2003; Van Dyne & Ang, 2008b). Despite the scarcity of research on it, it has already been argued that cultural intelligence is "conceptually distinct from personality traits, other intelligences and other intercultural competencies" (Ang et al., 2007, p. 6) and its development took place under reasoning around theoretical models of intelligence, a need based on the increasing multiculturalism in the workplace and the need to understand the capacity of some people to adapt to new cultural environments as this capacity varies from person to person. As stated by Earley and Ang (2003), cultural intelligence theory is a "theory of intercultural interaction based on the concept of intelligence" (p. xiii) and it is determined by an individual's cognition, motivation, and behaviors that reveal adaptation to different cultural settings (Earley & Ang, 2003; Van Dyne & Livermore, 2005-2011).

The necessity of adaptation comes from the fact that within our own cultures we understand the different cultural elements and we behave appropriately, but within a different culture we lack these characteristics as there are new and different cultural elements and behaviors we are not familiar with. For us to be able to adapt to new cultural settings and carry ourselves appropriately we need to develop different skills and capabilities and therefore increase our cultural intelligence (Earley & Ang, 2003).

Four Components of Cultural Intelligence

These skills and capabilities encompass four components—cognitive, metacognitive, motivational, and behavioral—that all need to work together in a dynamic interaction in order to attain cultural intelligence (Earley & Ang, 2003). The cognitive aspect is the closest to traditional intelligence and, in the case of cultural intelligence, is concerned with the comprehension and functioning of an individual within a cultural setting. Drawn from the different frameworks of

self-theory, social cognition, and analogical reasoning, the cognitive aspect is described through knowledge of self and social environment and the handling of information.

The self acts as a filter of social information connecting intrapersonal (cognition and motivation) and interpersonal (interaction with social environment) processes in developing an individual's self concept of personality, social roles, and identities. The self-concept depends, therefore, on personal thoughts and social circumstances and is an important element that determines how people understand the signals relevant in social situations (Earley & Ang, 2003).

The information from the social environment is then understood, interpreted, and stored through the process of social cognition. As individuals process this information, they acknowledge their own cognitive processes as well. This acknowledgement allows the self-concept to interpret and understand social situations so the individual can change his or her behavior, if desired, through self-monitoring the behaviors, self-evaluating the inconsistencies between the behaviors and the norm, and self-reacting in order to change the behaviors through incentives. In a new culture, as in the native culture, self-concept reacts as a filter helping the individual to interpret and understand the encountered new social situations and multicultural interactions. In this case, the cognitive component now represents the person's knowledge of practices, norms, and values of the new cultural surrounding and the different systems related with the economy, law, and society (Ang et al., 2007; Ward et al., 2009). However, this cognitive learning of how people behave in a different culture is not enough; there is a need for a flexible self-concept and self-evaluation that would allow the individual to understand what is encountered and perceived and therefore change his or her behaviors. Analogical reasoning and inductive reasoning are also required to understand and adapt to a new cultural setting as they

allow the individual to put aside previous experiences and opinions about the encountered culture (Earley & Ang, 2003).

As metacognitive approaches identify that an individual processes information at the same time that he or she recognizes his or her cognitive process, the metacognitive component of cultural intelligence relates to the person's cultural awareness experienced while interacting in a cross-cultural situation (Ward et al., 2009). This interaction is part of the three stages in the development of this component as an individual makes cultural conclusions and judgments on the basis of this interaction and increases his or her knowledge about other cultures. The other two parts correspond to the consequences produced by the interaction and the openness of the individual, which controls if the experiences become favorable or not for himself or herself. When an individual is open to new experiences, he or she would be more flexible to new ideas, more tolerant, more certain of himself or herself, and more likely to avoid the use of stereotypes to understand the situation (Klafehn, Banerjee, & Chiu, 2008).

The specific element of metacognition that relates to cultural intelligence is meta-cognitive knowledge and is divided into three categories. The first category relates to a person's different thoughts about people as thinkers. An individual can acknowledge his or her own personal capabilities (intra-individual metacognition), other person's capabilities (inter-individual metacognition), and general innate capabilities of a group (universal metacognition). In the case of personal capabilities, when faced with a new culture, for example, the person thinks about his or her own capabilities that would allow him or her to interact with people from that culture (Earley & Ang, 2003).

The second category of metacognition is related to the nature and the handling of the information that a person acquires. In terms of the nature of information, information processing

can be attached to three levels: universal, cultural, and setting-specific. At the universal level, knowing the characteristics of metacognition shared by everyone helps maintain general understanding. At a cultural level, knowing about others' metacognitions helps one understand the actions of people from a different culture. Finally, at a setting-specific level, existing meta-cognitive abilities help one to predict others' behaviors and acknowledge our own capability to adapt. In terms of handling the information, in a cross-cultural experience, the individual realizes that the information needed to adapt to a new culture is the kind of information that requires attention, effort, and persistence (Earley & Ang, 2003).

The final category of metacognition is related to specific strategies that a person uses to achieve a goal. For example, in a new culture, a person may use the strategy of thinking about past experiences to define which approaches may work in this new situation. These three categories of metacognitive knowledge are important as an individual's awareness of people's capabilities, information, and strategies later influences behavioral change and, therefore, promotes a better interaction with a different culture (Earley & Ang, 2003). For example, if an American business executive with a high metacognitive component travels to Asia, he or she would be attentive of the behaviors of his or her Asian colleagues in order to figure out the appropriate communication behavior and time to speak (Van Dyne & Ang, 2008a).

The motivational aspect of cultural intelligence represents the person's desire to learn more about cultural differences and how to interact around people from different countries (Ward et al., 2009). The motivational aspect (also called CQ-Drive) includes intrinsic and extrinsic values. Intrinsic value constitutes all the intangible benefits that a person experiences when interacting in a cross-cultural situation, such as personal satisfaction, and extrinsic value constitutes all the tangibles benefits (Van Dyne & Ang, 2008a; Van Dyne & Livermore, 2005-

2011). This desire is engaged to the person's social context and social history: the past, present, and future social interactions that have, are, or will shape the person's values and norms and, therefore, his or her experiences and goals. The motivational aspect is also connected to three self-motives that are intertwined: self-enhancement, self-efficacy, and self-consistency. These motives can interfere with the desire and motivation of a person to learn about a different culture and even with his or her adjustment to this culture (Earley & Ang, 2003).

Self-enhancement is driven by situations in the environment and the cognitive processes that interpret them. It is important to remember that in this cognitive process self-referent information is the most relevant for a person, and, therefore, he or she can be biased when interpreting different situations and judging others. Self-efficacy, or how people judge themselves in terms of accomplishing a fixed level of performance, can interfere with the desire to learn and interact with other cultures and people as individuals usually avoid situations that they think will exceed their capabilities or are going to embarrass them. However, if a person has a high self-efficacy, the setting and pursuit of goals is imminent. The setting of goals is important for the motivational aspect of cultural intelligence as goals can influence the outcome of a cultural interaction. In a cross-cultural setting, for example, a person who sets specific goals about cultural traits such as greetings and respect can be more attentive towards these traits and be able to take this information for future interactions. Self-consistency can also act as an impediment for the motivational aspect, as it drives individuals to keep consistent life situations and perceptions through the creation of memories and thoughts compatible with the past and behaviors compatible with internalized norms and values—social history (Earley & Ang, 2003). Values are, in fact, central to the motivational aspect of cultural intelligence as they influence a person's decision and disposition to engage in different actions such as actively engaging in a

different culture (Earley & Ang, 2003). A person with a high motivational component would initiate a cross-cultural interaction. For example, if a business executive from China knows Japanese and likes to interact with people from other countries and cultures, he or she will initiate an interaction with a Japanese colleague (Van Dyne & Ang, 2008a).

When a person finally decides to engage in social interaction, this is formed by overt verbal and non-verbal behaviors between two or more people. Verbal behaviors include different elements such as fluency, use of pronouns and genre, and organization patterns; non-verbal behaviors include touch, signs, body movements, and facial expressions, among others (Rogers, 2008). The behavioral component of cultural intelligence is actually defined by the person's concrete actions when faced with a different cultural situation (Ward et al., 2009) and his or her interpretation of the behaviors provided by someone else. In a cross-cultural interaction, a person's behaviors can influence how people from other cultures perceived him or her; this impression the person makes, or self-presentation, is a key element of the behavioral component. Self-presentation has an influence on people's behaviors as people try to act in a way that will make them appear competent and socially attractive. For example, when a person from India, who usually eats with his or her hands, is in a public restaurant in a different country, he or she will change his or her behavior and eat with silverware or chopsticks to fit the new culture. Self-presentation and first impressions are really important in cross-cultural settings. As it usually involves strangers and is very brief, self-presentation relies solely on the people from the other culture's opinion of the outsider made only from the first impression—personal front or face including: age, gender, physical appearance (Cheng, 2007; Earley & Ang, 2003).

In the case of actual behaviors, people have different aptitudes (capacity) and abilities or skills (actual achievement); and in regards to cultural intelligence, a person has the capacity to

learn and understand other cultures' behaviors. In cultural intelligence, behaviors are culturally intelligent and not culturally competent. Culturally intelligent behaviors are different from the passive and nonconscious culturally competent behaviors in the fact that they are attached to cognition and motivation, and they have a purpose, a motive, and a strategy. In a cross-cultural interaction, the person not only mimics the others' behaviors, as in the culturally competent behavior of *chameleon effect*, but the person also analyzes them. In fact, acquiring appropriate cultural behaviors takes time and effort, and, therefore, an individual needs to have the capacity to recognize the new behavior and the willingness to learn it (Earley & Ang, 2003). Furthermore, a culturally-intelligent person has the ability to recognize even the differences within universal behaviors: behaviors that are present in every culture but still differ across cultures. The behavioral component requires flexibility; a person needs to be able to adapt or control his or her emotional and physical display when interacting with people from other cultures. With physical display, this is important in order to avoid a *nonverbal leakage* (nonverbal actions that do not match what is being said) and, therefore, a cultural misunderstanding or offense (Earley & Ang, 2003).

