

**How's your CQ?: A Quasi-Experimental Study of Cultural Intelligence  
Levels in Traditional Students Following Study Abroad and  
Classroom-based Cultural Experiences**

by

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## Abstract

The purpose of this research was to assess the impact of study abroad and classroom-based cultural experiences on traditional students' cultural intelligence (CQ) levels, as measured through CQ scores from the standardized Cultural Intelligence Survey. Data from students participating in cultural experiences offered through a major Land Grant University (LGU) were collected during the period 2011–2018 using the Cultural Intelligence Scale (CQS) developed by the Cultural Intelligence Center. This study used the CQS instrument to explore the relationship between cultural intelligence and cultural experiences on-campus and abroad.

The hypotheses were tested using a quasi-experimental pre-test/post-test research design. The results were initially analyzed using descriptive statistics to report mean average and standard deviation of scores before and after each cultural experience. A second round of analysis was performed to provide a deeper understanding of CQ scores at the sub-category level. Additional analysis was conducted to form concluding statements about the particular population and sample size used in this study. The results suggested an increase in cultural intelligence levels aligned to study abroad and classroom-based cultural experiences on traditional students' CQ levels. A closer analysis of the data raised some questions about the best practices in the assessment of cultural experiences that contribute to the discussion and the growing body of research regarding cultural intelligence literature, specifically research that uses CQS as the measurement. Overall, the findings from this research support the value of cultural experiences—both on campus and abroad—in raising CQ levels among traditional college students.

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## Glossary

Classroom-based	Referring to learning that occurs in a traditional classroom setting.
Cultural experience	Interacting with beliefs, social forms, shared attitudes, values, goals, and practices different than your own (Merriam-Webster).
Cultural intelligence	An individual's ability to adjust and perform in culturally diverse contexts (Alexandra, 2018; Earley & Ang, 2003).
Generation Z (Gen Z)	The generation after millennials, those born between the period 1996–2010 (Loveland, 2017).
Higher education	Education received at a college or university after completing high school.
Millennials	The generation following Gen X. Those born between the period 1981–1996 (Rauch, 2018).
Study abroad	A university sponsored, organized, and approved-for credit arrangement that allows students to travel outside of the United States (U.S) for differing periods of time (Albert, 2020).
Third culture	Culture that emerges as study abroad students associate with other students from their home culture. Also considered a peer cohort (Citron, 2002).
Traditional student	Referring to students currently enrolled in face-to-face undergraduate studies between the ages of 18–22.

## List of Abbreviations

CQ	Cultural intelligence
CQS	Cultural intelligence scale
LGU	Land grant university
ROI	Return on investment

## Introduction

The word “millennial” is often used to describe any generation that came after baby boomers; however, it would be useful to differentiate between true millennials and the next generation in line, Generation Z (Gen Z). According to Cameron and Pagnattaro (2017) a quarter of today’s population belongs to Gen Z, those born between 1995 and 2010 (Loveland, 2017). The first members of Gen Z are entering the college classroom with their needs, values, attitudes, and beliefs about higher education shaping the choices they make and which experiences—including study abroad opportunities—will be a part of their degree path.

Different from millennials, Gen Z students crave practical, real life experiences; cultural experiences can meet that expectation while educational outcomes respond to the market demand for Gen Z traditional students’ needs (Loveland, 2017). Gen Z students come to college after spending most of their time in a primary school learning environment under the No Child Left Behind Act of 2001 (Pool et al., 2017; Trolan & Fouts, 2011). For students who grew up with the No Child Left Behind curriculum, their learning experience relied on simply learning for tests (Trolan & Fouts, 2011). For this reason, Gen Z students look at their educational experience differently than anything universities have previously experienced.

Gen Z students recognize the return-on-investment (ROI) of their college degree and other experiences associated with college tuition, such as that of studying abroad. Gen Z members were raised during the U.S. economic crashes of 2000 and 2008; they are aware of economic struggles (Cameron & Pagnattaro, 2017; Loveland, 2017) and often need a cost-benefit analysis of anything costing significant money (Loveland, 2017). Receiving a college degree is no longer a novelty, nor does it secure a student a place in the job market; the experiences students have while in college are what make a college graduate marketable. Increased CQ can

be a targeted and measurable outcome from participation in cultural experiences and presented as an ROI. Higher education institutions have an opportunity to communicate all the ROI aspects of the college experience to prospective students, parents, and stakeholders.

Studying abroad may give students the tools to develop cross-cultural attributes and help them connect in a globally connected world (Killick, 2012). When a student is abroad, the experience of learning in a different culture than one's own can allow the student to transform by challenging their norms and widening their perceptions of the world (Ellwood, 2011). According to Raby et al. (2014), studying abroad supports a philosophical construct which helps an internationally literate student to navigate the modern world. A potential output of a study abroad cultural experience is the development of important cultural competency skills, which can be measured in levels of CQ. Establishing a global perspective involves learning to think and act in a world where those around you are often from a different cultural background (Braskamp et al., 2009). Gaining those intercultural skills creates a value-added educational experience for traditional learners. Overall, a study abroad experience should have a positive psychological impact on a student's personal development (Chickering & Braskamp, 2009).

### **Purpose of Study**

The purpose of this study is to assess the impact of study abroad and classroom-based cultural experiences on traditional university students' CQ levels, as measured through CQ scores from the standardized CQS measurement. Culture is understood to encompass symbols, images, and practices that collectively and socially bias communication (Ruben, 2015). This study contributes to existing CQ literature as well as multicultural pedagogical strategies. The current study has a student sample unique to the standard student population in study abroad research. Most study abroad research focuses on complete immersion programs, typically seen in

business or language-based colleges or fields of study. The present study population is an aggregate from a college in which program majors focus on all aspects of quality of life, such as design for consumers, human development and family sciences, nutrition and wellness, interior design, and global studies. This specific LGU population has been understudied when discussing the issues of CQ. The data for the study came from a database of responses to a questionnaire about CQ and incorporates students who have varied cultural experiences. The study has used established, standard methods of analysis including averaging of scores and analyzing standard deviations. Additionally, it has taken the analysis a step further by looking into CQ scores at the sub-category level. By doing both, the researcher aimed to further the knowledge on CQ and its ability to communicate students' cultural learning while also providing support for future research.

### **Objectives**

Three objectives were identified to carry out the purpose of the study. These objectives focus on overall CQ and the components or sub-categories of CQ. The first objective was to understand the relationship between CQ levels and a cultural experience. This objective required a pre-test to establish baseline CQS scores, followed by a post-test to calculate any potential loss or gain. The second objective was to differentiate between cultural experiences in an on-campus setting and those that occur during a study abroad experience. This objective required collecting data in courses from both contexts. The final objective, within the context of study abroad-based cultural experiences, was to understand the potential effect of program length as a variable among study abroad programs. Together, these three objectives provided a pathway to uncover new information about one of the factors that may make study abroad programs, and cultural experiences in general, effective—the cultural intelligence factor.

## Literature Review

In 2007, the number of U.S. students that studied abroad for academic credit was almost 250,000 (Stroud, 2010). That number has continued to trend upward (Anderson et al., 2015). Leading researchers and educators all seek to answer the same question: why are some students more prepared and better equipped to handle cross-cultural and multi-cultural situations (Alexandra, 2018; Fang et al., 2018)? This question becomes relevant especially when many U.S. universities have seemingly similar environments that rarely challenge social norms (Caldwell & Purtzer, 2015). Maloney and Asbury (2018) asserted that studying abroad is the ideal experience for students to learn hands-on ways to navigate cultures different than their own. Not only is studying abroad ideal for developing CQ, but the developmental stage of life when studying abroad facilitates for traditional students is also an ideal situation for students. Late adolescence and early adulthood are a formative period for students where they tend to be more open to experiences (Lee et al., 2014). Both students and parents view studying abroad as an experience that increases the opportunities for job interviews and career progression (Franklin, 2010; Stroud, 2010). This research supports the claim that Gen Z seeks colleges that will provide the best degree and ROI of the college experience as possible.

In the late 20<sup>th</sup> century, researchers articulated the idea of “third culture kids” (Pollock, D. C., 1989; Useem & Downie, 1976), referring to children who grow up in a country different than their parents’ home country. However, the idea of third culture kids has been expanded and can simply be referred to as “third culture”, the culture that emerges as study abroad students associate with other students from their home culture (Citron, 2002). Third culture is often used when discussing study abroad participant interaction; however, it can also be used to help explain the interaction among student groups in the classroom. A third culture dynamic is often

formed within a peer cohort group through active interactions with each other (Savicki, 2010). Culture may often present itself as having a fluid definition, but for the purpose of this study, culture will refer to “a group of people with shared values, assumptions, and norms of interaction” (Citron, 2002, p. 44). Similar to the study abroad participants’ have, when on-campus students begin a new course, they suddenly find themselves surrounded by new peers. This interaction with peers could create an alliance and exchange of cultural backgrounds leading to the creation of a domestic third culture.

Developing cross-cultural competencies becomes vital as our workplaces become globalized (Alexandra, 2018). Research shows that the ability to interact with individuals of different cultural backgrounds is vital in an era of global change and aids successful career development (Ramirez, 2019). This is why it has become increasingly important to understand what competences and tools can help individuals be successful in cultural interactions (Fang et al., 2018). CQ can be defined as an individual’s ability to adjust and perform in culturally diverse contexts (Alexandra, 2018; Earley & Ang, 2003). CQ development hinges on experiential, cultural contact over a period of time (Earley & Ang, 2003). There are several studies that have used Van Dyne et al.’s (2008) CQ scale, but there also have been several studies on CQ that took a different approach.

### **CQ Terminology**

Carlson and Widaman (1988) were some of the first researchers to look at college students’ attitudes towards other cultures after studying abroad. Throughout their research they refer to CQ as global mindedness. A few years later, Thomlison (1991) measured the results from a four-part survey examining intercultural contact and attitude change. In this study, Thomlison (1991) did not label the development with any one term but instead discussed

variable clusters that he discovered in terms of intercultural contact. Douglas and Jones-Rikkens (2001) examined globalization by measuring “world-mindedness”—defined as “the extent to which individuals value global perspectives on various issues” (p.55). Paige et al. (2009) also used the overarching idea of global engagement to define the scope of their study. In a more recent study, Miller-Perrin and Thompson (2010) used the terms internal redirection and external connections to examine the effects of study abroad on students’ personal growth.

The development of the CQ scale by the Cultural Intelligence Center provided a tool that is capable of encompassing all previously defined terms. The CQ scale is capable of considering all internal and external effects of studying abroad. The creation of this scale additionally offered a uniform way to define terms associated with cultural and study abroad research; the CQ scale creates a standard unit of measurement by which all study abroad research can be compared. (Van Dyne et al., 2008).

