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LANGUAGE PROFICIENCY AND CULTURAL INTELLIGENCE IN
DISTANCE ENGLISH-LANGUAGE LEARNING

by

Jared Marcum

A dissertation submitted in partial fulfillment
of the requirements for the degree

of

DOCTOR OF PHILOSOPHY

in

Instructional Technology and Learning Sciences

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ABSTRACT

Language Proficiency and Cultural Intelligence in

Distance English-Language Learning

by

Jared Marcum, Doctor of Philosophy

Utah State University, 2017

Major Professor: Dr. Yanghee Kim

Department: Instructional Technology and Learning Sciences

The purpose of this study is to explore the viability of an international distance English-language program in the development of linguistic and cross-cultural proficiency among a culturally-diverse group of college-age learners. Pretest and posttest quantitative measures of both language proficiency and cultural proficiency were used in this exploration. The measures included (a) the computer-administered Oral Proficiency Interview (OPIc) from the American Council on the Teaching of Foreign Languages (ACTFL), (b) ACTFL-aligned assessments of reading, listening, grammar, and vocabulary skills, and (c) the Cultural Intelligence Scale (CQS). In addition, course activities surveys provided additional information about student perceptions of course activities. Participants in this study came from various countries as they prepared to attend a U.S. university in Hawaii.

Transactional distance theory served as the theoretical framework for the English-language program in the study. Interpersonal dialogue is a key part of transactional distance theory, so the English-language program relied heavily on dialogue between

learners and instructors. In addition to English-language proficiency, the program sought to help students learn to effectively communicate with students from other cultures. Cross-cultural proficiency was fostered through cross-cultural dialogue with tutors, teachers, and other students.

Student English proficiency mean scores showed significant improvement from pretest to posttest in speaking, listening, vocabulary, and grammar. However, mean scores did not show a significant change from pretest to posttest in reading proficiency. Students reported that dialogue with tutors and teachers was among the most helpful activities in learning English.

Cognitive cultural intelligence was the only cultural intelligence factor to show significant changes in mean scores from pretest to posttest. Students reported that certain activities—particularly dialogue with tutors and other students—as helpful in developing cross-cultural proficiencies.

This study also investigated the predictive relationship between cultural intelligence (CQ) and language learning. Results were mixed. Only one of the four cultural intelligence factors—metacognitive cultural intelligence—positively predicted grammar ability at pretest. Additionally, pretest metacognitive cultural intelligence positively predicted change in speaking scores from pretest to posttest. However, change of metacognitive cultural intelligence from pretest to posttest negatively predicted change in grammar, reading, and speaking scores from pretest to posttest.

(139 pages)

PUBLIC ABSTRACT

Language Proficiency and Cultural Intelligence in

Distance English-Language Learning

Jared Marcum

The purpose of this study is to explore the viability of an international distance English-language program in the development of language and cultural proficiency. Students participated in tests at the beginning and at the end of the course to determine how well they developed both language and cultural proficiencies. The measures included (a) the computer-administered Oral Proficiency Interview (OPIc) from the American Council on the Teaching of Foreign Languages (ACTFL), (b) ACTFL-aligned assessments of reading, listening, grammar, and vocabulary skills, and (c) the Cultural Intelligence Scale (CQS). In addition, course activities surveys provided additional information about student perceptions of course activities. Participants in this study came from various countries as they prepared to attend a U.S. university in Hawaii.

The distance learning program fostered language proficiency through various learning activities, with an emphasis on synchronous dialogue over video chat technologies. In addition to English-language proficiency, the program sought to help students learn to effectively communicate with students from other cultures. Cross-cultural proficiency was fostered through cross-cultural dialogue with tutors, teachers, and other students.

Students showed improvement in speaking, listening, vocabulary, and grammar. However, on average, students did not show an improvement in reading proficiency. Students reported that dialogue with tutors and teachers was among the most helpful

activities in learning English. Students showed some improvement in cultural proficiency. However, this improvement was not universal across all measures of cultural proficiency. Students reported that certain activities—particularly dialogue with tutors and other students—as helpful in developing cross-cultural proficiencies.

This study also investigated the relationship between language proficiency and cultural proficiency. Results were mixed. With a few exceptions, cultural proficiency did not predict a student's language proficiency at the beginning of the course, during the course, or at the end of the course.

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CONTENTS

	Page
ABSTRACT.....	iii
PUBLIC ABSTRACT.....	v
ACKNOWLEDGMENTS	vii
LIST OF TABLES	xi
LIST OF FIGURES	xiii
CHAPTER	
I. INTRODUCTION	1
Statement of Purpose	3
Research Questions.....	3
Definition of Terms.....	4
II. LITERATURE REVIEW	7
Theoretical Framework.....	7
The Importance of Dialogue	7
Dialogue and Sociocultural Theory	11
Relationship Between Cultural Proficiency and Language Proficiency....	15
Cultural Intelligence Theory	17
Communicating Across Many Cultures.....	23
Summary.....	28
III. METHODOLOGY	32
Research Design.....	32
Participants.....	32
Curriculum Design.....	34
Data and Instrumentation.....	37
Procedures.....	43
Data Analysis	43
IV. RESULTS.....	49
Preliminary Data Analysis	49
Primary Analysis.....	52
V. DISCUSSION.....	73

Introduction.....	73
Discussion.....	74
Implications.....	84
Limitations.....	85
Recommendations for Further Research.....	87
REFERENCES	88
APPENDICES	103

LIST OF TABLES

Table		Page
1	Participants by courses and number of courses enrolled (completed/enrolled)	33
2	Participant by gender and native country	33
3	Participation by measurement instrument	34
4	Oral Proficiency Interview Rating Numeric Conversion, from Dandonoli and Hennings (1990)	40
5	Means and Standard Deviations of Pretest and Posttest Scores for English Skills by the Number of Enrollments.	53
6	Main and Interaction effects on English Skill with Number of Enrollments as Between-Subjects Factor.	57
7	Means and Standard Deviations of Pretest and Posttest Scores for Listening, Reading and Speaking by Enrollment in a Skills-based Course.	58
8	Main and Interaction Effects Results on Listening, Reading, and Speaking with Enrollment in Skills-based Course as Between-Subjects Factor.	58
9	Means and Standard Deviations of CQ Pretest and Posttest Scores by the Number of Enrollments.	60
10	Main and Interaction Effects on CQ with Number of Enrollments as Between-Subjects Factor.	63
11	Means and Standard Deviations of CQ Pretest and Posttest Scores by Enrollment in the Reading Course.	64
12	Main and Interaction Effects on CQ with Enrollment in the Reading Course as Between-Subjects Factor.	65
13	Results for Regression Analyses on Pretest CQ Predicting Pretest English Proficiency.	66
14	Results for Regression Analyses on Pretest CQ Predicting English Proficiency Change.	67
15	Results for Regression Analyses on CQ Change Predicting English Proficiency Change.	69
16	Course Activities Survey Category Means.	71

17	Results for Repeated Measures ANOVA for Perceptions of English-language Learning by Course Activities with Post-hoc Tests.	71
18	Results for Repeated Measures ANOVA for Perceptions of Cultural Learning by Course Activities with Post-hoc Tests.	72
19	Means and Standard Deviations from Rafieyan et al. (2015) Compared to Pretest CQ Means and Standard Deviations in This Study.	81

LIST OF FIGURES

Figure		Page
1	Kachru's Circles.	26
2	Change in vocabulary score by number of enrollments	54
3	Change in listening score by number of enrollments	55
4	Change in grammar score by number of enrollments.....	55
5	Change in reading score by number of enrollments	56
6	Change in speaking score by number of enrollments	56
7	Change in metacognitive CQ by number of enrollments	61
8	Change in cognitive CQ by number of enrollments	62
9	Change in motivational CQ by number of enrollments.....	62
10	Change in behavioral CQ by number of enrollments	63

CHAPTER I

INTRODUCTION

International student populations at U.S. universities are growing rapidly. According to the International Institute of Education (IIE) Open Doors (2015), 1,043,839 foreign students studied in the United States during 2015 and 2016. This represents a 7.1% increase from the previous academic year, and nearly a 100% growth in just over a decade. During these years, the top 25 U.S. universities hosting international students boasted international enrollments of at least 6,000 students.

Students wishing to succeed academically at U.S. universities face challenges. Cultural and English-language proficiencies are significantly related to international student success. Yet, foreign students often struggle in acquiring these proficiencies (Andrade, 2006; Bridgeman, Cho, & DiPietro, 2016; Kelly & Moogan, 2012; Zhou, Jindal-Snape, Topping, & Todman, 2008). Consequently, many universities support a variety of programs to address the linguistic and cultural needs of international students.

Intensive English-language programs are a common solution. These programs not only intend to increase student English proficiency, they also seek to acculturate students to their new learning environment (Gao, 2006; Richards & Schmidt, 2013). Recent technological innovations offer new options for intensive English-language programs. Online learning technologies now make it possible for universities to extend language and cultural support to students before they leave their native country.

There exists an extensive amount of research that speaks to the effectiveness of online learning. Generally, these studies indicate that online learning can be as effective as traditional face-to-face learning environments (Bernard et al., 2004; Means, Toyama,

Murphy, Bakia, & Jones, 2009). Studies also support the efficacy of online learning technologies for the purpose of language-learning. Specifically, online technologies have been used to develop oral proficiency (Blake, Wilson, Cetto, & Pardo-Ballester, 2008), writing proficiency (Harker & Koutsantoni, 2005; Hsieh & Liou, 2008; Xing, Wang, & Spencer, 2008), and reading proficiency (Harker & Koutsantoni, 2005). Students also perceive online learning as an effective way to learn a language (Don, 2005; Murday, Ushida, & Chenoweth, 2008; Sun, 2014).

A bulk of distance language-learning research has focused on particular course components within a distance-learning context. For example, studies have explored tutor communication (Hampel & Stickler, 2005), telecollaboration (Basharina, Guardado, & Morgan, 2008; O'Dowd & Waire, 2009), videoconferencing (Acar, 2007; Wang, 2007), virtual worlds (Zheng, Young, Wagner, & Brewer, 2009), and assessment methods (Cox & Davies, 2012; Roever, 2006). As noted by Blake (2008), White (2006), Vorobel, and Kim (2012), emphasis on specific course components has left a gap in understanding full-course and full-program experiences.

In addition, cross-cultural proficiency in international distance-learning programs is not well understood. The relationship between language learning and cultural learning is widely accepted in linguistic fields (Gao, 2006; Hinkel, 1999; Nayar, 1997; Richards & Schmidt, 2013). Cultural proficiency has been positively correlated to language development in face-to-face foreign-language contexts (Rafie, Khosravi, & Nasiri, 2016; Rafieyan, Golerazeghi, & Orang, 2015). However, the large majority of such research has been performed in face-to-face learning environments. Three studies have looked at cross-cultural proficiency outcomes in a distance language-learning environment. All

three studies dealt with K-12 learners collaborating with those of other cultures and none of these studies addressed entire-course distance-learning experiences (O'Dowd, 2007; Schenker, 2012; Yang & Chen, 2014). There has yet to appear a significant corpus of distance-learning research that addresses language acquisition and cultural proficiency across entire course experiences among college-age students participating from different countries.

Statement of Purpose

The purpose of this study was to explore the viability of an international distance English-language program in the development of linguistic and cross-cultural proficiency among a culturally-diverse group of college-age learners who participated from various countries.

Research Questions

The first two questions investigated linguistic and cultural proficiency development within a distance-learning environment. The third question focused on the relationship between English proficiency and cultural proficiency. The fourth question explored distance-learning activities that promote both linguistic and cultural learning.

1. What is the change of learner English-language proficiency while participating in a distance English-as-an-International language (EIL) program?
2. What is the change of learner cross-cultural proficiency while participating in a distance-learning EIL program?

3. Can cultural intelligence (CQ) predict English proficiency (or the change of English proficiency) among learners participating in a distance-learning EIL program?
4. What elements of distance-learning courses do students perceive as influential in developing language and cross-cultural proficiency?

Definition of Terms

Distance-Learning

Distance learning long preceded the advent of the internet. Radio, television, audio cassettes, printed manuals, and the telephone, have all been used in distance English-language learning. However, for the purpose of this study, distance learning will refer to computer-mediated online distance learning. Distance learning is a preferred descriptor to online learning because online learning can be interpreted to mean various types of delivery contexts and programs (J. Moore, Dickson-Deane, & Galyen, 2011). This differentiation is particularly applicable as students in this study participated from a variety of different countries.

Interaction

Moore (1989) devised three categories of interaction in a distance-learning environment: learner-content interaction, learner-instructor interaction, and learner-learner interaction. Learner-content interaction consists of any contact with course material that does not involve another person. These could include reading materials, prepared videos, writing exercises, and other course assignments. Moore (1993) later preferred to describe interaction between people in a course as dialogue.

Dialogue

Moore (1989, 1993) defined dialogue as interactions between people in a distance-learning context that are focused on maintaining, stimulating, enhancing, and motivating student learning. He further divided dialogue into learner-instructor dialogue and learner-learner dialogue. Learner-instructor dialogue constitutes interactions between learners and any expert in the course (e.g. teacher, tutor). Learner-learner dialogue consists of interactions between learners.

Native-Speaking Normative (NS-norm) Models.

This traditional language-teaching model assumes that the goal of language teaching is to help learners communicate with native-speakers of English. Thus, learners are taught to approximate, as close as possible, the language of native speakers. That approximation necessitates considerable understanding of the cultural and linguistic nuances of native-speaking groups (Jenkins, 2013).

World English Models

The world-English perspective highlights the global nature of English communication and recognizes the diversity in English norms and linguistic innovation by non-native speaking populations. With the advent of globalism, some have begun to question the native-speaker-normative (NS-norm) model that has historically dominated English-language learning. English is increasingly being employed as a *lingua franca*—the adopted common language between speakers of different languages. Two world-English models are mentioned in this study: English-as-an-International Language (EIL), and English-as-a-Lingua Franca (ELF). The English curriculum that is the focus of this study employs an EIL model.

Cross-Cultural Proficiency

Cross-cultural proficiency is defined as the ability to communicate effectively with someone from another culture. In a globalized society, cross-cultural proficiency means the ability to communicate effectively across many cultures. This capability is of particular importance for participants in cross-cultural learning situations (Hofstede, 2001; Johari, Bentley, Tinney, & Chia, 2005). In this study, cultural intelligence (CQ) will serve as the measure of cross-cultural proficiency.

Learning and Development

Vygotsky (1980) explained that learning and development are two separate but related phenomena. According to Vygotsky, “learning is not development... Rather, the developmental process lags behind the learning process; this sequence then results in zones of proximal development” (p. 90). He elaborated on two types of development: potential development and actual development. Potential development is what a learner can do with the assistance of others. Actual development is what a learner can do on their own. Learning is the social process that helps a learner move through zones of proximal development, turning potential development into actual development.

CHAPTER II

LITERATURE REVIEW

Theoretical Framework

This study will explore the viability of an international distance English-language program in the development of linguistic and cross-cultural proficiency among a culturally-diverse group of college-age learners participating from various countries. The program that will serve as the focus of this study is based upon the following theoretical premises:

1. Learner-instructor dialogue is important in a distance-learning environment because it can help close the psychological and communication gaps inherent in such programs (Moore, 1993).
2. Language development and cultural development are closely related to each other. Ideally, language and culture should be learned in concert (Gao, 2006; Richards & Schmidt, 2013).
3. Due to the global nature of English, it is important to develop the ability to communicate across many cultures (Jenkins, 2006b).

The following literature review will outline relevant theory and research that applies to these three theoretical premises.

The Importance of Dialogue

The distance English-language program in this study relies heavily upon learner-instructor dialogue. Moore's (1993) transactional distance theory provides a lens through which to explain the importance of dialogue in a distance-learning environment. Moore acquired the idea of transaction from Dewey (1949), and defined it as an interplay among

environment, individuals, and social norms in a given situation. For Moore, the separation inherent in distance education makes authentic transaction especially difficult, resulting in a psychological and communicative gap. Moore defined this gap as transactional distance and theorized that high amounts of transactional distance would increase the potential for misunderstandings, detachment, and inhibit learning. Moore recognized that transactional distance is not unique to distance learning. Psychological and communication gaps are common features of face-to-face learning environments. However, Moore noted that the physical separation of teacher and learner in distance education necessitates unique educational theories and practices. Consequently, Moore developed the theory of transactional distance to help close the psychological and communication gaps in a distance-learning environment.

Moore's theory has three major components (or variables): dialogue, course structure, and learner autonomy. According to Moore, dialogue and autonomy have a positive relationship (i.e. the more dialogue, the more autonomy). Conversely, structure has a negative relationship with dialogue and autonomy (i.e. the more structure, the less dialogue and autonomy).

Dialogue. As noted in the definitions section above, dialogue refers to human interactions within the course context that are focused on improving the understanding of the student and solving their educational needs (Falloon, 2011; Giossos, Koutsouba, Lionarakis, & Skavantzios, 2009). Thus, dialogue is purposeful and respectful, where participants are active listeners and contributors. Moore (1993) identified several factors as influential in the quality of dialogue: the number of students, frequency of communication, physical space of the participants (mainly dealing with potential

distractions), and personalities of those involved. In addition, Moore understood communication media as a major factor in the quality of dialogue. He claimed that computer-mediated communication technologies that promote immediate and individualized interaction may effectively close transactional distance. Moore (1989) further divided dialogue into two different types: learner-instructor dialogue, and learner-learner dialogue.

Structure. Course structure refers to the degree of rigidity (high structure) and flexibility (low structure) in the course design. Moore understood this variable as being subject to communication media, course design, learner differences, and institutional constraints. Moore stated that learning through a television program would be an example of a highly structured learning environment. In such an environment, the learner does not interact with those on the other side of the screen, eliminating the opportunity for the learner and teacher to bridge the transactional distance. Conversely, courses that offer opportunities for dialogue are considered flexible in structure and more suited to address the needs of an individual student.

Learner autonomy. This variable describes a learner's ability to actively influence they/their own learning in the course. According to Moore, transactional distance will decrease as (a) students have access to people and resources that help them meet their unique learning needs, and (b) students exercise control over the learning process. For Moore (1993), if learners do not have some measure of control over their learning experiences, they often feel a lack of connectedness to that learning (Andrade & Bunker, 2009). Moore understood learner autonomy as a spectrum. On one end, learners have complete control over their learning. In fact, truly autonomous learners can

approach the subject matter directly and do not need the help of an instructor. On the other end of the spectrum, learners have no power to make decisions concerning content or learning methods. Moore claimed that distance-learning courses can be designed to provide learners with a significant amount of decision-making opportunities (Andrade & Bunker, 2009). However, Moore was hesitant to claim complete autonomy as an ideal distance-learning design. He recognized that most learners—even adult learners—are unprepared for fully autonomous learning.

Moore's (1993) hesitancy can be seen as a slight deviation from Dewey, who consistently emphasized the importance of self-regulation and individual effort in learning. For Dewey (1916) it must be the students, not the teacher, who set learning goals and determine how to accomplish those goals. Dewey claimed that such autonomy can be exhibited by learners at the youngest of ages. In online learning contexts, those who follow Dewey's logic begin to question the need for professional instructors in online learning communities, instead preferring members of those communities to act as both facilitators and learners (Glassman, 2001).

Andrade and Bunker (2009) based their model of self-regulated distance language learning on Moore's theory. Like Moore, they recognized the importance of decreasing transactional distance through high amounts of learner-instructor dialogue. "This initially results in a decrease in autonomy in the form of independence but decreases transactional distance and ultimately serves to increase learners' self-regulation, capacity for autonomy, persistence in the course, and language proficiency" (p. 54). Other researchers also support the need of learner-instructor dialogue within cross-cultural distance learning environments. Basharina et al. (2008) noted that while some have questioned the need for

a teacher in online education, recent studies have confirmed that students benefit from the increased role of a teacher (O'Dowd & Eberbach, 2004; Ware & Kramsch, 2005).