Part of the definition of cultural intelligence is related to four aspects of Gardner's multiple intelligence theory: linguistic, spatial, intrapersonal, and interpersonal (B. Peterson, 2004). Many important behaviors are attached to these aspects. Linguistically, even though, it is not necessary to speak a foreign language fluently, having some language skills can help people interact with someone from another culture. With spatial intelligence, however, a minimum knowledge of proper behaviors is necessary for this interaction. When people are around someone from a different cultural background, they need to be aware of different elements such as personal space, forms of greeting, and body language in order to carry themselves properly

and avoid misunderstandings or uncomfortable situations. To learn about these proper behaviors, it is important to know our own cultural systems (B. Peterson, 2004). When people become aware of their own cultural elements (related to intrapersonal intelligence), it is easier for them to compare and understand other's cultural behaviors, and adapt themselves to be more attuned to interact with different cultures and their people. The actual interaction with people from a different cultural background is one of the main ideas in cultural intelligence. This interaction is related to interpersonal intelligence as the ability to anticipate other people's intentions and motivations is necessary to improve relations in different cultural surroundings (B. Peterson, 2004).

Besides these four aspects, a personal willingness to learn about different cultures and intention of succeeding at having a good cross-cultural interaction is part of cultural intelligence. According to Peterson (2004) "Cultural Intelligence is for people who know culture is important, who realize that international cultural issues affect their daily work, and who want to improve their awareness, understanding, and skills" (p. 9). In this matter, different characteristics such as tolerance, open-mindedness, appreciation of different and new cultural elements, interest in the local culture, positive self-image, respect for others, and even a sense of humor become important as well when relating with people from a different culture (Earley & Ang, 2003; B. Peterson, 2004).

Measurement of Cultural Intelligence

Today, there is only one available assessment that can measure cultural intelligence (Van Dyne & Livermore, 2005-2011). The 20-item, four factor CQS (the CQ Scale) assessment was created and validated by the researchers Ang, Van Dyne, Koh, Ng, Templer, Tay, and Chadnrasekar in 2004 (Shannon & Begley, 2008). The measurement of cultural intelligence

proved to be important to build further knowledge for the individuals. As it shows individuals their present score on each of the components, the measurement can act as a guide for the person to improve every aspect of cultural intelligence and therefore his or her ability to succeed in a cross-cultural setting (Earley & Ang, 2003).

Assessment of cultural intelligence was originally targeted to people with oversees duties such as leaders of international groups, employees who do business with people from different backgrounds or go to work in a foreign country, and even travelers; however, it has a wider scope (Earley & Ang, 2003; Van Dyne & Livermore, 2005-2011). It can be used not only to assess anyone who is involved in any kind of cross-cultural interaction, no matter the culture, overseas (international setting), but also in his or her own country (intranational setting). It has also been tested at educational settings with students who would or did travel abroad and with students who have not. Ward et al. (2009) conducted a study with international students who were actively participating in a cross-cultural experience in New Zealand supported the four-factor structure as the best fit to measure cultural intelligence in comparison to the currently available alternative structures. This study along with two others conducted alongside (one reporting a relationship between cultural and emotional intelligences and the failure of cultural intelligence in predicting individuals' adjustments, psychological, sociocultural, and academic and another reporting the relationship between the scores of cultural intelligence, a general cognitive test, and the Multicultural Personality Questionnaire) suggest that the researchers responsible for the 20-item, four factor CQS created a reliable four-factor measure of cultural intelligence (Ward et al., 2009).

Klein (2010) conducted a study to examine the effectiveness of a multicultural studies course using the 20-item scale (the study included a self-report and an observer-report

questionnaire) to measure the cultural intelligence of the undergraduate students enrolled in it. The results revealed that the course resulted in a slight increase in all four factors of cultural intelligence. After the course, students' motivation to participate in cross-cultural interactions increased and their behavior changed to adapt to other cultures (Klein, 2010).

Furthermore, with various studies, as stated in the CQC website, the measure of cultural intelligence is reliable and valid "across samples, across time, [and] across cultures" (Van Dyne & Livermore, 2005-2011, para. 5) and it can be applied to different cultural settings. Different studies were conducted to prove its robustness, structure, utility, stability, reliability, and validity (Earley & Ang, 2003; Van Dyne, Ang, & Koh, 2008).

Increasing Cultural Intelligence

Around the world, people interact with people from other countries on a daily basis. Many of them achieve successful interaction as they learn from and respect each other's cultures. Cultural intelligence is an individual capability that is not connected with the person's personality or interests (Van Dyne & Livermore, 2005-2011), and as multiple cultural skills can be learned, therefore, cultural intelligence can be increased. In fact, numerous companies today offer training on cultural intelligence (B. Peterson, 2004).

It is important to recognize that there are different ways to do something to increase cultural intelligence. Culture influences how people interpret life and behave in the world. The more we learn about other cultures, the more we understand and adapt to different ways of life. Expanding this knowledge, understanding, and adapting ourselves toward other cultures is a difficult process that takes time and a person's willingness and desire to learn about new cultural attitudes and values and change cultural behaviors to adjust effectively to different cultural contexts (B. Peterson, 2004).

For B. Peterson (2004), the formula to achieve cultural intelligence is as follows: "Knowledge about Cultures (facts and cultural traits) + Awareness (of yourself and others) + Specific Skills (behaviors) = Cultural Intelligence" (p. 13). Around this formula, there are several traits and skills that are important for people to recognize and practice. In the first part of this formula, *knowledge about culture*—knowing facts and cultural traits such as the history of a country, its social structure, ethnicity, and religion—can help propel our awareness of other cultures and can help us think about our own behaviors (B. Peterson, 2004). To increase cultural intelligence knowledge, a person can, for example, read specific cultural books or attend a specific culture class (Van Dyne & Livermore, 2005-2011). To this level of cognition, we add the importance of metacognition. The person needs to be aware of his or her own regulatory processes such as selecting the appropriate cognitive strategy and monitoring and evaluating his or her own learning and performance in cultural interactions (self-evaluation). There are appropriate cognitive and metacognitive methods that can be used to increase cultural intelligence. For example, if a person has a low metacognitive aspect of cultural intelligence, he or she can plan before a cross-cultural interaction by thinking of how this interaction may differ (Van Dyne & Livermore, 2005-2011). In fact, metacognitive training develops different skills such as reasoning inductively, formulating hypotheses and problems, thinking about solutions, choosing a strategy, setting goals, and evaluating oneself. For example, the clinical psychology cognitive-behavior modification technique helps individuals to think about the situation and their behaviors, so that they become more aware of their own cognitive structures that influence how they view and understand situations (Earley & Ang, 2003).

In the second part of Peterson's formula, *awareness*, cultural self-awareness is one of the first traits that people need to be aware of and the first step that they need to take to increase

cultural intelligence as it helps them understand and accept the differences between their own cultural styles and others. Cultural awareness of others helps individuals learn about cultures' specific characteristics and helps them think about how they might be able to change their behaviors to adapt themselves. In fact, analyzing their own behaviors by finding the antecedents of the behavior, analyzing the behavior itself, and seeing the consequences can help people change their behaviors. It is also important for a person to be aware of how his or her own and others' behaviors impact social settings (B. Peterson, 2004).

A person is able to move from an intention to produce a behavior to the actual production of it, and behaviors can actually be improved with practice and experience. As stated by Earley and Ang (2003), the behavioral component of cultural intelligence can be increased by applying Goffman's dramaturgical approach competencies: self-presentation, framing, scripting, staging, and performing. In a cross-cultural situation, a person needs to be aware of his or her ability to communicate with others and create a positive first impression (self-presentation), be aware of the context which determines the appropriate verbal or nonverbal behaviors (framing), take notes of the cultural interaction that give cues of how to act (scripting), use appropriate cultural symbols such as clothing (staging), and finally actually produce the appropriate behaviors (performing). To increase cultural intelligence in this way, role playing can be used (Earley & Ang, 2003; B. Peterson, 2004). Role playing can be done in the classroom. After reading a story for example, students can take a role and practice different cultural traits. Students can focus on listening, observing, and understanding the various cultural mistakes that would most likely be represented as people act under their preconceived thoughts and notions about other cultures when comparing them to their own (Westby, 2007).

The third part of the formula is *specific skills*. While the person learns about other cultures, one of the most important elements is to demonstrate cultural sensitivity through attitudes and behaviors of respect (B. Peterson, 2004). In fact, in developing cross-cultural verbal and nonverbal communication skills, it is necessary to pay attention to formalities and protocols. In verbal communication it is important to keep in mind that not everyone speaks one's own native language. B. Peterson, for example, gives tips on how to use the English language when speaking with people who are not fluent in it (these tips can be used to increase communication skills in any language). To succeed at communicating without major problems, the person should remember to speak slowly and clearly and remember to repeat a sentence if necessary. Avoiding the use of idiomatic expressions while keeping the use of the vocabulary simple can avoid confusion. Giving and sending feedback and providing examples could be helpful in clarifying the discussion (B. Peterson, 2004).

Today, another important communication skill is to learn a foreign language. A person who speaks a foreign language has more access to the other culture's knowledge, beliefs, and values (Earley & Ang, 2003). As not everyone learns to speak a foreign language fluently, it is important for a person to be a sympathetic native listener and try his or her best to understand the person who is talking. In the case of language, it is also important to take into consideration different linguistic behaviors, such as directness of speech, which in collectivistic cultures is less predominant as people try not to impose their ways on others; paralanguage or the differences between tone, sounds, lexicon, rate and loudness of speaking that can inform the speaker's intent; or even silence, which in some cultures represents respect and evaluation of the problem while in others it represents absence of communication and even communication that has not worked (Earley & Ang, 2003).

