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Measuring the Impact of a Study Abroad Program on Engineering Students' Global Perspective

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Abstract

With the increasing demand of engineers to have global competencies, students are more than ever required to be creative and critical thinkers when solving complex problems. To prepare engineering students for successfully transitioning to the globally connected workforce, engineering educators need to explore different ways to help develop students' understanding of global perspectives. One of the tools to develop these skills is through study abroad programs which are designed to help undergraduate students achieve learning outcomes pertinent to global engineering. This study describes students' global learning gains in one study-abroad program with the goal of increasing students' understanding of the global perspective. Data were collected using the Global Perspectives Inventory (GPI) survey to measure the global perspective of students participating in the program. Data was analyzed quantitatively using two different tests, Paired T-tests and Repeated Measures ANOVA. The results showed a significant increase in the GPI scores in most of the dimensions for both the T-test and Repeated Measures ANOVA. Overall, the study had a positive influence on the students' understanding of global perspectives and further practical significance are discussed.

Introduction and Background

As we move towards the new industrial revolution, engineering work will become global, diverse, and complex. With the increasing demand of engineering from a global perspective, students will be required to explore new ideas and use enhanced creativity when solving technical problems [1]. To prepare engineering students for successfully transitioning to the globally connected workforce, engineering educators need to explore different ways to help develop students' understanding of *global perspectives* through *intercultural maturity* and *intercultural communication* [2], [3]. One way engineering programs are developing these skills is through study abroad programs which are designed to help undergraduate students achieve learning outcomes pertinent to global engineering. This study describes the Rising Sophomore Abroad Program (RSAP) , which introduces global engineering to undergraduate students at the end of their freshmen year followed by a two-week international travel component [18].

The goal of the RSAP program is to develop students' learning by defining global engineering practice, recognizing contextual influences on engineering problems and their respective solution, and exploring the diversity in engineering practice [4]. The program includes a semester-long course, which addresses global engineering challenges, cross-cultural collaboration, and developing diverse teamwork skills through group projects. After the course is completed, students depart in different international tracks around the world for a duration of two weeks. The course and the international travel aim to increase students' understanding of global perspectives in engineering.

Global perspective includes several components of knowledge, attitudes, and skills important to develop intercultural communication and identity and interpersonal relations important to intercultural maturity [3]. According to [2] multiple perspectives about knowing, sense of

identity and relationships with people have become powerful influences in the global world. This study addresses the increasing need to identify students' development of these perspectives globally. Hence, we investigate the influence of the RSAP program on students' multiple global perspectives by capturing data at different points in the program.

Purpose and Research Question

The purpose of this study is to explore students' understanding of the global perspectives across three different points in the RSAP program: At the beginning of the semester in the Global STEM practice class, at the end of the semester when the class finishes and after the short-term international module. Hence, the study addresses the following research question

RQ: How do students' Global Perspective score change between pre-course, post-course and post-trip administration of the Global Perspective Inventory (GPI)?

Literature review

The NAE report on Educating the Engineer of 2020 states that the engineering graduates should be "*technically proficient engineers who are broadly educated, see themselves as global citizens, can be leaders in business and public service, and who are ethically grounded* [5]." Most of the programs that aim to teach cultural intelligence to engineering students opt for some form of international travel, despite the challenges that it represents [4]. Although most of these programs do not focus solely on global engineering practices, they present unique learning opportunities that allow engineering students to experience some of the global challenges ahead. When properly conceived and implemented, study abroad programs can improve the students' ability to work in culturally diverse teams, their sensitivity to the engineering challenges and opportunities in other countries, and their awareness of the limitations of a U.S.-centric worldview [6].

A general concern about the implementation of study abroad programs for engineering students is how these programs fit in the crowded engineering curriculum. While semester-long study abroad programs are a common option for social science majors, the engineering curriculum seldomly allows that level of flexibility. One way to overcome this limitation is the implementation of short-term study abroad programs. Short-term study abroad experiences, defined as consisting of eight weeks or fewer, are typically more accessible for engineering students [7]. Within a short period of time, these experiences aim to "increase [the students'] cross-cultural sensitivity and ability to work in diverse teams [8]." In order to overcome the perception that short-term study abroad programs do not effectively improve student experiences, it is important to add to our evaluations of them [9]. If they are designed purposefully to meet their outcome goals, short-term study abroad trips can be as effective as semester-long ones [10].

