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How's your CQ?: Effect of Study Abroad and Classroom-based Cultural Experiences on Cultural Intelligence Levels in Traditional Students

Abbi-Storm McCann[1], Lindsay Tan[1], Mary Katherine Thornton[1]

Abstract

This research assessed the impact of study abroad and classroom-based cultural experiences on traditional college students' cultural intelligence (CQ) levels, as measured through the standardized Cultural Intelligence Survey. Data from students participating in cultural experiences were collected using the Cultural Intelligence Scale (CQS). The hypotheses were tested using a pre-test/post-test research design and a non-randomized sample (quasi-experimental). The results were initially analyzed using descriptive statistics to report mean average and standard deviation scores before and after each cultural experience. A second round of analysis was performed to provide a deeper understanding of CQ scores at the dimension level. A closer analysis of the data raised some questions about best practices in assessing cultural experiences that contribute to the discussion and growing body of research regarding cultural intelligence literature. Overall, the findings from this research support the value of cultural experiences in raising CQ levels among traditional college students.

1 Auburn University, Auburn, AL, United States of America

Corresponding author: Abbi-Storm McCann, azm0077@auburn.edu

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Abstract in Spanish

Esta investigación evaluó el impacto de estudiar en el extranjero y las experiencias culturales en el aula en los niveles de inteligencia cultural (CQ) de los estudiantes universitarios tradicionales, medidos a través de la Encuesta de Inteligencia Cultural estandarizada. Los datos de los estudiantes que participaron en experiencias culturales se recolectaron utilizando la Escala de Inteligencia Cultural (CQS). Las hipótesis se probaron utilizando un diseño de investigación pre-test/post-test y una muestra no aleatorizada (cuasi-experimental). Los resultados se analizaron inicialmente utilizando estadística descriptiva para reportar la media promedio y la desviación estándar antes y después de cada experiencia cultural. Se realizó una segunda ronda de análisis para proporcionar una comprensión más profunda de los puntajes de CQ a nivel de dimensión. Un análisis más exhaustivo de los datos planteó algunas preguntas sobre las mejores prácticas en la evaluación de las experiencias culturales que contribuyen a la discusión y al creciente cuerpo de investigación sobre la literatura de inteligencia cultural. En general, los hallazgos de esta investigación respaldan el valor de las experiencias culturales para elevar los niveles de CQ entre los estudiantes universitarios tradicionales.

Keywords:

Cultural intelligence, study abroad, cultural intelligence survey, program assessment

Introduction

According to Cameron and Pagnattaro (2017) a quarter of today's population belongs to Gen Z, 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.

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; Trolian & Fouts, 2011). For students who grew up with the No Child Left Behind curriculum, their learning experience relied on simply learning for tests

(Trolian & 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 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 that 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 Land Grant University (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 with 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 further by looking into CQ scores at the dimension 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.

Literature Review

332,727 students were studying abroad in academic programs during the 2017/2018 school year (Institute of International Education, 2018). A 2.3% increase from the previous academic year (Institute of International Education, 2018). 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 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.

Developing cross-cultural competencies becomes vital as our workplaces become globalized (Alexandra, 2018). Research shows that the ability to interact successfully with individuals of different cultural backgrounds is vital in an era of global change and that it aids successful career development (Ramirez, 2019). This is why it has become increasingly important to understand what competencies 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 (Earley & Ang, 2003). CQ development hinges on experiential, cultural contact over some time (Earley & Ang, 2003). Several studies 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 examine 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 concerning intercultural contact. Douglas and Jones-Rikkers (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 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 capable of encompassing all previously defined terms. The CQ scale can consider 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-Rikkers (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. Table (1) summarizes selected study abroad literature relevant to the current study.

Key Authors	Terminology	Methodology	Findings
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-Rikkers (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

TABLE (1): LITERATURE REVIEW SUMMARY

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-Rikkers (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.

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.

Research Design

The research was designed to explore the CQ of students who had various cultural experiences at an 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 periods. The fifth opportunity was an on-campus course.

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	6 weeks	Summer 2016 13 participants			
Summer in Fiji and New Zealand	6 weeks	Summer 2017 Eight participants			