Nonverbal communication skills are also important; they have been accounted to contain 65% to 93% of the meaning in an interaction and to help keep a polite relation (B. Peterson, 2004; Rogers, 2008). Compared to verbal behaviors, nonverbal ones are more difficult as they usually occur very quickly and are difficult to perceive for someone who is involved in the actual interaction. Nonverbal behaviors such as kinesics, facial expressions, personal space, and the use of time can communicate cultural beliefs, emotions, and values.

Kinesics or gestures and body movements such as nodding, wrinkling the nose, rolling the eyes, eye contact, fingering the OK sign, or kissing cheeks, and many more differ from culture to culture with vastly different meanings. For example, nodding the head up and down can represent disagreement in some parts of the Middle East, Europe, Africa, and India but it can represent agreement or continued attention in other parts of the world. Facial expressions communicate emotions and are also different in every culture. For example, in Western cultures facial expressions are used more than in Asian cultures. Proxemics or personal space also differs among cultures. Generally, in the Middle East and Latin America people prefer smaller distances when talking to someone than in Asia and North America. Although smaller personal space can make someone from a Middle Eastern or Latin American country feel comfortable and accepted, to people from other countries it may feel aggressive and uncomfortable. Similarly, tactile communication is predominant in Latin American countries in comparison to North America and Asia. Public display of affection, for example, is more accepted in Latin America than in Asia, where displays of affection are usually not shown in public. The use of time also differs from country to country and can affect social interaction as people judge others on their punctuality or lateness. In North America, time is valued and, therefore, people always attempt to be on time,

but in Latin America, people are not too worried about time and, therefore, being on time is not important.

A person needs to be aware of these differences in order not to offend people from other cultures. In general, verbal and nonverbal differences carry various meanings, and a person who wants to increase his or her cultural intelligence needs to be able to see the differences and understand that they influence his or her self-impression (Earley & Ang, 2003). When interacting with people from another country and culture, a person can also rely on *cultural intelligence talk* (CQ talk), which helps individuals to deliberately discover the elements that need to be learned through verbal and nonverbal behaviors during an interaction. There are different responses that can be used for CQ talk: inquiry or checking (a person asks someone else about different behaviors), self-revelation (a person tells others about himself or herself), and correction (a person corrects an erroneous statement made by another). An example of inquiry and self-revelation could be when a person is in a cross-cultural setting never experienced before; he or she can inform the other person of this situation and ask for reassurance. CQ talk will help people to reduce the amount of guessing about utterances and actions during interactions and, therefore, confusion and misunderstandings. However, as CQ talk is a behavior, it is important to remember that it may not be accepted in every culture (Rogers, 2008).

To B. Peterson's (2004) formula, which as we have seen incorporates the components of cognition, metacognition, and behavior, is added the importance of the motivational component of cultural intelligence that drives the individual to adapt to a new cultural setting. In increasing this component, the individual's values, goal setting, attitude, self-efficacy, curiosity, and self-awareness need to be reinforced along with an open-mindness to change his or her behavior. In goal setting, for example, the individual would need to set his or her goals prior to the cross-

cultural encounter without forgetting to take into consideration his or her own self-efficacy, which determines the type and levels of goals and the metacognitive strategies of planning, monitoring, and evaluating. In regards to attitude, because of bias, prejudice, or past experiences, people make decisions to interact, or not, with a particular culture. An attitude change would increase the possibility of a person interacting with the culture again and, therefore, of increasing the motivational component of cultural intelligence (Earley & Ang, 2003). To increase cultural intelligence motivation, simple actions can be taken, as well, such as asking a person who has travelled how he or she became motivated or thinking about the different benefits we experienced while interacting with someone from a different country (Van Dyne & Livermore, 2005-2011).

There are also personal traits that help people be more open to cultural intelligence. Tolerance for ambiguity, flexibility, intentionality, and open-mindedness are some of the skills that are required when we participate in culturally diverse situations. Humility, empathy, and an outgoing personality can help the person be more open to cultural differences (B. Peterson, 2004). In fact, moving from culture to culture is challenging; it requires a level of adjustment that is not present in any other social interaction because the characteristics of this new situation are totally different from other ones. Moreover, the characteristics that we learn from other cultures are not always useful in a new culture (Earley & Ang, 2003). Increasing cultural intelligence is, as well, a difficult process that takes time and has its ups and downs. As we learn about other cultures, people find elements within them that they like or do not like. Sometimes individuals even get frustrated by the cultural ways of others. However, it is important to keep on working on the process of increasing our cultural intelligence and recognize its value and enrichment. It is

important to stay with the process as cultural intelligence can decrease as well if a person does not practice his or her cultural skills (B. Peterson, 2004).

Having high cultural intelligence has many advantages. People who have a high cultural intelligence are usually more prone to make decisions during cross-cultural interactions and have a more acceptable performance and adaptability in those situations. Cultural intelligence can be increased by various methods. In fact, just understanding cultural intelligence also allows us to be aware of our own and others' cultural weaknesses and strengths. By knowing our own cultural intelligence, we can work on how to increase it and by knowing the cultural intelligence of others, we can better understand people's actions and therefore improve interaction (Van Dyne & Livermore, 2005-2011).

CHAPTER 3

RESEARCH METHODOLOGY

This study determined if there was an increase in cultural intelligence of students who experienced the Foundational Studies 2010 Non-Native Language program in Spanish 101 classes at Indiana State University and if this increase in cultural intelligence was influenced by gender. The 20-item, four factor CQS instrument was administered to the subjects twice, once at the beginning of the semester and once at the end of the semester. The pretest and posttest results were compared in order to see if there was an increase in cultural intelligence among the participants and if this increase in cultural intelligence was influenced by gender. A 2 X 2 Factorial ANOVA was employed to simultaneously compare the pretest and posttest data while factoring in the gender of participants.

Research Questions

The research questions posed for this study were

1. Does Spanish 101 influence cultural intelligence in U.S. students?
2. Does gender contribute to an increase in cultural intelligence? Does cultural intelligence increase more in female or male students?

Hypotheses

The null hypotheses stated for this study were

1. There is no difference in the cultural intelligence of U.S. students measured prior to taking Spanish 101 and that measured at the completion.
2. There is no change in the cultural intelligence of female U.S. students and male U.S. students taking Spanish 101 at the times of testing (pretest and posttest).
3. There is no interaction between the two independent variables—time of testing and gender—that influence a change in cultural intelligence. All the mean changes and differences are explained by the main effects of the two factors.

Sampling Procedure

The participants for this study were Indiana State University students enrolled in the Spanish 101 class sections (six sections, spring 2012), who were U.S. citizens and who were not enrolled in courses aligned with Foundational Studies 2010 Global Perspectives and Cultural Diversity. It is important to exclude students in these other classes as the Foundational Studies 2010 Global Perspectives and Cultural Diversity program contains objectives that are similar to the ones included in the Spanish 101 courses. In the survey students were asked if they were U.S. citizens and if they were enrolled in any other Foundational Studies 2010 Global Perspectives and Cultural Diversity course. Each section had approximately 20 students. All students, except for the ones enrolled in the category mentioned above, were invited to participate in this study. Gender of the participants was considered in this study. This study used a comprehensive cluster sampling: six sections of Spanish 101 were used. The expected overall sample size was 120 students.

Research Instrument

The 2005, 20-item, four factor CQS is the only available evidence based-assessment that measures cultural intelligence (Van Dyne & Livermore, 2005-2011). Even though there are

different scales that include items comparable to CQ, no other scale is based on different intelligence theories or tests the four components at the same time (Ang et al., 2007). The assessment was created and academically validated by the researchers Ang et al. (Shannon & Begley, 2008).

Previously from the creation of items in the scale, all four of the components of cultural intelligence were defined through theory (as seen in Chapter 2) and interviews conducted with eight businessmen who had widespread international work knowledge and practice (Van Dyne et al., 2008). The CQS includes each of the four components of cultural intelligence—cognitive, meta-cognitive, motivational, and behavioral—which are labeled in the instrument as CQ-Knowledge, CQ-Strategy, CQ-Motivation, and CQ-Behavior respectively (Van Dyne & Livermore, 2005-2011). The number of items for each of the four components started with double the number of the ones listed in the final scale (13 or 14 by component). Each of the items was evaluated by six members (three faculty and three businessmen possessing intercultural knowledge and practice) for clarity and quality. In order to reduce the effect of boredom and fatigue in taking the measure and provide "adequate internal consistency reliability" (Van Dyne et al., 2008, p. 4) the items for each component were reduced to 40 items.

Different studies were undertaken to confirm the four concept structure of the instrument; the final scale; the generalization across samples; time, countries, methods (self-report and observer report); and discriminant and incremental validities. In the case of confirming the final scale, a study with 576 undergraduate students in Singapore helped the researchers reduce the number of items from 40 to the 20 that possessed the "strongest psychometric properties" (Van Dyne et al., 2008, p. 4). After this study, a confirmatory factor analysis and a model comparisons helped prove that the 20-item, four-factor model was adequate. Different measures in this study

also demonstrated the internal consistency of the instrument as the items and the scales were proven to have a strong relationship (Van Dyne et al., 2008). In regards to the generalization across samples, Van Dyne et al. (2008) conducted a study of 447 undergraduate students in Singapore was undertaken proving once again the adequacy of the 20-item four-factor model and the strong relationship between the items and the scales. The results of both of these studies support as well the number of items for each of the four factors of cultural intelligence: four items for the metacognitive, six for the cognitive, five for the motivational, and five for the behavioral.