### **Impact of Study Abroad on CQ**

Carlson and Widaman (1988) found that the students surveyed had increased levels of international political concern and cultural interests. Thomlison (1991) reported similar results, i.e. significant changes in students’ beliefs and values. Douglas and Jones-Rikkens (2001) found evidence of increased world-mindedness. Paige et al. (2009) also found significant evidence of an overall impactful study abroad experience. Miller-Perrin and Thompson (2010) found evidence to support the need for students to study abroad during college. According to Van Dyne et al (2008), the creation of the CQ scale not only provided uniform terminology that could increase validity across study abroad research; it also generated a way to summarize the results of cultural studies. There have been similar impact results across all study abroad research; using the CQ scale provides consistency for meta-analysis across this developing research area. **Error!**

**Reference source not found.** provides a brief summary of study abroad research that is relevant to the current study.

**Table 1**

*Literature Review Summary*

<b>Key Authors</b>	<b>Terminology</b>	<b>Methodology</b>	<b>Findings</b>
Carlson and Widaman (1988)	Global mindedness and international awareness	Questionnaire sent to junior study abroad and domestic students at one university	Increased cultural and political concerns
Thomlison (1991)	Intercultural contact	Four-part survey sent to undergraduate study abroad students at one university	Significant changes in students' personal growth
Douglas and Jones-Rikkens (2001)	World-mindedness	Questionnaire sent to study abroad and domestic students at one university	Increased world-mindedness
Paige et al. (2009)	Global engagement	Online survey and follow-up interviews of study abroad students from 22 institutions	Studying abroad can impact a college experience

Research shows the positive impact studying abroad can have on students (Ellwood, 2011; Killick, 2012; Raby et al., 2014). Ramirez (2016) found that studying abroad increases a student's CQ. CQ presents a theoretical expansion of intelligence research and can be defined as "the capability to function effectively in culturally diverse settings" (Van Dyne et al., 2008, p. 16).

A review of past research revealed a methodological consistency of using surveys when exploring cultural study abroad experiences, suggesting the need for a standard measuring unit across all study abroad research. Carlson and Widaman (1988) used a quasi-experimental design, surveying 450 students who went abroad and 800 students who did not. Thomlison (1991) used a similar approach, surveying 174 students who spent a year abroad. Douglas and Jones-Rikkens (2001) collected data from 120 students who had traveled abroad and those who had not. Paige et al. (2009) employed a mixed methods study design, consisting of an online survey and individual follow-up interviews. Miller-Perrin and Thompson (2010) surveyed 74 students who had spent time abroad. Van Dyne et al.'s (2008) CQ scale provides a standard measuring unit that can easily be distributed in an online survey.

### **Cultural Intelligence Scale**

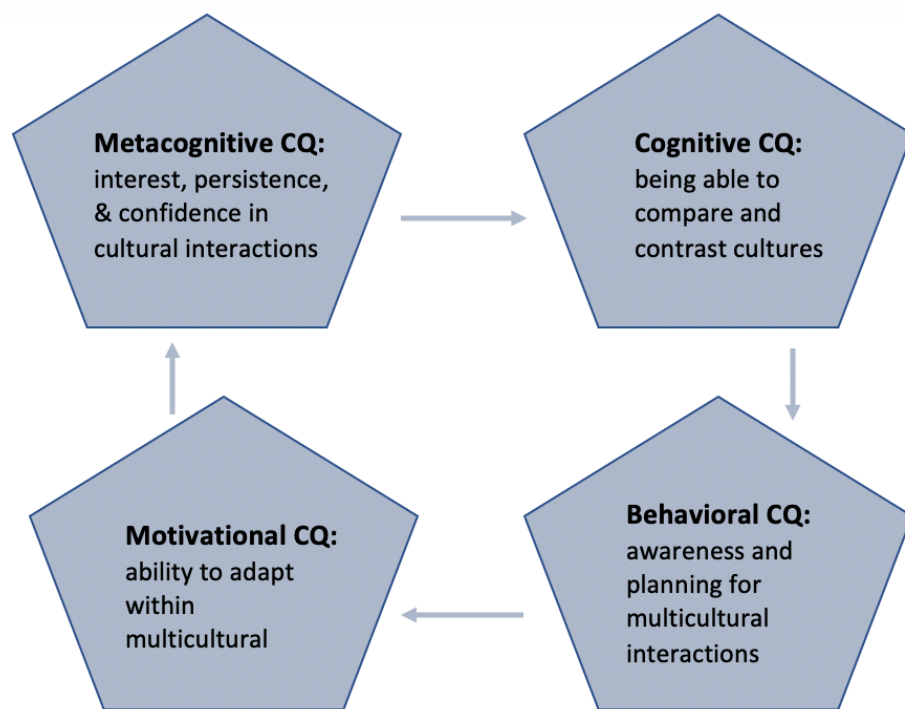
The Cultural Intelligence Center developed the CQS based on Ang and Van Dyne's (2008) four-factor extension of Earley and Ang's (2003) original three-factor conceptualization of cultural intelligence. These four factors include metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ (Ang & Van Dyne, 2008). These factors can also be referred to as CQ drive, CQ knowledge, CQ action, and CQ strategy, respectively. The CQS uses a pre-test and post-test testing model designed to show changes over time.

According to the Cultural Intelligence Center, Van Dyne et al. (2008) followed rigorous construction procedures involving several samples and cross-validation samples over several years during the development of the scale. CQ research is grounded in the theory of multiple intelligences (Sternberg & Detterman, 1986). Adding to previous CQ work, Earley and Ang (2003) discovered three points where intelligence related to human interaction developed. The increasing amount of research related to CQ led Van Dyne et al. (2008) to focus on the cultural

aspects of CQ. They started with 53 items for the initial item pool, with 13–14 items per CQ dimension; the researchers then retained 10 items for each dimension. The remaining 40 items were analyzed for high residuals, small standard deviations, and low item correlations; this process led to identifying 20 of the strongest psychometric items that lead to the creation of the final survey items (Ang et al., 2007; Van Dyne et al., 2008).

**Figure 1**

*Cultural Intelligence Model reproduced from Van Dyne et al. (2008)*



Once the final items were established, Van Dyne et al. (2008) conducted a second study; this study corrected the item-to-total correlations between items and their scales, supporting internal consistency. A third study then examined if CQS could be measured longitudinally (Van Dyne et al., 2008). That CQ levels could change over time based on cultural exposure, socialization, and other life experiences had been shown (Earley & Ang, 2003). The results of

study three provided evidence of adaptable results as well as pre- and post-test reliability (Van Dyne et al., 2008). The sample from the three previous studies consisted of undergraduate students in Singapore; study four determined that the four-factor structure would hold across multiple countries (Van Dyne et al., 2008). CQS is self-reported, and therefore it was important to consider observer ratings as well. Study five developed, administered, and analyzed certain multi-trait, multi-method techniques developed by Campbell and Fiske (1959). It provided evidence of convergent, discriminant, and criterion validity of CQS across self and peer ratings (Van Dyne et al., 2008).

The sixth and final study addressed discriminant and incremental validity of the CQS. The discriminant validity of the four factors was assessed using confirmatory factor analysis; all factor loadings were significant, with *t* values ranging from 8.96 to 33.07 (Van Dyne et al., 2008). The incremental and predictive validity were tested with hierarchical regression, and this resulted in a 6% incremental variance and an adjusted R<sup>2</sup> of 31%. The sixth study process led to significant statistical relationships and incremental and predictive validity between variables. Ang and Van Dyne (2008) found strong internal reliability of the four CQS factors, measured by Cronbach's Alpha and a standard cut-off of .70.

Fang et al. (2018) examined 186 articles involving CQ. Out of these, more than 90% of the quantitative articles used CQS for their study, confirming that the four-factor survey model of CQS is an established way to study and explore CQ levels (Fang et al., 2018). Their review also included research that translated CQS into Spanish (Moyano et al., 2015), Turkish (Şahin et al., 2013), and Arabic (Al-Dossary, 2016) establishing CQS and confirming validity and reliability across different languages (Fang et al., 2018).

The diverse factors involved in researching cultural intelligence call for a standard way to formalize results on the topic. Van Dyne et al.'s (2008) CQ scale provides a way to standardize and validate CQ research. It provides standardization in terminology, measures, and methodology. For these reasons, this CQ scale has been chosen for the current research project being presented here.

## Research Design

The research was designed to explore the CQ of students who had a variety of cultural experiences at a major Land Grant University (LGU). The CQS was used to measure the impacts of these experiences.

### Overview of Programs Offering Cultural Experiences

Table 2 lists the five different opportunities for cultural experiences. Four of these were study abroad experiences in different locations and for different time periods. The fifth opportunity was an on-campus course.

**Table 2**

*Data Collection Summary*

Program Title	Length	Number of Participants Per Semester			
Global Studies Course	16 weeks	Fall 2016 28 participants	Spring 2017 23 participants	Fall 2018 28 participants	Spring 2018 17 participants
Semester in Italy	12 weeks	Summer 2011 21 participants	Summer 2012 17 participants		
Spring Break-London	10 days	Spring 2018 16 participants			
Summer in Fiji	Six weeks	Summer 2016 13 participants			
Summer in Fiji and New Zealand	Six weeks	Summer 2017 Eight participants			

The Global Studies Course is an introductory class included in LGU's core curriculum options. This course serves as the starting point for a Global Studies major and introduces students to the problem-based learning (PBL) teaching method used throughout the major. PBL is a student-centered pedagogy in which students learn about a subject through the experience of solving an open-ended problem (Genareo, 2015). Throughout the semester, students are put into groups, given three to four case study scenarios and asked to work through the case with a written report of their findings at the end. The case studies used in the course tackle issues such as climate change, human trafficking, and voter suppression. In addition to topical exposure to culture, students also gain cultural competency skills through working together on teams. The CQS was given to students in this course during the first week of classes and again during the final week.

The semester in Italy is the longest of the four study abroad programs and has a duration of three months. Students on this program are immersed in Italian culture from food to family dynamics. A typical week for students participating in this program consists of four class days and a three-day weekend during which students are encouraged to engage in self-led cultural experiences. Class days for this program vary from week to week; a sample week schedule can be seen in **Error! Reference source not found.** During the semester in Italy, students live in a renovated Baroque palace in the foothills outside of Rome. They live in a dorm-like setting with an on-site kitchen and laundry facilities. As part of the program, students participate in several overnight field trips to multiple towns in Italy. Some students also use their three-day weekends for personal travel to other European countries while others use the time to dive deeper into Italian culture.

The Summer in Fiji is a six-week program in which students live on a remote island with a tribe; this also is a program in which students are immersed in the local culture and sustainability with off-the grid living. They live in the house of a local tribe member on the 200-acre island, fully immersing themselves in authentic Fijian life. While on the island, living in a third-world country, students gain knowledge of issues such as sustainability and economic development. A sample itinerary from this program can be found in **Error! Reference source not found.**

Summer in Fiji and New Zealand follows the same structure as the Fiji-only experience. This program offers students a way to compare the remote sustainable experience in Fiji to a more developed sustainability experience in New Zealand. It enables students to look at a developed world and observe how tribes function there, comparing it to the untouched Fijian lifestyle they had just experienced.

The London Fashion Tour is a ten-day program that takes place over the students' spring break. This program combines classroom knowledge with field experiences. Students on this program stay in a hotel close to London's city center. While in the city, students have the opportunity to visit museums, meet with industry professionals, and attend a theater show. A sample itinerary for this program can be seen in **Error! Reference source not found.**

These programs offer situations that vary in length from 10 days to a full semester and on-campus cultural exposure to experience in three culturally different locations. Their lengths can be described as long, mid-range, and short. Different faculty supervise each program, and they may have in place their own learning objectives. There were no standard pedagogical requirements or learning outcomes in place for study abroad programs.

## **Sample**

The Cultural Intelligence Scale (CQS) was delivered to students in the programs through the Cultural Intelligence Center in the semesters and years shown in Table 2. The CQS data were available to the researcher. The full sample totaled 184 students whose cultural experiences ranged from 2011–2012 (Italy), 2016–2017 (Fiji and Fiji-New Zealand), 2018 (London), and 2016–2018 (Global Studies course). All student participants were students 19 years of age or older. The only available data concerning the students is their minimum age and the results of the CQS administration.