One of the tools used to measure global perspectives is the GPI. The GPI has been used to measure global perspective changes in university students after their participation in short-term study abroad programs. Non-engineering students who study abroad for varying amounts of time consistently have improved GPI scores, which aligns with other research that overseas

experiences lead to identity, diversity, and cognitive improvements [3], [11]–[13]. Engineering education literature demonstrates a need for assessing global preparedness of engineering students [14]. Hence, we aim to understand whether students had similar or different understanding of the Global perspective in this study abroad program.

Methods

We used a survey research approach to answer our research question. We chose survey research as it provides quantitative descriptions and trends of the Global Perspective scores among students in the RSAP program [15]. The Global Perspective Inventory (GPI) was used as our survey instrument which has already been cross-validated with numerous data from college-students [2], [3]. In this study paired t-tests and repeated measures ANOVA was implemented to compare students' scores at three different points in time: pre-course, post-course and post-trip. Details of the data collection, survey and data analysis are provided in the following sections.

Sampling

The RSAP program in this study is located at a large R1 university in the Mid-Atlantic region. The participants are first year engineering students in their second semester and are part of the general first-year engineering program in the university. The RSAP program includes a semester-long on campus-course followed by a two-week module in different international tracks. The selection process involves an application process where students provide e short essays. Students are selected on a particular international track based on their application score and personal preference. Our study involves students who enrolled in the RSAP program for 2018 and 2019. There were 123 students enrolled in the 2018 cohort and 122 students enrolled in the 2019 cohort. The full list of student demographics for the RSAP program is provided in Appendix B.

Survey Instrument

The GPI survey instrument was designed to comprehensively measure each respondent's global perspective. The instrument includes six scales—both development and acquisition scales within each of the three domains: *Cognitive, intrapersonal, and interpersonal*. Each of the domains consist of 2 dimensions. The GPI survey instrument was developed using data collected from 19,600 undergraduate students in the United States who completed the survey from 2012-2014 [2]. The survey instrument was tested for validity and reliability and in all cases found to be valid and reliable [2]. Table 1 shows the different dimensions of the GPI in each domain along with their description and a sample item. A full list of GPI items is shown in Appendix A. Respondents were asked to rate each item using a Likert scale from a score of 1 ("Strongly Disagree") to 5 ("Strongly Agree").

Table 1
Description and Sample GPI Survey Items from [2].

GPI Domain	GPI Dimension Scale	Description	Sample Item	# of items
Cognitive	Knowing	One's view of different cultural contexts and valuing its importance	I take into account different perspectives before drawing conclusions about the world around me.	5
	Knowledge	Understand and be aware of various cultures and the impact on our global society and being proficient in more than one language	I understand how various cultures of this world interact socially.	5
Interpersonal	Social Responsibility	Interdependence and social concern for others in different cultures	I consciously behave in terms of making a difference.	5
	Social Interactions	Degree of engagement with others in different cultural settings from different backgrounds	I frequently interact with people from a race/ethnic group different from my own.	4
Intrapersonal Domain	Identity	level of awareness of one's own identity and acceptance of one's ethnic, racial and gender dimensions of one's identity	I can explain my personal values to people who are different from me.	6
	Affect	Dealing with emotional intelligence when encountering different cultures by respecting and accepting different cultural perspectives	I am accepting of people with different religious and spiritual traditions.	5

Data Collection

The GPI data was collected for the 2018 and 2019 RSAP cohorts which includes 245 engineering students. A survey was administered where students completed the GPI via an online survey on the first day of the Global Engineering course (Pre-course) and the last day of the course (Post-course) [15]. In addition, students also completed the GPI via email after returning from their international tracks (Post Trip). There were a total of 215 respondents who completed the survey at the three different points in time. There were 30 incomplete cases, where students

did not choose to fill all the survey responses. Hence we had a high response rate of 88% from our survey administration [15]. The study was approved by the IRB and participation in this study was voluntary and students had the choice to opt out at any time of the study. The instructor was responsible for introducing the research project to the class and the teaching assistant collected signed consent forms from students. There was no incentive provided to students who agreed to participate in the study.

Data Analysis

Our study goal was to compare students' Global Perspective scores at different points in time: pre-course, post-course and post-trip. Hence, we carried out two different tests, Paired T-tests and Repeated Measures ANOVA to answer our research question. We chose to omit any incomplete survey responses and used the completed 215 responses for analyzing the data.