TABLE (2): DATA COLLECTION SUMMARY

The Global Studies Course is an introductory class included in LGU's core curriculum options. This course is 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 course, an existing LGU core course, was redesigned to improve three areas: cultural intelligence levels (CQ), awareness of and positive attitudes toward sustainability, and ability to apply learned knowledge through problem-based learning (PBL) exercises. For CQ, there are four areas of potential growth. Cognitive knowledge was the primary integration in the course; the course content introduces new knowledge about other cultures and provides benchmark content from which a student may choose to grow. For example: students worked with case studies on global issues that allowed for knowledge growth. Motivational drive was supported by the values, attitudes, and beliefs communicated by the instructor; in other words, speaking as if external cultural experiences are normative, safe, and positive was intended to promote students' motivation to seek out cultural experiences. For example: students were

encouraged to attend cultural events or join campus organizations where they would interact with multiple cultures. Tendencies toward behavioral action were buoyed by introducing and describing opportunities for cultural experiences through the institution. For example: students were prompted to attend informational sessions about study abroad and extra credit given for attending cultural festivals. Metacognitive strategy relies on a student's ability to metacognate, so the course focused on building that skillset through problem-based learning and reflective moments within the curriculum. For example: all assignments in the course require a personal reflection and peer review. This allows students an opportunity to grow on a personal, cultural level. By building these four dimensions into elements across the entire course, students were regularly presented with opportunities to grow CQ without being prescriptive about personal outcomes.

The semester in Italy is the longest of the four study abroad programs and lasts three months. Pre-departure training for this experience takes place over 6-8 weeks during the semester preceding travel. Students in 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 Appendix A. 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. Pre-departure training for this experience occurs in two meetings held the semester before travel begins. 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, students gain knowledge of issues such as sustainability and economic development. A sample itinerary of this program can be found in Appendix B.

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

The London Fashion Tour is a ten-day program over the students' spring break. Pre-departure training is held in a single meeting in the same semester as the abroad experience. 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 Appendix C.

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 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 with 171 usable participant surveys. Of those participants, there were 38 whose cultural experiences ranged from 2011–2012 (Italy), 21 from 2016–2017 (Fiji and Fiji-New Zealand), 16 in 2018 (London), and 96 from 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. LGU's demographics are 88-99% White for the last 50 years. Of the remining population, 60-70% of those students were Black and all other ethnicities make up the remaining marginal percentage.

Study Execution

The CQS was administered as a quasi-experimental pre-test/post-test surrounding a cultural experience (the treatment). The quasi-experimental, versus experimental, approach was necessary because participants self-selected

their cohort during registration; the sample could not be randomized. 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.

Each CQS data output was reported on a seven-point scale, for both the pre-test (T1) and post-test (T2). Four CQ dimensions 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 1). For each program listed, the breakdown of scores listed above was reported for each pre-test (T1) and post-test (T2).