## **Study Execution**

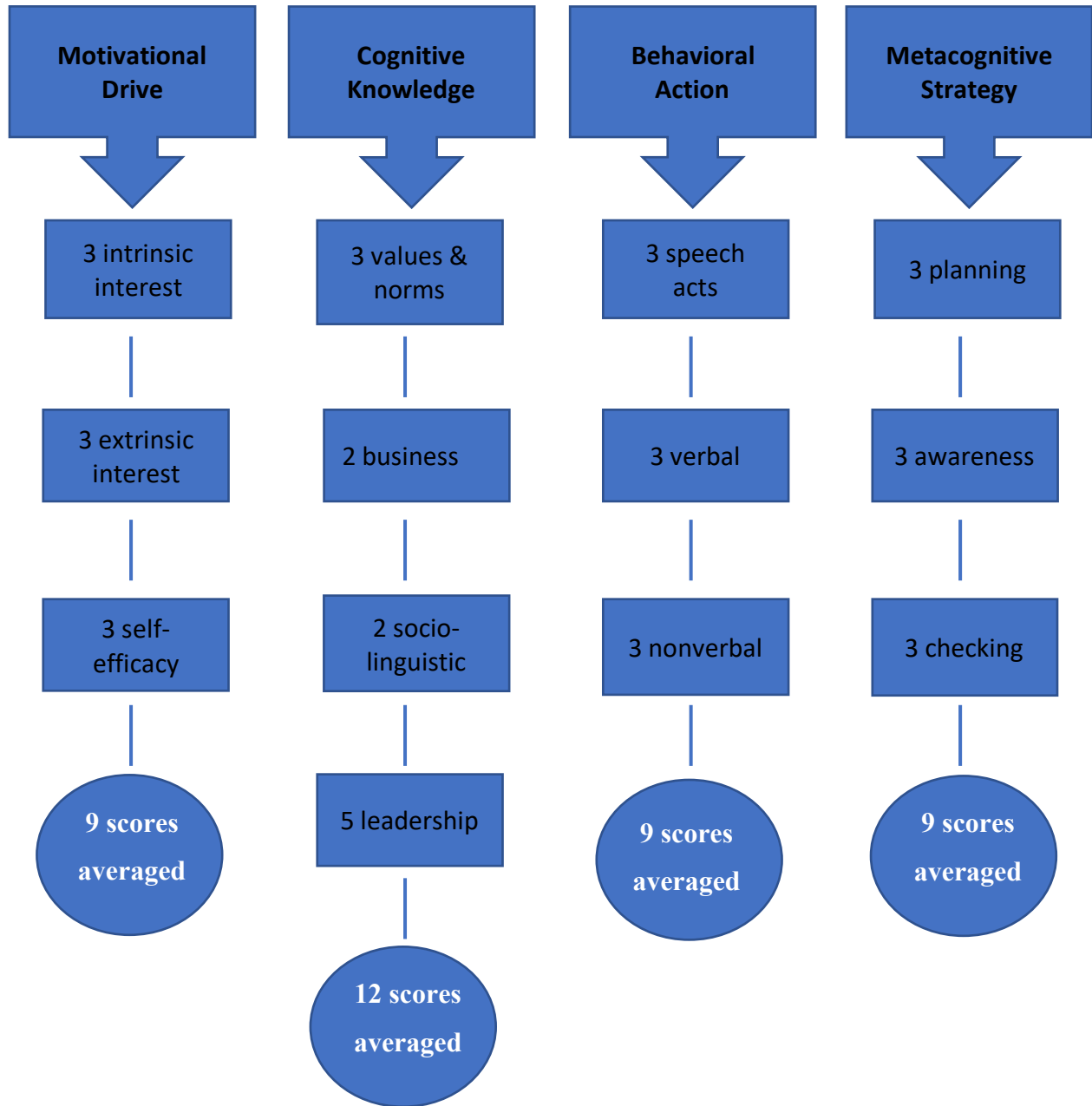
The CQS was administered as a quasi-experimental pre-test/post-test surrounding a cultural experience (the treatment). The CQS was presented to participants as a pre/post online survey to be completed as part of the course curriculum for all students enrolled in the sample of study abroad and on-campus cultural experiences offered through a multidisciplinary college. Although the survey was originally administered with no intent to use for research purposes, the LGU Institutional Research with Human Subjects Board determined that for this study the generated data were exempt. Only aggregate, secondary data without any student identifiers or performance data (e.g. grades) was used.

Each CQS data output was reported on a seven-point scale, for both the pre-test (T1) and post-test (T2). Four CQ components were reported: cognitive, behavioral, motivational, and metacognitive, and each component was broken down into multiple variables. Motivational consists of nine separate individual scores, cognitive 12 separate scores, metacognitive nine individual scores, and behavioral nine individual scores (see Figure 2). For each of the programs

listed, the breakdown of scores listed above was reported for each pre-test (T1) and post-test (T2).

**Figure 2**

*Breakdown of measures/sub-categories composing a students' CQ score.*



The study explored three hypotheses regarding the testing outcomes based on 1) participation in cultural experiences, 2) type of cultural experiences, and 3) duration of cultural experiences. The hypotheses were as follows.

*H1: CQ levels of students who have a multicultural experience will increase from pre-test to post-test.*

*1a. Subcategory motivation will increase from pre-test to post-test*

*1b. Subcategory cognitive will increase from pre-test to post-test*

*1c. Subcategory behavioral will increase from pre-test to post-test*

*1d. Subcategory metacognitive will increase from pre-test to post-test*

*H2: CQ levels of study abroad students will show higher increases from pre-test to post-test than those of on-campus students.*

*2a. Subcategory motivation of study abroad students will show higher increases from pre-test to post-test than those of on-campus students.*

*2b. Subcategory cognitive of study abroad students will show higher increases from pre-test to post-test than those of on-campus students.*

*2c. Subcategory behavioral of study abroad students will show higher increases from pre-test to post-test than those of on-campus students.*

*2d. Subcategory metacognitive of study abroad students will show higher increases from pre-test to post-test than those of on-campus students.*

*H3: CQ levels will be higher across study abroad programs dependent on length of program.*

*3a. Subcategory motivation will increase more significantly for programs of longer length when compared to programs of shorter length*

*3b. Subcategory cognitive will increase more significantly for programs of longer length when compared to programs of shorter length*

*3c. Subcategory behavioral will increase more significantly for programs of longer length when compared to programs of shorter length*

*3d. Subcategory metacognitive will increase more significantly for programs of longer length when compared to programs of shorter length*

To keep with industry standards, which report CQS of cohorts in terms of mean average and standard deviation, the results were analyzed using descriptive statistics to report mean average and standard deviation of scores before and after each cultural experience. However, it is important to note that reporting results in this way does not allow for granulated data on specific aspects of CQ as measured within the instrument. As such, it is difficult to infer the meaning of the results beyond simply stating that a CQ gain or loss occurred. In other words, if an institution is interested in creating meaningful outcomes through the integration of cultural experiences, both on campus and abroad, the average CQ scores of its students may provide enough insight to guide data-driven interventions or to support the efficacy of such programs in terms of ROI. The industry standard approach alone is not necessarily sufficient to meet the objectives of the current study; therefore, the researcher also conducted an analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) tests to further explore the hypotheses by taking a deeper look into the sub-categories of CQ. ANOVA and MANOVA These tests were required to analyze the specialized population from this study to give a specific look into the unique sample's CQ scores.

## Results

Before analyzing the data, it was necessary to delete any incomplete survey responses. This data cleaning meant that any pre-test (T1) score that did not have an accompanying post-test (T2) score was eliminated.

### Data Cleaning

Of the 184 surveys, 13 T1 CQS scores were deleted, with 171 remaining survey responses. The remaining CQS scores were checked for skewness and kurtosis using SPSS, see Table 3 for results. Skewness is a way to assess the symmetry or lack thereof of the data based on a normal distribution of zero (NIST/SEMATECH, 2012). Though the data showed a level of skewness, the negative values shown in Table 3 indicate that the data were skewed left. This indicates that for each of the categories, respondents answered on the higher end of the spectrum (NIST/SEMATECH, 2012; Thornton, 2010). Median scores, along with standard deviations, are reported in Table 5 to provide further support outside of skewness for the data.

**Table 3**

*Results from Tests for Skewness and Kurtosis*

	Skewness (SES = .186)	Kurtosis (SEK = .369)
T1 Motivational	-2.488	12.601
T1 Cognitive	-.373	.082
T1 Behavioral	-.287	.068
T1 Metacognitive	-.308	-.197
T1 Overall CQ	-.124	.012
T2 Motivational	-.969	.638
T2 Cognitive	-.239	-.529
T2 Behavioral	-.998	1.492
T2 Metacognitive	-.723	-.046
T2 Overall CQ	-.519	.040

It can also be seen in Table 3 that kurtosis mainly fell in what is to be considered the average range. Kurtosis is an assessment of heavy-tailed or light-tailed data when compared to a normal distribution (NIST/SEMATECH, 2012). As seen from Table 3, kurtosis for our data set had a heavy-tail, meaning that our data had a normal distribution of scores despite some level of skewness. Motivational T1 has the only outlier, and the possibilities for that will be discussed in the results.

### **Model Fit**

As noted above, each of the four CQ categories have several subcategories. The existing data were parceled into categories by the Cultural Intelligence Center. Because the data had been parceled by the data collection center, this study was able to start data analysis by performing a confirmatory factor analysis (CFA) on the four categories for all of the data collected. CFA was used to evaluate the reliability of the measure. The results from this test were used to confirm if the indicators and sub-indicators of the CQS survey were an appropriate and reliable measure of CQ in the current study and data set. Using SPSS and AMOS software, CFA showed good model fit for both each subcategory and overall CQ across both T1 & T2 scores. It is important to note that chi-squared goodness of fit did not pass every measure; however, this test is sensitive to sample size (Parry, 2017) and thus is not the most accurate depiction of model fit for the data used in this study.

For that reason, other model measures were analyzed including degrees of freedom, normed fit index (NFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). It should be noted here that for this data set, model fit was only achieved with CFI; this is because this metric is not sensitive to sample size (Parry, 2017), making it most useful in the current study. Results of T1 overall CQ ( $\chi^2 = 1.478$ ,  $df = 2$ ,  $p = .478$ ;

NFI = .989; CFI = 1.00; RMSEA = .000) and T2 overall ( $\chi^2 = 16.683$ ,  $df = 2$ ,  $p = .000$ ; NFI = .937; CFI = .943; RMSEA = .208) are shown below in Table 4.1–4.10.