Paired T-Tests

We carried out Paired T-Tests in order to understand the influence of the course and the influence of the international trip on GPI. The first Paired T-test was implemented for comparing students' GPI score results for pre-course versus post-course. The second paired T-test was implemented for comparing students' GPI score results between post-course and post-trip. The sample size for both the paired T-tests was 215 which included survey responses at three different points in time. Aggregate scores were calculated for each scale on the GPI by averaging the relevant items for each of the dimensions. For example, in the *knowing* dimension, the average score of all 5 relevant items were calculated for the T-tests. The aggregate scores of the dimensions were then compared using the T-tests. We used the *one-tailed* t-tests in our study since we assumed differences in a single direction where the GPI scores increased from pre-course to post-course to post-trip [16]. In order to control the familywise error rate, the Bonferroni correction in the t-tests were used [17]. We used R programming language to conduct the pairwise t-tests using the *t.test* function.

Repeated Measures ANOVA

Since we had students' GPI scores across three different points in time, we conducted repeated measures ANOVA to compare these scores across all three administrations. Aggregate scores were calculated for each scale on the GPI by averaging the relevant items for each of the dimensions. For example, in the *knowledge* dimension, the average score of all 5 relevant items were calculated for the ANOVA. The aggregate scores of the dimensions across the three different administrations were then compared using the repeated measures ANOVA. We used R programming language to conduct the analysis using the ezANOVA function from the *ez* package in R [17].

Data Quality and Limitations

We conducted several checks and assumptions in our study to ensure that the data set was appropriate for the data analysis. For the paired T-tests we checked the paired t-test assumptions and the normality assumptions for the dataset. For our first assumption, we ensured that the data

was collected from the same respondents at two different points in time. Second of all, for normality assumption, the sample size, n>30, our sample size was 215 which is above the requirement for the normality in the differences of the pairs [17]. Hence, we can assume that the differences of the pairs follow a normal distribution with the relatively large sample size.

For the repeated measures ANOVA, we checked the normality of assumption, and the assumption of sphericity [17]. For the normality of assumption, we plotted the normality plot of residuals (QQ-plot) for all dimensions in the GPI. Figure 1 shows the output of the QQ-plot where the quantiles of the residuals are plotted against the quantiles of the normal distribution.