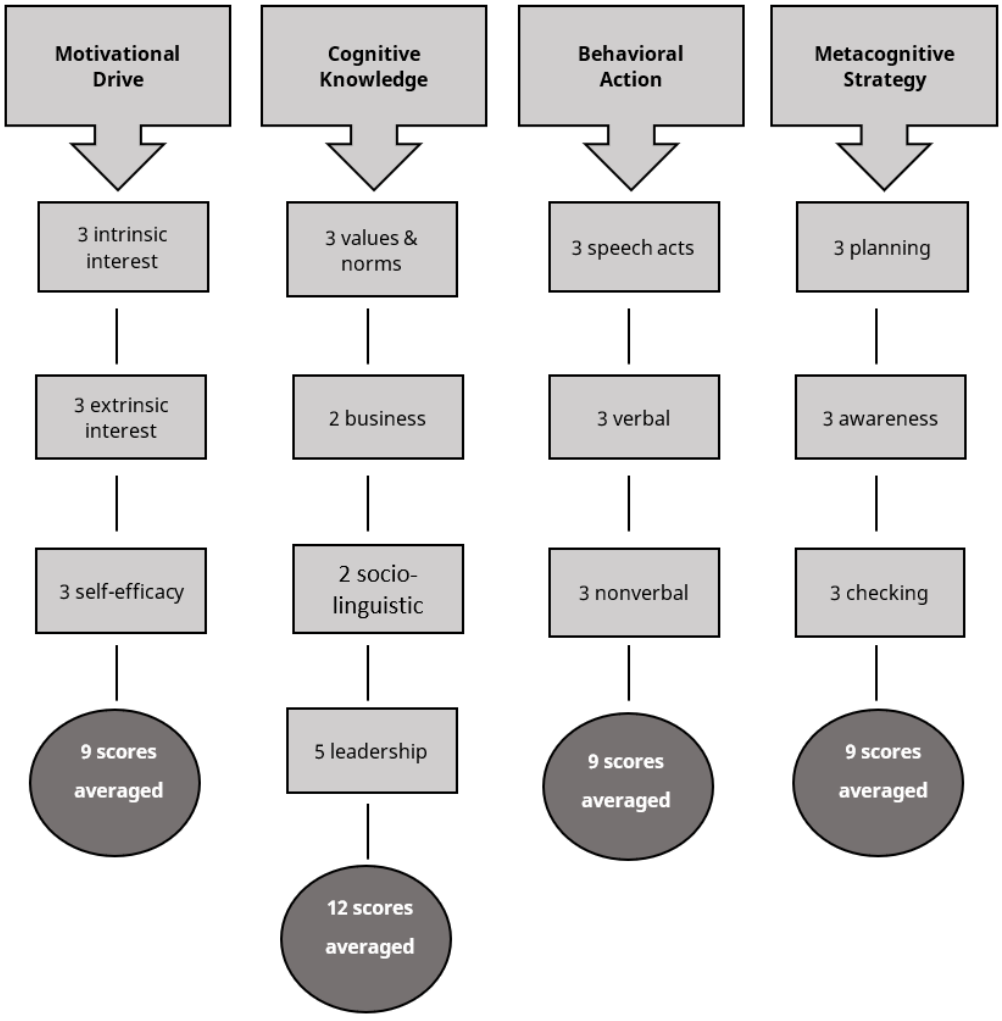

FIGURE (1): BREAKDOWN OF MEASURES/DIMENSIONS COMPOSING A STUDENTS' CQ SCORE

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

1a. Motivational CQ will increase from pre-test to post-test
1b. Cognitive CQ will increase from pre-test to post-test
1c. Behavioral CQ will increase from pre-test to post-test
1d. Metacognitive CQ will increase from pre-test to post-test

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

2a. Motivational CQ of study abroad students will show higher increases from pre-test to post-test than on-campus students.
2b. Cognitive CQ of study abroad students will show higher increases from pre-test to post-test than on-campus students.
2c. Behavioral CQ of study abroad students will show higher increases from pre-test to post-test than on-campus students.
2d. Metacognitive CQ of study abroad students will show higher increases from pre-test to post-test than on-campus students.

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

3a. Motivational CQ will increase more significantly for programs of longer length when compared to programs of shorter length
3b. Cognitive CQ will increase more significantly for programs of longer length when compared to programs of shorter length
3c. Behavioral CQ will increase more significantly for programs of longer length when compared to programs of shorter length
3d. Metacognitive CQ will increase more significantly for programs of longer length when compared to programs of shorter length

To keep with industry standards, which report the CQS of cohorts in terms of mean average and standard deviation, the results were analyzed using descriptive statistics to report the 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 dimensions 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

Of the 184 surveys, 13 T1 CQS scores were incomplete, with 171 remaining survey responses for analysis.

Results Using Established Method for CQS

The first step of the analysis was to follow the standard way to report CQS results, by calculating the mean averages and standard deviations for each cohort (see Table 3). 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 to determine statistical significance. The result for each cohort was a significant change.

Cohort	T1 Ave	T1 SD	T2 Ave	T2 SD	Diff	Effect Size (Cohen's d)	p-value
Global Studies Cohort 1	5.18	0.91	5.88	0.69	0.7	control	0.000*
Global Studies Cohort 2	5.16	0.68	5.67	0.79	0.51	control	0.000*
Global Studies Cohort 3	4.79	0.73	5.43	0.66	0.64	control	0.000*
Global Studies Cohort 4	5.26	0.67	5.50	0.24	0.24	control	0.000*
London Cohort 1	5.32	0.6	5.48	0.69	0.16	large	0.000*

Fiji/New Zealand Cohort 1	5.36	0.65	6.28	0.43	0.92	large	0.000*
Fiji Cohort 1	5.39	0.77	5.64	0.62	0.25	moderate	0.000*
Italy Cohort 1	5.14	0.44	5.68	0.52	0.54	trivial	0.000*
Italy Cohort 2	5.08	0.55	5.91	0.55	0.83	large	0.000*

TABLE (3): AVERAGE CULTURAL INTELLIGENCE SCORES

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 the 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 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 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. Perceiving this improvement in scores helped validate 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 rise 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 scores. 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. Like the other cohorts, they had increased CQ scores (0.54 and 0.83). For the twelve-week program, the students in the summer of 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 in 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) and, using Cohen's d, the effect size between the campus experience (control) and abroad experiences was moderate to large; Italy cohort 1 (trivial effect size) was an outlier. 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

The following results for H1 used ANOVA to 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 dimensions—motivation, cognitive, behavioral, and metacognitive. The hypotheses were aimed to explore these dimensions concerning 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.

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 (4), 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 dimensions 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 dimensions scores and total CQ. These results suggest that a multicultural experience abroad or in-classroom does affect the total and dimension CQ scores.