Moore (1993) further described learner autonomy as a spectrum, and claimed that “while only a minority of [learners] might be practicing as fully autonomous learners, the obligation on teachers is to assist them to acquire [the skills of autonomous learners]” (p. 32). Learner autonomy that is developed, rather than inherent, is better understood through the lens of sociocultural theory, than the fully autonomous learning idealism proposed by Dewey.

Dialogue and Sociocultural Theory

For Vygotsky (1980), dialogue is found in the practical sociocultural activity of learners. He claims that children often turn to another person in an effort to solve ever-present real-world problems. This social interaction with more experienced others allows children to solve problems currently beyond their capacity. The emphasis on social interaction with more-experienced others was a basic difference between Vygotsky and Dewey. Dewey believed that once children become interested in learning something, the teacher must step back and simply facilitate the process. For Vygotsky, the social interaction must continue through the learning process, so that learners can pass through, and expand zones of proximal development (Glassman, 2001). Thus, if learners are unable to dialogue with more-experienced others, movement towards mature development becomes difficult. Vygotsky (1986) saw social interaction as a key part of language development, since “the primary function of speech, in both children and adults is communication, social contact” (p. 34).

Two studies emphasize the importance of interacting with more-experienced language learners in a distance language-learning context. Don (2005) asked online Spanish-language course developers and instructors to identify and rank essential course elements in a distance language-learning experience. Learner-instructor contact ranked in the first level of importance. Learner-learner contact was ranked at a second-level of importance. Don then asked distance Spanish-language learners to identify which characteristics they felt most influenced their learning. Activities were ranked from one to five. Activities with mean scores of four or above were considered perceived contributors to student learning. Students identified learner-instructor contact as influential in their learning, $M = 4.04$ ($SD = .96$). However, student-student interaction received a mean score well below the identified threshold, $M = 2.83$ ($SD = 1.31$). Similarly, Madyarov (2009) asked distance English-language learners to rank course activities on the same one to five scale as Don (2005). Madyarov (2009) found that learners valued learner-instructor dialogue—in this case, phone conversations—as the most consequential activity in their language improvement, $M = 4.64$ ($SD = .67$). They ranked learner-instructor dialogue above all other course learning activities, including dialogue with their own peers, $M = 3.04$ ($SD = 1.19$).

Dialogue with more-experienced language users may be important for more than just linguistic exposure and practice. They can also provide support and motivation. Harker and Koutsantoni (2005) compared a blended English-language environment with that of a distance English-language environment. They found significantly different retention rates between learning groups (50% among distance students; 87% among blended students). Harker and Koutsantoni concluded that lack of contact with teachers

and tutors significantly contributed to the drop-out rates among the distance-learning students.

Several studies that look at particular distance-learning technologies also substantiate the importance of learner-instructor dialogue. In a study comparing two virtual classroom technologies, Schullo, Hilbelink, Venable, and Barron (2007) claimed that continuous dialogue between instructors and learners can significantly “improve attitudes, encourage earlier completion of coursework, improve performance in tests, allow deep and meaningful learning opportunities, increase retention rates, and build learning communities.” (p. 2). Schullo et al. based this claim on the earlier work of Anderson (2003), Moore (1989), and Collis (1996). Collis claimed that synchronous dialogue is of special importance, due to its ability to facilitate high-quality and immediate feedback. Falloon (2011) further builds upon the work of Schullo et al. and Collis and analyzed the value of virtual classrooms in the context of Moore’s theory of transactional distance. Falloon found that learners felt that virtual classrooms humanized the learning environment by promoting more immediate dialogue. It is also worth noting that Falloon discovered that the larger the virtual learning group the more difficult it was for learners and instructors to close transactional distance.

Asynchronous video has also been found to be an effective medium to close transactional distance between the learner and instructor. Borup, West, and Graham (2012) surveyed preservice teachers participating in a distance learning course that used asynchronous video as the medium of course discussions. They found that asynchronous video helped the learners view their instructors as real people. This perception made them more likely to turn to their instructors for help. Borup et al. also found that learners

valued asynchronous video dialogue with other students. However, students did not value learner-learner dialogue to the same degree as learner-instructor dialogue. Learners often felt that other students were selective in their replies and that fellow students frequently did not listen to their video posts.

Language-learning studies in traditional face-to-face learning environments have also validated the importance of dialogue with more-experienced others. Lantolf and Beckett (2009) noted that beginning in the 1980s, sociocultural theory has seen increasing use among language-learning researchers. Swain and Lapkin (2002) observed two adolescent French immersion students learning through a teaching technique often referred to as reformulation. Reformulation requires an instructor to rewrite learner essays, correcting mistakes, but preserving all the learner's ideas. The learners then have an opportunity to compare and talk through differences between their essay and the essay of the expert. Posttests led the researchers to conclude that this type of learner-instructor dialogue was effective in helping the learners move through zones of proximal development towards mature language use.

Lantolf and Aljaafreh (1995) sought to understand language regression (backsliding) in terms of zones of proximal development. They concluded that the quality and consistency of dialogue with more-experienced users of English affected a student's ability to formulate correct foundational ideas of how a language works. Without quality and consistent dialogue with a more-experienced language user, learners tended to come to incorrect conclusions and even formulated incorrect rules.

In a longitudinal study of Japanese learners, Ohta noted (2000) that zones of proximal development are especially operable in learner-instructor relationships where

instructors are (a) attentive to the immediate needs of the students, (b) are willing to work collaboratively with them, and (c) withdraw assistance as the student becomes proficient.

Relationship Between Cultural Proficiency and Language Proficiency

Sociocultural theory forms a strong relationship between linguistic and cultural development. From Vygotsky's (1980) perspective, language is not simply a skill to be learned, but is a key mediating tool in sociocultural interaction. Sociocultural theorists abandon the knower/knowledge dualistic paradigm prevalent in other cognitive theories (Packer & Goicoechea, 2000). Instead, they view cognition as a cultural phenomenon that is "stretched over... mind, body, activity and culturally organized settings" (Lave, 1988, p. 1). From this perspective, learning and development are seen as enculturation. Social activity helps group members internalize group behavioral norms and jargon. These group members then adopt and adapt the language and belief systems of the group, becoming active participants in the culture (Packer & Goicoechea, 2000). Language is a key socially-mediated activity through which we internalize and affect our cultural surroundings. Lave and Wenger (1991) understood this enculturation as a movement from the periphery towards the center of the cultural group. As learners become proficient in the language and conventions of the group, they move towards the center of that group. This movement increases their ability to adopt cultural conventions and modify those conventions (Lave & Wenger, 2002).

Thus, from a sociocultural perspective, the development of language skills (e.g. reading, writing, etc.) cannot be an end, but must be a means to both linguistic and cultural proficiency (Mauranen, Hynninen, & Ranta, 2010). Richards and Schmidt (2013) refer to language learning as a "process of socialization with the dominant culture. In

foreign language teaching, the culture of the language may be taught as an integral part of the curriculum” (p. 151). Gao (2006) stated, “the interdependence of language learning and culture learning is so evident that we can draw the conclusion that language learning is culture learning” (p. 59).

A wealth of research supports the importance of cultural learning in language learning. However, perspectives on how to accomplish cultural learning has changed over the years. These changes have largely followed poststructuralist critiques of positivism. In the sixties, seventies, and much of the eighties, practitioners commonly focused on the native culture of the target language (Meadows, 2016). In recent decades, Byram (1997; Byram & Feng, 2004) and others (Baker, 2012; Broady, 2004; J. K. Hall, 2013; Jenkins, 2006a; Kramsch, 1993; Seidlhofer, 2003) have recommended a different, more cross-cultural approach to cultural learning, largely following an intercultural communicative proficiency view (Byram, 1997; Meadows, 2016). In this view, the object of cultural teaching is to help learners become proficient cross-cultural actors, where the learner can mediate and adapt to a multiplicity of different cultures. In recent years this has led to the use of intercultural communication theories within language-learning research.

Generally, intercultural communication theories seek to provide methods for people of one culture to effectively communicate with people of another culture. This capability is particularly important for participants in cross-cultural learning situations (Hofstede, 2001; Johari et al., 2005). Triandis (2004) noted that many intercultural communication theorists—like sociocultural theorists—have sought to abandon an objective, dualistic view of culture, and now recognize culture as an amalgamation of

internal and social factors. Early cross-cultural theorists focused on a person's outward behaviors (Hammer, Gudykunst, & Wiseman, 1978). These behavioristic models have largely given way to models that include underlying cultural thoughts and beliefs (Chiu, Lonner, Matsumoto, & Ward, 2013). These definitions have included characteristics such as values, norms, traditions, epistemologies, practices, and worldviews (Branch, 1997; Chen & Starosta, 2005; Halverson & Tirmizi, 2008; House, Hanges, Javidan, Dorfman, & Gupta, 2004).

This shift in cultural understanding has resulted in evolving cross-cultural methodologies, which increasingly include metacognitive components, including identifying one's own cultural beliefs (Ang et al., 2007; M. Bennett, 1993; Trimble, 2003), considering the unequal distribution of cultural knowledge (Chiu et al., 2013), and acquiring the higher-level processes necessary to appropriately develop accurate cultural knowledge (Ang et al., 2007). Metacognitive components of cross-cultural competence allows individuals to build a vantage point from which to consider and process cultural differences (Trimble, 2003). Some theorists believe that this vantage point is essential to adequately understand tacit cultural elements and make the personal changes (beliefs, prejudices, and worldview) required to become effective cross-cultural communicators (M. Bennett, 1993; E. T. Hall, 1998).

Cultural Intelligence Theory

Earley and Ang (2003) created the cultural intelligence (CQ) framework as a measurement of internal and social cross-cultural competencies. They define CQ as "an individual's capability to function and manage effectively in culturally diverse settings" (Ng, Van Dyne, Ang, & Ryan, 2012, p. 32). Since its development in 2003, CQ has

become a significant theoretical framework in cross-cultural proficiency research (Matsumoto & Hwang, 2013; Ng et al., 2012).

Early and Ang (2003) patterned CQ after a framework of general intelligence developed by Sternberg (1986). Sternberg was among the first to move beyond traditional measures of intelligence (verbal comprehension, memory, and reasoning), to a more sociocultural and contextual view. Sternberg (1985) defined intelligence as “mental activity directed toward purposive adaptation to, and selection and shaping of, real-world environments relevant to one’s life” (p. 45). Sternberg conceived several loci of intelligence as important to adequately account for sociocultural aspects of intelligence. Similarly, Early and Ang (2003) constructed the CQ framework on four basic loci. Three of these loci measure mental activity (metacognition, cognition, and motivation). The fourth measures social interaction (behavior). Ng et al. (2012) claimed that CQ is unique because it seeks to measure people’s perception of their ability to reason with cross-cultural situations and solve real-world problems.

Metacognitive CQ. Ang et al. (2007) conceptualized metacognitive CQ as the robustness and control of mental processes that help individuals effectively and correctly understand cultural differences. Those with high metacognitive CQ tend to possess more consistent awareness of their own thinking processes. This awareness is accompanied by a certain amount of mental flexibility, which allows individuals to revise mental models as they encounter novel cultural situations. Ang et al. described those with high metacognitive CQ as being consistently aware of the cultural norms and behaviors of others, tending to question their own cultural assumptions. Those with high

metacognitive CQ also exhibit high amounts of openness and flexibility during and after cross-cultural interactions (Triandis, 2006).

Cognitive CQ. Ang et al. (2007) conceived cognitive CQ to describe knowledge of cultural norms, conventions, and practices. Typically gained through experience and formal education, this knowledge can include perceptions of a particular culture's economics, social norms, political systems, and religious practices. Cognitive CQ also includes a knowledge of how a person's culture is different from other cultures. For example, knowing whether a culture is more or less individualistic than the person's own culture would be considered within the realm of cognitive CQ. The need for this self-awareness aligns with other cultural theorists who emphasized the need for a person to confront their own culture before understanding other cultures (M. Bennett, 1993; Hofstede, 2001).

Motivational CQ. This construct describes the ability to focus energy towards the complex task of learning about, and functioning within, culturally diverse situations. Ang et al. (2007) outlined motivational CQ in the context of the expectancy-value theory of motivation, which states that the amount of energy one will expend is related to (a) how much a person values cultural understanding and (b) how much that person believes cultural understanding is possible. Those with high amounts of motivational CQ have high expectations that cultural bridges can be successfully crossed, and that such an endeavor is worth the effort (Ang et al., 2007).

Behavioral CQ. As defined by Ang et al. (2007), behavioral CQ is similar in its approach to early models of cross-cultural proficiency. Hammer et al. (1978) were among the first to develop a behavior-focused cross-cultural competency model. Their theory of

intercultural effectiveness proposed that three factors, above all others, determined a person's ability to navigate cross-cultural contexts. These factors included, (a) an ability to handle the stress of cross-cultural situations (especially living/working in a foreign culture), (b) the ability to communicate effectively, and (c) the ability to establish relationships with those of other cultures. Unlike Hammer et al., Ang et al. (2007) place greater emphasis on verbal and non-verbal communication skills. This approach follows Hall (1966, 1973, 1998), who emphasized the tacit nature of cultural communication. Those with high levels of behavioral CQ have a diverse collection of situationally appropriate verbal and non-verbal actions that include words, tone of voice, body language, and facial expressions.

CQ as compared to other measures of cross-cultural proficiency. Ang et al. (2007) designed CQ as a way to overcome some perceived weaknesses in other theories of cross-cultural competence, including a lack of sound theoretical frameworks. Often, cross-cultural competence models provide a list of cross-cultural skills, but fails to identify a theory by which those skills are obtained (Yamazaki & Kayes, 2004). Dinges and Baldwin (1996) stated that much of the early intercultural communication research was disconnected from social-science frameworks. The Intercultural Development Inventory (IDI, Hammer, Bennett, & Wiseman, 2003), Intercultural Communication Competence (ICC, Arasaratnam & Doerfel, 2005), and the Intercultural Adjustment Potential Scale (ICAPS, Matsumoto et al., 2001) are often the target of these complaints (Chiu et al., 2013). Ang et al. (2007) claimed that CQ is unique among measures of cross-cultural proficiency due to the use of multiple, qualitatively different, but theoretically related loci.

Cultural Intelligence Development. Like many intercultural communication theorists, Ang (2007) and Van Dyne (2015a) recommended intentional programs to promote CQ development. Such programs often vary in their approach. Yamazaki and Kayes (2004) emphasized the importance of interpersonal skills development. Bennett (1993) and Hammer (2003) outlined a program moving interlocutors from ethnocentrism to ethnorelativism. Hofstede (1980) focused on the importance of facing one's own cultural biases and identifying the differences between cultures. In the realm of English-language teaching, Baker (2011) encouraged exploration of diverse cultural groups utilizing various learning activities. These activities included exploring a diverse set of cultures and critically evaluating English-language materials from a broad range of cultures. Ang (2007) and Van Dyne (2015a) did not minimize the importance of intentional cultural training programs. However, they recognized the importance of practical cross-cultural experience in the development of cross-cultural proficiency. Ang and Van Dyne agreed with Lave and Wenger (1991) in their assessment that "knowing cannot be separated from doing and that working on authentic or realistic tasks facilitates learning" (Ang & Van Dyne, 2015a, p. 299). Ang and Van Dyne proposed a continuous four-stage cycle of cultural proficiency development. The stages of this cycle include:

1. Engaging in cross-cultural experiences
2. Reflecting on cross-cultural experiences
3. Abstracting cross-cultural experiences
4. Actively experimenting with new behaviors and assessing their effectiveness

CQ and prior English-language learning research. There is a lack of research in cultural proficiency specific to distance English-language learning. However, there are

a few studies that show a relationship between cross-cultural proficiency and language proficiency in traditional face-to-face language-learning environments. Rafieyan et al. (2015) found a significant linear relationship between CQ and pragmatic comprehension among students participating in an intensive English-language programs within the United States. Rafie et al. (2016) showed that CQ—particularly motivational CQ—has a significant predictive relationship with listening skills among Iranian English-language students. Ghonsooly and Golparvar (2013) found that CQ exhibited a significant relationship with English writing ability among Iranian English-language students participating in an advanced test-preparation course. Of the four CQ factors, Ghonsooly and Golparvar found cognitive CQ to be the best predictor.

Cultural Intelligence, a theoretical fit for this study. Cultural intelligence was chosen as the measure of cultural proficiency in this study for two reasons. First, the English-language program in this study sought to build cultural proficiency across many cultures (see World-English models, p. 23). Ang et al. (2003) designed CQ to be independent of assessing culture-specific situations. Some cross-cultural competence scales will assess cross-cultural ability based on how a person responds to a culture-specific situation. For example, respondents are given a hypothetical cultural clash and expected to explain how they would respond to that situation. Such cross-cultural proficiency models were designed to help Americans live in a specific foreign country (Bhawuk, 1998). Ang et al. (2007) took a broader look at cross-cultural competence. They designed CQ to measure a set of skills that can help build cultural proficiency across many cultures.

Second, there exists some important theoretical overlaps between transactional distance and CQ. As noted, Ang (2007) and Van Dyne (2015a) recommended that cross-cultural experience is paramount in developing cross-cultural proficiency. Cross-cultural experiences provide opportunities for cross-cultural learners to reflect, abstract, and actively implement new cross-cultural strategies. This fits well with Moore's (1993) idea that dialogue is necessary to close the transactional distance between learners and instructors.

Andrade and Bunker (2009), who used transactional distance to create their model for self-regulated distance-learning, divided self-regulation into the four same loci that Early and Ang (2003) used in CQ: metacognition, cognition, motivation, and behavior. Andrade and Bunker used these loci to describe characteristics that promote success within a distance-learning environment (Dembo, Junge, & Lynch, 2006; Garrison, 2003; Zimmerman & Kitsantas, 1997). Andrade and Bunker's (2009) definitions bear strong similarities to Early and Ang's (2003). For Andrade and Bunker (2009), metacognition refers to a learner's ability to plan, set goals, and evaluate their performance. Cognition alludes to a learner's knowledge of effective learning strategies. Motivation relates to the desire of a learner to take responsibility for their own learning. Strong behavior is seen as seeking help and using positive learning practices (Dembo et al., 2006).

Communicating Across Many Cultures

Traditional native-speaker normative English-language models. These traditional language models are based on the assumption that an English learner's goal is to effectively communicate with a native speaker of English. Thus, these learners are taught to approximate, as closely as possible, the language of native speakers (including

cultural-specific language). That approximation necessitates considerable understanding of the cultural and linguistic nuances of the native-speaking group (Jenkins, 2013).

Even outside of native-speaking countries, English as a foreign-language (EFL) often seeks to teach English in the context of a native-speaking culture. Many English-language teachers see it as their obligation to teach English within the context of a dominant NS-norm culture (Gao, 2006; Rafie et al., 2016; Rafieyan, 2016; Richards & Schmidt, 2013). Any difference between a native speaker and non-native speaker, including linguistic, sociocultural differences, and code-mixing/switching are seen as errors in the language. Thus, efforts are made to correct misunderstandings to best approximate the native language and sociocultural perspective of the native-speaking country (Jenkins, 2006b).