**Table 4.1**

*Tabulated Results from CFA Test of T1 Overall CQ (N = 171)*

T <sub>1</sub> Indicators and Sub-Indicators for Overall CQ	
	Standardized Coefficients
Motivation Average	.187
Cognitive Average	.253
Behavioral Average	.582
Metacognitive Average	.597
Model Fit Indices: $\chi^2 = 1.478$ , $df = 2$ , $p = .478$ ; NFI = .989; CFI = 1.00; RMSEA = .000	

**Table 4.2**

*Tabulated Results from CFA Test of T2 Overall CQ (N = 171)*

T <sub>2</sub> Indicators and Sub-Indicators for Overall CQ	
	Standardized Coefficients
Motivation Average	.628
Cognitive Average	.593
Behavioral Average	.525
Metacognitive Average	.478
Model Fit Indices: $\chi^2 = 16.683$ , $df = 2$ , $p = .000$ ; NFI = .937; CFI = .943; RMSEA = .208	

**Table 4.3**

*Tabulated Results from CFA Test of T<sub>1</sub> Motivation Indicators (N = 171)*

T <sub>1</sub> Indicators and Sub-Indicators for Motivation	
	Standardized Coefficients

Intrinsic Motivation Indicator 1	.808
Intrinsic Motivation Indicator 2	.876
Intrinsic Motivation Indicator 3	.650
Extrinsic Motivation Indicator 1	.835
Extrinsic Motivation Indicator 2	.698
Extrinsic Motivation Indicator 3	.910
Self-Efficacy Indicator 1	.802
Self-Efficacy Indicator 2	.918
Self-Efficacy Indicator 3	.816
Intrinsic Motivation Overall	.668
Extrinsic Motivation Overall	.648
Self-Efficacy Overall	.843

Model Fit Indices:  $\chi^2 = 33.575$ ,  $df = 24$ ,  $p = .093$ ; NFI = .960; CFI = .988; RMSEA = .048

**Table 4.4**

*Tabulated Results from CFA Test of T<sub>1</sub> Cognitive Indicators (N = 171)*

T <sub>1</sub> Indicators and Sub-Indicators for Cognitive	Standardized Coefficients
Leadership Indicator 1	.778
Leadership Indicator 2	.790
Leadership Indicator 3	.894
Leadership Indicator 4	.898
Leadership Indicator 5	.870
Socio-Linguistic Indicator 1	.960
Socio-Linguistic Indicator 2	.900
Business Indicator 1	.881
Business Indicator 2	.966
Values and Norms Indicator 1	.751
Values and Norms Indicator 2	.865
Values and Norms Indicator 3	.848
Leadership Knowledge Overall	.682
Socio-Linguistic Knowledge Overall	.345

Business Knowledge Overall	.774
Values and Norms Overall	.867

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Model Fit Indices:  $\chi^2 = 110.841$ ,  $df = 50$ ,  $p = .000$ ; NFI = .932; CFI = .961; RMSEA = .085

**Table 4.5**

*Tabulated Results from CFA Test of T<sub>1</sub> Behavioral Indicators (N = 171)*

T <sub>1</sub> Indicators and Sub-Indicators for Behavioral	
	Standardized Coefficients
Speech Acts Indicator 1	.789
Speech Acts Indicator 2	.805
Speech Acts Indicator 3	.799
Verbal Indicator 1	.799
Verbal Indicator 2	.803
Verbal Indicator 3	.762
Non-Verbal Indicator 1	.803
Non-Verbal Indicator 2	.799
Non-Verbal Indicator 3	.721
Speech Acts Overall	.827
Verbal Overall	.785
Non-Verbal Overall	.859

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Model Fit Indices:  $\chi^2 = 73.814$ ,  $df = 24$ ,  $p = .000$ ; NFI = .917; CFI = .942; RMSEA = .110; GFI = .908

**Table 4.6**

*Tabulated Results from CFA Test of T<sub>1</sub> Metacognitive Indicators (N = 171)*

T <sub>1</sub> Indicators and Sub-Indicators for Metacognitive	
	Standardized Coefficients
Planning Indicator 1	.717
Planning Indicator 2	.867
Planning Indicator 3	.692
Awareness Indicator 1	.769

Awareness Indicator 2	.916
Awareness Indicator 3	.816
Checking Indicator 1	.800
Checking Indicator 2	.700
Checking Indicator 3	.836
Planning Overall	.692
Awareness Overall	.643
Checking Overall	.963

Model Fit Indices:  $\chi^2 = 79.819$ ,  $df = 24$ ,  $p = .000$ ; NFI = .902; CFI = .929; RMSEA = .117

**Table 4.7**

*Tabulated Results from CFA Test of T<sub>2</sub> Motivation Indicators (N = 171)*

T <sub>2</sub> Indicators and Sub-Indicators for Motivation	
	Standardized Coefficients
Intrinsic Motivation Indicator 1	.895
Intrinsic Motivation Indicator 2	.798
Intrinsic Motivation Indicator 3	.592
Extrinsic Motivation Indicator 1	.860
Extrinsic Motivation Indicator 2	.613
Extrinsic Motivation Indicator 3	.895
Self-Efficacy Indicator 1	.812
Self-Efficacy Indicator 2	.888
Self-Efficacy Indicator 3	.777
Intrinsic Motivation Overall	.520
Extrinsic Motivation Overall	.586
Self-Efficacy Overall	.507

Model Fit Indices:  $\chi^2 = 61.394$ ,  $df = 24$ ,  $p = .000$ ; NFI = .917; CFI = .947; RMSEA = .096

**Table 4.8**

*Tabulated Results from CFA Test of T<sub>2</sub> Cognitive Indicators (N = 171)*

T <sub>2</sub> Indicators and Sub-Indicators for Cognitive	
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	Standardized Coefficients
Leadership Indicator 1	.630
Leadership Indicator 2	.817
Leadership Indicator 3	.851
Leadership Indicator 4	.826
Leadership Indicator 5	.801
Socio-Linguistic Indicator 1	.984
Socio-Linguistic Indicator 2	.945
Business Indicator 1	.851
Business Indicator 2	1.055
Values and Norms Indicator 1	.723
Values and Norms Indicator 2	.866
Values and Norms Indicator 3	.822
Leadership Knowledge Overall	.741
Socio-Linguistic Knowledge Overall	.371
Business Knowledge Overall	.682
Values and Norms Overall	.916

Model Fit Indices:  $\chi^2 = 87.346$ ,  $df = 51$ ,  $p = .001$ ; NFI = .945; CFI = .976; RMSEA = .065

**Table 4.9**

*Tabulated Results from CFA Test of T<sub>2</sub> Behavioral Indicators (N = 171)*

T <sub>2</sub> Indicators and Sub-Indicators for Behavioral	Standardized Coefficients
Speech Acts Indicator 1	.855
Speech Acts Indicator 2	.741
Speech Acts Indicator 3	.856
Verbal Indicator 1	.871
Verbal Indicator 2	.805
Verbal Indicator 3	.838
Non-Verbal Indicator 1	.869
Non-Verbal Indicator 2	.814

Non-Verbal Indicator 3	.834
Speech Acts Overall	.847
Verbal Overall	.855
Non-Verbal Overall	.933

Model Fit Indices:  $\chi^2 = 61.122$ ,  $df = 24$ ,  $p = .000$ ; NFI = .943; CFI = .964; RMSEA = .095

**Table 4.10**

*Tabulated Results from CFA Test of T<sub>2</sub> Metacognitive Indicators (N = 171)*

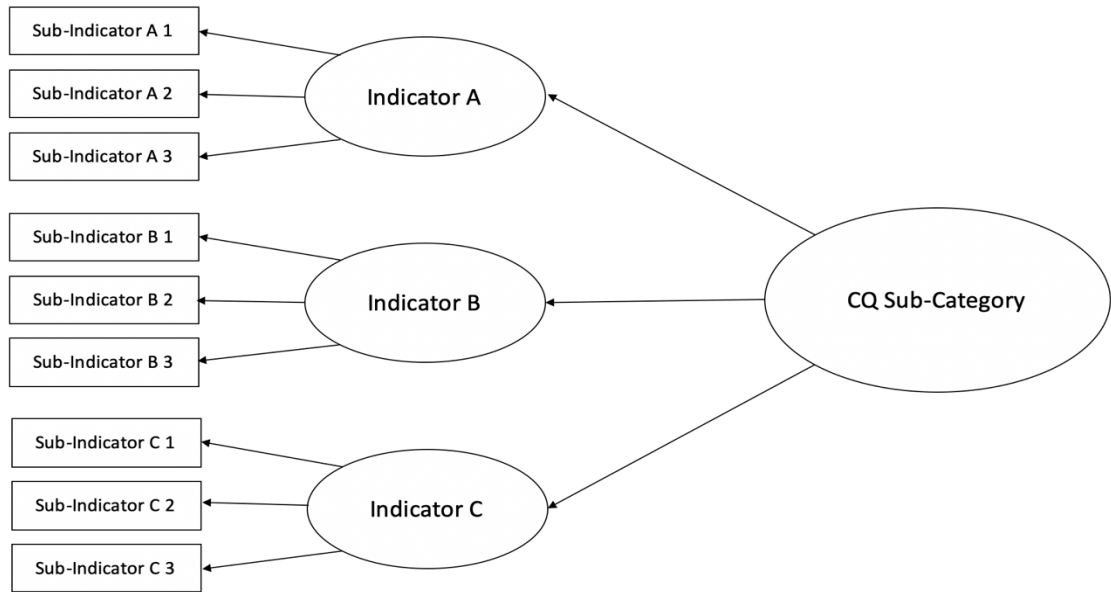
T <sub>2</sub> Indicators and Sub-Indicators for Metacognitive	
	Standardized Coefficients
Planning Indicator 1	.825
Planning Indicator 2	.767
Planning Indicator 3	.849
Awareness Indicator 1	.720
Awareness Indicator 2	.840
Awareness Indicator 3	.857
Checking Indicator 1	.850
Checking Indicator 2	.755
Checking Indicator 3	.806
Planning Overall	.678
Awareness Overall	.790
Checking Overall	.966

Model Fit Indices:  $\chi^2 = 103.925$ ,  $df = 24$ ,  $p = .000$ ; NFI = .888; CFI = .911; RMSEA = .140

The results suggest a relationship between both study abroad and classroom-based cultural experiences, and traditional students' CQ levels. Additionally, CFA was performed to determine if any factors were correlated; Figure 3 shows the general model used to determine correlation.

**Figure 2**

*General model used to determine model fit*



A closer analysis of the data raises some questions about best practices in assessment of cultural experiences and, in a later chapter, the discussion will contribute to the growing research segment of cultural intelligence literature, specifically research that uses the Cultural Intelligence Survey.

### **Results Using Established Method for CQS**

The first step of analysis was to follow the standard way to report CQS results, by calculating the mean averages and standard deviations for each cohort (see Table 5). The CQ scores for all participants, in each cohort, were combined to get one mean score and standard deviation for each group as shown in Table 5. An ANOVA was then conducted on the means of each cohort group in order to determine statistical significance. The result for each cohort was a significant change from T1 to T2.

**Table 5***Average Cultural Intelligence Scores*

<b>Cohort</b>	<b>T1 Ave</b>	<b>T1 SD</b>	<b>T2 Ave</b>	<b>T2 SD</b>	<b>Diff</b>	<b>p-value</b>
Global Studies	5.18	0.91	5.88	0.69	0.7	0.000*
Cohort 1						
Global Studies	5.16	0.68	5.67	0.79	0.51	0.000*
Cohort 2						
Global Studies	4.79	0.73	5.43	0.66	0.64	0.000*
Cohort 3						
Global Studies	5.26	0.67	5.50	0.24	0.24	0.000*
Cohort 4						
London	5.32	0.6	5.48	0.69	0.16	0.000*
Cohort 1						
Fiji/New Zealand	5.36	0.65	6.28	0.43	0.92	0.000*
Cohort 1						
Fiji	5.39	0.77	5.64	0.62	0.25	0.000*
Cohort 1						
Italy	5.14	0.44	5.68	0.52	0.54	0.000*
Cohort 1						
Italy	5.08	0.55	5.91	0.55	0.83	0.000*
Cohort 2						

***Global Studies Cohorts***

When looking at the four on-campus, global studies course cohorts, there was an increase from pre- to post-test in CQ scores across all cohorts studied (difference ranging from 0.24–0.7 per cohort).

In Fall 2016, the average pre-test T1 score was 5.18 with a standard deviation (SD) of 0.91. The average post-test T2 score was 5.88 with an SD of 0.69. These numbers show that the CQ scores increased through the semester and the SD decreased, signifying a slight increase in the clustering of scores. The SD is less than the mean, showing that data is normal.