Hypo-theses	Category	Average	Standard Deviation	df	F	p-value ($p < .05$)
H1	Total CQ T1	5.143	0.698	1,340	54.828	0.000*
	Total CQ T2	5.701	0.698			
H1 (a)	Motivational CQ T1	5.919	0.817	1,340	9.169	0.003*
	Motivational CQ T2	6.163	0.067			
H1 (b)	Cognitive CQ T1	4.107	0.083	1,340	67.611	0.000*
	Cognitive CQ T2	5.006	0.071			
H1 (c)	Behavioral CQ T1	4.949	0.084	1,340	33.002	0.000*
	Behavioral CQ T2	5.617	0.081			
H1 (d)	Meta Cognitive CQ T1	5.596	0.061	1,340	25.035	0.000*
	Meta Cognitive CQ T2	6.019	0.059			

*F reported for Wilks' Lambda

TABLE (4): RESULTS FROM H1 SINGLE-FACTOR ANOVA COMPARING T1 TO T2 FOR ALL GROUPS, TOTAL CQ AND DIMENSIONS OF CQ (N = 171)

For H2, a one-way, between-subjects MANOVA was conducted using SPSS to determine if study abroad students' CQ levels would show higher increases from pre-test to post-test than those of on-campus students (see Table 5).

Hypo-theses	Category	Multivariate Tests			Parameter Estimates	
		Average	F	p-value ($p < .05$	Intercept	p-value ($p < .05$)
H2	Total CQ T_1 Group 1	5.075			-.155	
	Total CQ T_1 Group 2	5.230	95.709	.000*	5.23	.149
	Total CQ T_2 Group 1	5.631			-.160	
	Total CQ T_2 Group 2	5.791			5.791	.137
H2 (a)	Motivational CQT_1 Group 1	5.826			-.214	
	Motivational CQ T_1 Group 2	6.040	13.62	.000*	6.04	.096
	Motivational CQ T_2 Group 1	6.113			-.113	
	Motivational CQ T_2 Group 2	6.227			6.277	.252
H2 (b)	Cognitive CQ T_1 Group 1	3.919			-.427	

	Cognitive CQ T_1 Group 2	4.347	105.49	.000*	4.35	.010*
	Cognitive CQ T_2 Group 1	4.849			-.360	
	Cognitive CQ T_2 Group 2	5.209			5.21	.012*
H2 (c)	Behavioral CQ T_1 Group 1	4.906			-.097	
	Behavioral CQ T_1 Group 2	5.529	58.670	.000*	5.003	.568
	Behavioral CQ T_2 Group 1	5.003			-.200	
	Behavioral CQ T_2 Group 2	5.729			5.729	.220
H2 (d)	Metacognitive CQ T_1 Group 1	5.647			-.117	
	Metacognitive CQ T_1 Group 2	5.530	40.98	.000*	5.73	.343
	Metacognitive CQ T_2 Group 1	6.034			+.034	
	Metacognitive CQ T_2 Group 2	6.000			6.00	.777

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

TABLE (5): RESULTS FROM H2 ONE-WAY MANOVA COMPARING T1 TO T2 FOR ALL GROUPS, TOTAL CQ AND DIMENSIONS OF CQ (GROUP 1 (N = 96) (GROUP 2 (N = 75))

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 total CQ scores of the two groups and by comparing the T1 and T2 dimensions scores for groups 1 and 2. The results for total 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 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 in 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 with domestic experience start with lower motivation CQ (5.826) than those 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 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 with domestic experience start with lower behavioral CQ (4.91) than those 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).

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 6). 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 total CQ scores of the four groups as well as by comparing the T1 and T2 dimensions scores for groups one through four.

Hypo-theses	Category	Multivariate Tests			Parameter Estimates	
		Average	F	p-value (p < .05	Intercept	p-value (p < .05)
H3	Total CQ T_1 Group 1	5.113			-.251	.178
	Total CQ T_1 Group 2	5.321			-.043	.843
	Total CQ T_1 Group 3	5.385	33.831	.000*	+.022	.933
	Total CQ T_1 Group 4	5.364			5.364	.000*
	Total CQ T_2 Group 1	5.784			-.499	.008*
	Total CQ T_2 Group 2	5.484			-.800	.000*
	Total CQ T_2 Group 3	5.642			-.641	.014*
	Total CQ T_2 Group 4	6.283			6.283	.000*
H3 (a)	Motivational CQ T_1 Group 1	6.026			-.298	.258
	Motivational CQ T_1 Group 2	6.035			-.290	.344
	Motivational CQ T_1 Group 3	6.653	6.034	.016*	-.672	.071
	Motivational CQ T_1 Group 4	6.325			6.325	.000*
	Motivational CQ T_2 Group 1	6.231			-.401	.024*
	Motivational CQ T_2 Group 2	5.882			-.751	.000*
	Motivational CQ T_2 Group 3	6.236			-.396	.108
	Motivational CQT_2 Group 4	6.632			6.632	.000*
H3 (b)	Cognitive CQ T_1 Group 1	4.397			+.455	.088
	Cognitive CQ T_1 Group 2	4.479			+.537	.083
	Cognitive CQ T_1 Group 3	4.500	44.22	.000*	+,558	.134
	Cognitive CQ T_1 Group 4	3.942			3.94	.000*
	Cognitive CQ T_2 Group 1	5.316			-.261	.258