NS-norm-based practices of English-language learning continue to play a role in learning English throughout the world. For example, Jenkins (2006a) noted the common practice among Asian schools to immerse non-native learners with native-speaking teachers. Often these native-speaking teachers have little or no training in teaching English. In many instances, inexperienced native teachers are preferred to non-native teachers that have degrees in teaching English. Leung (2005) argued that this practice presumes that people come hard-wired with a complete knowledge of their first language, giving them a sort of intuition that can be passed on to non-native speakers.

World-English models. With the progression of globalism, some have questioned the native-speaker-normative (NS-norm) models that have historically dominated English-language learning. They argue that English is no longer owned by a few native-speaking countries as English is increasingly being employed as a *lingua*

franca among millions of non-native speakers. To illustrate that English is a global language, Kachru (1992) developed a sociolinguistic model of the English-speaking world that can be described as three concentric circles: the *inner circle*, the *outer circle*, and the *expanding circle*. Within the inner circle are the traditional English-speaking countries (U.S., U.K., etc.). The outer circle is composed of countries where English holds an institutionalized status (Ghana, Malaysia, Singapore, etc.). The expanding circle includes countries where English is typically used in a foreign-language context (Japan, Israel, Korea, etc.). When calculating the population of countries outside the inner circle, we can see that much of the world's English communication is performed between those who are not living in inner-circle countries (see Figure 1). Leung (2005) estimated that there are between 320-380 million native speakers of English from inner-circle countries, 300-500 million non-native English speakers in outer-circle countries, and 500 million to one billion non-native English speakers in expanding-circle countries.

These large non-native speaking populations led Kachru (1992) and Jenkins (2006a, 2006b) to conclude that significant blind spots exist in NS-norm English-teaching models. Kachru (1992) argued that in the outer and expanding circles, users of English often adapt the language to their own conventions of politeness, persuasion, and social communication, creating their own form of English (see also Nayar, 1997). Thus, EIL and ELF proponents often encourage English-language professionals to move beyond simply helping non-native English speakers communicate with native speakers.

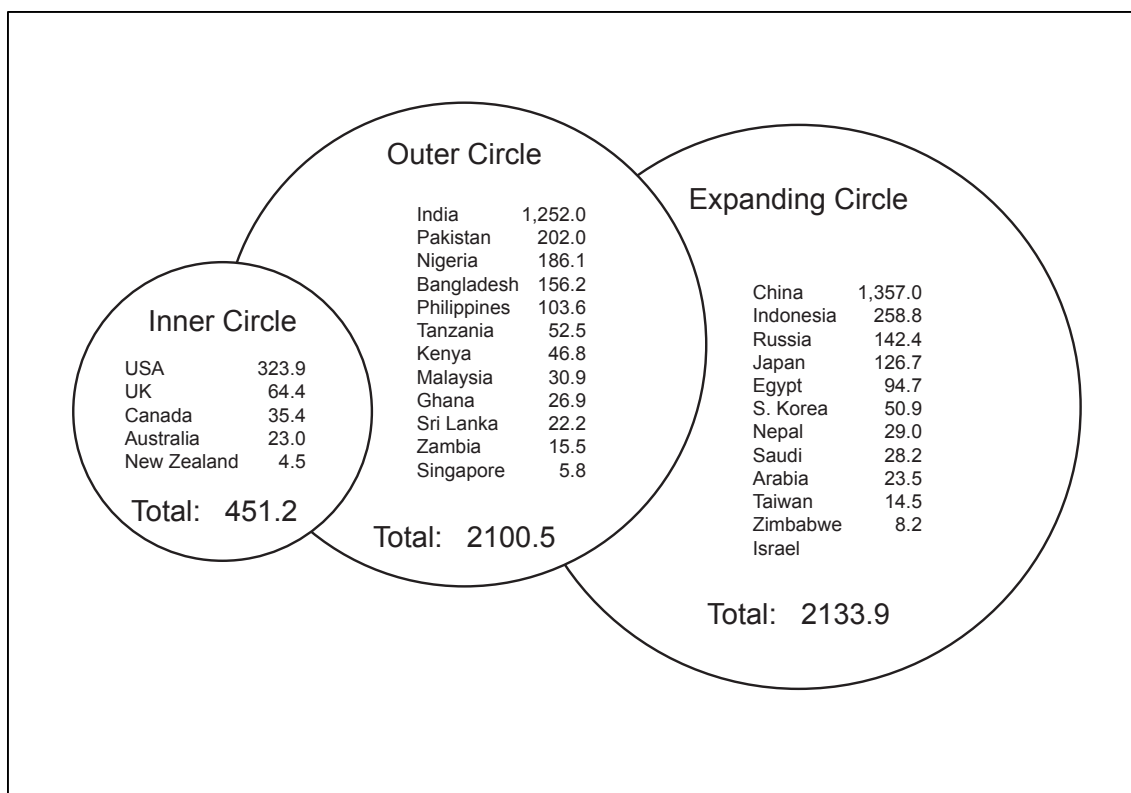


Figure 1. Kachru's Circles. Adapted from Kachru (1992). Population figures have been updated to reflect current populations in millions. These numbers reflect total populations. English speakers will only represent a portion of these populations (see also Leung, 2005).

This argument is of particular importance for cross-cultural audiences whose ultimate goal is to communicate with the larger global English-speaking world. For example, U.S. university international students usually return to their home country upon completion of their studies. This return is often by choice, but also due to U.S. visa restrictions that require students to return to their native country upon completion of their degree (Han, Stocking, Gebbie, & Appelbaum, 2015). In such cases it may be important

that students learn English with the intent to communicate with the global community, not just with native speakers while at college.

Over the past two decades, English-language models have emerged to address the global nature of English. Two such models are English-as-an-International Language (EIL) and English-as-Lingua-Franca (ELF) (Bolton & Kachru, 2006; Jenkins, 2003). EIL and ELF are not always seen as synonymous approaches to English-language learning. Berns (1995) stated that EIL seeks to make learners proficient in communicating with the world community, whereas ELF may have a more regional target form of language (e.g. Euro-English or African English). Jenkins, (2006a), on the other hand, did not make significant distinctions between EIL and ELF, but believed both models should fall under the ELF umbrella. Both Jenkins and Seidlhofer (2004) noted that the use of the term *international* in EIL can give the impression that there is “one clearly distinguishable, codified, and unitary variety called International English” (Seidlhofer, 2004, p. 210). Despite these nuances, both EIL and ELF view English as a world language, no longer owned by a few native-speaking countries.

The world-English perspective brings to the foreground significant questions about how cultural learning is to be approached within the language-learning context. How should language teachers approach the sociocultural aspects of language when there are so many cultures that use English as their *lingua franca*? If English is becoming the language through which much of the world communicates across cultures, then NS-norm culture-specific teaching lacks practical value and does not appear to be the desired solution (Jenkins, 2006a; Kachru, 1992). Thus, in a world-English perspective, the goal is to create bilingual speakers, who keep their cultural identity and can effectively

communicate with other native and non-native English speakers from a variety of cultures (Graddol, 2006; Jenkins, 2006b). Some world-English advocates have advocated the replacement of the NS-culture-specific learning with pragmatic strategies focused on helping the learner gain cross-cultural proficiency (Baker, 2011; Jenkins, 2006b; Kramersch, 2013). This perspective does not abandon the importance of learning about cultures in language learning, but focuses on cross-cultural competencies that are not specific to one culture (Sharifian, 2009). For example, Baker's (2011) intercultural awareness (ICA) model includes an awareness of the relative nature of cultural norms, avoidance of cultural stereotypes, and an ability to negotiate sociocultural communication modes. CQ was selected as the cross-cultural proficiency model for this study due to its focus on cross-cultural competencies.

Summary

This study focused on a distance English-language program that was built upon several theoretical premises, namely, (a) the importance of learner-instructor dialogue in closing the transactional distance inherent in distance-learning programs, (b) the necessity to promote linguistic development along with cultural development through practical cross-cultural experience, and (c) the significance of addressing English development for students who will use English in a world-English environment.

Moore's (1993) transactional distance theory provided the theoretical underpinning for much of the interaction within the distance-learning program in this study. Transactional distance theory highlights the importance of dialogue between the learner and instructor as a means to close the perceived distance between teachers and students. In addition to closing transactional distance, interaction with more-experienced

others can help students progress through zones of proximal development (Vygotsky, 1980). Both Madyarov (2009) and Don (2005) showed that dialogue with more-experienced language users can promote language development in a distance-learning environment.

Those within the field of language learning often encourage cultural learning to accompany language learning (Gao, 2006; Richards & Schmidt, 2013). Perspectives on how cultural learning should be approached within language learning have changed over the years, largely following poststructuralist critiques of positivism (Meadows, 2016). Early cross-cultural theorists focused on a person's outward behaviors, usually in reference to one particular culture. More recently, others (Baker, 2012; Broady, 2004; J. K. Hall, 2013; Jenkins, 2006a; Kramsch, 1993; Seidlhofer, 2003) have recommended a different, more cross-cultural approach to cultural learning, largely following an intercultural communicative proficiency view (Byram, 1997; Meadows, 2016). In this view, the object of cultural learning is to help learners become proficient cross-cultural actors, where the learner can mediate and adapt to a multiplicity of different cultures. Cultural Intelligence (CQ) is one theoretical approach to help learners develop proficiency to interact with those from many different cultures. CQ looks at metacognitive, cognitive, motivational, and behavioral skills when communicating with those of other cultures. CQ was chosen as the cross-cultural measure for this study because (a) the English-language program in this study sought to build cultural proficiency across many cultures, and (b) there exists some important theoretical overlaps between transactional distance, CQ, and the world-English model of the distance learning program in this study.

The distance-learning program in this study follows a world-English approach to English-language learning. English is now used as a global language and some have questioned the native-speaker-normative (NS-norm) models in English-language learning. These researchers argue that English is no longer owned by a few native-speaking countries and have developed English language models that seek to address a world-English perspective. English-as-an-International Language (EIL) and English-as-Lingua-Franca (ELF) are two such models. The program in this study uses an EIL model.

The world-English perspective raises significant questions about how cultural learning is to be approached within the language-learning context. Both EIL and ELF support a cross-cultural approach that promotes learning how to communicate across many different types of cultures. This approach to cultural learning aligns well with the intercultural communicative proficiency view mentioned above.

Currently, there is little research that explores the viability of distance-learning programs that seek to promote both linguistic and cross-cultural proficiency among a culturally diverse group of learners. The following research questions were devised to facilitate such an exploration:

1. What is the change of learner English-language proficiency while participating in a distance English-as-an-International language (EIL) program?
2. What is the change of learner cross-cultural proficiency while participating in a distance-learning EIL program?

3. Can cultural intelligence (CQ) predict English proficiency (or the change of English proficiency) among learners participating in a distance-learning EIL program?
4. What elements of the distance-learning courses do students perceive as influential in developing language and cross-cultural proficiency?

CHAPTER III

METHODOLOGY

Research Design

This study used a pretest and posttest quantitative methodology to gather data on English and cross-cultural proficiencies. A five-part English assessment was administered to measure vocabulary, listening, grammar, reading, and speaking proficiencies. Vocabulary, listening, grammar, and reading were assessed through a long-standing online English placement exam designed by an intensive English-language program within the United States. An American Council on the Teaching of Foreign Languages (ACTFL) computer-administered oral proficiency interview assessed speaking proficiency. The Cultural Intelligence Scale (CQS) measured cultural proficiency. Lastly, a Likert-style survey measured student perceptions of and course activities toward language and cultural learning. The linguistic and cultural proficiency pretest and posttest data supplied information concerning how cultural proficiency and linguistic proficiency changed over the course of the semester. In addition to tracking language proficiency and cultural proficiency, analyses were performed to determine if measures of cultural intelligence could predict language proficiency. Student perception surveys provided data concerning which course activities students perceived as best facilitating their language and cultural learning (Don, 2005; Madyarov, 2009).

Participants

This study used convenience sampling. Sixty-five students enrolled in one to three courses within the distance-learning English-as-an-International Language (EIL) program. This made for some variation in experience from student to student. Table 1

provides a breakdown of enrollments. Students were preparing to attend a private U.S. university. At the time of their enrollment, the students resided in 18 different countries, all from Kachru's outer or expanding circles. The broad cultural diversity in this study provided an ideal sample from which to study a distance learning program that seeks to promote a world English model of language learning and cross-cultural proficiencies. For a breakdown of country and other demographics (enrolled, completed, gender) see Table 2. According to ACTFL proficiency guidelines, these students began the program at the novice-high through intermediate-mid proficiency levels, with a majority at the intermediate-low level (Swender, Conrad, & Vicars, 2012). Due to technical difficulties and nine students withdrawing from the course, several students failed to complete pretests and/or posttests. Table 3 provides a breakdown of participation by measurement instrument.

Table 1

Participants by courses and number of courses enrolled (completed/enrolled)

Total Enrollments	Speak/Listen	Write	Read	Totals
1 Course	10/12	10/11	3/4	23/27
2 Courses	10/12	12/15	4/5	13/16
3 Courses	20/22	20/22	20/22	20/22
Totals	40/46	42/48	27/31	56/65

Table 2

Participant by gender and native country

Country	Male		Female	
	Enrolled	Completed	Enrolled	Completed
Brazil			1	0
China	7	7	4	4

	Male		Female	
Hong Kong	2	2	7	4
Indonesia	2	2	1	1
Japan	2	2		
Kiribati	2	2		
Macau	1	1		
Malaysia	2	2		
Mexico			1	1
Mongolia	5	5	9	9
Philippines	3	3	1	1
South Korea	1	1	2	2
Samoa			2	0
Tahiti	2	2		
Taiwan	2	2		
Thailand	1	1	1	1
Tonga	2	1		
Vanuatu	1	0	1	0
Totals	35	33	30	23

Table 3

Participation by measurement instrument

Measure	Participants		
	Pretest	Posttest	Pretest & Posttest
Vocabulary	54	51	45
Listening	58	51	49
Grammar	57	51	48
Reading	59	51	50
Speaking	52	51	45
Cultural Intelligence Scale	64	54	54
Course Activities Survey	NA	53	NA

Curriculum Design

Students could have enrolled in one to three available courses. The first course targeted speaking and listening skills (EIL Speaking/Listening). The second course targeted writing skills (EIL Writing). The third course targeted reading skills (EIL

Reading). Even though courses were divided by skill, there was also significant skill overlap among the three courses. For example, all courses included tutor speaking sessions. These courses have been in operation for six years. In 2015, students spent an average of 11 hours per course per week over 14 weeks. The student/student, student/teacher, and student/tutor interactions were with both native and non-native speakers and no preference was given to accent types (Jenkins, 2006).

As noted earlier, the course designers used transactional distance theory to promote flexibility in course structure, dialogue, and learner autonomy. There was particular emphasis on learner-instructor dialogue. In all courses, all students interacted synchronously with the same tutor through weekly video tutor sessions. Tutors were trained to assess student needs and customize sessions to meet those needs (Ohta, 2000). As prescribed by Moore (1993), these interactions were positive in nature and focused on helping the students address their needs throughout the course. Tutor appointments were designed to help students become more autonomous in their language learning by identifying where the students were unable to perform language skills on their own. Tutors then provided customized support to help them in that development (Andrade & Bunker, 2009; Vygotsky, 1980). Students received help on course assignments, were given opportunities for speaking/listening practice, and provided opportunities to ask questions. These sessions were thirty minutes long.

To further promote dialogue, students also interacted asynchronously through video and text with other learners, tutors, and teachers. Teachers and tutors provided asynchronous feedback on every assignment. According to Moore (1989) learner-learner dialogue can be an extremely valuable tool to close transactional distance and give

students a sense of community. In the distance learning program in this study, learner-learner dialogue occurred through asynchronous video discussions where students were asked to discuss course materials. The frequency of learner-learner discussions varied by course. In the EIL-speaking/listening course learner-learner discussion occurred four times during the semester. In the EIL writing course they occurred nine times throughout the semester. In the EIL reading course learner-learner discussions occurred weekly.

The EIL program in this study followed a world-English model in its approach to English and cultural learning. The course designers intentionally exposed students to a broad range of expressions and nuances from a variety of cultures, including accent types. These courses had students from many different nationalities and students were encouraged to interact with those of other cultures and learn about those cultures. Even though there were a few native-speaking tutors, the majority of tutors were non-native-speaker TESOL majors. Tutors provided students with a multitude of cross-cultural person-to-person interactions. Course teachers were both non-native speakers and native-speakers of English.

The EIL program in this study largely relied on learner-instructor and learner-learner dialogue to promote cross-cultural proficiency. With the exception of one unit in the EIL reading course, students were not exposed to definitions or concepts of cross-cultural proficiency. The reading course unit contained an overview of an early version of cultural intelligence as presented by Thomas (2008) and cultural differences as presented by Hofstede (1980). This instruction-light approach could be seen as a partial fulfillment of recommendations by intercultural theorists who promoted the importance of both

intentional teaching and cross-cultural experience (Ang & Van Dyne, 2015a; Baker, 2011). See Appendix A for an outline of course activities and descriptions.

Data and Instrumentation

This study gathered data from the following sources:

1. English Proficiency Assessments
2. 20-item Cultural Intelligence Scale (CQS)
3. Course Activities Survey

English Proficiency Assessments

The English proficiency assessments measured three areas of English proficiency (reading, listening, and speaking). It is important to note that even though writing was part of the course curriculum, the chosen assessments did not gather data on writing ability. This was a limitation of the selected English proficiency testing instrument. Two additional sections focused on vocabulary and grammar. Four parts of the exam—vocabulary, grammar, listening, and reading—have been used in an English-placement test by an intensive English-language program. This assessment was administered through an online automated system. Part five of the assessment was an ACTFL computer-administered Oral Proficiency Interview (OPIc). The OPIc was administered online through Language Testing International (LTI), the test distributor for ACTFL. The pretests were administered within the first two weeks of the semester. The posttests were administered during the last two weeks of the semester. These tests took from one to two hours to complete. Even though students were required to participate in the assessments, test scores did not affect their final grades.

Part 1-4: Vocabulary, Listening, grammar, and reading. Even though vocabulary is not one of the four standard skills of English-language learning, it has proven to be a strong predictor of ability in reading, writing, listening, and speaking (Laufer & Nation, 1995; Morris & Cobb, 2004; Nation, 2011). Part one of the English assessment measured whether a student could associate a target word with another word that shares meaning but is used more frequently (Nation, 2011). During the vocabulary assessment students were given word and context prompts and then were asked to select a word that closely resembled the word in that context. For example, a student could have received the following prompt: *assign: Let's assign him a partner.* The student then selected another word from a list that best approximated the word *assign*. Each student received thirty test items and were given thirty seconds to complete each question

Parts two through four were based upon the ESL-CAPE (Cox & Davies, 2012). The ESL-CAPE was designed in the early 1990s as part of a computer-adaptive English assessment. It was first administered to a large group of language students and calibrated through item-response theory used a Rasch model to determine the student's language levels. In a Rasch model students are given questions at varied levels of difficulty. As students answer more and more items, the test system refines the student's ability level until the standard error of their ability estimate is refined and reaches the test's confidence range (Wright, 1977). The level at which the student performs consistently is then considered their language ability estimate. Due to the adaptive nature of the test, the number of items per student varied depending on the consistency of their ability to answer questions with similar difficulty ratings.

In the listening phase of the exam, students listened to a series of audio clips of varying difficulty. After listening to an audio clip, students were asked to recall audio clip details from a list within a thirty second timeframe. The grammar portion of this adaptive assessment provided two types of questions. Students were asked to appropriately assess grammar mistakes and fill in phrases to create grammatically appropriate sentences. They were also asked to create grammatically appropriate sentences by rearranging grammatically incorrect sentences. Due to the adaptive nature and the large item banks of these instruments, the sample size in this study was not large enough to run internal reliability tests for test-items. However, test administrators have run extensive reliability tests on item banks since the test inception and have reported sufficient reliability for use in this study. Test administrators reported a Cronbach alpha score of $\alpha = .94$ for the first four parts of the assessment.