From the second study conducted by Van Dyne et al. (2008), 204 students completed the 20-item four-factor model after four months to prove generalization across time; the results confirmed that the model is controlled across time. Through this study, the researchers also describe cultural intelligence as a "malleable capability" (Van Dyne et al., p. 10) as it can change under different circumstances involving cultural interaction. In the case of generalization across countries, 337 students from the United States completed the model and their results were compared with the Singaporean students from the second study mentioned above. Different tests of invariance proved that the model is controlled across both countries. Finally, to evaluate the generalization across methods, a multitrait multimethod study was conducted by Van Dyne et al. The study proved the "convergent, discriminant, and criterion validity" (Van Dyne et al., 2008, p. 16) of the model across both methods.

A sixth study was undertaken by Van Dyne et al. (2008) in order to verify discriminant and incremental validity of the four factors of cultural intelligence. In relation to discriminant validity, the four factors of cultural intelligence were taken into consideration in relation to the traits of "cognitive ability, emotional intelligence, cultural judgment and decision making,

interactional adjustment, and mental well-being" (Van Dyne et al., 2008, p. 16). A factor analysis proved discriminant validity by showing the distinction between the four factors of cultural intelligence and the traits mentioned above. Incremental validity of the four factors of cultural intelligence was studied in relation to demographic characteristics and the above mentioned traits used for discriminant validity. Results of this study showed that the model of cultural intelligence has incremental validity "in predicting cultural judgment and decision making, adjustment, and mental well-being" (Van Dyne et al., 2008, p. 20). According to Van Dyne et al., the CQS instrument is proven to be different from and "has predictive validity over and above other forms of intelligence, demographic characteristics, and personality" (p.xvi). Overall, these studies proved that the instrument to measure cultural intelligence is reliable and valid (Van Dyne et al., 2008).

For this study, the demographic portion of the instrument was modified to include gender demographics. The demographic portion of the instrument was also modified to include the enrollment of the students in any other Foundational Studies 2010 Global Perspectives and Cultural Diversity course. The instrument uses a seven point Likert scale of 1 to 7, 1 representing *strongly disagree* and 7 representing *strongly agree*. The first four items correspond to the metacognitive factor (CQ-Strategy). These are followed by six items related to the cognitive factor (CQ-Knowledge), five items related to motivational factor (CQ-Motivation), and finally five items related to the behavioral factor (CQ-Behavior). Each item was created to be short and understandable through the use of simple language and was limited to only one idea. The cultural intelligence assessment results can show that education programs can improve students' cultural performance (Van Dyne et al., 2008).

Materials and Equipment

As the cultural intelligence assessment was administered at the beginning and the end of a course, a copy of the CQS was provided to each student twice, once at the beginning of the semester and once at the end of the semester. Both times students were asked to come to the Language Computer Laboratory accompanied by their teachers. The CQS was provided to each student via Qualtrics. Students took the survey at the Language Computer Laboratory during their regular Spanish classroom time, where each student has her or his own individual desk provided with a computer.

Survey Procedure

The research assistant for this study was given a letter explaining the study and the survey procedure. The letter specified the times when the survey was to be provided to students and the time it would take for students to complete it. The teachers and the research assistant were asked not to leave the Language Computer Laboratory while their students completed the survey. The research assistant was asked to inform the students of the study and sign the consent form, which was part of Qualtrics.

This study was a survey research design. All the proper documentation was approved by Indiana State University's Institutional Review Board (IRB). Permission to administer the survey to participants in all the sections of Spanish 101 was requested and approved by Dr. Lisa Calvin, the coordinator of the Foundational Studies 2010 Non-Native Language program. Dr. Calvin and I approached each instructor to ask for his or her collaboration in this study and to explain the study's procedures.

Analysis of Data

To answer the two questions of this study:

1. Does Spanish 101 influence cultural intelligence in U.S. students?
2. Does gender contribute to an increase in cultural intelligence? Does cultural intelligence increase more in female or male students?

A 2 X 2 factorial Analysis of Variance (ANOVA) was conducted on each of the four factors of cultural intelligence: metacognitive, cognitive, motivational, and behavioral. Each of the four 2 X 2 factorial ANOVAs showed the effects of the two independent variables: gender (male and female) and the scores of every participant's 20-item four factor CQS (time of testing: pretest and posttest) on each of the four dependent variables independently: metacognitive, cognitive, motivational, and behavioral. In the case of the latest independent variable, it is important to mention that because the CQS was used as an anonymous survey, the pretest and posttest scores could not be matched to the same participant. In the analysis this independent variable was treated as a between groups variable.

Each main effect analysis of time of testing, in each of the four factorial ANOVAs, answered the first question of this study as it showed if there was a difference among pretest and posttest scores across genders in each of the four factors of cultural intelligence independently. Correspondingly, each main effect analysis of gender, in each of the four factorial ANOVAs, answered the second question of this study as it showed if there was a change in scores over time of testing among gender in each of the four factors of cultural intelligence independently. At the same time, each interaction analysis of gender and scores, in each of the four factorial ANOVAs, showed if there was an interaction effect between these two independent variables that would contribute to a change in cultural intelligence.

For this study each participant's 20-item four factor CQS was analyzed. As we have seen, for each of the four factors of cultural intelligence (metacognitive, cognitive, motivation, and

behavior), the factorial ANOVA evaluated three separate sets of mean differences. The goal of this study was to evaluate the mean differences that may be produced by either gender or scores independently or by the two acting together. For each of the four factors of cultural intelligence, the first purpose of this study was to evaluate if differences in time of testing result in differences in each of the four factors of cultural intelligence. In order to analyze the differences in scores, we compared the mean scores for all pretests and the mean for all posttests. The second purpose of this study was to evaluate if differences in gender result in changes in each of the four factors of cultural intelligence. In order to analyze the differences in gender, we compared the mean score for all female participants and the mean score for all male participants. Finally, the last purpose of this study was to evaluate if there was an interaction between gender and scores in each of the four factors of cultural intelligence. In order to evaluate other mean differences that may result from unique combinations of gender and scores, we identified the mean differences that could not be explained by gender and scores separately. The Statistical Package for the Social Sciences (SPSS) was essential in this statistical analysis. It was hoped that the results reflected by this study could be valuable in defining future educational recommendations for the Foundational Studies program.

CHAPTER 4

RESULTS

This chapter describes the results of the quantitative research undertaken to determine if there was an increase in cultural intelligence of students who experienced the Foundational Studies 2010 Non-Native Language program in Spanish 101 classes at Indiana State University and if this increase in cultural intelligence was influenced by gender. The data in this study were obtained from the 20-item, four factor CQS instrument administered to the subjects twice, once at the beginning of the semester and once at the end of the semester.

The results of this study are presented in four sections. Each of the sections shows the effects of the two independent variables—the scores of every participant's 20-item four factor CQS (time of testing: pretest and posttest) and gender (male and female)—on each of the four dependent variables independently: metacognitive, cognitive, motivational, and behavioral. Each section analyzes the main effects and interactions of these two independent variables for each of the four factors of cultural intelligence to answer the research questions posed for this study:

1. Does Spanish 101 influence cultural intelligence in U.S. students?
2. Does gender contribute to an increase in cultural intelligence? Does cultural intelligence increase more in female or male students?

Each section examines each of the following hypotheses for each of the four factors of cultural intelligence:

1. There is no difference in the cultural intelligence of U.S. students measured prior to taking Spanish 101 and that measured at the completion.
2. There is no change in the cultural intelligence of female U.S. students and male U.S. students taking Spanish 101 at the times of testing (pretest and posttest).
3. There is no interaction between the two independent variables: time of testing and gender that influence a change in cultural intelligence. All the mean changes and differences are explained by the main effects of the two factors.

Participants

The students enrolled in six sections of Spanish 101 during the spring 2012 semester participated in this study. A total of 194 students participated in this study; 105 students participated in the pretest and 89 students participated in the posttest. Distribution of participants by gender and U.S. citizenship for the pretest and for the posttest are shown in Tables 1 and 2 respectively.

Table 1

Distribution of Participants by Gender and U.S. Citizenship for the Pretest (N=105)

Gender	U.S. Citizenship	Number
Male	54	55
Female	50	50

Table 2

Distribution of Participants by Gender and U.S. Citizenship for the Posttest (N=89)

Gender	U.S. Citizenship	Number
Male	44	44
Female	45	45

Because many students enroll in Foundational Studies program courses (general education classes) during their first semester in college (fall semester), many of the students that participated in this study had taken or were currently enrolled in one or more of the 13 courses aligned with the Foundational Studies 2010 Global Perspectives and Cultural Diversity category by the spring semester. Hence, from the 105 students who participated in the pretest and the 89 students who participated in the posttest, 59 pretests and 47 posttests had to be taken out of the study as they represented students who had taken or were currently enrolled in one or more of the 13 courses mentioned above. Within the pretests, 63% of the students had taken or were currently enrolled in one of these courses: 24% in two courses, 12% in three courses, and less than 2% in four courses. Within the posttests, 57% of the students had taken or were currently enrolled in one of these courses: 28% in two courses, 9% in three courses, and 6% in four courses.

Consequently, only 46 pretests and 42 posttests could be actually used in the analysis of data for this study. Within the 46 pretests half of the participants were male and half were female; within the 42 posttests, 22 of the participants were male and 20 were female. All these pretests and posttests belonged to U.S. citizens as the only test belonging to a non-U.S. citizen

was eliminated as the student had taken or was currently enrolled in two of the courses mentioned above.