	Cognitive CQ T_2 Group 2	4.802			-.775	.005*
	Cognitive CQ T_2 Group 3	4.917			-.660	.043*
	Cognitive CQ T_2 Group 4	5.209			5.58	.000*
H3 (c)	Behavioral CQ T_1 Group 1	4.772			-.459	.143
	Behavioral CQ T_1 Group 2	5.153			-.078	.829
	Behavioral CQ T_1 Group 3	5.431	516.45	.000*	+.200	.646
	Behavioral CQ T_1 Group 4	5.231			5.23	.000*
	Behavioral CQ T_2 Group 1	5.743			-.556	.053*
	Behavioral CQ T_2 Group 2	5.327			-.973	.004*
	Behavioral CQ T_2 Group 3	5.542			-.757	.059
	Behavioral CQ T_2 Group 4	6.299			6.299	.000*
H3 (d)	Metacognitive CQ T_1 Group 1	5.257			-.700	.005
	Metacognitive CQ T_1 Group 2	5.618			-.339	.231
	Metacognitive CQ T_1 Group 3	5.958	9.44	.003*	+.001	.997
	Metacognitive CQ T_1 Group 4	5.957			5.96	.000*
	Metacognitive CQ T_2 Group 1	5.845			-.779	.001*
	Metacognitive CQ T_2 Group 2	5.924			-.700	.012*
	Metacognitive CQ T_2 Group 3	5.875			-.749	.025*
	Metacognitive CQ T_2 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*

TABLE (6): RESULTS FROM H3 ONE-WAY MANOVA COMPARING T1 TO T2 FOR STUDY ABROAD GROUPS, TOTAL CQ AND DIMENSIONS OF CQ (GROUP1(N = 38), (GROUP 2 (N = 16), (GROUP3 (N = 8), GROUP4 (N = 13))

The results for total CQ were 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 dimensions 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 cognitive level. However, within this dimension 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 behavioral level.

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 metacognitive level.

In summary (see Table 7), H1 was analyzed twice; once using descriptive statistics in order to comply with industry standards and again using ANOVA to look at individual dimension scores.

Hypotheses	Test Used	Results
H1	One-way ANOVA	• Increase in total CQ
H1 (a–b)	One-way ANOVA	• Increase in total CQ • Increase in all dimensions
H2 (a–b)	One-way between subjects MANOVA	• Increase in total CQ • Increase in all dimensions
H3 (a–b)	One-way between subjects MANOVA	• Increase in total CQ • Increase in partial dimensions

TABLE (7): SUMMARY OF TESTS USED AND RESULTS

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 total CQ as well as in the dimensions. When testing H2, the results provided further support for H1 and once again showed increases in the total CQ and the dimension scores for CQ. The results for H3 saw an increase in total CQ that was

not statistically significant. There was not an increase across all dimension scores and some dimension scores saw a decrease from T1 to T2.

Discussion

CQ and Its Dimensions

CQ has four dimensions—motivation, behavioral, cognitive, and metacognitive. In this study, significant increases from pre-test to post-test scores occurred across the dimensions. Notably, 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 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 or it could be the addition of a second country. 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 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 dimension 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 suggest that, at this point in their college career, many 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. Still, on-campus and study abroad experiences both 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 dimension with the smallest difference between T1 and T2 scores and 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 dimensions. 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 decreased (-.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 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 dimension, 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 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 started with higher CQ levels (5.647) than those who had abroad experiences (5.53).

Looking closer at differences between scores from on campus and study abroad students, 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 choose 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. This outcome may suggest an area for further study to strengthen outcomes by differentiating the value of on campus and study abroad experiences.

Total 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. 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 concerning 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 the 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 increased 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 various activities on the results, 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 concerning 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. The two factors of length of experience and activities within experience may interact to impact CQ gain. The potential implications of this effect will be discussed later.

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.

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. Looking closer at the differences between on-campus and study abroad scores, this increase could be because students choosing to take part in a campus course about global issues are culturally aware and 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 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.

The established method for viewing CQS results and the separate statistical (ANOVA) analysis both 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 for those whose cultural experiences were set in the on-campus classroom.

Conclusion

Studying abroad has increased 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 the 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 the aforementioned research supports the 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, providing the ROI on any educational experience is valuable. College students must develop problem-solving and critical thinking skills, work together in groups, and use classroom knowledge in practical settings (Trolian & 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 cultural experiences that could lead to CQ development.

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 occurring while abroad and in the classroom would help link CQ's relation to the curriculum and program activities abroad. Research can then contribute 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. 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).

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 pre-existing data did not lend itself to hierarchical regression analyses of T1 and T2 to analyze the data for statistically significant variance within the variables. According to Eisenberg et al. (2013) in their study on student cultural intelligence levels, hierarchical regression analyses were conducted to determine which dimensions 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 unavailable; 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 from the results. 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 studying abroad may be those who understand the value of an international experience; this could mean that their pre-test CQ levels are elevated, and thus the potential for 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 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. Whatley et al. (2020) define this as “student cocooning” when students spend more time with their cohort than immersing in local culture (p.12). 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 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 domestically 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.