Part 5: Speaking. Students participated in a computer-administered ACTFL Oral Proficiency Interview (OPIc). The OPIc is an online test which shows considerable reliability and validity when compared with the Oral Proficiency Interview (OPI) (Swender et al., 2012). Before beginning each assessment, students took a background survey and a self-assessment, with instructions in their native language. The self-assessment helped determine which test format each student received. The questions were delivered through an avatar-style interview, where the avatar mimicked an interviewer. Once the student completed the OPIc, a certified OPIc rater listened to the student responses and rated the student according to the ACTFL proficiency scale. To reach a major level, the student had to consistently perform at that level. Sublevels were determined by how often the student reached higher levels of proficiency. For instance,

an intermediate-low rating was given to a student who was consistent at intermediate proficiencies, but rarely showed advanced communication abilities. An intermediate-high score was given to a participant who was consistent in intermediate proficiencies and often reached an advanced level (Swender et al., 2012). For quantitative analysis, it was necessary to convert the ACTFL sublevels to numeric data using Dandonoli and Hennings (1990) conversion model (see Table 4). This conversion model seeks to reflect the unequal intervals between the ACTFL sublevels.

Table 4

Oral Proficiency Interview Rating Numeric Conversion, from Dandonoli and Hennings (1990)

ACTFL Level	Score	ACTFL Level	Score	ACTFL Level	Score
Novice Low	.1	Intermediate Low	1.1	Advanced	2.3
Novice Mid	.3	Intermediate Mid	1.3	Advanced High	2.8
Novice High	.8	Intermediate High	1.8	Superior	3.3

English proficiency variables. The English proficiency assessments provided data from which to analyze the change of English skill from pretest to posttest. Thus, the following English proficiency variables were available for analysis:

- English vocabulary proficiency
- English listening proficiency
- English grammar proficiency
- English reading proficiency
- English speaking proficiency

20-item Cultural Intelligence Scale (CQS)

The 20-item four-factor Cultural Intelligence Scale (CQS) is made up of Likert-style questions, with ranges from one (strongly disagree) to seven (strongly agree). Four of the scale items measure metacognitive cultural intelligence (CQ), six measure cognitive CQ, five measure motivational CQ, and five measure behavioral CQ. Ang et al. (2007; 2003) initially created 53 test items for the CQS. These items were ranked for readability, clarity, and fidelity. The item pool was then cut to 40 questions. Ang et al. administered this 40-item survey to 576 Singaporean university students. Questions that showed statistical weaknesses (high residuals, low factor loading, small standard deviations, extreme means, or low item-total correlations) were removed. This elimination resulted in a 20-item self-report measure (Matsumoto & Hwang, 2013). Composite reliabilities exceeded .70 (metacognitive CQ, $\alpha = .72$, cognitive CQ, $\alpha = .86$, motivational CQ, $\alpha = .76$, and behavioral CQ, $\alpha = .83$). Other studies have reported similar alphas for each CQ factor, often exceeding .80 (Matsumoto & Hwang, 2013). The Cronbach's analysis in this study produced an alpha score of $\alpha = .88$.

Even though CQ is a relatively new theoretical approach in the field of intercultural communication, the CQS has shown considerable evidence as a valid measure across cultures (Matsumoto & Hwang, 2013). A significant amount of research has become available using CQ in recent years (Ghonsooly & Golparvar, 2013; Rafieyan et al., 2015, 2015). The CQS has been used to describe cross-cultural proficiencies in a diverse set of circumstances, such as Taiwanese manufacturing, Filipino laborers, U.S. real-estate agents, and Korean undergraduate students (Matsumoto & Hwang, 2013). The CQS has shown promise in predicting a range of desirable cross-cultural outcomes,

including expatriate job performance, leadership, negotiation effectiveness, teamwork (Van Dyne et al., 2012), and language learning (Rafie et al., 2016).

The CQS was administered at the same time as the English assessment and took ten to fifteen minutes to complete. The language level required to take the CQS was above that of the students in this study. Thus, a translation of the CQS was provided in the student's native language. These translations were provided by professional translation services and each translation was double checked for accuracy. The English version of the CQS can be found in Appendix B.

Cultural intelligence variables. The CQS provided scores for each cultural intelligence factor. These factor scores acted as the cultural proficiency variables in our analyses. These variables included:

- Metacognitive CQ (CQ-Meta)
- Cognitive CQ (CQ-Cog)
- Motivational CQ (CQ-Mot)
- Behavioral CQ (CQ-Beh)

Course Activities Survey

This survey consisted of 21-26 Likert-style survey questions designed to gather information concerning student perceptions of language and cultural learning activities in each course. Students were asked to rank each course activity on its contribution to their learning. The students then answered on a five-point scale, with ranges from one (not helpful) to five (extremely helpful). The questions were written to English-language-levels below the level of the students in the EIL program. The course activities survey is found in Appendix C.

Procedures

This study included a complete semester of participation in an EIL program over a four-month time frame. The study procedures are as follows:

- Language and cultural proficiency pretests (Parts one through five of the English assessment and the CQS) were administered together during the first two weeks of the semester. Part five of the English assessment was remotely proctored by course tutors.
- Students participated in course activities and assignments over a fourteen-week semester.
- Language and cultural proficiency posttests (Parts one through five of the English assessment and the CQS) were administered together during the last two weeks of the semester. Part five of the English assessment was remotely proctored by course tutors.
- Students participated in the course activities survey during the last two weeks of the semester.

Data Analysis

After the completion of the semester, English proficiency and cultural assessment data was gathered and matched to each student by identification number. Data from the course activities survey was organized according to four activity categories. These four categories aligned with Moore's (1989) types of interaction, which included learner-content interaction, learner-instructor interaction, and learner-learner interaction. These four categories included: dialogue with tutors, dialogue with teachers, dialogue with other students, and course assignments (learner-content interaction). A repeated measures

analysis of variance (ANOVA) was used to measure mean differences from pretest to posttest. Multiple regression analyses were used to measure CQ prediction of English proficiency and English proficiency change from pretest to posttest. A repeated measures ANOVA was used to measure the mean difference of the categories from the course activities survey. The significance level for all tests was set at $p = .05$.

Statistical assumptions tests were completed as a necessary preliminary step. For the ANOVAs, these assumption tests included analyses of normality, homogeneity of variance, Mauchly's Test of Sphericity (where applicable), and Tukey's outlier tests. For the regression analyses, assumption tests included scatterplots of the standardized residuals against predicted values, a normal probability plot of errors (q-q plot), and a correlation matrix. The plots facilitated a check for a normal scattered distribution, independence of errors, and homoscedasticity. The q-q plots also assisted in identifying suspect outliers. A Tukey's outlier test was run on the standardized residuals to confirm the q-q plot findings. The correlation matrix allowed an examination of predictor variable collinearity. Independent variables with an $r \geq .85$ were considered collinear (See Appendix I).

Research Question 1

What is the change of learner English-language proficiency while participating in a distance English-as-an-International language (EIL) program?

To answer the first research question, a repeated measures ANOVA was performed for each English proficiency variable. These analyses measured the mean difference between pretest and posttest. The use of repeated measures ANOVAs—instead of paired sample t-tests—allowed for the variation of courses enrollments to be accounted

for. Two enrollment differences were seen as possible between-subjects factors. First, how many courses a student enrolled in was seen as possibly influencing language proficiency change. Thus, five repeated measures ANOVAs placed one of the five English proficiency pretest and posttest scores as the repeated measures (dependent variable) with the number of courses taken as the between-subjects factor (independent variable).

Whether or not a student enrolled in a course focused on a particular English skill was also considered as possibly influencing English proficiency change. Thus, three repeated measures ANOVAs placed listening, reading, and speaking proficiency scores as dependent variables, with enrollment in a skills-based course as the between-subjects factor. Typically, these three repeated measures ANOVAs would be included with the first five repeated measures ANOVAs with two between-subjects factors (number of enrollments and enrollment in a skills-based course). Combining these tests would have provided an opportunity to look at interaction among these factors and would have reduced the likelihood of a type I error. However, combining the ANOVAs placed the numbers for each cell size too low. Thus, these analyses were run separately (see Limitations, p. 85).

Research Question 2

What is the change of learner cross-cultural proficiency while participating in a distance-learning EIL program?

To answer the second research question, a repeated measures ANOVA was performed for each cultural intelligence factor. These analyses measured the mean difference between CQ score from pretest to posttest. The use of repeated measures

ANOVAs—instead of paired sample t-tests—allowed for the variation of courses enrollments to be accounted for. Two enrollment differences were seen as possible between-subjects factors. First, the number of enrolled courses was seen as possibly influencing cultural proficiency change from pretest to posttest. Thus, repeated measures ANOVAs placed one of the cultural intelligence factors pretest and posttest scores as the repeated measures factor (dependent variable) with the number of enrolled courses as the between-subjects factor (independent variable).

Whether or not a student enrolled in the reading course—the only course to include intentional instruction on cultural proficiency—was also considered a possible influencer of cultural proficiency change from pretest to posttest. Thus, an additional ANOVA was run for each CQ factor with enrollment in the EIL reading course as the between-subjects factor. Typically, this last repeated measures ANOVA would be included with the former repeated measures ANOVAs with two between-subjects factors (number of enrollments and enrollment in the EIL reading course). Combining these tests would have provided an opportunity to look at interaction among these factors and would have reduced the likelihood of a type I error. However, combining the ANOVAs placed the numbers for each cell size too low. Thus, these analyses were run separately (see Limitations, p. 85).

Research Question 3

Can cultural intelligence predict English proficiency (or the change of English proficiency) among learners participating in a distance-learning EIL program?

In order to build upon prior research, it was determined to identify each CQ factor as a possible predictor of English proficiency. To adequately answer this question, this

study explored three possible ways in which CQ could predict English proficiency. First, it was anticipated that pretest CQ might predict a student's pretest English ability. This first possibility most closely approximated prior research, which typically measured CQ prediction of English skill at a particular moment in time (Ghonsooly & Golparvar, 2013; Rafie et al., 2016; Rafieyan et al., 2015). Second, it was anticipated that incoming CQ may successfully predict the change of student English proficiency scores from pretest to posttest. Third, this study considered the possibility that student change in CQ scores from pretest to posttest may predict change in English proficiency from pretest to posttest.

To address the first possible predictive relationship, five separate regression analyses were completed. All four CQ factors (metacognitive, cognitive, motivational, and behavioral) pretest scores acted as the predictor variables with one of the five English proficiency pretest scores as the dependent variable. To explore the second possible predictive relationship, five regression analyses were conducted. The four CQ factor pretest scores acted as predictor variables with change in one of the English proficiency skills from pretest to posttest acting as the dependent variable. To investigate the third possible predictive relationship, five regression analyses placed the change of CQ factor scores from pretest to posttest as predictor variables with change in English proficiency from pretest to posttest as the dependent variable.

Research Question 4

What elements of distance-learning courses do students perceive as influential in developing language and cross-cultural proficiency?

The course activities were grouped into four categories to align with Moore's types of interaction. These included dialogue with a tutor, dialogue with a teacher, dialogue with other learners, and course assignments. Mean scores were calculated by student across courses. Mean scores of four or above were considered perceived contributors to student learning. Both Don (2005) and Madyarov (2009) used similar summative surveys and analysis techniques in their studies. In addition, a repeated measures ANOVA was run to identify significant difference in student ratings between activity categories.

CHAPTER IV

RESULTS

This study explored English-language proficiency and cultural intelligence within a distance-learning context. Students participated from many different countries in a curriculum designed to (a) promote language learning by closing the transactional distance between teachers, tutors, and students, and (b) develop cross-cultural proficiency through cross-cultural experiences. To answer research questions one and two, repeated measures ANOVAs were conducted on each measure of both English proficiency and cultural intelligence. To answer research question three, regression analyses were performed to measure the ability of cultural intelligence to predict English proficiency and change in English proficiency from pretest to posttest. Finally, to inform our discussion, course activities surveys provided information concerning student perceptions of both English-language and cultural learning. All quantitative tests were conducted using the JASP software package, a statistical software developed by the European Research Council. The following results are divided into two sections. The first section provides data concerning preliminary tests to examine whether statistical assumptions were satisfied. Section two reports results from the primary analysis and is divided by research question.

Preliminary Data Analysis

This section reports on the various assumption tests related to the repeated measures ANOVAs and multiple regression analyses. For tables and figures related to assumption tests, see Appendices D through I.

Necessary Sample Sizes

Sixty-five students enrolled in the English-language distance-learning program in this study. However, not all participants participated in all pretests and posttests. This made for some variation in sample sizes from one statistical test to another. Resulting sample sizes were checked against Cohen's (2007) guidelines. G*Power, a power analysis computer program, was used to determine that necessary sample size for each statistical test. G*Power inputs included an effect size (Cohen's f^2) of .50, α -level of .05, and a power level of .90. For a repeated measures ANOVA, the calculated sample size was 42 (research questions one, two, and four). All samples satisfied this minimum requirement. Each regression analysis incorporated four predictors: metacognitive cultural intelligence (CQ), cognitive CQ, motivational CQ, and behavioral CQ. Given these constraints, G*Power calculated a necessary sample size of 36. All the regression analyses satisfied these sample size constraints.

Assumptions for Repeated Measures ANOVA

Normality. Each dependent variable in a repeated measures ANOVA should be normally distributed around the mean. A Shapiro-Wilk (S-W) test of Normality was performed to test this assumption. The S-W tests returned significant results for the speaking assessment, $S-W = .908, p = .002$, and the behavioral CQ assessment $S-W = .949, p = .023$. Although the distribution of these tests were not normal, this assumption is rarely a cause for concern in a repeated measures ANOVA (Cohen, 2007).

Homogeneity of Variance. A Levene's test of equality of variance was performed for each pretest and posttest. Only the vocabulary posttest returned a

significant result, $F = 6.03$, $p = .005$. In a repeated measures design with the same number of observations in each measure, this assumption can be ignored (Cohen, 2007).

Sphericity. Most of the repeated measures ANOVAs in this study involve only a pretest and posttest. Thus, sphericity can be ignored for these tests. However, the ANOVA that compared means for the course activities survey included more than two dependent samples. Thus, A Mauchly's Test of Sphericity was run to determine if the sphericity assumption was violated for these samples. This test returned a significant result, $M-W = .490$, $p < .001$, confirming that the sphericity assumption was violated. A Huynh-Feldt correction was performed for this repeated measures ANOVA along with a Bonferroni adjustment for the post-hoc tests (Cohen, 2007).

Outliers. After initial data collection, it was apparent that outliers were likely. As the repeated measures ANOVA is especially vulnerable to outlier effects, a Tukey's outlier test was run for each sample to check for possible outliers. Verified outliers were then removed from the analyses.

Assumptions for Multiple Regression

The following tests were performed to verify that regression assumptions were met.

Normally distributed errors. A q-q plot of standardized residuals was performed to verify normally distributed errors. Largely, these residuals appeared to be normally distributed. However, some plots showed suspect outliers. A Tukey's outlier test of the standardized residuals was performed to verify these findings. Verified outliers were then removed from the analyses.

Homoscedasticity. A scatterplot of residuals versus predicted values was performed to verify that regression results had acceptable homogeneity of variance. Residuals appeared to be randomly scattered, confirming homogeneity of variance for all regression analyses.

Multicollinearity. In linear multiple regression, the independent (predictor) variables cannot be collinear. In regression analyses that have multiple predictor variables, it is important to assess whether any of the variables correlate with one or a combination of other predictor variables. This can be determined by calculating tolerance or the variance inflation factor (VIF) for each variable (Cohen, 2007). While there does not exist an agreed VIF cut score, O'Brien (2007) notes a range of caution between VIF scores of 4.0 and 10.0, with a VIF score of 10.0 indicating strong multicollinearity. No VIF score in this study exceeded 2.4, indicating no multicollinearity among all predictor variables.

Primary Analysis

The following analysis will be divided into four sections, with each section addressing statistical analyses relevant to one of the four research questions.

Research Question 1

What is the change of learner English-language proficiency while participating in a distance English-as-an-International language (EIL) program?

Five repeated measures ANOVAs placed English proficiency pretest and posttest scores as the dependent variables with the number of courses taken as between-subjects factors. These analyses measured the (a) mean difference between pretest and posttest for each English skill and (b) how the number of enrollments may have influenced the mean

difference between English proficiency pretests and posttests. Descriptive statistics for these analyses are presented in Table 5. Visual representations of change in mean scores are provided in Figure 2 through Figure 6. Repeated measures ANOVAs revealed that four of the five main effects (speaking, listening, grammar, and vocabulary) were significant, speaking, $F(1, 42) = 40.40, p < .001, \eta^2 = .485$, listening, $F(1, 42) = 13.44, p < .001, \eta^2 = .225$, grammar, $F(1, 42) = 8.53, p = .006, \eta^2 = .163$, and vocabulary, $F(1, 39) = 7.85, p = .008, \eta^2 = .166$. The repeated measures ANOVA for reading was not significant, $F(1, 45) = .18, p = .67, \eta^2 = .004$. The interaction effect (number of enrollments) was not significant for any of the repeated measures ANOVAs (see Table 6). G*Power was then used to determine actual power for the ANOVA results. Results are as follows: speaking, power $(1 - \beta) = 1.00$, listening, power $(1 - \beta) = .959$, grammar, power $(1 - \beta) = .848$, vocabulary, power $(1 - \beta) = .828$, reading, power $(1 - \beta) = .069$. Results indicated that the distance learning program had a large effect on both speaking and listening ability, while grammar and vocabulary were moderately effected. The program did not appear to have a measurable effect on reading ability.

Table 5

Means and Standard Deviations of Pretest and Posttest Scores for English Skills by the Number of Enrollments.