Descriptive Statistics

The data collected on Qualtrics were transferred into an Excel file where the students' pretests and posttests' scores were added and then entered into SPSS for analysis. Four 2 X 2 factorial ANOVAs at the .05 level of significance were conducted between pretest and posttest scores, with gender (male and female) and scores (time of testing: pretest and posttest) as the independent variables, for each of the four factors of cultural intelligence: cognitive, metacognitive, motivational, and behavioral.

At first glance, it is important to notice that there are sample mean differences between the pretests and posttests for each of the four factors of cultural intelligence. In fact, students increased their cultural intelligence mean by 1.05 on the metacognitive factor, by 7.00 on the cognitive factor, by 2.49 on the motivational factor, and by 2.37 on the behavioral factor. Descriptive statistics for pretest and posttest factors are shown in Table 3.

Table 3

Descriptive Statistics for Pretest and Posttest for each of the Four Factors of Cultural Intelligence

Factors of cultural intelligence	Number of items	Mean	SD
Pretest Metacognitive	4	19.19	3.85
Posttest Metacognitive	4	20.24	4.34

(continued)

Table 3 (continued)

Descriptive Statistics for Pretest and Posttest for each for the Four Factors of Cultural Intelligence

Factors of cultural intelligence	Number of items	Mean	SD
Pretest Cognitive	6	20.95	6.65
Posttest Cognitive	6	27.95	6.11
Pretest Motivational	5	23.06	6.05
Posttest Motivational	5	25.55	5.51
Pretest Behavioral	5	21.06	4.81
Posttest Behavioral	5	23.43	5.64

Different items comprise each of the four factors of cultural intelligence. It is interesting to review in more detail which of the items, in each of the four factors, has increased the most among students and which ones have increased the least. The metacognitive factor contains four items. The means of each of these items increased as demonstrated in Table 4. The mean of item MC2, "I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me," increased the most among participants, increasing by 0.39. The mean of item MC1, "I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds," increased least, increasing by only 0.03. Descriptive statistics for means and standard deviations for pretest and posttest for the metacognitive factor are shown in Table 4.

Table 4

Means and Standard Deviations for Pretest and Posttest for the Metacognitive Factor

Metacognitive CQ	Mean - SD	Pretest	Posttest
MC1 I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.	Mean	5.04	5.07
	SD	1.13	1.09
MC2 I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.	Mean	4.80	5.19
	SD	1.15	1.21
MC3 I am conscious of the cultural knowledge I apply to cross-cultural interactions.	Mean	4.87	5.12
	SD	1.09	1.15
MC4 I check the accuracy of my cultural knowledge as I interact with people from different cultures.	Mean	4.48	4.86
	SD	1.39	1.44

The cognitive factor contains six items. The means of each of these items increased as demonstrated in Table 5. Item COG6, "I know the rules for expressing non-verbal behaviors in other cultures," increased the most among participants, increasing by 1.33. The mean of item COG1, "I know the legal and economic systems of other cultures," increased least, increasing by only 0.87. Descriptive statistics for means and standard deviations for pretest and posttest for the cognitive factor are shown in Table 5.

Table 5

Means and Standard Deviations for Pretest and Posttest for the Cognitive Factor

Cognitive CQ	Mean- SD	Pretest	Posttest
COG1 I know the legal and economic systems of other cultures.	Mean	3.39	4.26
	SD	1.42	1.43
COG2 I know the rules (e.g., vocabulary, grammar) of other languages.	Mean	3.24	4.52
	SD	1.42	1.35
COG3 I know the cultural values and religious beliefs of other cultures.	Mean	4.04	4.95
	SD	1.43	1.12
COG4 I know the marriage systems of other cultures.	Mean	3.44	4.71
	SD	1.33	1.40
COG5 I know the arts and crafts of other cultures.	Mean	3.69	4.88
	SD	1.46	1.17
COG6 I know the rules for expressing non-verbal behaviors in other cultures.	Mean	3.29	4.62
	SD	1.23	1.43

The motivational factor contains five items. The means of each of these items increased as demonstrated in Table 6. Item MOT4, "I enjoy living in cultures that are unfamiliar to me," increased the most among participants, increasing by 0.73. The mean of item MOT3, "I am sure I can deal with the stresses of adjusting to a culture that is new to me," increased least, increasing

by only 0.21. Descriptive statistics for means and standard deviations for pretest and posttest for the cognitive factor are shown in Table 6.

Table 6

Means and Standard Deviations for Pretest and Posttest for the Motivational Factor

Motivational CQ	Mean – SD	Pretest	Posttest
MOT1 I enjoy interacting with people from different cultures.	Mean	5.19	5.45
	SD	1.45	1.19
MOT2 I am confident that I can socialize with locals in a culture that is unfamiliar to me.	Mean	4.48	5.09
	SD	1.54	1.30
MOT3 I am sure I can deal with the stresses of adjusting to a culture that is new to me.	Mean	4.93	5.14
	SD	1.57	1.28
MOT4 I enjoy living in cultures that are unfamiliar to me.	Mean	3.98	4.71
	SD	1.64	1.57
MOT5 I am confident that I can get accustomed to the shopping conditions in a different culture.	Mean	4.58	5.14
	SD	1.54	1.35

The behavioral factor contains five items. The means of each of these items increased as demonstrated in Table 7. The mean of item BEH2, “I use pause and silence differently to suit different cross-cultural situations,” increased the most among participants, increasing by 0.66. The mean of item BEH3, “I vary the rate of my speaking when a cross-cultural situation requires

it," increased least, increasing by only 0.23. Descriptive statistics for means and standard deviations for pretest and posttest for the cognitive factor are shown in Table 7.

Table 7

Means and Standard Deviations for Pretest and Posttest for the Behavioral Factor

Behavioral CQ	Mean - SD	Pretest	Posttest
BEH1 I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it.	Mean	4.34	4.64
	SD	1.46	1.38
BEH2 I use pause and silence differently to suit different cross-cultural situations.	Mean	3.91	4.57
	SD	1.28	1.35
BEH3 I vary the rate of my speaking when a cross-cultural situation requires it.	Mean	4.50	4.73
	SD	1.24	1.24
BEH4 I change my non-verbal behavior when a cross-cultural situation requires it.	Mean	4.33	4.93
	SD	1.37	1.22
BEH5 I alter my facial expressions when a cross-cultural interaction requires it.	Mean	4.17	4.67
	SD	1.20	1.46

In respect to gender, four 2 X 2 factorial ANOVAs were conducted between male and female participants for each of the four factors of cultural intelligence. It is interesting to see that for all the pretests and posttests there is a sample mean difference between female and male participants. For all the pretests and posttests, except for the pretest for the cognitive and the

behavioral factors, the female participants obtained a higher mean score than the male participants. Furthermore, at the posttest, female participants had a higher increase of cultural intelligence than their male counterparts. Female participants increased their mean metacognitive factor by 2.25 (in comparison with the male participants' mean increase of 0.05), their mean cognitive factor by 8.75 (in comparison with the male participants' mean increase of 5.32), their mean motivational factor by 3.54 (in comparison with the male participants' mean increase of 1.6), and their mean behavioral factor by 3.05 (in comparison with the male participants' mean increase of 1.74). Descriptive statistics for pretest and posttest factors are shown in Table 8.

Table 8

Descriptive Statistics for Male and Female for each of the Four Factors of Cultural Intelligence

Pretest - Posttest	Mean - SD	Male	Female
Pretest Metacognitive	Mean	19.09	19.30
	SD	3.35	4.37
Posttest Metacognitive	Mean	19.04	21.55
	SD	4.41	3.97
Pretest Cognitive	Mean	21.91	20.00
	SD	6.79	6.51

(continued)

Table 8 (continued)

Descriptive Statistics for Male and Female for each of the Four Factors of Cultural Intelligence

Pretest - Posttest	Mean – SD	Male	Female
Posttest Cognitive	Mean	27.23	28.75
	SD	6.32	5.93
Pretest Motivational	Mean	22.22	23.91
	SD	5.05	6.93
Posttest Motivational	Mean	23.82	27.45
	SD	5.91	4.43
Pretest Behavioral	Mean	21.17	20.95
	SD	4.13	5.50
Posttest Behavioral	Mean	22.91	24.00
	SD	5.13	6.25

Data Analysis

A 2 X 2 factorial ANOVA at the 0.05 level of significance was conducted for each of the four factors of cultural intelligence cognitive, metacognitive, motivational, and behavioral. For each of the four factorial ANOVAs the three assumptions for the two-factor ANOVA were met.

First, for each of the ANOVAs, the observations within each sample were independent as the sample used for this study was constituted by unrelated subjects. Secondly, the population from which the sample was selected was normal. Both skew and kurtosis fell within the acceptable limits of normality for each of the four factors of cultural intelligence as shown in Table 9.

Table 9

Descriptive Statistics for the Four Factors of Cultural Intelligence

	Metacognitive	Cognitive	Motivational	Behavioral
Skewness	-0.40	-0.47	-0.75	-0.71
Kurtosis	-0.30	0.08	0.72	0.69

Finally, for each of these four factorial ANOVAs, the homogeneity of variance was met as well. Levene's test of equality of error variances obtained for each of the factors of cultural intelligence shows that for each of the factors the Sigma values were greater than our alpha level of 0.05 and therefore that the variances of scores in each combination are equal. The Sigma values for the metacognitive, cognitive, motivational, and behavioral factors were 0.644, 0.664, 0.366, and 0.530 respectively.

For each of the 2 X 2 factorial ANOVAs time of testing and gender were the independent variables, each with two levels: pretest/posttest and male/female respectively. Each 2 X 2 ANOVA tested two main effects and one interaction effect. The main effect of time of testing assessed whether there was a significant difference from pretest to posttest across both genders. The main effect of gender assessed whether there was a significant difference between male and female participants across time of testing. The interaction effect tested whether there was a

significant interaction between time of testing and gender on the cultural intelligence factor. Each of the four factors of cultural intelligence was analyzed using this 2 X 2 framework.