The spring 2017 global studies course had an average T1 CQ score of 5.16 with an SD of 0.68. Students in this semester showed clustering of scores similar to T2 in the previous semester. The average T2 CQ score was 5.67 with a SD of 0.79; the difference between T1 and T2 scores was 0.5. The SD increased while the T2 scores increased. The researcher can infer that CQ scores increased, but that there was also less variation in student scores compared to the beginning of the semester. The SD only deviated from the mean by .79, less of a deviation than that of the T1 score.

A year later, in spring 2018, the students had an average T1 score of 5.26 with an SD of 0.67. By the end of the semester the students had an average T2 score of 5.50 with an SD of 0.87. The difference between the averages was 0.24. When CQ scores increased, SD increased as well.

In fall 2018 the average T1 CQ score was 4.79 with an SD of 0.73. At the end of this semester the students had an average T2 score of 5.43 with an SD of 0.66. The difference between the averages of T1 and T2 was 0.64.

The GS1–GS4 all had the CQ score increase from pre- to post-test, actually perceiving this improvement in scores helped in validating the literature that classroom-based cultural experiences can raise CQ scores. When analyzing the CQ scores from the GS cohorts, it is possible to compare the raise in scores to other cultural experiences, even those that are study abroad. This study shows that study abroad experiences are comparable to those that these GS cohorts completed.

### ***London***

There was only one cohort of London students, who experienced the shortest study abroad experience, to analyze. Their CQ scores rose from start to finish of the 10-day program.

The average T1 score of 5.32 with an SD of 0.60 increased to an average T2 score of 5.48 with an SD of 0.69. The difference between the T1 and T2 scores was 0.16. The SD scores increased slightly from T1 to T2.

### ***Fiji and New Zealand***

The two different Fiji experience cohorts both displayed a rise in scores, with the difference between T1 and T2 being 0.25 and 0.92, respectively. The Fiji/New Zealand trip had an average T1 score of 5.36 with an SD of 0.65. After the six-week trip across two countries, the students had an average T2 score of 6.28 with an SD of 0.43. The difference between the T1 and T2 average scores was 0.92.

The six-week Fiji trip had an average T1 score of 5.39 with an SD of 0.77. Upon the students' return to the U.S., the average T2 score was 5.64 with an SD of 0.62. The difference between the T1 and T2 scores was 0.25. Thus, the two cohorts marked an increase in CQ score. It should be noted that the Fiji/New Zealand cohort saw a greater increase than the Fiji cohort. The T2 SD values decreased from the T1 values in both cohorts.

### ***Italy***

The students in the two Italy cohorts had the longest study abroad experiences. Similar to the other cohorts, they had increased CQ scores (0.54 and 0.83). For the twelve-week program, the students in summer 2011 had an average T1 score of 5.14 with an SD of 0.44. By the end of the summer, their average T2 score was 5.68 with an SD of 0.52. The difference between the T1 and T2 scores for this semester was 0.54.

In fall 2012, students belonging to the twelve-week Italy program had an average T1 score of 5.08 with an SD of 0.55. By the end of the twelve weeks, students had an average T2

score of 5.91 with an SD of 0.55. The difference between the T1 and T2 scores for this semester was 0.83. Both Italy cohorts had increased CQ scores at the end of their experiences.

### **Summary**

As shown in Table 5, all differences between T1 and T2 values were statistically significant (p-values of 0.000). Overall, the T1 scores ranged from 4.79 at the lowest (Global Studies cohort 3) to 5.39 at the highest (Fiji), and T2 scores rose similarly from 5.43 (also Global Studies cohort 3) to 6.28 (Fiji/New Zealand). There were no drops in scores between T1 and T2. The differences in increases ranged from a slight 0.16 (London) to 0.92 at the highest (Fiji/New Zealand). In five of the nine cohorts, the SD values dropped; i.e., the individual CQ scores ranged less widely.

The London experience was the shortest program and had the smallest change from T1 to T2, although its T2 value of 5.48 was similar to the T2 scores of classroom Global Studies cohorts 3 and 4. The closest T2 value to that for the students in the Fiji/New Zealand experience (6.28) was for the first Global Studies cohort (5.88).

### **Hypothesis Testing Results**

As previously discussed, there are limitations to the CQS instrument and the industry standard method of reporting results derived from its use. The limited utility of the results from the first round of analysis, following the standard method of reporting CQS scores, prompted additional analysis using complementary methods. The following results for H1 used ANOVA to specifically look at the scores of the unique sample used in this study. Then, MANOVA was used to compare individual cohorts, rather than looking at one average per cohort. The more nuanced analyses made possible through ANOVA and MANOVA provided more granular data for further analysis.

The CQS cultural intelligence measure has four components—motivation, cognitive, behavioral, and metacognitive. The hypotheses were aimed to explore these components with regard to the change from pre- to post-tests, differences between on-campus and study abroad students, and differences related to program length. It should be noted that for reporting purposes, the research has reported Wilks' Lambda as the F-value throughout the results section. Multivariate tests (Pillai's Trace, Hotelling's Trace, and Roy's Largest Root) all report the same number.

*H1: CQ levels of students who have a multicultural experience will increase from pre-test to post-test*

*1a. Subcategory motivation will increase from pre-test to post-test*

*1b. Subcategory cognitive will increase from pre-test to post-test*

*1c. Subcategory behavioral will increase from pre-test to post-test*

*1d. Subcategory metacognitive will increase from pre-test to post-test*

For H1, a one-way, between subjects ANOVA was conducted using Microsoft Excel to understand whether participating in a multicultural experience, on-campus or abroad, would increase a student's CQ level. As shown in Table 6, there was a significant effect of the multicultural experience on CQ score at the  $p < .05$  level [ $F(1,340) = 54.83, p = 0.00$ ]. The researcher then examined if the subcategories of CQ showed similar statistical results. For H1a, *motivation*,  $p < .05$  level [ $F(1,340) = 9.17, p = 0.00$ ], H1b, *cognitive*,  $p < .05$  level [ $F(1,340) = 67.61, p = 0.00$ ], H1c, *behavioral*,  $p < .05$  level [ $F(1,340) = 33.00, p = 0.00$ ], and H1d, *metacognitive*,  $p < .05$  level [ $F(1,340) = 25.03, p = 0.00$ ]. Thus, the results showed a statistically significant increase between T1 and T2 across all CQ subcategory scores as well as overall CQ.

These results suggest that a multicultural experience abroad or in-classroom does have an effect on the overall and component CQ scores.

**Table 6**

*Results from H1 Single-factor ANOVA comparing T1 to T2 for All Groups, Overall CQ and Sub-Categories of CQ (n = 171)*

Hypotheses	Category	Average	Standard Deviation	df	F	p-value (p < .05)
H1	CQ T <sub>1</sub>	5.143	0.698	1,340	54.828	0.000*
	CQ T <sub>2</sub>	5.701	0.698			
H1 (a)	Motivation T <sub>1</sub>	5.919	0.817	1,340	9.169	0.003*
	Motivation T <sub>2</sub>	6.163	0.067			
H1 (b)	Cognitive T <sub>1</sub>	4.107	0.083	1,340	67.611	0.000*
	Cognitive T <sub>2</sub>	5.006	0.071			
H1 (c)	Behavioral T <sub>1</sub>	4.949	0.084	1,340	33.002	0.000*
	Behavioral T <sub>2</sub>	5.617	0.081			
H1 (d)	Meta Cognitive T <sub>1</sub>	5.596	0.061	1,340	25.035	0.000*
	Meta Cognitive T <sub>2</sub>	6.019	0.059			

\*F reported for Wilks' Lambda

*H2: CQ levels of study abroad students will show higher increases from pre-test to post-test than those of on-campus students.*

*2a. Subcategory motivation of study abroad students will show higher increases from pre-test to post-test than those of on-campus students.*

*2b. Subcategory cognitive of study abroad students will show higher increases from pre-test to post-test than those of on-campus students.*

*2c. Subcategory behavioral of study abroad students will show higher increases from pre-test to post-test than those of on-campus students.*

*2d. Subcategory metacognitive of study abroad students will show higher increases from pre-test to post-test than those of on-campus students.*

For H2, a one-way, between subjects MANOVA was conducted using SPSS to determine if the CQ levels of study abroad students would show higher increases from pre-test to post-test than those of on-campus students (see Table 7).

**Table 7**

*Results from H2 One-way MANOVA Comparing T1 to T2 for All Groups, Overall CQ and Sub-Categories of CQ (Group 1 (n = 96) (Group 2 (n = 75))*

Hypotheses	Category	Multivariate Tests			Parameter Estimates	
		Average	F	p-value (p < .05)	Intercept	p-value (p < .05)
H2	CQ T <sub>1</sub> Group 1	5.075			-.155	
	CQ T <sub>1</sub> Group 2	5.230	95.709	.000*	5.23	.149
	CQ T <sub>2</sub> Group 1	5.631			-.160	
	CQ T <sub>2</sub> Group 2	5.791			5.791	.137
H2 (a)	Motivation T <sub>1</sub> Group 1	5.826			-.214	
	Motivation T <sub>1</sub> Group 2	6.040	13.62	.000*	6.04	.096
	Motivation T <sub>2</sub> Group 1	6.113			-.113	
	Motivation T <sub>2</sub> Group 2	6.227			6.277	.252
H2 (b)	Cognitive T <sub>1</sub> Group 1	3.919			-.427	
	Cognitive T <sub>1</sub> Group 2	4.347	105.49	.000*	4.35	.010*
	Cognitive T <sub>2</sub> Group 1	4.849			-.360	
	Cognitive T <sub>2</sub> Group 2	5.209			5.21	.012*
H2 (c)	Behavioral T <sub>1</sub> Group 1	4.906			-.097	
	Behavioral T <sub>1</sub> Group 2	5.529	58.670	.000*	5.003	.568
	Behavioral T <sub>2</sub> Group 1	5.003			-.200	
	Behavioral T <sub>2</sub> Group 2	5.729			5.729	.220
H2 (d)	Metacognitive T <sub>1</sub> Group 1	5.647			-.117	
	Metacognitive T <sub>1</sub> Group 2	5.530	40.98	.000*	5.73	.343
	Metacognitive T <sub>2</sub> Group 1	6.034			+.034	
	Metacognitive T <sub>2</sub> Group 2	6.000			6.00	.777

*Note: Group 1 = in class group; Group 2 = study abroad \*F reported for Wilks' Lambda*

To test the hypothesis, the data were divided into two separate groups, with group 1 comprising all students in the Global Studies courses and group 2 comprising all students involved in a study abroad experience. The results were analyzed by comparing T1 and T2 scores for overall CQ scores of the two groups as well as by comparing the T1 and T2 subcategory scores for groups 1 and 2. The results for overall CQ [F = 95.709, p = 0.00] support H2, showing a greater increase of CQ scores of students who study abroad (5.791) than those who have a domestic experience (5.631). While both groups show an increase in CQ, students

who have the domestic experience start with lower CQ (5.075) than those students that choose to go abroad (5.230).

The results for H2a (motivation) [ $F = 13.62, p = 0.00$ ] support H2a by showing that CQ levels increased from T1 (6.04) to T2 (6.227). They show a greater increase of motivation CQ scores of students who study abroad (6.227) than those who have a domestic experience (6.114). Both groups show an increase in motivation CQ, but students who have the domestic experience start with lower motivation CQ (5.826) than those students who choose to go abroad (6.04).

The results for H2b (cognitive) [ $F = 105.49, p = 0.00$ ] support H2 by once again showing that CQ levels increase from T1 (4.35) to T2 (5.21). They also show a greater increase of cognitive CQ scores of students who study abroad (5.21) than those who have a domestic experience (4.85). While both groups show an increase in CQ, students who have the domestic experience start with lower cognitive CQ (3.92) than those students who chose to go abroad (4.35).