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. By allowing the students to reflect on their activities in real-time, they can contribute insight into 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 students spend abroad (i.e., spring, summer, or fall) to see if this affects CQ development.

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 concerning studying abroad. Future research could use the Motivation to Study Abroad (MSA) to understand the motivation behind students studying abroad and compare it to the CQ drive metric used in this study. This potential information could provide valuable insights into the development of future study abroad programs and how to guide a student's CQ development (Anderson et al., 2015). Other instruments 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.

A closer analysis of the data additionally raises some questions about the best practices in the 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 insofar 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 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 culturally intelligent graduates, 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.

References

Alexandra, V. (2018). Predicting CQ development in the context of experiential cross-cultural training: The role of social dominance orientation and the propensity to change stereotypes. *Academy of Management Learning and Education, 17*(1), 62–78. https://doi.org/10.5465/amle.2015.0096

Alexis, F., Cacso, M., Martin, J., & Zhang, G. (2017). Cross-cultural and global interdependency development in stem undergraduate students: Results from singapore study abroad program. *Educatoin, 137*(3), 249-256.

Anderson, P. H., Hubbard, A., & Lawton, L. (2015). Student motivation to study abroad and their intercultural development. *Frontiers: The Interdisciplinary Journal of Study Abroad, 26*(1), 39–52. https://doi.org/10.36366/frontiers.v26i1.354

Ang, S., & Van Dyne, L. (2008). Conceptualization of cultural intelligence: Definition, distinctiveness and nomological network. In Ang & Van Dyne (Eds.), *Handbook of cultural intelligence: Theory measurement and applications* (pp. 3–15). M.E. Sharpe.

Ang, S., Van Dyne, L., Koh, C., Ng, K. Y., Templer, K. J., Tay, C., & Chandrasekar, N. A. (2007). Cultural intelligence: Its measurement and effects on cultural judgement and decision making, cultural adaptation and task performance. *Management and Organization Review, 3*(3), 335–371. https://doi.org/10.1111/j.1740-8784.2007.00082.x

Bennett, M. J. (2004). Becoming interculturally competent. In J. Wurzel (Ed.), *Toward multiculturalism: A reader in multicultural education* (2nd ed., pp. 62-77). Intercultural Resource Corportation.

Bland, H. W., Melton, B. F., Welle, P., & Bigham, L. (2012). Stress tolerance: New challenges for millennial college students. *College Student Journal, 46*(2), 362–375.

Braskamp, L. A., Braskamp, D. C., & Merrill, K. (2009). Assessing Progress in Global Learning and Development of Students with Education Abroad Experiences. *Frontiers: The Interdisciplinary Journal of Study Abroad, 18*(1), 101–118. https://doi.org/10.36366/frontiers.v18i1.256

Caldwell, P., & Purtzer, M. A. (2015). Long-term learning in a short-term study abroad program: “Are we really truly helping the community?” *Public Health Nursing, 32*(5), 577–583. https://doi.org/10.111/phn.12168

Cameron, E. A., & Pagnattaro, M. A. (2017). Beyond millennials: Engaging Generation Z in business law classes. *Journal of Legal Studies Education, 34*(2), 317–324. https://doi.org/10.1111/jlse.12064.

Carlson, J. S., & Widaman, K. F. (1988). The effects of study abroad during college on attitudes toward other cultures. *International Journal of Intercultural Relations, 12*(1), 1–17. https://doi.org/10.1016/0147-1767(88)90003-X.

Chickering, A., & Braskamp, L. A. (2009). Developing a global perspective for personal and social responsibility. *Association of American Colleges and Universities Peer Review,11*(4), 27–30.

Citron, J. L. (2002). U.S. students abroad: Host culture integration or third culture formation. In W. Grünsweig & N. Rinehart (Eds.), *Rockin’ in Red Square: Critical approaches to international education in the age of cyberculture* (pp. 41–56). LIT Verlag.

Douglas, C., & Jones-Rikkers, C. G. (2001). Study abroad programs and American student worldmindedness. *Journal of Teaching in International Business, 13*(1), 55–66. https://doi.org/10.1300/J066v13n01_04.

Dwyer, M. M. (2004). More is better: The impact of study abroad program duration. *Frontiers: The Interdisciplinary Journal of Study Abroad, X*(fall), 151–163.

Earley, P. C., & Ang, S. (2003). *Cultural intelligence: Individual interactions cross cultures.* Stanford University Press.

Eisenberg, J., Lee, H. J., Bruck, F., Brenner, B., Claes, M. T., Mironski, J., & Bell, R. (2013). Can business schools make students culturally competent? Effects of cross-cultural management courses on cultural intelligence. *Academic of Management Learning & Education, 12*(4), 603-621.