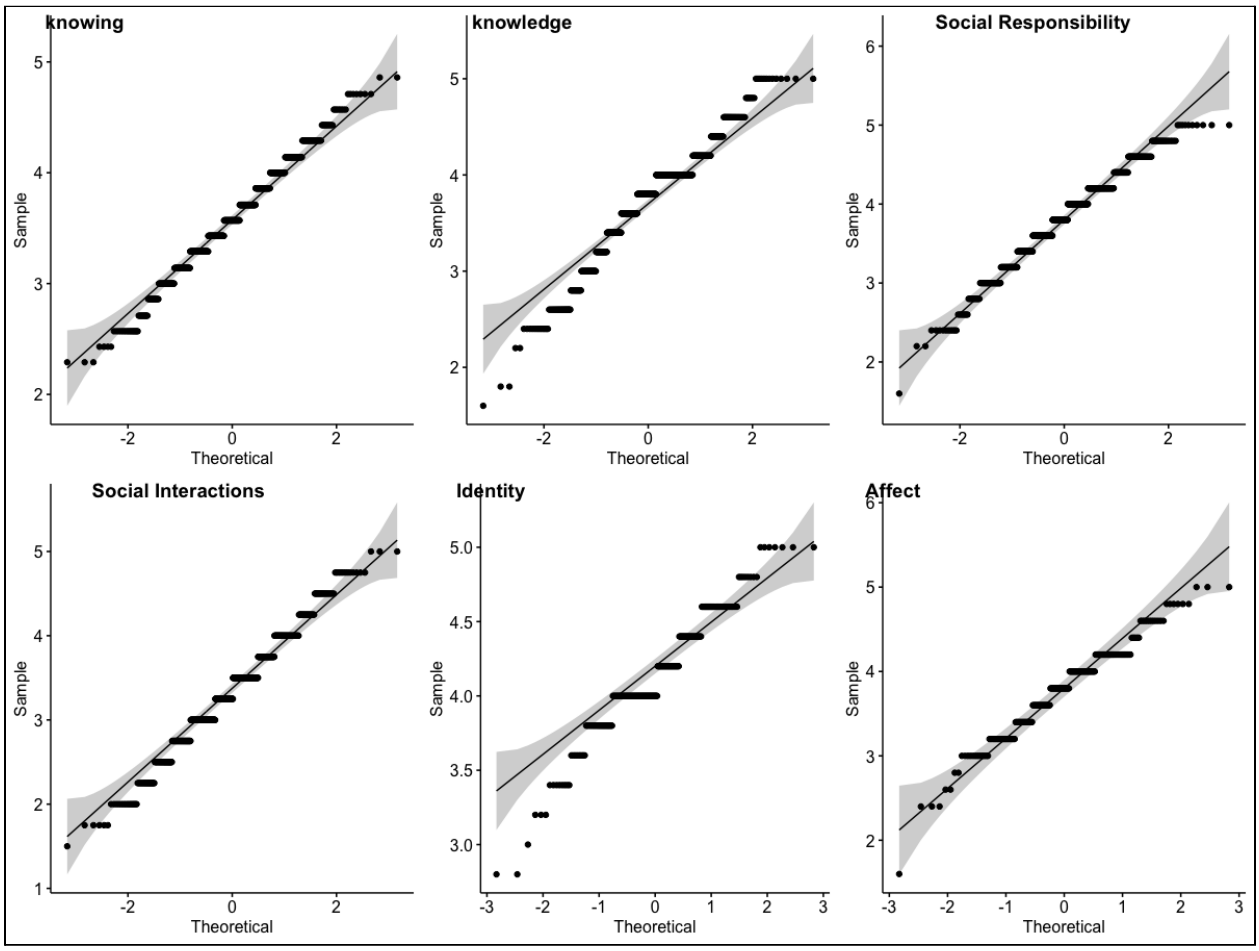

Fig. 1. QQ-plot of the GPI dimensions to check the normality of assumption

From the figure it is seen that all the dimensions have points that fall approximately along the reference line. Hence, we were able to assume normality. For the assumption of sphericity, we carried out the Mauchly's test. The results of each dimension are shown in Table 2. From the table, the *Knowing* and *Knowledge* dimensions reject the assumption of sphericity with significant p-values and for the rest of the dimensions we accept the assumption of sphericity. For the dimensions that rejected the assumption of sphericity, we considered the

Greenhouse-Geisser correction when analyzing the results. The Mauchly's test and the correction are a standard output for the ezANOVA function in R.

Table 2
Results of Mauchly Test for Sphericity and Greenhouse-Geisser correction

GPI Domain	GPI Dimension Scale	Mauchly's Test p-value	Greenhouse-Geisser p-value, p[GG]
Cognitive	Knowing	0.005*	0.14
	Knowledge	0.02*	0.16
Interpersonal	Social Responsibility	0.97	—
	Social Interactions	0.88	—
Intrapersonal Domain	Identity	0.52	—
	Affect	0.54	—
*Note: *indicates significant p-value (p<0.05)*			

This study had several limitations. The repeated measures ANOVA analysis was conducted in three different points in time for both the 2018 and 2019 cohort, however, did not consider variation across these two cohorts. It is possible that there are significant differences across cohorts since the nature of experience of the cohorts were different since portions of the class and the experience in the international tracks were changed in these two years. In addition, a small group of RSAP students did not complete the post-course and the post-trip GPI survey. This could be because a group of students were less engaged in class for which they had missed completing the post-trip survey. In addition, the post-trip GPI survey was conducted during the following summer, which could be a reason for low response rate.

Results

The results from the data analysis reveals the comparison of students' GPI scores at three different points in time. The following section provides descriptive statistics, the results from the paired T-tests and the repeated measures ANOVA for each dimension in the GPI.

Descriptive Statistics

The mean, median and standard deviation of the GPI scores administered in three different points in time were calculated along with their difference. Table 3 shows the mean, median and standard deviation of the students' GPI scores during pre-course, post-course and post-trip administration.