The results for H2c (behavioral) [ $F = 58.67, p = 0.00$ ] support H2 by once again showing that CQ levels increase from T1 (5.003) to T2 (5.73). They also show a greater increase of behavioral CQ scores of students who study abroad (5.73) than those who with a domestic experience (5.53). While both groups show an increase in CQ, students who have the domestic experience start with lower behavioral CQ (4.91) than those students who chose to go abroad (5.003).

The results for H2d (metacognitive) [ $F = 40.98, p = 0.00$ ] support H2 by once again showing that CQ levels increase from T1 (5.53) to T2 (6.00). For the first time, the analysis shows a greater increase of metacognitive CQ scores of domestic students (6.034) than those who study abroad (6.00). While both groups show an increase in CQ, students who have the

domestic experience start with higher metacognitive CQ (5.65) than those students that chose to go abroad (5.53).

*H3: CQ levels will increase more significantly for programs of longer length when compared to programs of shorter length.*

*3a. Subcategory motivation will increase more significantly for programs of longer length when compared to programs of shorter length*

*3b. Subcategory cognitive will increase more significantly for programs of longer length when compared to programs of shorter length*

*3c. Subcategory behavioral will increase more significantly for programs of longer length when compared to programs of shorter length*

*3d. Subcategory metacognitive will increase more significantly for programs of longer length when compared to programs of shorter length*

For H3, MANOVA was used through SPSS to determine whether the length of study abroad played a role in increased CQ scores of students from pre-test to post-test (see Table 8). For this hypothesis, the data were divided into four separate groups: Italy (group 1), London (group 2), Fiji (group 3), and Fiji and New Zealand (group 4). The results were analyzed by comparing T1 and T2 scores for overall CQ scores of the four groups as well as by comparing the T1 and T2 subcategory scores for groups one through four.

**Table 8**

*Results from H3 One-way MANOVA Comparing T1 to T2 for Study Abroad Groups, Overall CQ and Sub-Categories of CQ (Group1(n = 38), (Group 2 (n = 16), (Group3 (n = 8), Group4 (n = 13))*

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Hypotheses	Category	Multivariate Tests	Parameter Estimates
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		Average	F	p-value (p < .05)	Intercept	p-value (p < .05)
H3	CQ T <sub>1</sub> Group 1	5.113	33.831	.000*	-.251	.178
	CQ T <sub>1</sub> Group 2	5.321			-.043	.843
	CQ T <sub>1</sub> Group 3	5.385			+.022	.933
	CQ T <sub>1</sub> Group 4	5.364			5.364	.000*
	CQ T <sub>2</sub> Group 1	5.784			-.499	.008*
	CQ T <sub>2</sub> Group 2	5.484			-.800	.000*
	CQ T <sub>2</sub> Group 3	5.642			-.641	.014*
	CQ T <sub>2</sub> Group 4	6.283			6.283	.000*
H3 (a)	Motivation T <sub>1</sub> Group 1	6.026	6.034	.016*	-.298	.258
	Motivation T <sub>1</sub> Group 2	6.035			-.290	.344
	Motivation T <sub>1</sub> Group 3	6.653			-.672	.071
	Motivation T <sub>1</sub> Group 4	6.325			6.325	.000*
	Motivation T <sub>2</sub> Group 1	6.231			-.401	.024*
	Motivation T <sub>2</sub> Group 2	5.882			-.751	.000*
	Motivation T <sub>2</sub> Group 3	6.236			-.396	.108
	Motivation T <sub>2</sub> Group 4	6.632			6.632	.000*
H3 (b)	Cognitive T <sub>1</sub> Group 1	4.397	44.22	.000*	+.455	.088
	Cognitive T <sub>1</sub> Group 2	4.479			+.537	.083
	Cognitive T <sub>1</sub> Group 3	4.500			+.558	.134
	Cognitive T <sub>1</sub> Group 4	3.942			3.94	.000*
	Cognitive T <sub>2</sub> Group 1	5.316			-.261	.258
	Cognitive T <sub>2</sub> Group 2	4.802			-.775	.005*
	Cognitive T <sub>2</sub> Group 3	4.917			-.660	.043*
	Cognitive T <sub>2</sub> Group 4	5.209			5.58	.000*
H3 (c)	Behavioral T <sub>1</sub> Group 1	4.772	516.45	.000*	-.459	.143
	Behavioral T <sub>1</sub> Group 2	5.153			-.078	.829
	Behavioral T <sub>1</sub> Group 3	5.431			+.200	.646
	Behavioral T <sub>1</sub> Group 4	5.231			5.23	.000*
	Behavioral T <sub>2</sub> Group 1	5.743			-.556	.053*
	Behavioral T <sub>2</sub> Group 2	5.327			-.973	.004*
	Behavioral T <sub>2</sub> Group 3	5.542			-.757	.059
	Behavioral T <sub>2</sub> Group 4	6.299			6.299	.000*
H3 (d)	Metacognitive T <sub>1</sub> Group 1	5.257	9.44	.003*	-.700	.005
	Metacognitive T <sub>1</sub> Group 2	5.618			-.339	.231
	Metacognitive T <sub>1</sub> Group 3	5.958			+.001	.997
	Metacognitive T <sub>1</sub> Group 4	5.957			5.96	.000*
	Metacognitive T <sub>2</sub> Group 1	5.845			-.779	.001*
	Metacognitive T <sub>2</sub> Group 2	5.924			-.700	.012*
	Metacognitive T <sub>2</sub> Group 3	5.875			-.749	.025*
	Metacognitive T <sub>2</sub> Group 4	6.624			6.624	.000*

*Note: Group 1 = Italy; Group 2 = London; Group 3 = Fiji; Group 4 = Fiji and New Zealand \*F reported for Wilks' Lambda*

The results for overall CQ was as follows: [F = 33.831, p = 0.00]. Although there was an increase from pre-test to post-test, the length did not seem to affect this particular population's CQ score. The type of host country appeared to have more effect on CQ scores than the length of time spent abroad. This can be observed by comparing the T2 score of the 12-week semester in

Italy which stood at 5.784 and the T2 score of the six-week program in Fiji and New Zealand which stood at 6.283.

The results for H3a (motivation) [ $F = 6.034$ ,  $p = 0.016$ , Estimate Intercept T1 = 6.325 (group1 = -.298, group2 = -.290, group3 = -.672, group4 = 6.325) and Estimate Intercept T2 = 6.632 (group1 = -.401, group2 = -.751, group3 = -.396, group4 = 6.632)] showed length of program abroad does not have a direct effect on CQ scores even at the subcategory level of motivation.

The results for H3b (cognitive) [ $F = 44.22$ ,  $p = 0.00$ , Estimate Intercept T1= 3.94 (group1 = .455, group2 = .537, group3 = .558, group4 = 3.94) and Estimate Intercept T2 = 5.58 (group1 = -.261, group2 = -.775, group3 = -.660, group4 = 5.58)] showed length of program abroad does not have a direct effect on CQ scores even at the subcategory level of cognitive. However, within this subcategory the data also showed that all of the programs except for Fiji and New Zealand had a higher starting point than the estimated intercept point.

The results for H3c (behavioral) [ $F = 16.45$ ,  $p = 0.00$ , Estimate Intercept T1= 5.23 (group1 = -.459, group2 = -.078, group3 = .200, group4 = 5.23) and Estimate Intercept T2 = 6.299 (group1 = -.556, group2 = -.973, group3 = -.757, group4 = 6.299)] showed that the length of program abroad does not have a direct effect on CQ scores even at the subcategory level of behavioral.

The results for H2d (metacognitive) [ $F = 9.44$ ,  $p = 0.003$ , Estimate Intercept T1= 5.96 (group1 = -.700, group2 = -.339, group3 = .001, group4 = 5.96) and Estimate Intercept T2 = 6.624 (group1 = -.779, group2 = -.700, group3 = -.749, group4 = 6.624)] showed length of program abroad does not have a direct effect on CQ scores even at the subcategory level of metacognitive.

In summary (see Table 9), H1 was analyzed twice; once using descriptive statistics in order to comply with industry standards and again using ANOVA to look at individual sub-category scores.

**Table 9**

*Summary of Tests used And Results*

<b>Hypotheses</b>	<b>Test Used</b>	<b>Results</b>
<b>H1</b>	One-way ANOVA	<ul style="list-style-type: none"> <li>• Increase in overall CQ</li> </ul>
<b>H1 (a–b)</b>	One-way ANOVA	<ul style="list-style-type: none"> <li>• Increase in overall CQ</li> <li>• Increase in all subcategories</li> </ul>
<b>H2 (a–b)</b>	One-way between subjects MANOVA	<ul style="list-style-type: none"> <li>• Increase in overall CQ</li> <li>• Increase in all subcategories</li> </ul>
<b>H3 (a–b)</b>	One-way between subjects MANOVA	<ul style="list-style-type: none"> <li>• Increase in overall CQ</li> <li>• Increase in partial subcategories</li> </ul>

The results of round one for H1 showed an increase of CQ score from T1 to T2, as well as a significant standard deviation found using the mean averages and ANOVA. Round two of analysis for H1 also showed an increase in overall CQ as well as in the sub-categories. When testing H2, the results provided further support for H1 and once again showed increases in the overall CQ and the sub-category scores for CQ. The results for H3 saw an increase in overall CQ that was not statistically significant. There was not an increase across all sub-category scores and some sub-category scores saw a decrease from T1 to T2.

## Discussion

### CQ and Its Components

CQ has four components or sub-categories—motivation, behavioral, cognitive, and met-cognitive. In this study, significant increases from pre-test to post-test scores occurred across the sub-categories. It is notable that the students' cognitive average at T1 and T2 scores were the lowest of the four. Cognitive refers to the knowledge factor of the CQ score, which indicates that these students had relatively low starting points but did evidence CQ gain, further suggesting that they have a lower baseline of knowledge about other cultures other than their own, but that their knowledge can be increased through cultural experiences. The lowest T1 score (3.94) was among the Fiji and New Zealand cohort; however, this group also saw the highest gain (1.64) from T1 to T2 (5.58). Group 3, the Fiji-only cohort, saw a decrease in score (-.0008). This left the researcher wondering what aspects of the curriculum differed from the Fiji-only to the Fiji and New Zealand program. The semester in Italy also had a noteworthy increase (.924) from T1 (4.395) to T2 (5.319). These findings align with the data which suggests that a program where students are abroad for 12 weeks or a program that experiences two different cultures would have a larger cognitive gain. Despite having the lowest starting score, cognitive scores of the on-campus course had the largest gain (.927) from T1 (3.923) to T2 (4.85). The reasoning for this could be that while student knowledge of cultures outside of their own might be little to none (Caldwell & Purtzer, 2015), the on-campus groups have a more culturally diverse experience than those that go abroad. Previous studies have suggested that simply studying abroad is no longer a sufficient way to gain cultural knowledge (Anderson et al., 2015). Similar effects could have happened with the students at LGU, which could explain why students in the classroom had a bigger gain than students who went abroad.

Perhaps logically, as it relates to baseline cultural knowledge, the behavioral sub-category had the next lowest starting point after cognitive. This could be because behavior involves interacting with people of different cultural backgrounds. Low T1 scores in cognitive suggests that, at this point in their college career, many of the students studied do not have knowledge of other cultures. It does not seem surprising that they would then also show low T1 scores in behavioral as they may not have had significant encounters with people from cultures that differ from their own either. Still, both on-campus and study abroad experiences appeared to have affected increases for the component, with the former (on-campus) still lower than the latter (study abroad) at T2.