Ellwood, C. (2011). Undoing the knots: Identity transformations in a study abroad programme. *Educational Philosophy and Theory, 43*(9), 960–978, https://doi.org/10.1111/j.1469-5812.2009.00559.x

Engberg, M.E., & Jourian, T. J. (2015). Intercultural wonderment and study abroad. *Frontiers: The Interdisciplinary Journal of Study Abroad, 25*(1), 1-19. https://doi.org/10.36366/frontiers.v25i1.341

Engberg, M.E., Jourian, T. J., & Davidson, L. M. (2016). The mediating role of intercultural wonderment: Connecting programmatic dimensions to global outcomes in study abroad. *Higher Education, 71*, 21-37. https://doi.org/10.1007/s10734-015-9886-6

Evanson, T. A., & Zust, B. L. (2006). "Bittersweet knowledge": The long-term effects of an international experience. *Journal of Nursing Education, 45*(10), 412–419. https://doi.org/10.3928/01484834-20061001-06.

Fang, F., Schei, V., & Selart, M. (2018). Hype or hope? A new look at the research on cultural intelligence. *International Journal of Interculutural Relations,66,* 1–24. https://doi.org/10.1016/j.ijintrel.2018.04.002

Franklin, K. (2010). Long-term Career Impact and Professional Applicability of the Study Abroad Experience. *Frontiers: The Interdisciplinary Journal of Study Abroad, 19*(1), 169–191. https://doi.org/10.36366/frontiers.v19i1.279

Genareo, V. R. (2015, November). Problem-based learning: Six steps to design, implement, and assess. *Faculty Focus: Higher Ed Teaching Strategies.* http://facultyfocus.com

Institute of International Education. (2018). Fast facts. https://www.iie.org/Research-and-Insights/Open-Doors/Fact-Sheets-and-Infographics/Fast-Facts

Killick, D. (2012). Seeing-ourselves-in-the-world: Developing global citizenship through international mobility and campus community. *Journal of Studies in International Education, 16*(4), 372–389. https://doi.org/10.1177/1028315311431893

Lee, A., Williams, R. D., Shaw, M. A., & Jie, Y. (2014). First-year students' perspectives on intercultural learning. *Teaching in Higher Education*, *19*(5), 543–554. https://doi.org/10.1080/13562517.2014.880687

Loveland, E. (2017). Instant generation. *The Journal of College Admission, 34–38.*

Maloney, T., & Asbury, T. (2018). The drop-off: Pedagogy of study abroad educators fostering intercultural competence. *International Research and Review*, *7*(2), 65–84.

Miller-Perrin, C., & Thompson, D. (2010). The Development of Vocational Calling, Identity, and Faith in College Students: A Preliminary Study of the Impact of Study Abroad. *Frontiers: The Interdisciplinary Journal of Study Abroad, 19*(1), 87–104. https://doi.org/10.36366/frontiers.v19i1.275

Neppel, J. M. (2005). Study abroad as a passport to student learning: Does the duration of the study abroad program matter? (Publication No. 1426842) [Doctoral Dissertation, University of Maryland]. Digital Respository at the University of Maryland.

Paige, R. M., Fry, G. W., Stallman, E. M., Josic, J., & Jon, J. (2009). Study abroad for global engagement: The long-term impact of mobility experiences. *Intercultural Education, 20*(Suppl. S1–2), S29–S44. https://doi.org/10.1080/14675980903370847

Pool, R., Nolen, A., & Putten, J. (2017). Longitudinal comparative analysis: The no child left behind generation goes to college. *SAGE Research Methods Cases.* https://doi.org/10.4135/9781473969773

Raby, R. L., Rhodes, G. M., & Biscarra, A. (2014). Community college study abroad: Implications for student success. *Community College Journal of Research and Practice, 38*, 174–183. https://doi.org/10.1080/10668926.2014.851961

Ramirez, E. (2016). Impact on intercultural competence when studying abroad and the moderating role of personality. *Journal of Teaching in International Business, 27*(2–3), 88–105. https://doi.org/10.1080/08975930.2016.1208784.

Ramirez, E. (2019). Influence of students' interactions abroad on developing intercultural competence. *Journal of Teaching in International Business, 30*(1), 54–76. https://doi.org/10.1080/08975930.2019.1627979.