Table 3
Descriptive Statistics of the GPI scores for pre-course, post-course and post-trip

Timeline	Dimension	mean	median	SD	Difference in mean	
Pre-Course	Pre Knowing	3.6	3.57	0.43		*Likert scale from 1 to 5*
	Pre-Knowledge	3.5	3.6	0.6		
	Pre SocInt	3.28	3.25	0.64		
	Pre SocResp	3.79	3.8	0.54		
	Pre-Identity	3.93	4	0.54		
	Pre-Affect	4.14	4	0.41		
Post-Course	Post Knowing	3.54	3.57	0.47	-0.06	Difference in post-course and pre-course
	Post Knowledge	3.81	4	0.52	0.31	
	Post SocInt	3.36	3.5	0.62	0.08	
	Post SocResp	3.8	3.8	0.56	0.01	
	Post Identity	3.99	4	0.53	0.06	
	Post Affect	4.15	4	0.44	0.01	
Post-Trip	PostTrip Knowing	3.6	3.57	0.52	0.06	Difference in post-trip and post-course
	PostTrip Knowledge	3.83	3.8	0.54	0.02	
	PostTrip SocInt	3.4	3.5	0.64	0.04	
	PostTrip SocResp	3.83	3.8	0.58	0.03	
	PostTrip Identity	4.08	4	0.52	0.09	
	PostTrip Affect	4.21	4.2	0.42	0.06	

From Table 3, we can see that the highest mean among the dimensions for all the three different administrations was on the *Affect* dimension. The *Affect* dimension had an average score of above 4 in all three different points in time with a difference of 0.06 between post-trip and post-course and 0.01 between post-course and pre-course. The lowest mean among the dimensions was in the *Social Interaction* dimension. The *Social Interaction* dimension had an average score of 3.35 in all three different points in time with a difference of 0.08 between pre-course and post-course and 0.03 between post-trip and post-course. In addition, the *Social Interaction* dimension had the highest standard deviation among the dimensions in the GPI.

Paired T-tests

The results of the paired T-tests between pre-course and post-course administrations shows that the students' GPI scores increased in the *Knowledge, Social Interactions and Identity* dimensions. These dimensions saw a significant increase in the average scores ($p< 0.05$). In particular, the *Knowledge* dimension had a T-statistic value of 7.99 and a p-value of 3.91E-14 ($p<0.001$), the *Social Interactions* dimension had a T-statistic value of 2.31 and a p-value of 0.01 ($p<0.05$) and the *Identity* dimension had a T-statistic value of 2.08 and a p-value of 0.02 *$p<0.05$). However, there were no significant differences in the average score for the *Knowing, Social Responsibility and Affect* dimensions ($p>0.05$). We calculated Cohen's d to understand the

effect size for each scale. The *Knowledge* dimension had an effect size of 0.48, the *Identity* dimension had an effect size of 0.14 and the *Social Interactions* dimension had an effect size of 0.03. Hence, there was a medium effect for the *Knowledge* dimension (>0.3) and small effect for the *Identity* dimension [17]. Table 4 shows the full results of the paired T-tests.

Table 4
T-Tests Comparing Pre-course and Post-course GPI scores

Pre-course				**Post-course**						
Dimension	**df**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Diff**	**T**	**p-value**	**Sig.**	**Effect Size**
Knowing	214	3.6	0.43	3.54	0.47	-0.06	-1.93	0.97		0.131
Knowledge	214	3.5	0.6	3.81	0.52	0.31	7.99	3.91E-14	***	**0.48**
Social Responsibility	214	3.28	0.64	3.36	0.62	0.08	0.52	0.6		0.16
Social Interactions	214	3.79	0.54	3.8	0.56	0.01	2.31	0.01	*	0.03
Identity	214	3.93	0.54	3.99	0.53	0.06	2.08	0.02	*	0.14
Affect	214	4.14	0.41	4.15	0.44	0.01	0.45	0.32		0.03

*Likert scale from 1 = "Strongly Disagree" to 5 = "Strongly Agree." Significance levels are * = p < .05, ** = p < .01, *** = p < .001.*

The results of the paired T-tests between post-course and post-trip administration shows that the students' GPI scores increased in the *Identity and Affect* dimensions. These dimensions saw a significant increase in the average scores ($p< 0.05$). In particular, the *Identity* dimension had a T-statistic value of 2.74 and a p-value of 0.003 ($p<0.01$) and the *Affect* dimension had a T-statistic value of 2.11 and a p-value of 0.01 ($p<0.05$). However, there were no significant differences in the average score for the four other dimensions ($p>0.05$). In terms of the effect size, the *Identity* dimension had an effect size of 0.185 and the *Affect* dimension had an effect size of 0.143. Hence, there were small effects in both the *Identity and Affect* dimensions. Table 5 shows the full results of the paired T-tests.