First Section: Change in the Metacognitive Factor of Cultural Intelligence

In the metacognitive factor, two main effects—time of testing and gender—and the interaction of these two were tested. For the main effect analysis of time of testing, there was no significant difference between pretest and posttest scores across genders, $F(1,84) = 1.63$, $p > 0.05$. For the main effect analysis of gender, there was no significant change in this factor's scores between female and male students at the times of testing, $F(1,84) = 2.48$, $p > 0.05$. Finally, for the interaction analysis, there was no significant interaction found for this factor of cultural intelligence between gender and time of testing, $F(1,84) = 1.75$, $p > 0.05$. A summary of main effects and interactions for the metacognitive factor of cultural intelligence is presented in Table 10.

Table 10

Factorial ANOVA Summary Table for Metacognitive Factor

Source	SS	Df	MS	F	Sig.
Gender	40.62	1	40.62	2.48	0.119
Time	26.63	1	26.63	1.63	0.206
Gender x Time	28.68	1	28.68	1.75	0.189
Error	1376.60	84	16.39		
Total	1466.72	87			

$p < 0.05$

Second Section: Change in the Cognitive Factor of Cultural Intelligence

In the cognitive factor, two main effects—time of testing and gender—and the interaction of these two were tested. For the main effect analysis of time of testing, there was a statistically significant difference between pretest and posttest scores across genders, $F(1,84) = 26.38$, $p < 0.05$ ($\eta 2 = .24$), with the posttest being significantly higher than the pretest. For the main effect analysis of gender, there was no significant change in this factor's scores between female and male students at the times of testing (pretest and posttest), $F(1,84) = 0.02$, $p > 0.05$. Finally, there was no significant interaction found between gender and scores at the interaction analysis, $F(1,84) = 1.51$, $p > 0.05$. A summary of main effects and interactions for the cognitive factor of cultural intelligence are presented in Table 11.

Table 11

Factorial ANOVA Summary Table for Cognitive Factor

Source	SS	Df	MS	F	Sig.
Gender	0.84	1	0.84	0.02	0.887
Time	1084.38	1	1084.38	26.38	0.000
Gender x Time	64.71	1	64.71	1.57	0.213
Error	3453.44	84	41.11		
Total	4594.32	87			

$p < 0.05$

Third Section: Change in the Motivational Factor of Cultural Intelligence

In the motivational factor, two main effects—time of testing and gender—and the interaction of these two were tested. For the main effect analysis of time of testing, there was a

statistically significant difference between pretest and posttest scores across genders, $F(1,84) = 4.46$, $p < 0.05$ ($\eta 2 = 0.05$). For the main effect analysis of gender, there was a statistically significant change in this factor's scores between female and male students at the times of testing, $F(1,84) = 4.80$, $p < 0.05$ ($\eta 2 = 0.05$), with the females scoring significantly higher than the males. For the interaction analysis, there was no significant interaction between gender and scores found for this factor of cultural intelligence, $F(1,84) = 0.63$, $p > 0.05$. A summary of main effects and interactions for the motivational factor of cultural intelligence are presented in Table 12.

Table 12

Factorial ANOVA Summary Table for Motivational Factor

Source	SS	Df	MS	F	Sig.
Gender	155.59	1	155.59	4.80	0.031
Time	144.71	1	144.72	4.46	0.038
Gender x Time	20.55	1	20.55	0.63	0.428
Error	2723.96	84	32.43		
Total	3030.50	87			

$p < 0.05$

Fourth Section: Change in the Behavioral Factor of Cultural Intelligence

Finally, in the behavioral factor, two main effects—time of testing and gender—and the interaction of these two were tested. For the main effect analysis of time of testing, there was a statistically significant difference between pretest and posttest scores across genders, $F(1,84) = 4.51$, $p < 0.05$ ($\eta 2 = 0.05$), with the posttest being significantly higher than the pretest. For the

main effect analysis of gender, there was no significant change in this factor's scores between female and male students at the times of testing, $F(1,84) = 0.15$, $p > 0.05$. Finally, for the interaction analysis, there was no significant interaction found between gender and scores, $F(1,84) = 0.34$, $p > 0.05$. A summary of main effects and interactions for the behavioral factor of cultural intelligence is presented in Table 13.

Table 13

Factorial ANOVA Summary Table for Behavioral Factor

Source	SS	Df	MS	F	Sig.
Gender	4.18	1	4.18	0.15	0.699
Time	125.19	1	125.19	4.51	0.037
Gender x Time	9.38	1	9.39	0.34	0.563
Error	2334.08	84	27.79		
Total	2469.72	87			

$p < 0.05$

In summary of the statistical analyses conducted in this study, four 2 X 2 factorial ANOVAs were conducted for this study. In the case of the main effect analysis of time of testing, a statistically significant difference was observed between pretest and posttest across genders for all the factors of cultural intelligence except the metacognitive factor. For the main effect analysis of gender, a statistically significant change was observed in only one of the factors of cultural intelligence between female and male students at the times of testing: the motivational factor. Finally, for the interaction analysis of gender and scores, no significant difference was found for any of the factors of cultural intelligence.

CHAPTER 5

SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

As the world becomes more globalized each day, relations among people from other countries and cultures are inevitable (Cheng, 2007; B. Peterson, 2004; Van Dyne & Ang, 2008b). In every thinkable location—supermarkets, schools, universities, workplaces—we are surrounded by people from diverse cultural backgrounds. Today, it is important to be able to function in diverse cultural situations and interact with people who are different from us. In fact, it is important to be aware of cultural intelligence: "a person's capability to function effectively in situations characterized by cultural diversity." (Van Dyne & Livermore, 2005-2011, "About CQ," para. 2).

In the case of students who are soon graduating from institutions of higher education and who will be entering the workforce, being prepared to deal with globalization and therefore a more diverse world is essential (B. Peterson, 2004). Many universities and colleges are aware of the need to prepare students to adapt and live in a multicultural world. Many of these educational institutions incorporate a diversity curriculum where the study of other cultures is undertaken in their liberal education programs (Hopkins, 1999). At Indiana State University, and more specifically in regards to its foreign language program, the Foundational Studies 2010 Non-Native Language program incorporates objectives of cultural awareness, sensitivity to diversity,

and holistic applications, which help students to be more successful in today's multicultural society (Calvin & Rider, 2010; Office of General Education, 2011).

Summary

This study was undertaken to determine to what extent the Foundational Studies 2010 Non-Native Language program in Spanish 101 courses at Indiana State University succeeds in developing and increasing students' cultural intelligence through the objectives mentioned above.

The research questions posed for this study were

1. Does Spanish 101 influence cultural intelligence in U.S. students?
2. Does gender contribute to an increase in cultural intelligence? Does cultural intelligence increase more in female or male students?

This study was based on the concept of cultural intelligence developed by Van Dyne and Livermore (2005-2011), which has been assessed in different educational settings, mainly in relation with studying abroad, but never reviewed as part of a foreign language program (Earley & Ang, 2003; V. D., personal communication, March 08, 2011). The only available assessment that has been demonstrated to reliably measure cultural intelligence, the 20-item, four factor CQS instrument (Van Dyne & Livermore, 2005-2011) was used in this study. The instrument measures the four factors of cultural intelligence: cognitive, metacognitive, motivational, and behavioral. To answer the research questions of this study, four 2 X 2 factorial ANOVAs were conducted on each of the four factors of cultural intelligence: cognitive, metacognitive, motivational, and behavioral.

The instrument was administered twice, once at the beginning of the semester and once at the end of the semester, to Spanish 101 students during the spring 2012 semester at Indiana State

University. One hundred and five students participated in the pretest and 89 students participated in the posttest. However, only 46 pretests and 42 posttests were used in the analysis of data because the remaining ones represented students who had been enrolled in one or more courses aligned with the Foundational Studies 2010 Global Perspectives and Cultural Diversity category.

Discussions and Conclusions

The first point of this discussion is to answer the primary question of this study, "Does Spanish 101 influence cultural intelligence in U.S. students?"

The main effect analysis of time of testing from each of the four 2 X 2 factorial ANOVAs was used to examine if there was a difference among pretest and posttests scores across genders in each of the four factors of cultural intelligence. In the case of the cognitive, motivational, and behavioral factors, there was a statistically significant difference between pretest and posttest scores across genders. Only in the metacognitive factor of cultural intelligence was there no statistically significant difference found between pretest and posttest scores across genders.

These results are a projection of what students are taught in class and the different requirements attached to the Foundational Studies 2010 Non-Native Language program objectives of cultural awareness, sensitivity to diversity, and holistic application. It is important to mention that all of the Spanish 101 courses follow the same syllabus and the same textbook, *Experience Spanish: Un mundo sin límites* (Amores, Suarez Garcia, & Morris, 2012).

The cognitive factor constitutes the knowledge of the different norms, values, practices, and systems of the new culture. The cognitive factor of cultural intelligence in Spanish 101 students increased between their pretests and posttests. In fact, different Spanish 101 lessons cover most of this factor's six items stated below in this section of the CQS:

Table 14

Cognitive Factor in the 20-item, four factor CQS

Cognitive CQ	Items
COG1	I know the legal and economic systems of other cultures.
COG2	I know the rules (e.g., vocabulary, grammar) of other languages.
COG3	I know the cultural values and religious beliefs of other cultures.
COG4	I know the marriage systems of other cultures.
COG5	I know the arts and crafts of other cultures.
COG6	I know the rules for expressing non-verbal behaviors in other cultures.