Skill	Enrollments	Range of Possible Scores	Pretest		Posttest		<i>n</i>
			M	SD	M	SD	
Vocabulary	One Course	0.0 – 1.0	.74	.15	.78	.17	17
	Two Courses		.75	.11	.79	.11	10
	Three Courses		.72	.13	.78	.10	15
	Total		.74	.13	.78	.13	42

Listening	One Course	-3.0 – 3.0	1.89	1.21	2.50	1.16	19
	Two Courses		1.36	.95	1.93	.71	10
	Three Courses		1.53	1.10	1.65	1.25	16
	Total		1.64	1.12	2.07	1.16	45
Grammar	One Course	-3.0 – 3.0	.57	1.00	.95	1.43	19
	Two Courses		.74	.78	.90	1.44	9
	Three Courses		.67	1.01	1.29	1.04	17
	Total		.64	.94	1.07	1.29	45
Reading	One Course	-3.0 – 3.0	1.73	.99	1.60	.96	20
	Two Courses		1.37	.94	1.34	.78	10
	Three Courses		1.12	.88	1.12	1.04	18
	Total		1.36	.96	1.42	.96	48
Speaking	One Course	0.1 – 3.3	1.08	.25	1.35	.33	15
	Two Courses		1.06	.14	1.38	.28	11
	Three Courses		1.03	.15	1.41	.34	19
	Total		1.06	.19	1.38	.32	45



Figure 2. Change in vocabulary score by number of enrollments

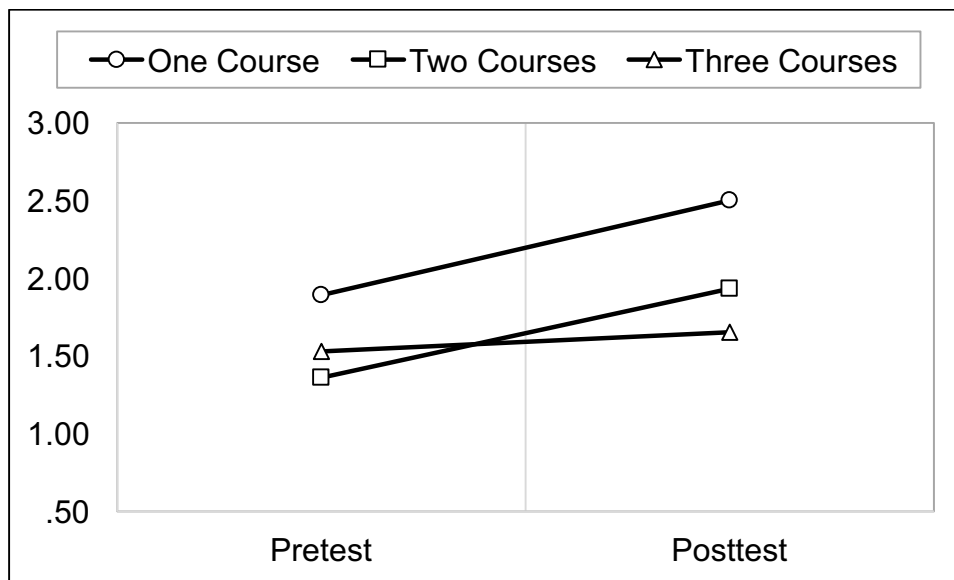


Figure 3. Change in listening score by number of enrollments

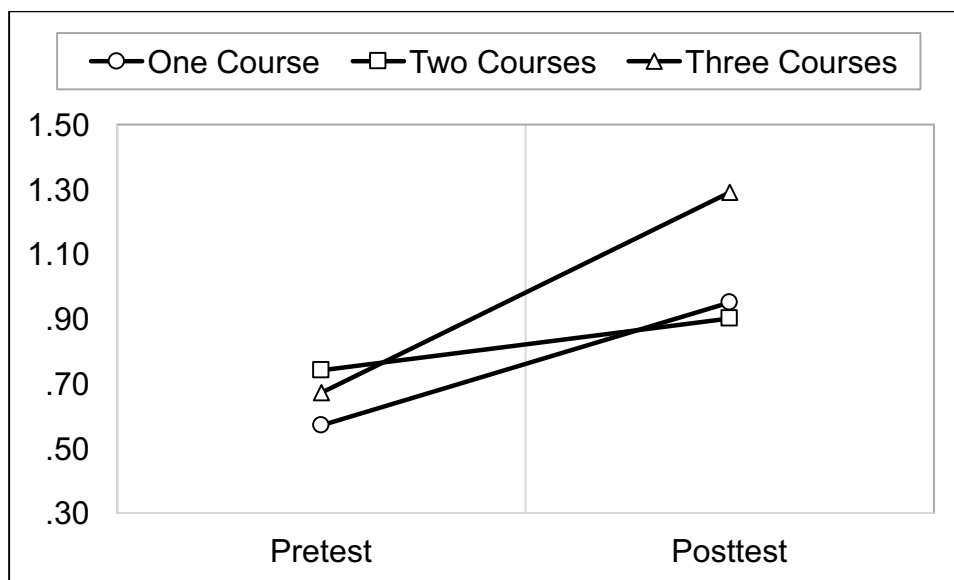


Figure 4. Change in grammar score by number of enrollments

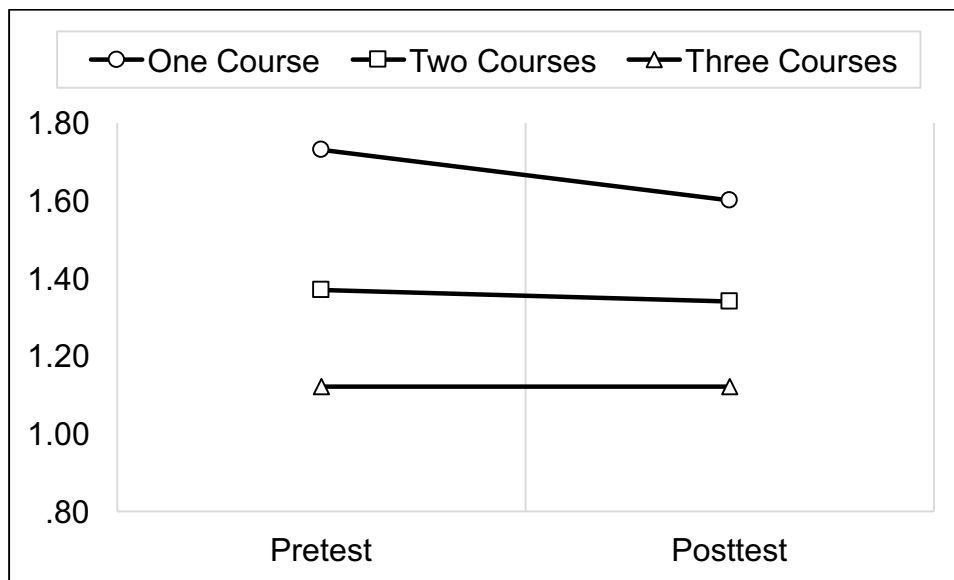


Figure 5. Change in reading score by number of enrollments

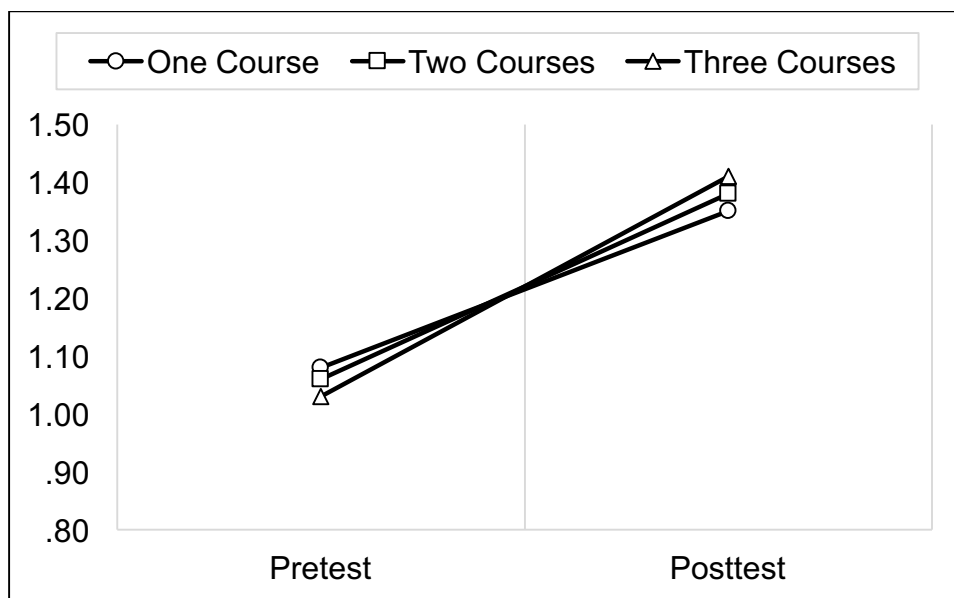


Figure 6. Change in speaking score by number of enrollments

Table 6

Main and Interaction effects on English Skill with Number of Enrollments as Between-Subjects Factor.

Skill	Source	<i>F</i>	<i>df</i>	<i>p</i>	η^2
Vocabulary	Time	7.85	1	.008*	.166
	Time × Enrollments	.193	2	.83	.008
Listening	Time	13.44	1	.000**	.225
	Time × Enrollments	2.14	2	.13	.072
Grammar	Time	8.53	1	.006*	.163
	Time × Enrollments	.96	2	.39	.036
Reading	Time	.18	1	.67	.004
	Time × Enrollments	.12	2	.89	.005
Speaking	Time	40.40	1	.000**	.485
	Time × Enrollments	.43	2	.65	.010

* $p < .05$. ** $p < .001$.

The second set of repeated measures ANOVAs placed listening, reading, and speaking pretest and posttest scores as the dependent variables and enrollment in a skills-based course on that topic as the between-subjects factor. These analyses measured if enrollment in a course germane to the English skill significantly influenced mean differences between pretest and posttest. The descriptive statistics for these analyses are presented in Table 7. Results from these analyses showed that the interaction effect of enrollment in a skills-based course was not significant (see Table 8). This indicated that whether a student enrolled in one, two, or three courses, they would likely make similar gains in their listening, speaking, or reading ability.

Table 7

Means and Standard Deviations of Pretest and Posttest Scores for Listening, Reading and Speaking by Enrollment in a Skills-based Course.

Skill	Enrollments	Pretest		Posttest		<i>n</i>
		M	SD	M	SD	
Listening	Skill course	1.60	1.08	1.99	1.20	32
	No skill course	1.75	1.23	2.28	1.07	13
	Total	1.64	1.12	2.07	1.16	45
Reading	Skill course	1.29	.86	1.17	.98	23
	No skill course	1.56	1.03	1.54	.93	25
	Total	1.36	.96	1.42	.96	48
Speaking	Skill course	1.04	.18	1.41	.31	35
	No skill course	1.12	.19	1.28	.34	10
	Total	1.06	.19	1.38	.32	45

Table 8

Main and Interaction Effects Results on Listening, Reading, and Speaking with Enrollment in Skills-based Course as Between-Subjects Factor.

Skill	Source	<i>F</i>	<i>df</i>	<i>p</i>	η^2
Listening	Time	12.3	1	.000*	.222
	Time × Enrollment in skill course	.28	2	.56	.005
Reading	Time	.27	1	.61	.006
	Time × Enrollment in skill course	.13	2	.72	.003
Speaking	Time	22.0	1	.000*	.321
	Time × Enrollment in skill course	3.60	2	.07	.052

***p* < .001.

Research Question 2

What is the change of learner cross-cultural proficiency while participating in a distance-learning EIL program?

Analyses included a series of repeated measures ANOVAs to compare CQ pretest and posttest mean scores. Cultural Intelligence Scale (CQS) pretest and posttest scores were entered as the dependent variable and number of courses acted as the between-subjects factor. These analyses measured the (a) mean difference between pretest and posttest for each CQ factor and (b) how the number of enrollments may have influenced mean difference between CQS pretests and posttests. Descriptive statistics for these analyses are found in Table 9. Visual representations of change in mean scores are provided in Figure 7 through Figure 10. Repeated measures ANOVAs revealed that only one of the main effects (Cognitive CQ) was significant, $F(1, 49) = 17.09, p < .001, \eta^2 = .254$. The main effects of metacognitive CQ, $F(1, 48) = 1.01, p = .320, \eta^2 = .020$, motivational CQ, $F(1, 48) = 0.43, p = .513, \eta^2 = .008$, and behavioral CQ, $F(1, 51) = 1.63, p = .207, \eta^2 = .027$ did not show significant results. G*Power was then used to determine actual power for the ANOVA results. Results are as follows: cognitive CQ, power $(1 - \beta) = .992$, metacognitive CQ, power $(1 - \beta) = .160$, motivational CQ, power $(1 - \beta) = .091$, behavioral CQ, power $(1 - \beta) = .213$. These results indicated that the distance learning program had a large effect on cognitive CQ and very little effect on the other three CQ factors.

The interaction effect of behavioral CQ and number of enrolled courses showed a significant result, $F(1, 51) = 3.46, p = .039, \eta^2 = .116$ (see Table 10). Post-hoc Tukey HSD tests did not show a significant result between groups that enrolled in one, two, or

three courses. Cohen (2007) noted that, in rare cases, it is possible for the overall ANOVA model to produce a significant result, while the post-hoc tests fail to show significance. According to Cohen, Tukey's HSD is especially conservative with small or unequal sample sizes and can result in a type II error. The behavioral CQ ANOVA model may be considered to consist of small and unequal samples (e.g. one course, $n = 22$, two courses, $n = 12$). The descriptive plot in Figure 10 showed that the likely significant improvement in mean scores was among students who enrolled in three courses. A paired-samples t-test was run to investigate whether students who participated in three courses reported a significant difference of behavioral CQ pretest and posttest scores. This t-test reported a significant result, $t(19) = 2.44$, $p = .025$, $d = .55$. It is important to note that while the Tukey HSD tests could have resulted in a type II error, running a paired sample t-test as a post-hoc comparison may inflate the likelihood of a type I error (Cohen). A post-hoc G*Power analysis showed that this post-hoc t-test, though significant, showed low power, $(1 - \beta) = .646$. The small sample size of the t-test likely contributed to the low power result (Cohen). These results indicated that the enrolling in three courses had a significant, but small effect on Behavioral CQ.

Table 9

Means and Standard Deviations of CQ Pretest and Posttest Scores by the Number of Enrollments.

Skill	Enrollment	Range of Possible Scores	Pretest		Posttest		<i>n</i>
			M	SD	M	SD	
CQ-Meta	One Course	0 - 7	5.86	.75	5.87	.87	21
	Two Courses		6.11	.65	6.16	.74	11

	Three Courses		5.90	.80	6.17	.66	19
	Total		5.93	.74	6.04	.77	51
CQ-Cog	One Course	0 - 7	4.26	1.07	4.68	.90	21
	Two Courses		4.28	.86	5.06	.49	12
	Three Courses		4.34	1.32	5.06	1.10	19
	Total		4.30	1.11	4.91	.91	52
CQ-Mot	One Course	0 - 7	6.13	.77	6.13	.43	22
	Two Courses		6.56	.45	6.36	.62	10
	Three Courses		6.04	.80	6.48	.52	19
	Total		6.18	.75	6.31	.52	51
CQ-Beh	One Course	0 - 7	5.81	.73	5.68	.66	22
	Two Courses		5.72	1.17	5.75	1.03	12
	Three Courses		5.67	.79	6.24	.76	20
	Total		5.74	.85	5.90	.82	54



Figure 7. Change in metacognitive CQ by number of enrollments



Figure 8. Change in cognitive CQ by number of enrollments

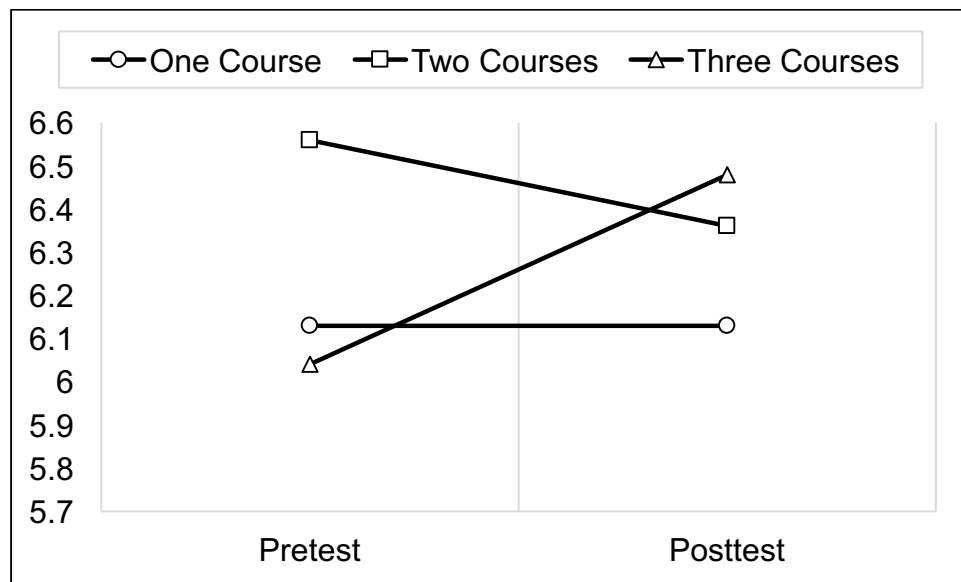


Figure 9. Change in motivational CQ by number of enrollments

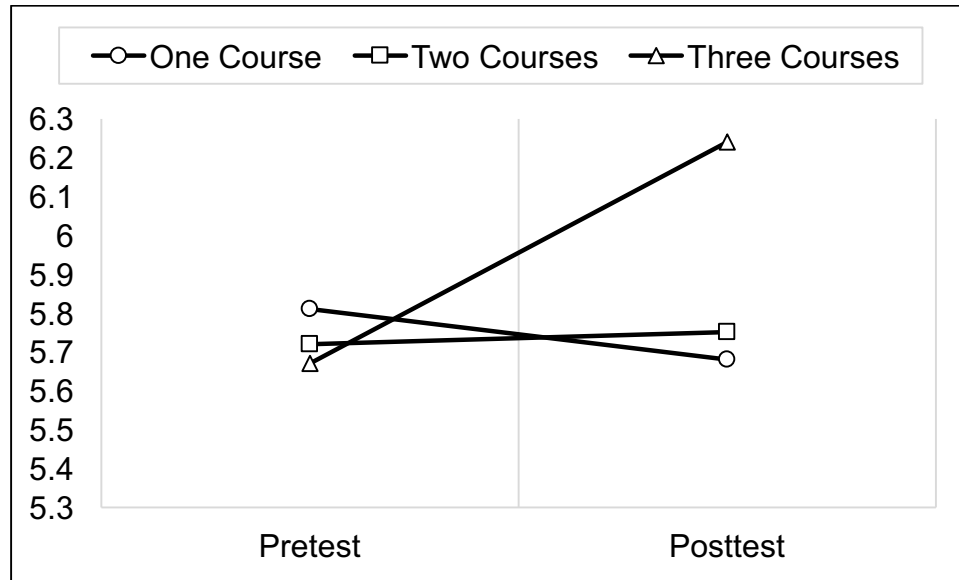


Figure 10. Change in behavioral CQ by number of enrollments

Table 10

Main and Interaction Effects on CQ with Number of Enrollments as Between-Subjects

Factor.

CQ Factor	Source	<i>F</i>	<i>df</i>	<i>p</i>	η^2
CQ-Meta	Time	1.01	1	.32	.020
	Time × Enrollments	.67	2	.52	.027
CQ-Cog	Time	17.09	1	.000*	.254
	Time × Enrollments	.56	2	.57	.017
CQ-Mot	Time	.43	1	.51	.008
	Time × Enrollments	2.42	2	.10	.091
CQ-Beh	Time	1.63	1	.21	.027
	Time × Enrollments	3.46	2	.039*	.116

p* < .05. *p* < .001.

A second set of repeated measures ANOVAs were run to account for enrollment in the EIL reading course, which was the only course that contained intentional cultural proficiency learning. These analyses allowed us to see if enrollment in the EIL reading course significantly influenced mean differences between pretest and posttest. CQ factor pretest and posttest scores were the dependent variable and enrollment in the reading course was the between-subjects factor. Descriptive statistics for these analyses are contained in Table 11. Of the interaction effects, behavioral CQ and enrollment in the reading courses was the only one that showed a significant result, $F(1, 52) = 4.39, p = .041, \eta^2 = .075$ (see Table 12). A G*Power analysis showed that while this result was significant, it was small, power $(1 - \beta) = .659$.

Table 11

Means and Standard Deviations of CQ Pretest and Posttest Scores by Enrollment in the Reading Course.

Skill	Reading Course	Pretest		Posttest		<i>n</i>
		M	SD	M	SD	
CQ-Meta	Enrolled	5.78	.77	6.12	.80	24
	Not Enrolled	6.11	.65	6.16	.74	27
	Total	5.93	.74	6.04	.77	51
CQ-Cog	Enrolled	4.39	1.21	4.68	.90	25
	Not Enrolled	4.21	1.03	5.03	1.11	27
	Total	4.30	1.11	4.91	.91	52
CQ-Mot	Enrolled	6.11	.77	6.48	.49	24
	Not Enrolled	6.24	.76	6.16	.50	27
	Total	6.18	.75	6.31	.52	51
CQ-Beh	Enrolled	5.86	.78	6.02	.88	26
	Not Enrolled	5.89	.90	5.80	.76	28
	Total	5.74	.85	5.90	.82	54

Table 12

Main and Interaction Effects on CQ with Enrollment in the Reading Course as Between-Subjects Factor.