Table 5
T-Tests Comparing Post-course and Post-trip GPI scores

Post-course				**Post-trip**						
Dimension	**df**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Diff**	**T**	**p-value**	**Sig.**	**Effect Size**
Knowing	214	3.54	0.47	3.6	0.52	0.06	1.64	0.05		0.112
Knowledge	214	3.81	0.52	3.83	0.54	0.02	0.53	2.90E-01		0.036

Social Responsibility	214	3.36	0.62	3.4	0.64	0.04	0.94	0.17		0.066
Social Interactions	214	3.8	0.56	3.83	0.58	0.03	0.97	0.16		0.065
Identity	214	3.99	0.53	4.08	0.52	0.09	2.74	0.003	**	0.185
Affect	214	4.15	0.44	4.21	0.42	0.06	2.11	0.01	*	0.143
*Likert scale from 1 = "Strongly Disagree" to 5 = "Strongly Agree." Significance levels are * = p < .05, ** = p < .01, *** = p < .001.*										

Repeated Measures ANOVA

The results from the repeated measures ANOVA show that there was significant difference across all three distributions of the GPI in the *Knowledge, Social Interactions, Identity* and *Affect Dimensions* with $p<0.05$. In particular, the *Knowledge* dimension had a F-statistic value of 49.7 and a p-value of 3.80E-20 ($p<0.001$), the *Social Interactions* dimension had a F-statistic value of 5.58 and a p-value of 0.004 ($p<0.01$), the *Identity* dimension had a F-statistic value of 12 and a p-value of 8.50E-6 ($p<0.001$) and the *Affect* dimension had a F-statistic value of 4 and a p-value of 0.02 ($p<0.05$). However, there were no significant differences in the *Knowing* and *Social responsibility* dimensions. The generalized eta-squared for effect size was also reported for all dimensions using the ezANOVA R function. The dimensions which had significant differences across all three distributions had effect sizes less than 0.1. These values indicate small effects in the GPI scores across the three distributions. Table 6 shows the full results of the repeated measures ANOVA.

Table 6
Repeated Measures ANOVA results on the GPI dimensions

Dimension	**F-Statistic**	**df**	**p-value**	**Sig.**	**Effect size**
Knowing	1.97	2, 428	0.14		0.002
Knowledge	49.7	2, 428	3.80E-20	***	0.07
Social Responsibility	1.12	2, 428	0.32		0.001
Social Interactions	5.58	2, 428	0.004	**	0.006
Identity	12	2, 428	8.50E-06	***	0.01
Affect	4	2, 428	0.02	*	0.006

*Likert scale from 1 = "Strongly Disagree" to 5 = "Strongly Agree." Significance levels are * = p < .05, ** = p < .01, *** = p < .001.*

Discussion and Conclusion

The results from our study provide different considerations from practice. From the pre-course and post-course paired T-test, there was a significant increase in the GPI scores in the *Knowledge, Social Interactions and Identity* dimensions. This might mean that the Global Engineering course had an influence on students' awareness of cultures on our global society and one's own identity and engagement with a diverse group of people. The *Knowledge* dimension once again showed the largest growth, which may reflect the alignment of the learning objectives of the Global Engineering Course with the *knowledge* dimension of the GPI scale. Although the *Social Interaction and Identity* dimensions show statistically significant growth from pre-course to post-course administration, none of them increase by more than half point in the Likert scale and only achieve small effect sizes.

From the results of the post-course and post-trip administration, we found out that the *identity and affect* dimensions had a significant increase in the GPI scores. The increase in dimensions could be due to the nature of the international travel component which involves an intentionally designed travel itinerary with extensive interactions with local people and exposure to important cultural places. The increase in the *intrapersonal* domain shows that students' might possibly have a personal touch during their international travel that influences their emotional intelligence and awareness of their identity. We do not see any more statistical significance from our results which might reflect the short-term (i.e., 2 weeks) nature of international travel that hasn't influenced students on the other dimensions. The results however had smaller effect sizes in most of the dimensions which suggests that pre-travel preparation results in greater learning, so perhaps the course starts with the process of cultural learning and the international module solidifies student identity, respect and acceptance of different cultures.