Rockstuhl, T., Seiler, S., Ang, S., Van Dyne, L., & Annen, H. (2011). Beyond EQ and IQ: The role of cultural intelligence in cross-border leadership effectiveness in a globalized world. *Journal of Scoial Issues, 67*, 825-840. https://psycnet.apa.org/doi/10.1111/j.1540-4560.2011.01730.x

Ruben, B. D. (2015). Intercultural communication competence in retrospect: Who would have guessed? *International Journal of Intercultural Relations*, *48*, 22–23. https://doi-org.spot.lib.auburn.edu/10.1016/j.ijintrel.2015.03.010

Savicki, V. (2010). An Analysis of Contact Types of Study Abroad Students: The Peer Cohort, the Host Culture and the Electronic Presence of the Home Culture in Relation to Readiness and Outcomes. *Frontiers: The Interdisciplinary Journal of Study Abroad, 19*(1), 61–86. https://doi.org/10.36366/frontiers.v19i1.274

Savicki, V., Cooley, E., & Donnelly, R. (2008). Acculturative stress, appraisal, coping and intercultural adjustment. In V. Savicki (Ed.), *Developing intercultural competence and transformation: Theory, research, and application in international education* (pp. 173–192). Stylus Publishing.

Stroud, A. (2010). The assessment of learning outcomes in study abroad. *International Educator, 10*(2), 31.

Thomlison, T. D. (1991, February 22). *Effects of a study-abroad program on university students: Toward a predictive theory of intercultural contact.* Annual Intercultural and Communication Conference, IAICS, Chung King University, Tainan, Taiwan.

Trolian, T. L., & Fouts, K. S. (2011). No child left behind: Implications for college student learning. *About Campus, 16*(3), 207. https://doi.org/10.1002/abc.20061

Van Dyne, L., Ang, S., & Koh, C. (2008). *Development and validation of the CQS: The cultural intelligence scale*. Handbook of Cultural Intelligence. http://culturalq.com

Westwood, M. J., Lawrence, W. S., & Paul, D. (1986). Preparing for re-entry; A program for the sojourning student. *International Journal for the Advancement of Counselling,* (9), 221–230. https://doi.org/10.1007/BF00120242

Whatley, M., Landon, A. C., Tarrant, M. A., & Rubin, D. (2020). Program design and the development of students' global perspectives in faculty-led short-term study abroad. *Journal of Studies in Internaional Education, 00*(0), 1-18. https://doi.org/10.1177/1028315320906156

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.

Monday, 22		
9:45am	Campus classroom	Synthesis with Lacey [redacted]
10:00am	Campus classroom	"Life and times of the Middle Ages" with Francesca Fabi [redacted]
11:30am	Break	
11:40am	Campus classroom	"Italian Immigration in the US"
1:00pm	Lunch on your own	
2:00pm	Campus classroom	"Mythology" with Rossella De Venuto [redacted]
3:30pm	Campus classroom	"Religion" with Rossella De Venuto [redacted]
Following	Classes end	
Tuesday, 23		**Wear: Elegant/Formal for Opera night**
Morning		Journal Work & final mini-meetings with Lacey [redacted]
12:00pm	Campus kitchen	Last Cooking class with Mary Lou Gray [redacted]
Following	Campus kitchen	Lunch for everyone
2:30pm	Campus classroom	Open Note Quiz 3
Following	Classes end	
Evening:		
7:00pm	Monti bus stop	Pick up and transfer to the Baths of Caracalla
9:00pm	Baths of Caracalla	*La Traviata*
Wednesday, 24		
All day		Journal Work Day & final mini-meetings with Lacey [redacted]
10:00pm		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 • AU Staff [redacted]uation • Lacey's [redacted] (AUevaluate[redacted] • Journal Evaluation
Afternoon	Campus	Clean up of campus and prep for Farewell dinner
7:30pm	Campus	Farewell dinner hosted by the students

*Some names and information have been redacted

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 11th-17th Students will be on Vorovoro Island
May 17th-20th Students will be on Cegu Valley Farm in Tabia, Fiji
May 20th-22nd Students will be at Balencvaca Family Farm in Tabia, Fiji
May 22nd-June 12th Students will be back on Vorovoro Island

June 12th 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 12th Students will overnight at:
The Westin Denarau Island Resort & Spa
Address: Denarau Island North, Fiji
Phone: +679-675-0000

June 13th 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 10th

- Departure Atlanta and overnight flight to London.

Sunday March 11th

- 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 12th

- 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 13th

- Independent study
- Overnight London

Wednesday March 14th

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

Author Biography

Abbi-Storm McCann explores the worlds of consumer behavior, Cultural Intelligence, assessment, and how of those topics interconnect. She has earned certifications in higher education teaching, Culture Bump, and Cultural Intelligence.

Lindsay Tan Lindsay Tan is a design ecologist who provides an immersive look at the extraordinary power of design in everyday life, in the headlines, and at the heart of our most pressing global challenges.

Mary Katherine Thornton serves as the Director of International Outreach at the Hunger Solutions Institute and the Director of Global Education in the College of Human Sciences at Auburn University. She has a varied background ranging from business to biochemistry and has a passion to connect students with scholars and mentors across various fields to develop sustainable solutions to major global challenges, particularly hunger.