CQ Factor	Source	<i>F</i>	<i>df</i>	<i>p</i>	η^2
CQ-Meta	Time	1.59	1	.213	.029
	Time × Reading Course	3.93	1	.053	.072
CQ-Cog	Time	16.6 2	1	.000**	.254
	Time × Reading Course	.02	1	.86	.000
CQ-Mot	Time	1.44	1	.24	.026
	Time × Reading Course	3.86	1	.055	.071
CQ-Beh	Time	2.10	1	.153	.036
	Time × Reading Course	4.39	1	.041*	.075

* $p < .05$. ** $p < .001$.

Research Question 3

Can cultural intelligence predict English proficiency (or the change of English proficiency) among learners participating in a distance-learning EIL program?

To adequately answer this research question it was determined to explore three possible predictive relationships: (a) pretest CQ on pretest English proficiency, (b) pretest CQ on English proficiency change from pretest to posttest, and (c) CQ change from pretest to posttest on English proficiency change from pretest to posttest. Three different sets of regression analyses were performed.

Pretest CQ predicting pretest English proficiency. Pretest CQ scores only showed significant predictive ability of pretest grammar proficiency, $F(4,48) = 3.57, p =$

.01, $R^2 = .23$. The other four models (vocabulary, listening, reading, speaking) failed to show significant results. In the grammar proficiency model, only pretest metacognitive CQ significantly predicted pretest grammar skills, $\beta = .42$, $p = .02$. (see Table 13). 23% of the variance of pretest grammar proficiency can be explained by pretest CQ scores. A post-hoc G*Power analysis showed that this result can be considered moderate, power $(1 - \beta) = .868$. These results indicated that pretest CQ scores (in particular metacognitive CQ) acted as a reliable predictor of a student's pretest grammar proficiency before beginning the distance learning program.

Table 13

Results for Regression Analyses on Pretest CQ Predicting Pretest English Proficiency.

	Predictor Variable	<i>B</i>	<i>SE</i>	β	R^2	<i>F</i>
Vocabulary	CQ-Meta	.02	.03	.13	.10	1.37 (4,48)
	CQ-Cog	.27	.02	.24		
	CQ-Mot	.01	.03	.06		
	CQ-Beh	-.02	.03	-.13		
Listening	CQ-Meta	.22	.19	.22	.09	1.22 (4,49)
	CQ-Cog	.04	.12	.05		
	CQ-Mot	.18	.24	.16		
	CQ-Beh	-.24	.20	-.21		
Grammar	CQ-Meta	.37	.15	.42*	.23	3.57 (4,48)*
	CQ-Cog	.14	.10	.20		
	CQ-Mot	-.22	.19	-.21		
	CQ-Beh	.08	.16	.08		
Reading	CQ-Meta	.02	.17	.03	.03	0.44 (4,52)
	CQ-Cog	.11	.10	.15		
	CQ-Mot	-.06	.22	-.05		
	CQ-Beh	-.08	.17	.08		
Speaking	CQ-Meta	.03	.03	.23	.04	0.48 (4,46)
	CQ-Cog	-.02	.02	-.19		
	CQ-Mot	-.02	.04	-.11		

Predictor Variable	<i>B</i>	<i>SE</i>	β	<i>R</i> ²	<i>F</i>
CQ-Beh	.01	.03	.07		

* $p < .05$.

Pretest CQ predicting English proficiency change from pretest to posttest.

All five regression models failed to show that overall CQ significantly predicted change in any of the English proficiency scores. However, one CQ factor, pretest metacognitive CQ significantly predicted change in speaking scores, $\beta = .48, p = .027$. The other pretest CQ factors failed to show significant predictive ability on change of English proficiency scores from pretest to posttest (see Table 14). This indicated that, for the most part, pretest CQ scores failed to be a reliable predictor of a student's change in English proficiency during the course of the distance learning program. However, metacognitive CQ showed some promise in predicting change in speaking ability during the course of the program.

Table 14

Results for Regression Analyses on Pretest CQ Predicting English Proficiency Change.

	Predictor Variable	<i>B</i>	<i>SE</i>	β	<i>R</i> ²	<i>F</i>
Vocabulary	CQ-Meta	-.00	.02	-.02	.06	0.63 (4,39)
	CQ-Cog	-.00	.02	-.05		
	CQ-Mot	-.02	.03	-.19		
	CQ-Beh	.03	.02	.30		
Listening	CQ-Meta	-.06	.17	-.07	.03	.37 (4,42)
	CQ-Cog	.03	.11	.05		
	CQ-Mot	-.07	.21	-.07		
	CQ-Beh	.19	.16	.21		
Grammar	CQ-Meta	.23	.17	.27	.12	1.31 (4,40)
	CQ-Cog	-.22	.11	-.34		
	CQ-Mot	-.10	.20	-.11		

	Predictor Variable	<i>B</i>	<i>SE</i>	β	R^2	<i>F</i>
	CQ-Beh	-.18	.18	-.18		
Reading	CQ-Meta	.03	.21	.03	.01	0.12 (4,44)
	CQ-Cog	-.07	.13	-.09		
	CQ-Mot	.06	.23	.05		
	CQ-Beh	-.05	.20	-.04		
Speaking	CQ-Meta	.17	.07	.48*	.20	2.48 (4,40)
	CQ-Cog	-.02	.05	-.07		
	CQ-Mot	-.08	.08	-.19		
	CQ-Beh	.08	.07	.20		

* $p < .05$.

Change of CQ scores from pretest to posttest predicting English proficiency

change from pretest to posttest. Change in CQ scores showed significant predictive ability for change in grammar skill, $F(4,43) = 3.63$, $p = .05$, $R^2 = .21$, with only change in metacognitive CQ scores showing significance among the four CQ factors, $\beta = -.46$, $p = .02$. A G*Power analysis revealed that while change in CQ scores significantly predicted change in grammar skill, the effect was small, power $(1 - \beta) = .775$. While the other four models did not show significant results, in the overall regression model, Change in metacognitive CQ significantly predicted change in reading scores, $\beta = -.45$, $p = .02$, and speaking scores, $\beta = -.40$, $p = .05$. It is worth noting that in all three cases the standardized coefficient showed a negative effect, meaning that negative change in metacognitive CQ score from pretest to posttest predicted an increase in English proficiency (grammar, reading, speaking) score from pretest to posttest (see Table 15). These results indicated that change in CQ scores does not act as a strong predictor of change English proficiency in the distance learning program.

Table 15

Results for Regression Analyses on CQ Change Predicting English Proficiency Change.

	Predictor Variable	<i>B</i>	<i>SE</i>	β	<i>R</i> ²	<i>F</i>
Vocabulary	CQ-Meta	-.01	.02	-.08	.04	0.39 (4,38)
	CQ-Cog	.02	.02	.20		
	CQ-Mot	.01	.02	.09		
	CQ-Beh	-.02	.02	-.16		
Listening	CQ-Meta	-.01	.14	-.20	.08	0.93 (4,42)
	CQ-Cog	-.07	.12	-.10		
	CQ-Mot	.18	.17	.23		
	CQ-Beh	-.18	.15	-.22		
Grammar	CQ-Meta	-.35	.15	-.46*	.21	2.63 (4,43)*
	CQ-Cog	.12	.11	.16		
	CQ-Mot	.02	.17	.03		
	CQ-Beh	.28	.15	.35		
Reading	CQ-Meta	-.45	.17	-.45*	.13	1.71 (4,45)
	CQ-Cog	.19	.15	.19		
	CQ-Mot	.41	.21	.39		
	CQ-Beh	-.16	.19	-.14		
Speaking	CQ-Meta	-.12	.06	-.40*	.12	1.34 (4,40)
	CQ-Cog	.07	.05	.24		
	CQ-Mot	.07	.07	.22		
	CQ-Beh	-.04	.06	-.13		

**p* < .05. **

Research Question 4

What elements of distance-learning courses do students perceive as influential in developing language and cross-cultural proficiency?

The course activities survey contained 21-26 Likert-style questions. These questions asked students how well each course activity helped them in their English-language and cultural learning. Students were asked to rank their learning from one (not helpful) to five (extremely helpful). Activities were then grouped to help address the

theoretical approach of the program, and included four categories following Moore's (1989) description of interaction types: dialogue with the tutor, dialogue with the teacher, dialogue with other students, and course assignments. For details concerning course activities, see Appendix A. Scores of four or above were considered perceived contributors to student learning (Don, 2005).

In regards to student perceptions of English learning, dialogue with the tutor, $M = 4.67$ ($SD = .45$), dialogue with the teacher, $M = 4.43$ ($SD = .63$), and assignments $M = 4.14$ ($SD = .37$) were perceived contributors to English-language learning (see Table 16). Dialogue with other students was the only activity category that received a rank score below four, $M = 3.87$ ($SD = .84$). A repeated measures ANOVA was performed to determine if the mean difference between these activity categories was significant. Student perception scores from each category acted as the dependent variables. The sphericity assumption was not met satisfactorily for this test. Thus, a Hyunh-Feldt correction was implemented for the ANOVA with Bonferroni adjustments for the pot-hoc tests. This analysis resulted in a significant mean difference between course activities scores for English-language learning, $F(2.34, 121.89) = 21.91, p < .001, \eta^2 = .30$. Post-hoc tests (with Bonferroni adjustment) further revealed that dialogue with a more-experienced English user (teacher and tutor) was perceived as significantly more helpful than other course activities (dialogue with other students and course assignments, see Table 17).

Table 16

Course Activities Survey Category Means.

	Dialogue							
	w/Tutor		w/Teacher		w/Students		Assignments	
	M	SD	M	SD	M	SD	M	SD
English Learning	4.67	.45	4.43	.63	3.87	.84	4.14	.37
Cultural Learning	4.41	.61	4.00	.80	4.23	.77	3.92	.49

Table 17

Results for Repeated Measures ANOVA for Perceptions of English-language Learning by Course Activities with Post-hoc Tests.

		<i>F</i>	<i>df</i>	<i>p</i>	η^2
English Learning	Huynh-Feldt	21.91	2.34	.000**	.296
Post-Hoc Tests		MD	<i>t</i>	<i>p bonf</i>	
Dialogue w/Tutor	Dialogue w/Teacher	0.27	2.25	.155	
Dialogue w/Tutor	Dialogue w/Student	0.80	7.62	.000**	
Dialogue w/Tutor	Assignments	0.52	5.00	.000**	
Dialogue w/Teacher	Dialogue w/Student	0.56	5.37	.000**	
Dialogue w/Teacher	Assignments	0.29	2.74	.041*	
Dialogue w/Student	Assignments	-0.275	0.046	.057	

* $p < .05$. ** $p < .01$.

In regards to cultural learning, of the four course activities categories, dialogue with the tutor, $M = 4.41$ ($SD = .61$), dialogue with the teacher, $M = 4.00$ ($SD = .80$), and dialogue with other students, $M = 4.24$ ($SD = .77$) can be considered as perceived contributors to cultural learning (See Table 16). Course assignments were not perceived as contributors to cultural learning, $M = 3.92$ ($SD = .49$). A repeated measures ANOVA

was performed to determine if the mean difference between these activities was significant. Student perception scores from each category acted as dependent variables. This analysis revealed a significant mean difference between activity categories, $F(2.44, 126.86) = 7.38, p < .001, \eta^2 = .124$. Post-hoc tests (with Bonferroni adjustment) also determined that students perceived dialogue with the tutor as significantly more helpful in their cultural learning than dialogue with the teacher or the course assignments. Students also perceived dialogue with other students as significantly more helpful than the course assignments in their cultural learning. For ANOVA and post-hoc test results, see Table 18.

Table 18

Results for Repeated Measures ANOVA for Perceptions of Cultural Learning by Course Activities with Post-hoc Tests.

		<i>F</i>	<i>df</i>	<i>p</i>	η^2
English Learning	Huynh-Feldt	7.38	2.44	.000**	.124
Post-Hoc T-tests		MD	<i>t</i>	<i>p bonf</i>	
Dialogue w/Tutor	Dialogue w/Teacher	0.41	3.55	.003*	
Dialogue w/Tutor ×	Dialogue w/Student	0.18	1.53	.768	
Dialogue w/Tutor	Assignments	0.48	4.20	.000**	
Dialogue w/Teacher	Dialogue w/Student	-0.23	-2.02	.270	
Dialogue w/Teacher	Assignments	0.08	0.65	1.000	
Dialogue w/Student	Assignments	0.31	2.67	.050*	

* $p < .05$. ** $p < .001$.

CHAPTER V

DISCUSSION

Introduction

An extensive amount of literature agrees that online learning can be a viable learning platform, with students often performing as well as face-to-face students (Means et al., 2009). Research germane to online language learning has yielded similar results (Vorobel & Kim, 2012). However, much of this literature has emphasized specific aspects of a course, with few studies exploring whole course or program experiences. (Blake et al., 2008; Vorobel & Kim, 2012; White, 2006).

Language-learning research often emphasizes the importance of cultural learning within a language-learning context. (Gao, 2006; Hinkel, 1999; Nayar, 1997; Richards & Schmidt, 2013). However, research has yet to adequately investigate the roll of cultural learning within a distance-learning context. The purpose of this study is to explore the viability of an international distance English-language program in the development of linguistic and cross-cultural proficiency among a culturally-diverse group of college-age learners.

The distance English-language program in this study was built upon several theoretical premises. First, the curriculum implemented Moore's (1993) transactional distance theory as a foundational framework, with an emphasis on dialogue between learners and instructors (teachers and tutors). Second, due to the relationship between language learning and cultural learning, ideally language development and cultural development occur simultaneously. Third, the curriculum in this study used a world-

English model of cultural learning. From this perspective, cultural learning should be focused on skills that will develop a learner's ability to communicate across many cultures, using English as the language of communication.

A quantitative pretest and posttest approach was employed to gather data on how program participation affected both English proficiency and cultural proficiency. Several assessment instruments provided data on five English skills (vocabulary, grammar, reading, listening, speaking), and the four factors of cultural intelligence. In addition, a course activities survey provided data on student perceptions of English learning and cultural learning in course activities. Finally, statistical procedures facilitated an analysis of data. This chapter includes a discussion in context of the research questions that guided this study. Following the discussion, implications, limitations, and recommendations for future researchers are outlined.

Discussion

Research Question 1

What is the change of learner English-language proficiency while participating in a distance-learning English-as-an-International language (EIL) program? Data from the English assessments showed significant gains in vocabulary, grammar, listening, and speaking proficiency over the course of the semester, with the largest gains in speaking and listening. However, assessment data on reading ability did not show a significant improvement.

Comparison to prior research. The distance learning program in this study was designed according to Moore's (1993) transactional distance theory. In particular, the distance learning program relied on dialogue to help learners and instructors close the

transactional distance inherent in distance learning programs. The results of this study indicated that the distance learning program was largely successful at promoting language gains over the course of the program. This study used American Council on the Teaching of Foreign Languages (ACTFL), and ACTFL-aligned, English assessment instruments to gather data. Similarly, Madyarov (2009) used a widely-accepted testing instrument to explore learning gains of students enrolled in a distance English-language program. Madyarov instrument-of-choice was the Test of English as a Foreign Language, (TOEFL). While there has been some work done on equating the ACTFL levels with TOEFL scores (Boldt, Larsen-Freeman, Reed, & Courtney, 1992), there is some difficulty in comparing this study to that of Madyarov. First, there are significant curricular and participant differences between the two programs, creating too many variables for an unbiased comparison. For example, students in Madyarov's sample lived in a Farsi-speaking country in the Middle East. Students in this study resided in a variety of countries, particularly from Asia and the Pacific. While both studies included dialogue with tutors, there are significant differences between tutor qualifications and how tutors interacted with students. In this study, tutors were assigned to work with students in one course. These tutors were paid positions filled by undergraduate TESOL majors. In Madyarov's study, many of the tutors were volunteers and were spread across many learning groups. Madyarov did not specify if the tutors had specific English-language training.

Despite these differences, the results in this study generally agree with those of Madyarov. In both studies, students performed significantly better on assessments after a semester of participation in a distance English-language program. This study may add

some additional insight to Madyarov's (2009) findings. First, Madyarov only found significant differences in learners who pretested at approximately the novice-high level of proficiency. Mean differences of students who tested at higher levels were not significantly different from pretest to posttest. Madyarov concluded that students at lower levels of proficiency often make greater gains than those at higher levels (Swinton, 1983). This may very well be the case. However, students in this study showed significant gains at a higher level of proficiency than the students in Madyarov's study. Students in this study were pretested at approximately the intermediate-low level of proficiency and made significant gains in speaking, listening, grammar, and vocabulary, but did not make gains in reading.

Secondly, Madyarov did not measure speaking proficiency. A lack of investigation into speaking proficiency is common in distance language-learning research (Blake et al., 2008). In this study, student speaking proficiency scores showed significant gains over the course of the semester. This provides some evidence that the distance-learning context may serve as a viable option for developing speaking proficiency. In particular, distance learning programs may be well-served in providing ample opportunities for students to dialogue with more expert users of the language (Moore, 1993, Vygotsky, 1980). This study was not designed to investigate why those significant language gains were achieved. However, Moore's (1993) theory of transactional distance could be a successful framework on which to foster speaking proficiency. Given the results on the student surveys, it is likely that learner-instructor dialogue (including weekly tutor appointments) played a role in language proficiency improvements.

No significant gains in reading proficiency. On average, students in this study failed to make significant gains in reading proficiency. Furthermore, students who enrolled in the EIL reading course also failed to make significant improvement in reading proficiency. Madyarov (2009) found improvement in reading proficiency, but only among learners that began at approximately the novice-high proficiency level. One possible explanation may be curricular. Currently, the curriculum in this study does not provide consistent instruction on reading strategies. In particular, it does not provide guidance on how to apply those strategies. Intentional instruction on reading strategies comes highly recommended by reading proficiency researchers (Anderson, 1991, 2009). Also, while students do have some academic texts in the course, many of the readings are non-academic. This non-academic approach was not an ideal alignment with the reading assessment used in this study, which was focused on academic reading.

Number of courses. There did not appear to be a significant difference in English proficiency gains among students that enrolled in multiple courses. This may appear counterintuitive. It seems logical that as students participate in more courses, their English would improve at a quicker pace. One possible reason for this lack of difference may relate to the amount of time each course requires. As noted, it is typical for students to spend an average of eleven hours per course per week. This is a large time commitment for distance students. While this study does not have data concerning time-on-task averages, it is likely that as students enroll in more courses, their average time-on-task per course may decrease, lowering their overall improvement gains per class.

Type of course. Students who enrolled in a course specific to one of the assessed language skills did not improve significantly more than those who did not enroll in a

skills-based course. For example, there was not a significant difference in speaking gains between students who enrolled in the EIL speak/listen course and students who did not enroll in the EIL speak/listen course. Several factors may contribute to this lack of difference. One possible reason could be related to the significant overlap of English skill teaching among the program courses. In an effort to follow the recommendations of Moore (1993) and others (Andrade & Bunker, 2009) by providing ample dialogue with more-experienced language users, course designers programed a large amount of speaking and listening practice into all of the courses. Tutor appointments had very similar formats in all courses, with an emphasis on speaking interaction. Thus, students in all courses could be expected to make gains even if they were not enrolled in the speaking course. This may help explain why speaking and listening skills saw the largest differences from pretest to posttest.