The third component, motivation, was the sub-category with the smallest difference between T1 and T2 scores, but also the highest T1 scores. An explanation for this could be that students who elect to study abroad or take a course tackling global issues are motivated to learn or experience more, which is why they make the choice to study abroad. The motivation T2 score (6.632) for the Fiji/New Zealand cohort was the highest across all sub-categories. However the Fiji-only cohort, a similar program, had a higher increase (.583) from T1 to T2. While analyzing motivation scores, the data showed an increase from T1 to T2; however, that is not the case for London. The London cohort had a decrease (-.154) from T1 to T2. These subtle changes in CQ scores led the researcher to more questions involving specific curricular features within programs that could be the cause of these differences in scores. Anderson et al. (2015) noted in their study that study abroad research typically omits student motivation as a potential factor for student growth. Some students study abroad for the adventure or 'as a rite of passage', while for other students it is a curriculum requirement. These underlying interests and motivators for students could be a potential cause for the greater differences in CQ scores at the individual

level; however, they do not necessarily explain changes in motivation CQ for the program as a whole. This effect may be worth investigating further if a correlation can be drawn between the specific sources of motivation (e.g. required for degree completion vs. selected for adventure) and measures of “success” or satisfaction following a cultural experience. In turn, more understanding of such connections could help to direct students to the best possible experiences based on their underlying interests and motivators.

The fourth sub-category, metacognitive, represents a person’s ability to strategically navigate cultural situations. It collectively had the second highest overall T1 scores. The students who elected to study abroad had higher metacognitive scores than those who were on campus. Looking at these two groups, each average score at T2 was slightly lower than their T1 score, and these were the only instances when CQ loss was observed from T1 to T2. The Fiji-only cohort had a decrease (-.086) in the scores from T1 to T2, pointing the way for further studies to consider the curriculum of programs and explore this effect on CQ scores. Metacognitive is the only CQ score where in-class students actually started with higher CQ levels (5.647) than those of students who had abroad experiences (5.53).

A possible explanation for why students on campus had a higher baseline metacognitive score than study abroad students could be found in their underlying motivators. For example, for students who are not required to engage in cultural experiences, motivators may play a dominant role in outcomes. In other words, students who elect to sign-up for a course that will teach them about other cultures are already making strategic moves to become more culturally intelligent whereas students who elect to travel abroad may be motivated by a desire for adventure or a need to progress through a perceived rite of passage. However, for metacognitive, on-campus students had higher scores but a smaller gain from T1 to T2 than the students who went abroad.

## Overall CQ Growth

When analyzing the data, the results showed that CQ did increase significantly; however, the duration did not seem to have the effect predicted. Change in CQ scores changed between students who traveled longer, but were not statistically significant than those who traveled for a shorter time.

The short-term, 10-day program to London showed the least gain in CQ. The average pre- and post-test scores were respectively 5.32 and 5.48, making the difference between them 0.16. This finding of low CQ gain is not inconsistent with other studies. Dwyer (2004) and Neppel (2005) concluded that although full-year programs make significant impacts on study abroad students, programs with durations of two to four weeks can also positively impact students (Caldwell & Purtzer, 2015; Evanson & Zust, 2006). However, Dwyer (2004) noted that it was unclear if programs shorter than six weeks would have the same impact as longer programs. Results from the present study suggest that the length of experience plays a role in CQ gain. However, the MANOVA performed for the hypothesis testing during the second round of analysis showed that length, as a variable within the model, did not play a *significant* role in impacting students' CQ gain or loss.

The limited data related to the impact of program length suggests the need for further studies to determine if the effect of lengthening the study abroad experience increases CQ (a positive relationship) and, if so, whether the relationship results in a mutual increase indefinitely, whether the effect plateaus, or whether it reverses the direction at some duration. Findings from such additional studies might illuminate an ideal time frame for study abroad duration in relation to optimal CQ gain. It might also be possible to model optimal CQ gain against other factors—

such as cost, negative affect (such as travel anxiety), and/or number of destinations visited—to identify combinations of factors that may interact for optimal CQ gain.

Another possible explanation of why length does not play a significant role in students' CQ scores may be that the specific activities involved in these cultural experiences may not contribute significantly to increases in CQ levels. Research suggests that an effective study abroad program should include volunteer work, ethnographic work readings, attending theater events, and reflecting with journals (Alexis et al., 2017; Caldwell & Purtzer, 2015; Chickering & Braskamp, 2009; Engberg et al., 2016; Engberg & Jourian, 2015; Raby et al., 2014). To explore the effects of such a variety of activities on the results at hand, further study would be needed to document and analyze the specific activities involved in cultural experiences among these programs. Variations in activities among cultural experiences, as well as variations within cultural experiences (such as changes to itinerary from year to year), could result in measurable variations in the CQ gain among cohorts. This could shed light on the activities that resulted in the most significant CQ gains as well. Such findings could provide valuable and relevant guidance for study abroad curriculum planning. It might also be possible to model activities in relation to factors such as time, cost, or risk to build the economic case for the activities that provide the highest return on investment through CQ gain. It is possible that the two factors of length of experience and activities within experience may interact to impact on CQ gain. The potential implications of this effect will be discussed later.

Additional explanatory data would also assist with the assessment of student learning outcomes from study abroad experiences and provide guidance on the best practices for improvement. Activity tracking could provide a wealth of assessment data. In the London program, for example, it is known that students attend a theater performance and visit several

museums and historical sites but do not participate in volunteer work, ethnographic readings, or reflective journals. In reflecting on the duration of the program, it may be hard to find volunteer opportunities when being in-country for only ten days; however, it is worth exploring whether the benefits to CQ gain validate the effort to plan such an experience. While the principle purpose of study abroad may not be to increase CQ, it will still be a part of student growth while experiencing other cultures—ultimately increasing the ROI for Gen Z college students (Loveland, 2017).

Another possible explanation for CQ growth could be the degree to which the host country's culture differs from the student's home culture. In the experiences examined in this study, perhaps London was the most similar to the students' own country (the United States) when compared to the locations of Fiji or Italy. When traveling to London, students are spending time in a developed country where the primary language is English. Although this similarity may help students to make a quick transition to a new culture on a short trip, it could also affect a less significant gain in CQ levels. That said, all of the program content is delivered in English; however, New Zealand is the only other country in this study where English is the first language.

Duration, activity type, and degree of differentiation could all explain the relatively smaller gain in CQ for the London trip when compared to the other trips. However, it is also important to note that—overall—there was significant CQ gain of students who had a cultural experience whether abroad or on-campus.

In the on-campus experience, the Global Studies course students' CQ scores had an SD range of 0.24–0.70. These data show increases in CQ, but none that are statistically significant. This increase could be because students choosing to take part in a campus course about global issues are culturally aware and have a desire to grow their cultural awareness which could

influence their CQ score. One possible explanation for the comparable CQ increases might be that during this course, attention is brought to global issues that students work through using PBL techniques. This process allows for the student to research, process, and learn about a problem on their own with guidance from the instructor. This specific teaching technique allows students to work collaboratively, cultivating their problem solving and metacognitive skills (Genareo, 2015). It is possible that through the PBL process students have the same learning journey as study abroad students.

Both the established method for viewing CQS results and the separate statistical (ANOVA) analysis showed that no matter if a student's experience is in the classroom or abroad, a cultural experience is enough to increase a student's CQ. However, additional analysis (H2) found that the increase in CQ was higher for those who studied abroad than those whose cultural experiences were set in the on-campus classroom.

## **Conclusion**

The purpose of this research was to assess the impact of study abroad and classroom-based cultural experiences on traditional students' cultural intelligence (CQ) levels, as measured through standardized CQ scores.

Studying abroad has been shown to increase a student's cultural intelligence (CQ) (Ramirez, 2016). In this study, the CQ scores did increase significantly across all groups. According to The Cultural Intelligence Center's website, there are more than 100 peer reviewed CQ journal articles and research teams globally. There are several re-emerging outcomes in the body of research, all of which hold potential to create a competitive edge for anyone who seeks to improve their CQ. Outcomes include high-quality decision-making, effective negotiation skills, resistance to fatigue, and constructive leadership skills. In the current study, these conclusions could not be drawn, but aforementioned research supports positive impacts of studying abroad (Ellwood, 2011; Killick, 2012; Raby et al., 2014; Ramirez, 2019).

As millennials move out of the college classroom and Gen Z moves in, being able to provide the ROI on any educational experience is valuable. College students are expected to develop problem-solving and critical thinking skills, work together in groups, and use classroom knowledge in practical settings (Trolan & Fouts, 2011). The evidence uncovered by the researcher in this study makes a case for continuing to research within the field of study abroad and CQ. The knowledge from future studies when implemented will ultimately make a more marketable student and program. It is known that the more culturally competent a person is, the higher their function in society is (Bennett, 2004). The present study's findings contribute to learning and educational CQ literature and provide further understanding of some of the cultural experiences that could lead to CQ development.

The current study did discover increases in the overall CQ scores of those students who studied abroad and participated in cultural in-classroom activities. Reviewing the results of the study, the case for studying abroad is still strong for supporting the claim that CQ development depends on experiential and cultural contact over a period of time (Earley & Ang, 2003). Future studies should analyze more closely at the effects of duration of time abroad on CQ scores.

Understanding specific pedagogical aspects as well as length of time spent in a country compared to the CQ score has the potential to create a guide for development of all future study abroad programs.

CQ allows institutional programs to understand where cultural competency development happens or does not happen. Future research should look deeper into curriculum development and make changes to improve the CQ outcome of a program. Understanding the types of student activities taking place while abroad and in the classroom would help link CQ's relation to the curriculum and program activities abroad. Research can then make contributions to the overall evidence-based learning that happens when students study abroad and provide evidence for the LGU's global initiative, possibly leading to an increase in the number of students studying abroad. Data gained from curriculum studies will help strengthen the case for studying abroad by providing evidence to support ROI. In order for the curriculum to effectively support CQ development, program leaders should create opportunities for students to interact with others who hold different views than their own (Lee et al., 2014).

This study understands more work is required to increase the effectiveness of programs abroad and in the classroom. This can be achieved by better preparing students for their abroad experience in pre-departure sessions. Future research, including pre-departure sessions, should include PBL strategies, creating a bridge between on-campus and study abroad pedagogical

strategies. Further, it has been discussed that reflection is an important component of study abroad. However, simply journaling throughout the abroad experience is not enough; there should be deep reflection done post-trip. When looking at ways to facilitate reflection, guided reflection should be done before students can begin to think deeply about their experiences abroad. Guiding students through thoughtful reflection can increase the ability to reflect and ultimately get more out of the experience.

### **Limitations**

Out of the 186 CQS articles reviewed by Fang et al. (2018), the researcher observed that 15 of them more closely aligned to the purpose of this research project. Of those 15 articles, two articles best relate to the current research project. These studies set a precedent for analysis using descriptive statistics, hierarchical regression analysis, and relative weight analysis (Eisenberg et al., 2013; Rockstuhl et al., 2011). The nature of the pre-existing data did not lend itself to hierarchical regression analyses of T1 and T2 in order to analyze the data for statistically significant variance within the variables. According to Eisenberg et al. (2013) in their study on student's cultural intelligence levels, hierarchical regression analyses were conducted in order to determine which components of CQ were related to international travel and cultural experiences. For future studies, hierarchical regression could be used to determine which CQ factors increase or decrease and how they relate to the specific experience of the student.

The CQS is a self-assessment tool, which is always a source of limitation and bias during research. The nature of the existing data is such that demographic information is not available; there is no way to analyze moderating variables such as sex, age, or socio-economic status. Moreover, the existing data comprises a small amount, not allowing for generalizable conclusions to be drawn from the results. Additionally, small sample sizes such as these can

make it difficult to observe nuanced changes that may be more readily apparent in larger samples.