From the repeated measures ANOVA, we do see significant differences of 4 dimensions in the GPI score, however the effect sizes for our results reveal some variation in the strength of the growth in global perspective. Overall, most of the effect sizes are small in this study which means that there were significant differences in the mean scores, but they don't differ by 0.1 standard deviation or more. However, the small size effect in our output does not necessarily mean that fewer students experienced changes, there could be more reasons which are beyond this particular study.

The goal of the RSAP program was to ensure student awareness and learning engineering competencies from a global perspective. Our study aimed to understand whether the learning objectives of the course and the international module experience had any significant impact on the students' understanding of global perspective. We had seen some significant changes in our results which shows that the RSAP program had an influence on the students' understanding of global perspective but to a small extent. Following our quantitative study, in future we would like to get a deeper understanding of students' experiences in the RSAP program from the global perspective using a qualitative research approach.

We recommend people in charge of study abroad programs with the purpose of developing global awareness and preparing students for a globalized engineering workforce to develop programs intentionally. We consider that including time for students to interact with local peers is

really important and has demonstrated a positive impact in our program. Similarly, allowing students to have free time to explore on their own can be a key aspect of developing these competencies. Beyond the travel component, we consider the academic aspect of these types of programs (i.e., courses associated with it) and also intentionally design learning activities that allow students to obtain complementary learning gains to what they are experiencing by the fact of being abroad. Including self-reflection as part of the assignments have proven to help with awareness.

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Appendix A

GPI Item #	Scale	Question
GPI1	Knowing	When I notice cultural differences, my culture tends to have the better approach.
GPI2	Identity	I have a definite purpose in my life.
GPI3	Identity	I can explain my personal values to people who are different from me.
GPI4	Social Interactions	Most of my friends are from my own ethnic background.
GPI5	Social Responsibility	I think of my life in terms of giving back to society.
GPI6	Knowing	Some people have a culture and others do not.
GPI7	Knowing	In different settings, what is right and wrong is simple to determine.
GPI8	Knowledge	I am informed of current issues that impact foreign relations.
GPI9	Identity	I know who I am as a person.
GPI10	Identity	I feel threatened around people from backgrounds different from my own.
GPI11	Identity	I often get out of my comfort zone to better understand myself.
GPI12	Identity	I am willing to defend my own views when they differ from others.
GPI13	Knowledge	I understand the reasons and causes of conflict among nations of different cultures.
GPI14	Social Responsibility	I work for the rights of others.

GPI15		I see myself as a global citizen.
GPI16	Knowing	I take into account different perspectives before drawing conclusions about the world around me.
GPI17	Knowledge	I understand how various cultures of this world interact socially.
GPI18	Identity	I put my beliefs into action by standing up for my principles.
GPI19	Knowing	I consider different cultural perspectives when evaluating global problems.
GPI20	Knowing	I rely primarily on authorities to determine what is true in the world.
GPI21	Knowledge	I know how to analyze the basic characteristics of a culture.
GPI22	Affect	I am sensitive to those who are discriminated against.
GPI23	Affect	I do not feel threatened emotionally when presented with multiple perspectives.
GPI24	Social Interactions	I frequently interact with people from a race/ethnic group different from my own.
GPI25	Affect	I am accepting of people with different religious and spiritual traditions.
GPI26	Social Responsibility	I put the needs of others above my own personal wants.
GPI27	Knowledge	I can discuss cultural differences from an informed perspective.
GPI28	Identity	I am developing a meaningful philosophy of life.
GPI29	Social Interactions	I intentionally involve people from many cultural backgrounds in my life.
GPI30	Knowing	I rarely question what I have been taught about the world around me.
GPI31	Affect	I enjoy when my friends from other cultures teach me about our cultural differences.
GPI32	Social Responsibility	I consciously behave in terms of making a difference.
GPI33	Affect	I am open to people who strive to live lives very different from my own life style.
GPI34	Social Responsibility	Volunteering is not an important priority in my life.
GPI35	Social Interactions	I frequently interact with people from a country different from my own.

Appendix B

Gender	**2018**	**2019**	**2020**
Men	78	108	118
Women	78	48	67
Not Reported	0	4	0
Total	156	160	185

Race/Ethnicity	**2018**	**2019**	**2020**
Two or more	3	14	22
Asian	5	12	20
Black	3	12	12
Hispanic/Latino	2	8	2
White	98	101	122
Not reported	45	9	5
Other	0	4	2
Total	156	160	185