Research Question 2

What is the change of learner cross-cultural proficiency while participating in a distance-learning EIL program? Data from the Cultural Intelligence Scale (CQS) showed that students made significant gains in cognitive cultural intelligence (CQ). However, the other factors of CQ did not see significant differences from pretest to posttest. This study represents a first-effort to explore the change of cultural intelligence during a language-learning course and several insights may serve as a foundation for further research.

Cognitive CQ. Scores on cognitive CQ showed a significant difference between pretest and posttest. According to Ang et al. (2007) cognitive CQ reflects the amount of knowledge a person feels they have regarding other cultures, including economic systems, social norms, etc. Ang et al. also noted that this knowledge is usually gained

through both education and experience. The courses in this study focused on cross-cultural experience and did not spend time teaching about various cultures. Thus, it is likely that cross-cultural experiences (dialogue with those of other cultures) provided students with some opportunities to improve their cognitive CQ. This appears to support Ang (2007) and Van Dyne (2015a), who emphasized the importance of cross-cultural interaction in the development of cultural intelligence.

Behavioral CQ. Students who participated in three courses may have showed a significantly higher change in perceptions of behavioral CQ than those who enrolled in two or fewer courses. As defined by Ang et al. (2007), behavioral CQ describes how well a person performs in cross-cultural situations, with an emphasis on verbal and non-verbal communication skills. From the available data it is difficult to know exactly why students who enrolled in three courses generally felt they had improved their behavioral CQ—in contrast to those who only enrolled in two or fewer courses. It may be that exposure to cross-cultural learning situations played a role. As students were provided with increased opportunities for practice in cross-cultural interactions, they may have learned to communicate more appropriately in such situations.

Reading Course. Students who enrolled in the EIL reading course did report a significant difference in behavioral CQ versus those who were not enrolled in that course. It is also worth noting that mean differences in metacognitive CQ and motivational CQ approached significance. Thus, it appears that some instruction in cultural learning may have helped students develop greater cultural proficiency. Such an approach aligns well with prior research. Ang (2007) and Van Dyne (2015a), as well as others (Baker, 2011; J. Bennett & Bennett, 1993; Hammer et al., 2003; Yamazaki & Kayes, 2004) recommended

intentional cultural training as an ideal way to promote positive change in cultural proficiency.

Research Question 3

Can cultural intelligence predict English proficiency (or the change of English proficiency) among learners participating in a distance-learning EIL program? This study explored three possible relationships between English proficiency and cultural proficiency. The first set of analyses explored CQ pretest scores as predictors of English proficiency pretest scores. Second, this study explored the predictive ability of CQ pretest scores on the change of English proficiency from pretest to posttest. The final set of analyses explored the possibility that CQ change from pretest to posttest could significantly predict change in English proficiency scores from pretest to posttest. Results were mixed, with only metacognitive CQ showing predictive ability in some of the analyses. Pretest metacognitive CQ positively predicted pretest grammar skills. Pretest metacognitive CQ positively predicted change in speaking scores from pretest to posttest. However, change of metacognitive CQ from pretest to posttest negatively predicted change in grammar, reading, and speaking scores from pretest to posttest. In other words, as metacognitive CQ decreased from pretest to posttest, grammar, reading, and speaking scores increased.

Comparison to former research. Three studies have compared CQ to English-language proficiency. Ghonsooly and Golparvar (2013) found that all four CQ factors positively related to writing ability on the International English Language Testing System (IELTS) writing module. Rafie et al. (2016) noted a significant relationship between motivational CQ and results on the IELTS Listening Module. Rafieyan et al. (2015)

observed a significant relationship between overall CQ and pragmatic comprehension. Each of these studies appeared to show a relatively strong relationship between CQ and English-language skills. The results of this study do not show as strong of a relationship. However, direct comparison is difficult due to numerous differences in the sample and testing conditions. For example, students in this study tended to have higher pretest perceived cultural intelligence than respondents in Rafieyan et al. (the only one of the three studies to report CQ mean scores, see Table 19). In addition, the students in Rafieyan et al. were homogenous as far as their nationality (Iranian) and were participating in an intensive language program within the United States. Contrastingly, the students in this study, were heterogenous in regards to their nationality and were participating from their country-of-origin.

Table 19

Means and Standard Deviations from Rafieyan et al. (2015) Compared to Pretest CQ

Means and Standard Deviations in This Study.

Skill	Rafieyan et al.		This Study	
	M	SD	M	SD
CQ-Meta	5.13	1.60	5.93	.74
CQ-Cog	3.61	1.57	4.26	1.07
CQ-Mot	5.12	1.60	6.13	.77
CQ-Beh	4.27	1.50	5.81	.73

In this study, metacognitive CQ was the only CQ factor that showed significant predictive ability. However, results appear to be contradictory. Pretest metacognitive CQ significantly predicted pretest grammar proficiency and the change in speaking proficiency from pretest to posttest. This would appear to promote a positive predictive

relationship between metacognitive CQ and language learning. However, the statistical analyses that explored CQ score change from pretest to posttest as a predictor of English proficiency change from pretest to posttest showed a negative prediction. Grammar, reading, and speaking scores tended to increase as perceived metacognitive CQ decreased.

One possible explanation for this apparent contradiction could be that as students improved in their English proficiency through cross-cultural dialogue, they also became more aware of their actual metacognitive CQ. In other words, students may have overestimated their metacognitive CQ on pretests. Kruger and Dunning (1999) explained that overestimation bias is particularly likely in people that do not have experience in a particular domain. Thus, it may be that students in our study overestimated their metacognitive CQ on the pretest due to their lack of experience with those of other cultures. Consequently, as students in this study gained experience through cross-cultural dialogue, they may have more appropriately approximated their metacognitive CQ on the posttest. Additionally, overestimation bias may help explain why students in Rafieyan et al. (2015) reported lower CQ scores. Students in Rafieyan et al. were already living in the United States and may have more accurately estimated their CQ due to their more extensive experience with a foreign culture.

Even though the regression results for question 3 were not as strong as results from other studies, there remains some important implications for English language teaching practice. Pretest metacognitive CQ showed moderately strong predictive ability for pretest grammar proficiency. This could mean that as students who entered the program with a higher metacognitive CQ may have some advantage in English grammar

understanding in some way. While it is outside of the scope of this study to explore that predictive relationship further, this study does seem to suggest that cultural proficiency has a positive effect on English-language learning.

Research Question 4

What elements of distance-learning courses do students perceive as influential in developing language and cross-cultural proficiency? It was determined that course activities survey results with a mean score of four or higher would be considered perceived contributors to learning. For the purposes of this study, course activities were grouped into four categories according to Moore's (1989) interaction definitions: dialogue with tutor, dialogue with teacher, dialogue with students, and assignments.

English Language Activities. The results of this study appear to support findings from prior research and emphasize the importance of dialogue with more-experienced language users. In this study, students rated dialogue with the tutor or the teacher as significantly more influential in their English-language learning than course assignments or dialogue with other students. Don's (2005) student and expert surveys also showed a wide gap between learner-instructor dialogue and learner-learner dialogue, with learner-learner dialogue only receiving a mean score of 2.83 on a scale of one to five. Similarly, experts in Don's study ranked learner-learner dialogue at a lower level of importance when compared to learner-instructor dialogue. As discussed earlier, Madyarov (2009) found similar contrasts between learner-instructor dialogue and learner-learner dialogue. These findings do not necessarily diminish the importance of self-regulation or peer interaction, but may support an approach similar to Andrade and Bunker (2009) who

avored a controlled self-regulation, with frequent interaction with more-experienced language users.

Cultural Activities. The courses in this study relied on cross-cultural dialogue to help students gain cultural proficiency. Students in this study perceived that dialogue with tutors and other students were the most significant contributors to their cultural learning. Dialogue with the teacher and course assignments did not appear to be as influential in student perceptions of cultural learning.

Given that assignments in the course did little to directly address cultural proficiency, it may be understandable why students did not perceive the course assignments as helpful as other dialogue activities. Even among students in the reading course (where one reading assignment introduced concepts of cultural proficiency), students did not see their assignments as helpful as dialogue activities. These results may support a revision of course curriculum to include intentional cultural activities as recommended by some researchers (Ang & Van Dyne, 2015b; Baker, 2011; J. Bennett & Bennett, 1993; Gao, 2006; Hammer et al., 2003; Richards & Schmidt, 2013; Yamazaki & Kayes, 2004)

Implications

The implications that can be derived from this study are as follows:

- It may be important for distance language learning programs to provide ample opportunity for students to dialogue with more-experienced language users. Such opportunities may be particularly helpful in developing speaking and listening proficiency.

- While cross-cultural experience is valuable in a distance-learning experience, it may be more effective to couple cross-cultural experience with intentional cultural instruction.

These implications are particularly important in the design of distance language courses. Online forms of language instruction are growing, but with mixed opinions about that growth. Questions about viability still linger (Don, 2005; Vorobel & Kim, 2012). This study may help alleviate some of that concern by providing evidence that such programs can effectively promote language development. It may be particularly important for course designers to promote rich forms of dialogue with tutors and teachers. In distance-learning programs that seek to promote cross-cultural proficiency, cross-cultural experiences appear to be an effective way to help students gain some cross-cultural proficiency. However, it may be important that course designers plan intentional cross-cultural training as well as the cross-cultural experiences to maximize cultural proficiency gains.

Limitations

This study has several limitations. First, this study is an exploration and did not employ an experimental design. Thus, there is no comparison group. While the statistical analyses provided evidence of significant improvement in vocabulary, listening, grammar, speaking skills, and cognitive CQ, this study does not provide evidence that the distance-learning environment is worse, as good, or better for language learning than other learning environments. It also does not compare this distance-learning program to one that does not rely on learner-instructor dialogue.

A second limitation came in consequence of the chosen English and cultural assessments. There are four basic language skills: listening, speaking, reading, and writing. The instrument used in this study was not able to assess writing ability. The CQS measures metacognitive, cognitive, motivational, and behavioral CQ, which was a good fit for this study. However, there may be other aspects of cultural proficiency that may have been missed. For example, emotion is an important construct in both language learning and cultural development. However, this study does not address that construct.

Third, the somewhat small sample size made it difficult to use more complex analyses than those in this study. Typically, multiple between-subjects factors (e.g. enrolling in multiple courses and enrolling in a skills-based course) would have been placed in the same ANOVA. However, the small sample size in this study made the cell sizes too low, necessitating the need to run separate tests. Running separate analyses may have inflated the possibility of a type I error.

Fourth, this study only looked at the predictive ability of CQ factors on language proficiency skills. This approach followed the methods of other studies (Rafieyan et al., 2015; Rafie et al., 2016; Ghonsooly & Golparvar, 2013). However, there does not appear to be evidence, theoretical or otherwise, that the predictive relationship should not be reversed. It may be that language proficiency may significantly predict cultural proficiency.

Fifth, the curriculum did not intentionally target cultural proficiency. Instead, cultural experiences with tutors and other students was the primary cross-cultural learning method. It may well be that when cross-cultural interactions are coupled with intentional instruction, greater cultural-learning gains could result. Also, overestimation

bias in the pretest may have reduced real changes in cross-cultural proficiency. Instead of a strict pretest, posttest design, other assessment strategies could be employed to assess cultural intelligence change.

Recommendations for Further Research

These recommendations directly address the aforementioned limitations. First, a comparative study would be necessary to place findings within the context of other language-learning environments. Second, this study recommends that future studies use assessment instruments that will cover the four basic language proficiency skills, including writing. Third, larger sample sizes would provide the opportunity for more complex analyses. Fourth, an exploration of the predictive ability of foreign language skill on cultural proficiency may yield further insight into the relationship between language and culture. Fifth, a distance-learning environment with intentional cultural learning may be more fruitful grounds for investigations into the relationship between cultural proficiency and language learning. Such studies could include intentional learning exercises similar to those recommended by Ang (2007) and Van Dyne (2015a).

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APPENDICES

Appendix A
Course Activities Descriptions

Course Activities Descriptions

The course activities are divided by course and provide a short description, frequency of activity, and how the activity was categorized for this study.

Activities for the Speaking/Listening Course.

Activity	Description	Category	Frequency
Vocab activities	Students perform various exercises to help memorize words in their word list. Students also take a quiz to check their understanding.	Assignment	3 times
Listening logs	Students listen to a recording of the word. Students then count how many syllables each word has in their word list and compare it to the actual answer.	Assignment	6 times
Tutor appointments	The tutor talks with the student over video chat. Before every appointment, the student has to do a worksheet and prepare answers to questions that the tutor is going to ask.	Learner-tutor dialogue	13 times
Teacher communications	Teachers give feedback on homework assignments and quizzes. The teacher is also communicating with those who are struggling in the class to give them extra help.	Learner-teacher dialogue	Every assignment
Dictation	Students listen to a recording of sentences that contain words from their word list of the week. The student then needs to write what they hear, including punctuation and capitalization, in a provided worksheet.	Assignment	3 times
Reading	Students read a short article about whatever topic the teacher has chosen for the week. After reading the article, the student takes a short quiz about the article.	Assignment	6 times
Videos posts	Students post a video to the teacher answering several questions provided by the teacher.	Assignment	7 times
Documentaries	Students watch short documentary on a topic. Students fill out a worksheet while watching the documentary.	Assignment	2 times

Activity	Description	Category	Frequency
Note-taking	Students watch a video on how to take effective notes. They practice by watching a lecture and taking notes. They submit their completed notes for feedback.	Assignment	6 times
Discussions with students	Students post a video answering the question that was presented by the teacher. The students then need to respond to five other student posts.	Learner-learner dialogue	4 times
Vocabulary activities	Students perform various exercises to help memorize words in their word list. Students also take a quiz to check their understanding.	Assignment	3 times

Activities for the Writing Course.

Activity	Description	Category	Frequency
Writing assignments	Students write about a topic in a given time. Students are graded on their organization, content, grammatical accuracy, and fluency.	Assignment	9 times
Fluency	Students are given a reading from a text. They are given questions and must answer in a given timeframe. Students are encouraged not to focus on accuracy, but to write as quickly as they can.	Assignment	9 times
Tutor appointments	Students are to complete a worksheet before meeting with their tutor for the week. The students then have to prepare answers to some questions about course activities. They also have to write a basic paragraph about what was	Learner-tutor dialogue	11 times

Activity	Description	Category	Frequency
Teacher communications	discussed in the tutor appointment. Teachers give feedback on homework assignments and quizzes. The teacher is also communicating with those who are struggling in the class to give them extra help.	Learner-teacher dialogue	Every assignment
Manage Your Learning	Course Journal. Students take a survey to see where they are in their writing abilities. The students then choose an area with which they are struggling and focus on that area by completing the MYL assignment.	Assignment	10 times
Reading activities	Students read a short article and then submit a short writing assignment comparing their own lives to details within the article.	Assignment	10 times
Video discussions	Students discuss with each other their ideas on the upcoming writing assignment to help them get a better idea on what to write about.	Learner-learner dialogue	9 times
Vocabulary activities	Students are given direct instruction presentation about words that are in their readings to help them better understand the reading. They self-check their progress.	Assignment	8 times
Sentence activities	Students view a presentation about sentence structure and then are quizzed about what they had just learned.	Assignment	8 times
Grammar	Students watch a presentation on a certain grammar rule. After studying, they are required to take a quiz.	Assignment	5 times
Writing assignments	Students write about a topic in a given time. Students are graded on their organization, content, grammatical accuracy, and fluency.	Assignment	9 times

Activities for the Reading Course.

Activity	Description	Category	Frequency
Vocabulary activities	Students are given a vocabulary list from their book. The students have to find the definitions and meaning behind those words. They complete a quiz once on these words.	Assignment	2 times
Timed reading	Students are to read the pre-reading questions about the article first and then time themselves on how fast they read the article. They mark how fast they read the article.	Assignment	30 times
Tutor appointments	Students prepare by considering questions on a given topic. Students then discuss these questions with their tutors during the appointment.	Learner-tutor dialogue	11 times
Teacher communications	Teachers give feedback on homework assignments and quizzes. The teacher is also communicating with those who are struggling in the class to give them extra help.	Learner-teacher dialogue	Every assignment
Learner journal	Students reflect on what they are learning and write down their thoughts and ideas.	Assignment	10 times
Short novel	Students read a short novel and are quizzed about their readings. They are provided with a study guide to assist them. At the end of the course, students write a book review on this novel.	Assignment	11 times
Student discussions	Students are given a topic to read about in their text book and then tasked to answer a few questions. They answer the questions in a video in the discussion board. Students listen and respond to at least two other student comments.	Learner-learner dialogue	13 times
Reading-writing Assignments	Students are tasked to answer questions in their text book and then compare their answers in the back of the book.	Assignment	21 times

Appendix B

Cultural Intelligence Scale (CQS)

Cultural Intelligence Scale (CQS)

This survey was translated into the student native language and administered as a pretest and posttest.

Directions: Read each statement and select the response that best describes your capabilities. Select the answer that BEST describes you AS YOU REALLY ARE (1=strongly disagree; 7=strongly agree).

CQ Factor	Questionnaire Item
Metacognitive	I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.
Metacognitive	I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.
Metacognitive	I am conscious of the cultural knowledge I apply to cross-cultural interactions.
Metacognitive	I check the accuracy of my cultural knowledge as I interact with people from different cultures.
Cognitive	I know the legal and economic systems of other cultures.
Cognitive	I know the rules (e.g., vocabulary, grammar) of other languages.
Cognitive	I know the cultural values and religious beliefs of other cultures.
Cognitive	I know the marriage systems of other cultures.
Cognitive	I know the arts and crafts of other cultures.
Cognitive	I know the rules for expressing non-verbal behaviors in other cultures.
Motivational	I enjoy interacting with people from different cultures.
Motivational	I am confident that I can socialize with locals in a culture that is unfamiliar to me.
Motivational	I am sure I can deal with the stresses of adjusting to a culture that is new to me.
Motivational	I enjoy living in cultures that are unfamiliar to me.
Motivational	I am confident that I can get accustomed to the shopping conditions in a different culture.
Behavioral	I change my verbal behavior (e.g., accent, tone) when a cross-cultural interaction requires it.
Behavioral	I use pause and silence differently to suit different cross-cultural situations.
Behavioral	I vary the rate of my speaking when a cross-cultural situation requires it.
Behavioral	I change my non-verbal behavior when a cross-cultural situation requires it.
Behavioral	I alter my facial expressions when a cross-cultural interaction requires it.

Appendix C
Course Activities Survey

Course Activities Surveys

These Likert-style surveys were administered at the end of each course to gather data on student perceptions of the English-language and cultural learning. Students were asked to rate the items from one (not helpful) to five (extremely helpful).

Course activities survey for the speaking/listening course.

Proficiency	Questionnaire Item
Speaking Proficiency	Did this course help you improve in your ability to speak English?
Listening Proficiency	Did this course help you improve your ability to listen to and understand English?
English Proficiency	Which course activities helped you learn English? Vocab Activities Listening Logs Tutor Appointments Teacher Communications Dictation Reading Videos posts Documentaries Note-taking Discussions with students
CQ-Meta	Did this course help you learn how to change the way you think about other cultures?
CQ-Cog	Did this course help you gain new knowledge about other cultures?
CQ-Mot	Did this course help you want to communicate with people of other cultures?
CQ-Beh	Did this course help you learn how to communicate with people from other cultures?
Cultural proficiency	Which course activities helped you in your cultural learning? Vocab Activities Listening Logs Tutor Appointments Teacher Communications Dictation Reading

Proficiency	Questionnaire Item
	Videos posts
	Documentaries
	Note-taking
	Discussions with students

Course activities survey for the writing course.