In regards to the first item COG1, students are lightly introduced to these systems through some of the *entrada cultural* or cultural entries related to Mexico and Spain in the textbook. Through the actual study of the Spanish language, students learn all of the elements mentioned in the second item COG2. During the first semester of Spanish students learn vocabulary related to the weather, family, college life, and professions among other topics, along with the structure of sentences, nouns, articles, gender, and number, and different regular and irregular verbs in the present tense. At the same time, during class and through an interaction with their teacher, students also learn "the rules for expressing non-verbal behaviors in other cultures" (item COG6). In fact, one of the first lessons shows students the different physical actions used in the Latin/Hispanic world to greet other people. In the case of item COG3, students learn about cultural values and religious beliefs through the textbook's recurring cultural entries *entrada cultural* and *nota cultural* related to Hispanics in the United States, Mexico,

Spain, and the Virgin of Guadalupe among other topics. Students also study about the marriage systems (CG4) through one of the recurring interdisciplinary notes *nota interdisciplinaria*, *Changing Gender Roles in Mexico* in the textbook, the changes of last names when a person gets married and *express divorce* in Spain among other information. The elements in COG5 are generally introduced in this textbook through segments of *expresiones artísticas* on different artists such as Carlos Callejo, Diego Rivera, Antoni Gaudí, and their works of art (Amores et al., 2012). Through these different lessons, the Foundational Studies 2010 Non-Native Language program objectives of cultural awareness and diversity are met as well. In class, students become aware of the practices, perspectives, and products of the Latin/Hispanic culture and start comparing and critically thinking about the differences and similarities between their cultures and the ones that they are learning about (Calvin & Rider, 2010; Office of General Education, 2011). Through the critical thinking process, students improve their metacognition as they become aware of how they think about the target culture. This process helps them to construct a more accurate perception of the new culture through an examination and possible remediation of pre-established biases and prejudices. By obtaining a more accurate image of the Latin/Hispanic culture, students also "develop openness, sensitivity, and tolerance towards other languages and cultures" (Calvin & Rider, 2010, p. 6) and are therefore better prepared to mediate the challenges of global interaction and succeed in a multicultural society.

The motivational factor of cultural intelligence is related to the individual's desire to learn more about differences among cultures and how to interact around people of these cultures (Ward et al., 2009). The motivational factor increased in Spanish 101 students between their pretests and posttests. This result is a reflection of what students are taught in the classroom and the different activities they undertake outside the classroom. The different lessons on the culture

and the activity of choosing a traditional recipe from a Latin/Hispanic country to share with their classmates help students feel confident that they will be able to deal with and get accustomed to differences in another culture as stated in items MOT3 and MOT5 (Table 15).

Table 15

Motivational Factor in the 20-item, four factor CQS

Motivational CQ	Items
MOT1	I enjoy interacting with people from different cultures.
MOT2	I am confident that I can socialize with locals in a culture that is unfamiliar to me.
MOT3	I am sure I can deal with the stresses of adjusting to a culture that is new to me.
MOT4	I enjoy living in cultures that are unfamiliar to me.
MOT5	I am confident that I can get accustomed to the shopping conditions in a different culture.

Furthermore, students' attendance in at least two cultural events offers them the opportunity to interact with people from different countries and cultures, shows them that they can socialize with people regardless of their different backgrounds, and makes them aware that they can actually enjoy this type of interaction (MOT1 and MOT2; Table 15). It is important to mention that after the completion of Spanish 101, the students feel that they will enjoy living surrounded by a different culture (MOT4; Table 15). This feeling on the part of the students shows that they recognize the importance of intrinsic values (one of the elements of the motivational factor) gained during a cross-cultural interaction such as personal satisfaction and enrichment. In fact, this enjoyment and openness toward experiencing another culture shows the

fulfillment of one of the standards under the objective of holistic application in the Foundational Studies 2010 Non-Native Language program. In addition, under these standards, students learn the different skills pertaining to academic research through the presentation of traditional recipes and the essays due after experiencing the cultural events. Furthermore, objectives of sensitivity to diversity are attained through the material learned in class and the cultural activities available outside the classroom. By experiencing the language and the culture, students develop open minds, acceptance, and sensitivity toward different languages and cultures which prepares them to adapt to cross-cultural situations and therefore thrive in today's multicultural world (Calvin & Rider, 2010; Office of General Education, 2011).

The behavioral factor of cultural intelligence is represented by the individual's actions completed in a cross-cultural situation and the interpretation given to others' behaviors (Ward et al., 2009). This factor increased in Spanish 101 students between their pretests and posttests. As with the other two factors of cultural intelligence, the different lessons and activities provided by Spanish 101 were related to the different items in the behavioral factor listed below in this section of the CQS.

Table 16

Behavioral Factor in the 20-item, four factor CQS

Behavioral CQ	Items
BEH1	I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it.
BEH2	I use pause and silence differently to suit different cross-cultural situations.

(continued)

Table 16 (continued)

Behavioral Factor in the 20-item, four factor CQS

Behavioral CQ	Items
BEH3	I vary the rate of my speaking when a cross-cultural situation requires it.
BEH4	I change my non-verbal behavior when a cross-cultural situation requires it.
BEH5	I alter my facial expressions when a cross-cultural interaction requires it.

In the case of the items BEH1 and BEH4 (Table 16), students learned how to change their verbal and non-verbal behaviors through different lessons and activities. Inside the classroom for example, through a *nota cultural*, a recurring cultural entry in the textbook, students learned how to address Latin/Hispanic people in formal and familiar situations. By learning the physical aspects of greetings, introductions, and good-byes, such as shaking hands, kissing on the cheek, and hugging, students learned the different non-verbal behaviors that are used in these situations. Through interactions with their teachers, classmates, and, above all, interactions with people from different cultural backgrounds at the international events, students had the opportunity to experience others' behaviors and even change their own, including those mentioned in all of the items in the behavioral factor BEH1-BEH5 (Table 16). By experiencing and learning different cultural behaviors, students are better equipped to avoid cultural misunderstandings and therefore succeed in cross-cultural interactions (Earley & Ang, 2003). Furthermore, the objectives of cultural awareness and sensitivity to diversity are also fulfilled at the behavioral level preparing students to adapt and live in today's multicultural society.

The metacognitive factor is related to the individual's cultural awareness experienced while engaging in a cross-cultural situation (Ward et al., 2009). Among the four factors of cultural intelligence, the metacognitive factor was the only one where a significant difference between pretests and posttests was not found. Even though the cognitive, motivational, and behavioral factors increased and, with these factors, the students' cultural knowledge as well, it is difficult for students in Spanish 101 to be aware of and practice their cultural awareness when most of them do not often interact with people from other countries and cultures. In fact, this interaction and its consequences (judgments and conclusions made by the student after the interaction) are important for the development of the metacognitive factor, which is why Spanish 101 requires students to attend and participate in two different cultural events and write a report on them (Calvin & Rider, 2010; Klafehn et al., 2008). Most of the students attend two events, but many fail to keep on participating in many other international/cultural events offered at Indiana State University and the surrounding communities after they have completed this assignment. Furthermore, most of the students probably encounter different cross-cultural experiences in today's multicultural society; however, many of them do not note them as important cultural interactions. This lack and overlook of cross-cultural interactions undermines the development of the metacognitive factor as it prevents students from acknowledging their own capabilities that would help them interact with individuals from different cultural backgrounds. In addition, the lack of interaction blocks the students' ability to predict other people's actions and behaviors and therefore their ability to adapt to a different situation (Earley & Ang, 2003). Nevertheless, the two critical-thinking essays the students provide to report their learning and feelings about the events they attended help them to think and recognize their cultural awareness, stated in items MC1, MC2, MC3, and MC4 (Table 17), during the interaction at the events.

Table 17

Metacognitive Factor in the 20-item, four factor CQS

Metacognitive CQ	Items
MC1	I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.
MC2	I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.
MC3	I am conscious of the cultural knowledge I apply to cross-cultural interactions.
MC4	I check the accuracy of my cultural knowledge as I interact with people from different cultures.

The cognitive, motivation, and behavior factors of cultural intelligence increased in students between their pretests and posttests; only the metacognitive factor did not increase between tests. Even though the four factors of cultural intelligence need to work together in order to attain cultural intelligence, Spanish 101 fosters cultural intelligence in U.S. students at least in three of the four factors.

The second point of this discussion is to answer the secondary question of this study, "Does gender contribute to an increase in cultural intelligence? Does cultural intelligence increase more in female or male students?"

The main effect analysis of gender from each of the four 2 X 2 factorial ANOVAs was used to observe if there was a change in scores over time of testing between genders in each of the four factors of cultural intelligence. In the case of cognitive, metacognitive, and behavior factors, there were no statistically significant changes in these factors' scores between female

and male students at the times of testing. However, in the case of the motivational factor, a statistically significant change in this factor's scores between female and male students at the time of testing was found.

The motivational aspect of cultural intelligence is constituted by the individual's desire to learn more about different cultures and how to interact with people from different countries (Ward et al., 2009). The statistically significant change in this factor's scores between genders may be explained by gender differences. This type of research has increased in the last decade and some of the differences between genders have been associated with biological and/or sociological causes (Kitchenham, 2002).

Biologically, the two hemispheres of the female brain have "stronger neural pathways" which allows an improved coordination between them and therefore higher activity in the "Broca's area and Wernicke's area" (Kitchenham, 2002, p. 36) which results in an enhanced skill in communication. This communication skill could represent an advantage when interacting and socializing with people from different cultures (MOT 1, MOT 2 in the CQS. Similarly, women's enhanced skill in communication may make them more prone to interact and socialize in general. In fact, sociologically, men are found to be less likely to join clubs, tutor, and/or participate in other community activities than women (Lucas, 2009). This lack of participation could be explained by the finding that men are found to be more curious and more open to experiences, their chosen experiences usually involve danger and adventure (C. Peterson & Seligman, 2004).