The data are derived from students enrolled in experiences at a single institution, which may further limit the generalizability of the findings to other programs and study abroad courses. The students enrolled in study abroad may be those students who understand the value of an international experience; this could mean that their pre-test CQ levels are elevated and thus the potential to gain in CQ is reduced.

### **Implications for Further Study**

As stated previously, the current study has uncovered multiple avenues for future research. Looking ahead to attainable research goals for the future, this study has outlined deeper ways to explore these topics.

Study abroad students tend to bond with students from their home country and create a “third culture” (Citron, 2002 & Savicki, 2010). The concept of a third culture can both increase study abroad students’ well-being and help alleviate stress (Savicki et al., 2008). The differences among students—demographic backgrounds, declared majors, motivators, underlying interests, baseline CQ score—within a cohort could explain the greater CQ gain on the individual level rather than at the program level. However, third culture may also play a role in CQ gain/loss. It may therefore be necessary to collect additional data on indicators of third culture formation, e.g. students’ well-being and stress levels, during a study abroad experience to fully understand the effect of third culture on some of the phenomena observed in variations of CQ gain among individuals within the cohort of study abroad students. Future studies on peer cohorts abroad might shed light on an ideal cohort or bonding activities that could lead to CQ development.

However, the nature of the existing data did not allow the current study to have access to specific participant information.

Further CQ studies should include demographic and background questions to gain enhanced knowledge about participants, including their motivation for studying abroad. To increase understanding of how students interact with each other while abroad, surveys and interviews could be conducted at the midpoint and the end of travel. Findings from future studies could determine whether and to what degree cohort dynamics play a significant part within a program. Cohort dynamics are not relevant solely to study abroad participants, they apply to on-campus CQ development within the classroom as well. As mentioned above, peer cohorts abroad can help alleviate stress and foster a sense of normalcy (Savicki et al., 2008). A similar atmosphere might exist in a domestic classroom. Research shows that students entering college often face many sudden changes and challenges (Bland et al., 2012). Future research should explore the idea that the support of a classroom cohort within the familiar context of the home country could create an environment ripe for learning and CQ development. Findings from such studies might illuminate ideas for ideal cohort dynamics both domestic and abroad.

Cohort dynamics, as stated above, should be explored as a possible variable in CQ levels of students that study abroad. Another factor that could play a role in cohort dynamics is the faculty member leading the program. That individual can affect the group and the learning experience. Future studies should explore pre-departure training, the faculty member's cultural competency, familiarity with the host country, and interactions between learning material, students, and themselves. The existing data used in this study did not include faculty information; however, keeping a record of faculty-led programs at LGU could enhance the current study and future research.

It has been stated that future studies should consider activities as possible influencers on CQ. The activity itself along with the time given to reflect on the activity could both be possible stimulants for CQ growth. Future programs should keep record of specific activities, both academic and experiential. This will allow future research to compare CQ scores with the activities involved in specific programs, especially as the curriculum and planned activities change from year to year. Reflecting on experiences allows students the time to process their experiences with particular activities (both academic and experiential) while abroad. Future research should include analyses of student reflection and abroad activities. It should also consider working with centers on campus to develop more rigorous reflection exercises that can be used during each stage of the abroad experience.

A growing area of conversation within the study abroad field is the importance of re-entry training (Westwood et al., 1986), in which students are provided time to process and reflect on their abroad experience. Allowing the students to reflect on their activities in real-time, they can contribute better reflection on the long-term effects of their abroad experience. Future research should develop and test different methods of re-entry training on students' abroad experiences and CQ scores. A part of this analysis should also look at the time of the year that students spend abroad (i.e. spring, summer, or fall) to see if this affects CQ development.

As stated in the findings, the increases in CQ in the on-campus course were comparable to those of students who went abroad. The researcher believes that the practices developed in the on-campus class can be transformed to assist abroad students. Further studies should explore the idea of using PBL techniques before, during, and after study abroad experiences. Additional data would assist in the creation of meaningful assignments that are beneficial to CQ and that could be applied to study abroad experiences in order to further increase CQ. The use of ethnographic

readings are beneficial to the effectiveness of study abroad experiences. The PBL technique could use ethnographic readings to incorporate cultural and historical contexts into pre-departure sessions to help prepare students for travel. It could further provide students a deeper understanding of the host country beyond what can be gained by simply reading an article about the country, intentionally targeting specific pedagogical strategies that transcend from domestic to international contexts.

The current study experienced some difficulty in retrieving the data used from the third-party source; it proved to be taxing and expensive. In the future, LGU could benefit from keeping an internal database. This database should include the program destination, faculty lead, any curriculum materials, and student CQ scores. Having the program information on hand will provide future researchers the ability to readily explore more possible variables influencing CQ. Post-experience alumni surveys should also be collected as part of the internal database; potential surveys could include questions regarding how cultural experiences in college influence job searches post graduation. Keeping in touch with alumni will open the door for longitudinal studies on CQ retention. Research has shown evidence of long-term learning on study abroad participant knowledge and worldviews (Caldwell & Purtzer, 2015; Kollar & Ailinger, 2002; Levine, 2009). This information could prove vital when recruiting students and when providing ROI on cultural experiences, both abroad and domestic.

As previously mentioned, CQS is not the only measure of cultural intelligence. It may be useful to explore multiple instruments with the same cohort of students to determine variability in results between instruments. For example, Anderson et al. (2015) developed a 23-question instrument to measure student's motivations with regard to studying abroad. Future research could use the Motivation to Study Abroad (MSA) to understand the motivation behind students

who are studying abroad and compare it to the CQ drive metric used in this study. This potential information could provide a valuable insights into the development of future study abroad programs and how to guide a student's CQ development (Anderson et al., 2015). There are other instruments that should be considered when seeking an appropriate assessment tool based on an individual institution's goals for integration of cultural experiences. There is no "one size fits all" solution. Not only should other instruments be considered when exploring effects of cultural experiences, qualitative research should also be considered. Qualitative research has the ability to analyze beyond the numbers in an attempt to understand exactly how students are feel about any given event or moment.

The present study has provided some useful data to illuminate the relationship between CQ gain and specific variables among and between cultural experiences. It also highlights the limitations of collecting only CQ data and raises questions about how a more rigorous data set—including student demographics and program activities—might lead to optimizing CQ gain in the context of any cultural experience. The results from this study suggest an increase in the cultural intelligence levels aligned to study abroad and classroom-based cultural experiences. There is a clear need to gather more detailed information about the specific activities and variables at play in experiences such as these.

A closer analysis of the data additionally raises some questions about the best practices in assessment of cultural experiences. It is not clear that CQ is the "best" measure of the quality of a study abroad program; however, it is a useful measure in so far as it describes factors of CQ gain that are likely relevant to most if not all study abroad programs' goals—improving cultural intelligence. Additional data, or alternative instruments, could be used in combination with CQ to provide a more complete and nuanced understanding of what makes a study abroad experience

effective at raising CQ. Overall, the findings from this research support the value of cultural experiences—both on campus and abroad—in raising CQ levels among traditional college students. If an institution sets the goal of producing graduates who are culturally intelligent, then investments should be made in collecting regular, rigorous, and reliable information about academically-oriented cultural experiences to enable quality assessment, benchmark performances, and optimize the outcomes from these important programs.

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## Appendix A—Sample Itinerary for Italy

This itinerary provides details for a regular scheduled week. It provides both activities and the time/place at which they happen. It even provides the type of dress required on certain days.

Some names and information have been redacted.

### Monday, 22

9:45am Campus classroom  
10:00am Campus classroom  
11:30am Break  
11:40am Campus classroom  
1:00pm Lunch on your own  
2:00pm Campus classroom  
3:30pm Campus classroom  
Following Classes end

Synthesis with [REDACTED]  
"Life and times of the Middle Ages" with Francesca [REDACTED]  
"Italian Immigration in the US"  
"Mythology" with Rossella [REDACTED]  
"Religion" with Rossella [REDACTED]

### Tuesday, 23

Morning  
12:00pm Campus kitchen  
Following Campus kitchen  
2:30pm Campus classroom  
Following Classes end  
Evening:  
7:00pm Monti bus stop  
9:00pm Baths of Caracalla

**Wear: Elegant/Formal for Opera night**  
Journal Work & final mini-meetings with [REDACTED]  
Last Cooking class with Mary Lou [REDACTED]  
Lunch for everyone  
Open Note Quiz 3  
Pick up and transfer to the Baths of Caracalla  
*La Traviata*

### Wednesday, 24

All day  
10:00pm

Journal Work Day & final mini-meetings with [REDACTED]  
Final Journal (including final reflection) Due. Place on the table in the front of the classroom.

### Thursday, 25

12:00pm

Evaluations and final course requirements due:

- Final Interpersonal (Peer) Evaluations
- Final Program Evaluation
- [REDACTED] Staff Evaluation
- [REDACTED] Evaluation [REDACTED]
- Journal Evaluation

Afternoon Campus  
7:30pm Campus

Clean up of campus and prep for Farewell dinner  
Farewell dinner hosted by the students

## Appendix B—Sample Itinerary for Fiji

This is a previously used itinerary for the Fiji study abroad program at LGU. It outlines the day-to-day locations of the students but does not go into specific program details. This itinerary serves more as a guide on student whereabouts for parents.

**May 11<sup>th</sup>-17<sup>th</sup>** Students will be on Vorovoro Island

**May 17<sup>th</sup>-20<sup>th</sup>** Students will be on Cegu Valley Farm in Tabia, Fiji

**May 20<sup>th</sup>-22<sup>nd</sup>** Students will be at Balencyaca Family Farm in Tabia, Fiji

**May 22<sup>nd</sup>-June 12<sup>th</sup>** Students will be back on Vorovoro Island

**June 12<sup>th</sup>** students will travel from Vorovoro island to Labasa and on to Nadi:

Fiji Airways FJ80

Departing LBS (Labasa) at 12:45pm

Arriving NAN (Nadi) at 1:30pm

**June 12<sup>th</sup>** Students will overnight at:

The Westin Denarau Island Resort & Spa

Address: Denarau Island North, Fiji

Phone: +679-675-0000

**June 13<sup>th</sup>** students will travel from Nadi to Labasa:

Fiji Airways FJ81

Departing NAN (Nadi) at 11:30am

Arrive LBS (Labasa) at 12:15pm

**Students will travel to the states on individually booked flights**

## Appendix C—Sample Itinerary for London

This itinerary details the first four full days in London. It includes lodgings and program activities, but does not detail the specific timings for the activities.

### Program Agenda

#### Saturday March 10<sup>th</sup>

- ◆ Departure Atlanta and overnight flight to London.

#### Sunday March 11<sup>th</sup>

- ◆ Morning arrival Heathrow.
- ◆ Meet and greet by Select study guide at Heathrow and private escorted motor coach transfer to central London. This will also include a 2 hour panoramic orientation of the city. Photo stops are included along the way plus a visit to the Tower of London
- ◆ Afternoon check in to the hotel. Your guide will ensure students are settled into their rooms and comfortable with their surroundings.
- ◆ Validate London tube pass providing free travel on London’s bus and tube system, zones 1 and 2
- ◆ Overnight London

#### Monday March 12<sup>th</sup>

- ◆ Morning guided walking tour of London fashion districts with local expert (Kings Road, Carnaby Street and New Bond Street)
- ◆ Afternoon visit to Angels Costumers (12 max)
- ◆ Overnight London

#### Tuesday March 13<sup>th</sup>

- ◆ Independent study
- ◆ Overnight London

#### Wednesday March 14<sup>th</sup>

- ◆ Special visit to the Victoria and Albert Museum and curator led tour
- ◆ Overnight London