Proficiency	Questionnaire Item
Speaking Proficiency English Proficiency	Did this course help you improve in your ability to write English?
	Which course activities helped you learn English?
	Writing Assignments
	Fluency
	Tutor Appointments
	Teacher Communications
	MYL
	Reading Activities
	Video Discussions
	Vocabulary Activities
	Sentence Activities
	Grammar Activities
CQ-Meta	Did this course help you learn how to change the way you think about other cultures?
CQ-Cog	Did this course help you gain new knowledge about other cultures?
CQ-Mot	Did this course help you want to communicate with people of other cultures?
CQ-Beh	Did this course help you learn how to communicate with people from other cultures?
Cultural proficiency	Which course activities helped you in your cultural learning?
	Writing Assignments
	Fluency
	Tutor Appointments
	Teacher Communications
	MYL
	Reading Activities
	Video Discussions

Proficiency	Questionnaire Item
	Vocabulary Activities
	Sentence Activities
	Grammar Activities

Course activities survey for the reading course.

Proficiency	Questionnaire Item
Speaking Proficiency	Did this course help you improve in your ability to read English?
English Proficiency	Which course activities helped you learn English?
	Vocabulary Activities
	Timed Reading
	Tutor Appointments
	Teacher Communications
	Learner Journal
	Short Novel
	Student Disc
	Reading-writing Assignment
CQ-Meta	Did this course help you learn how to change the way you think about other cultures?
CQ-Cog	Did this course help you gain new knowledge about other cultures?
CQ-Mot	Did this course help you want to communicate with people of other cultures?
CQ-Beh	Did this course help you learn how to communicate with people from other cultures?
Cultural proficiency	Which course activities helped you in your cultural learning?
	Vocabulary Activities
	Timed Reading
	Tutor Appointments
	Teacher Communications
	Learner Journal
	Short Novel
	Student Disc
	Reading-writing Assignment

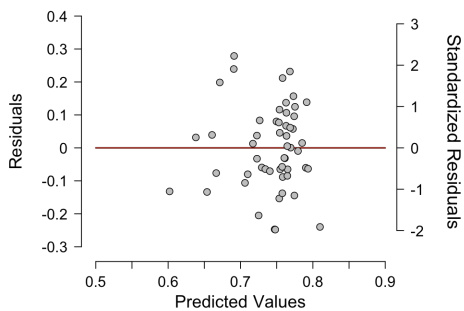
Appendix D

Q-Q-Plots and Scatterplots for Regression Analyses, CQ predicting

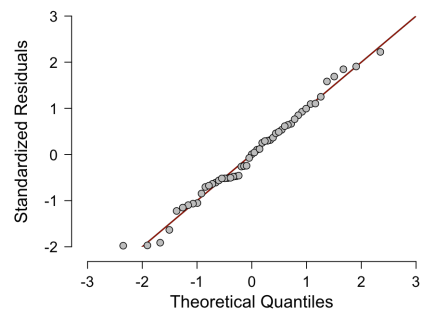
Vocabulary Proficiency

CQ Pretest Scores Predicting Vocabulary Pretest Scores

Residuals vs. Predicted

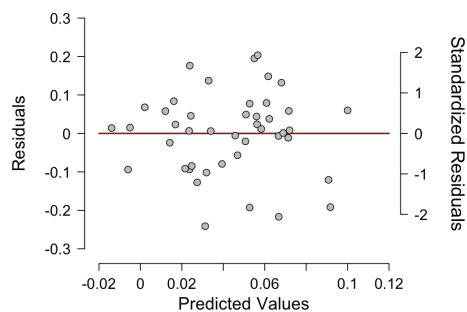


Q-Q Plot Standardized Residuals

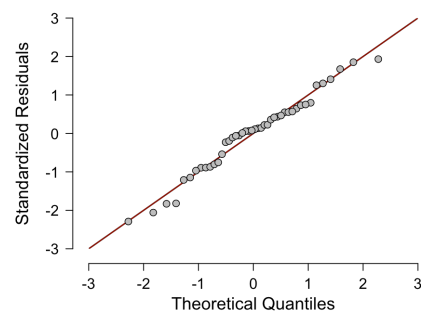


CQ Pretest Scores Predicting Vocabulary Score Change

Residuals vs. Predicted

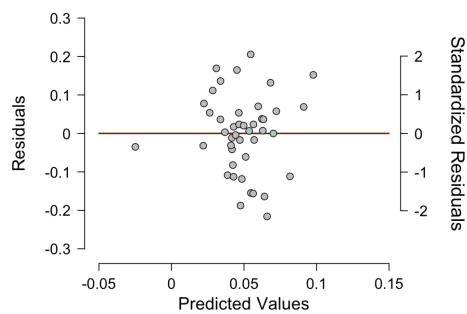


Q-Q Plot Standardized Residuals

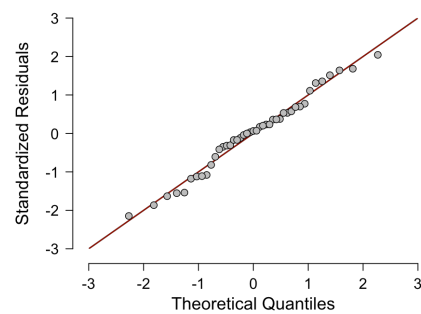


CQ Scores Change Predicting Vocabulary Score Change

Residuals vs. Predicted



Q-Q Plot Standardized Residuals

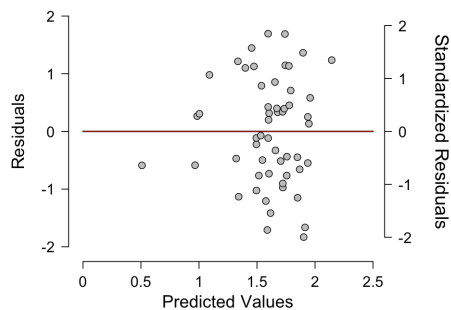


Appendix E

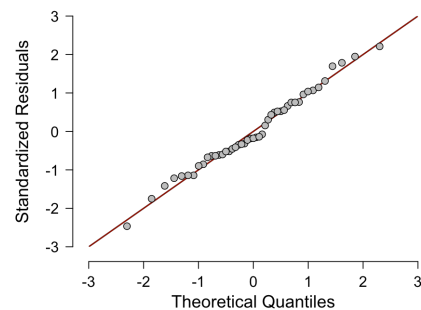
Q-Q-Plots and Scatterplots for Regression Analyses, CQ predicting Listening Proficiency

CQ Pretest Scores Predicting Listening Pretest Scores

Residuals vs. Predicted

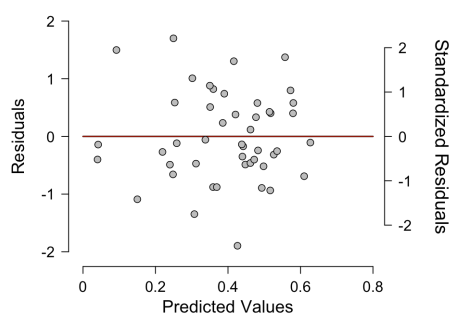


Q-Q Plot Standardized Residuals

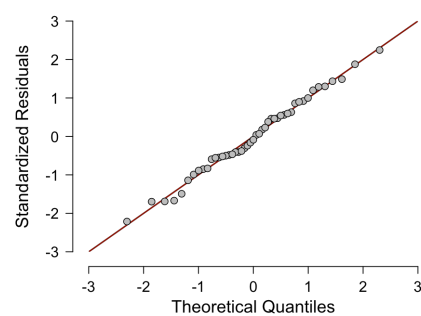


CQ Pretest Scores Predicting Listening Score Change

Residuals vs. Predicted

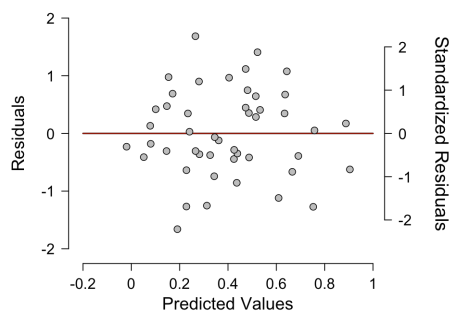


Q-Q Plot Standardized Residuals

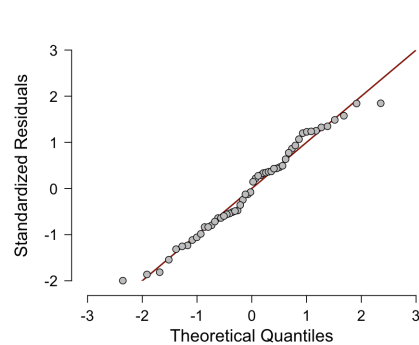


CQ Scores Change Predicting Listening Score Change

Residuals vs. Predicted



Q-Q Plot Standardized Residuals

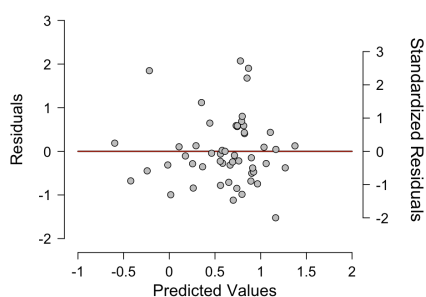


Appendix F

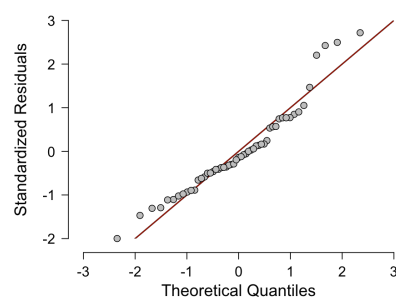
Q-Q-Plots and Scatterplots for Regression Analyses, CQ predicting Grammar Proficiency

CQ Pretest Scores Predicting Grammar Pretest Scores

Residuals vs. Predicted

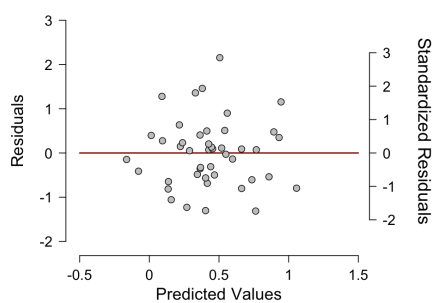


Q-Q Plot Standardized Residuals

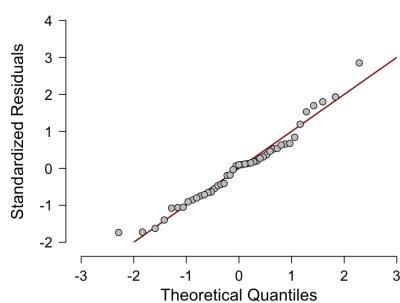


CQ Pretest Scores Predicting Grammar Score Change

Residuals vs. Predicted

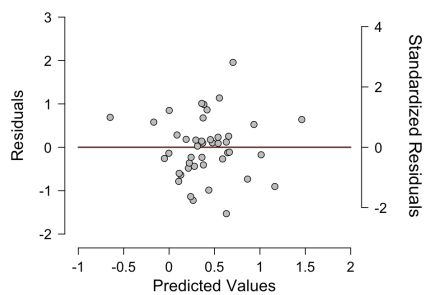


Q-Q Plot Standardized Residuals

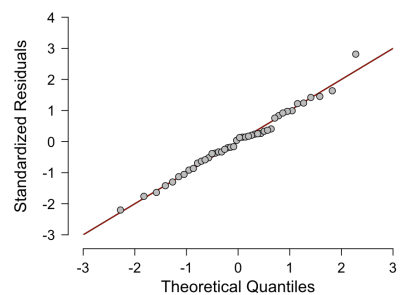


CQ Scores Change Predicting Grammar Score Change

Residuals vs. Predicted



Q-Q Plot Standardized Residuals

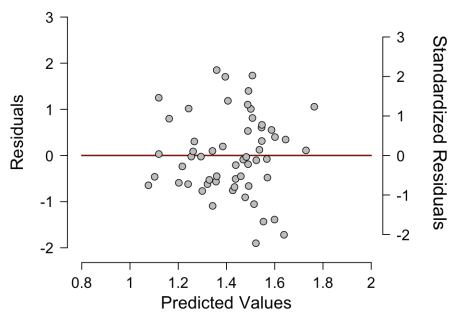


Appendix G

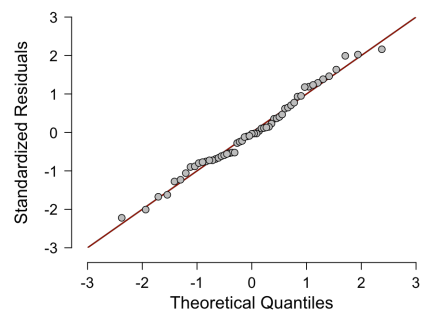
Q-Q-Plots and Scatterplots for Regression Analyses, CQ predicting Reading Proficiency

CQ Pretest Scores Predicting Reading Pretest Scores

Residuals vs. Predicted

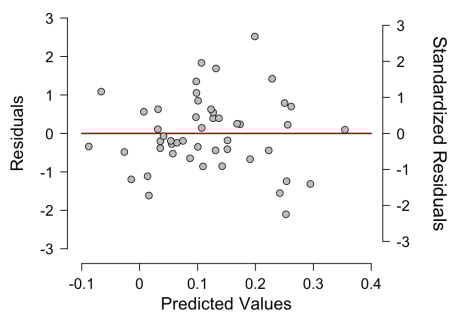


Q-Q Plot Standardized Residuals

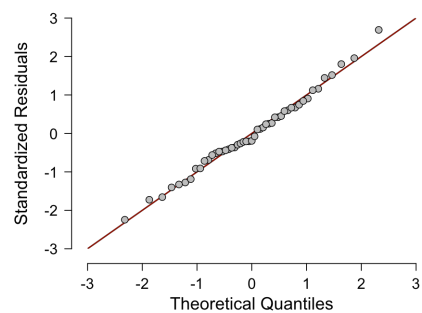


CQ Pretest Scores Predicting Reading Score Change

Residuals vs. Predicted

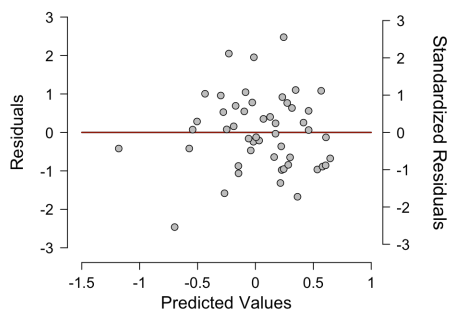


Q-Q Plot Standardized Residuals

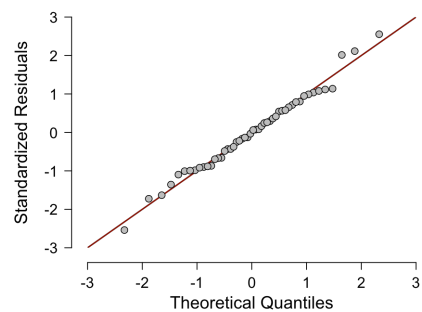


CQ Scores Change Predicting Reading Score Change

Residuals vs. Predicted



Q-Q Plot Standardized Residuals

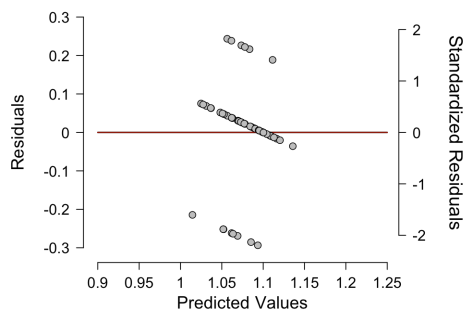


Appendix H

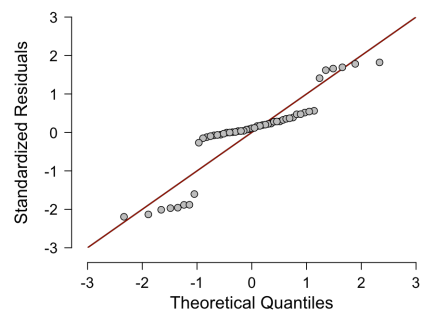
Q-Q-Plots and Scatterplots for Regression Analyses, CQ predicting Speaking Proficiency

CQ Pretest Scores Predicting Speaking Pretest Scores

Residuals vs. Predicted

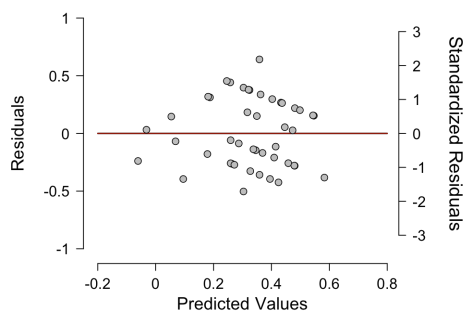


Q-Q Plot Standardized Residuals

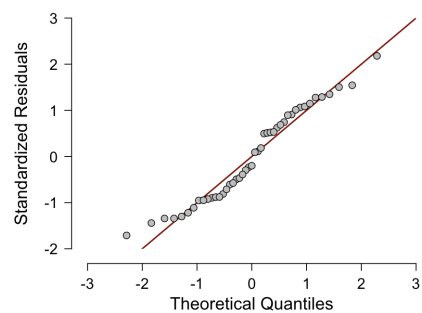


CQ Pretest Scores Predicting Speaking Score Change

Residuals vs. Predicted

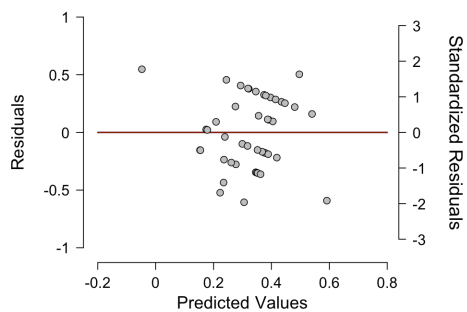


Q-Q Plot Standardized Residuals

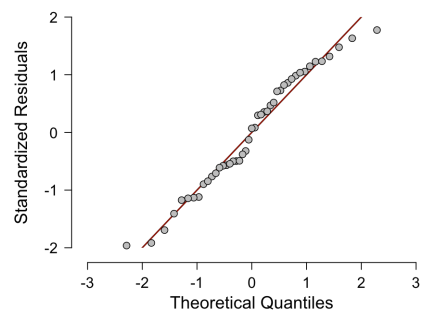


CQ Scores Change Predicting Speaking Score Change

Residuals vs. Predicted



Q-Q Plot Standardized Residuals



CURRICULUM VITAE

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Ph.D., Instructional Technology and Learning Sciences, Utah State University, 2017

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A.A., Graphic Design, Ricks College, 2000

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As the director, my primary responsibility is to create and manage the learning and teaching development program for the university.

ASSISTANT PROFESSOR, Department of Religious Education, BYU–Hawaii, September 2016 to present.

I have taught religion courses for BYU-Hawaii since 2013 and began as a faculty member in 2014. Courses: Religion 121, Book of Mormon I Religion 122, Book of Mormon II, Religion 200, Eternal Families, Religion 211, New Testament I, Religion 225, Foundations of the Restoration Religion 341, Church History 1805-1844.

DIRECTOR, Online Learning, BYU–Hawaii, September 2011 To September 2016.

As the director, my primary responsibility was to manage the online education program at the university.

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JR. ART DIRECTOR, Razor Advertising, Salt Lake City, UT, April 2000 To May 2001.

At Razor, I participated in various creative roles, including advertising design, web design, art direction, and client coordination.