In today's multicultural world, we can experience a cross-cultural experience almost anywhere and everywhere. Nevertheless, it is important to notice that the items in the motivational factor of the CQS can be strongly related to a desire of experiencing an actual sojourn abroad and/or a study abroad program. In fact, different research on study abroad

programs can also help explain the statistically significant change in the motivational factor's scores between female and male students. In respect to culture, a study using one of the oldest continuing study abroad programs supported the stereotype that women are more interested in *cultural pursuits* than their male counterparts, who are more interested in their careers (Lucas, 2009, p. 25). Men realize that studying abroad offers them different intrinsic and extrinsic values such as building up their curriculum vitae and learn about other cultures; however, these values are not enough for them to be motivated to study abroad (Lucas, 2009). In fact, female students are almost twice as likely as male students to undertake a study abroad program. It is important to mention as well that female students are more likely to choose a study abroad experience after being enrolled in courses pertaining to human diversity (Schmidt, 2009). It could be suggested then that Spanish 101 had a stronger influence on the motivational factor of cultural intelligence of female students, making them more motivated to learn about other cultures and to actually experience them.

Recommendations

This study has demonstrated that Spanish 101 and the components of the Foundational Studies 2010 Non-Native Language program have influenced students' cultural intelligence. The four factors of cultural intelligence increased among students; however, it is important to notice that the metacognitive factor still did not increased significantly. It is essential to remember that the four factors need to interact together in order to attain cultural intelligence (Earley & Ang, 2003).

In the case of the factor that increased least in this study, the metacognitive factor, the Foundational Studies 2010 Non-Native Language program should try to keep students interested in attending and actively participating in more than two international/cultural events, as the

interaction in a cross-cultural situation and the students' openness to these new experiences will help them to be more conscious of their cultural-awareness, more flexible to new ways of thinking, more tolerant, and more likely to forget about stereotypes when in these type of situations (Klafehn et al., 2008). In fact, cross-cultural interactions are crucial to the development of the metacognitive factor as strategies and skills, such as critically thinking about the new experience and imagining possible problems and solutions, are applied before an actual cultural encounter (Earley & Ang, 2003). These strategies and skills help students to accurately interact with people from different cultures and therefore adapt and succeed in multicultural societies. Along with these cultural experiences, Spanish 101 instructors could incorporate, if it is not already being done, a critical thinking discussion in the classroom. The cultural experiences along with the discussion could help students acknowledge their own capabilities of interacting with people from different backgrounds, comprehend that the information involved in adaptation to a new culture needs work and attention, and recognize strategies that can help them function in a different situation. It is important to remember that acknowledging capabilities, information, and strategies would later influence a behavioral change that would help students better interact with people from different cultures (Earley & Ang, 2003).

In contrast to the metacognitive factor, the cognitive factor was the one that increased the most among the four factors of cultural intelligence. As through many of the lessons in Spanish 101, students learn new information pertaining to the new culture and Spanish 101 instructors continue to build on the information provided by the textbook. Instructors also provide students with hand-on experiences like showing actual arts and crafts of other countries and cooking a traditional recipe, which is being done in Spanish 101. Like with the metacognitive factor, the cultural experiences allow students to increase their cognitive factor by exchanging information

with students from different cultures and countries and therefore learn more about the different items that constituted this factor such as economic systems, cultural values, marriage systems, and much more.

Motivationally, attending these experiences also helps students feel more comfortable and therefore more motivated and confident to interact with people from different backgrounds. In fact, the motivational factor of cultural intelligence keeps students interested in other cultures. It is important for instructors to remind students of the different intrinsic and extrinsic values provided by a cross-cultural experience and help them be aware of their self-enhancement, self-efficacy, and self-consistency. Furthermore, instructors could constantly reinforce students' curiosity, attitude, and open-mindedness towards the culture in each of the different activities undertaken in the classroom (Earley & Ang, 2003). Instructors can also invite a speaker to their classrooms who has travelled abroad and who can talk to students about his or her experience, his or her tactics to become motivated to be part of a different culture, and the benefits he or she acquired (Van Dyne & Livermore, 2005-2011).

Finally, in the case of the behavioral factor of cultural intelligence, students learn verbal and non-verbal behaviors through Spanish 101 lessons and cultural experiences. In fact, instructors could incorporate, if it is not already being done, actual representations of verbal and non-verbal behaviors between Spanish native speakers. In addition, as cited in Earley and Ang (2003), Goffman's dramaturgical approach competencies could be applied in the classroom: students could perform/role play different cultural encounters in order to practice and improve their cultural behaviors (Earley & Ang, 2003; B. Peterson, 2004). These verbal and non-verbal behaviors could be practiced regularly in the classroom. These cultural experiences provided inside the classroom and the ones attended outside the classroom are crucial for students to

develop the behaviors learned in the classroom through the actual interaction, observation, practice, and prediction of others' behaviors.

Spanish 101 and the Foundational Studies 2010 Non-Native Language program have influenced the cultural intelligence of Indiana State University students; however, it is important that the concept of cultural intelligence be integrated widely in this and other universities. The different academic departments in colleges and universities should integrate cultural intelligence based activities in their curricula. A possible activity could align with the international events considered in this study though a much wider array would likely be beneficial and in closer alignment with content area goals. In every university, a deeper connection between the different academic and administrative departments and the department that provides programs and services to international students should be promoted in order to increase the cultural intelligence of students, faculty, and staff through cross-cultural interactions.

Future Research

The concept of cultural intelligence has been assessed in different educational settings. However, as most of the studies have involved students that participate in cross-cultural experiences, further research in other academic settings is needed. Like this study on cultural intelligence in foreign language classes, cultural intelligence studies could be applied to different majors and departments in order to help students prepare to face our globalized world. At Indiana State University, this study could be replicated in each of the different foreign languages classes offered to students to observe if the results are particular to a specific target language, to the materials (textbook) used, or to the structure of the class. Furthermore, cultural intelligence studies could be conducted in each of the classes pertaining to the Foundational Studies 2010 Global Perspectives and Cultural Diversity program. Cultural intelligence studies could be

developed in different educational institutions in order to see if their interest and dedication to diversity is fulfilled by their curriculum. Moreover, studies could be done to see if aspects of diversity and multiculturalism should be applied horizontally throughout the existing educational curricula. In addition to cultural intelligence studies, research on the use of the cultural intelligence scale for curriculum development should be addressed. This study has raised new questions about cultural intelligence and its endurance. Further studies are needed on the topic of gender differences in relationship to the motivational factor of cultural intelligence. Additional research is also required to investigate if after learning and increasing cultural intelligence through a class, students keep up with it by further and constantly developing their metacognitive, cognitive, motivational, and behavioral factors of cultural intelligence.

According to B. Peterson (2004) "Cultural Intelligence is for people who know culture is important, who realize that international cultural issues affect their daily work, and who want to improve their awareness, understanding, and skills" (p. 9). Culture is indeed all around us and cultural intelligence is becoming essential to adapting and being able to function in our increasing multicultural world. In order to increase students' cultural intelligence, it is important for language instructors, and all instructors in general, to remind and teach students about the importance of cultural intelligence while keeping them metacognitively engaged in monitoring and working to increase their own cultural intelligence. Cultural intelligence will help students to thrive in different cross-cultural situations and therefore adapt and live in today's multicultural world.

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APPENDIX A

The 20-item four factor CQS (the CQ Scale)

		Strongly DISAGREE						Strongly AGREE
CQ-Strategy:								
MC1	I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.	1	2	3	4	5	6	7
MC2	I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.	1	2	3	4	5	6	7
MC3	I am conscious of the cultural knowledge I apply to cross-cultural interactions.	1	2	3	4	5	6	7
MC4	I check the accuracy of my cultural knowledge as I interact with people from different cultures.	1	2	3	4	5	6	7
CQ-Knowledge:								
COG1	I know the legal and economic systems of other cultures.	1	2	3	4	5	6	7
COG2	I know the rules (e.g., vocabulary, grammar) of other languages.	1	2	3	4	5	6	7
COG3	I know the cultural values and religious beliefs of other cultures.	1	2	3	4	5	6	7
COG4	I know the marriage systems of other cultures.	1	2	3	4	5	6	7
COG5	I know the arts and crafts of other cultures.	1	2	3	4	5	6	7
COG6	I know the rules for expressing non-verbal behaviors in other cultures.	1	2	3	4	5	6	7
CQ-Motivation:								
MOT1	I enjoy interacting with people from different cultures.	1	2	3	4	5	6	7
MOT2	I am confident that I can socialize with locals in a culture that is unfamiliar to me	1	2	3	4	5	6	7
MOT3	I am sure I can deal with the stresses of adjusting to a culture that is new to me.	1	2	3	4	5	6	7
MOT4	I enjoy living in cultures that are unfamiliar to me.	1	2	3	4	5	6	7
MOT5	I am confident that I can get used to the shopping conditions in a different culture.	1	2	3	4	5	6	7
CQ-Behavior:								
BEH1	I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it.	1	2	3	4	5	6	7
BEH2	I use pause and silence differently to suit different cross-cultural situations.	1	2	3	4	5	6	7
BEH3	I vary the rate of my speaking when a cross-cultural situation requires it.	1	2	3	4	5	6	7
BEH4	I change my non-verbal behavior when a cross-cultural situation requires it.	1	2	3	4	5	6	7
BEH5	I alter my facial expressions when a cross-cultural interaction requires it.	1	2	3	4	5	6	7

For additional information see Ang, S., Van Dyne, L., Koh, C.K.S., Ng, K.Y., Templer, K.J., Tay, C., & Chandrasekar, N.A. (2007). Cultural intelligence: Its measurement and effects on cultural judgment and decision making, cultural adaptation, and task performance. Management and Organization Review, 3, 335-371.