ASEE 2022 ANNUAL CONFERENCE
Excellence Through Diversity
MINNEAPOLIS, MINNESOTA, JUNE 26TH-29TH, 2022 ASEE
Paper ID #37864

Identifying Best Practices to sustain a US-Mexico International Program integrated into an engineering curriculum

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Sallie Turnbull

Sallie Turnbull is the Director of Internships and Career Programming at API, a company providing experiential education for high school, undergraduate and graduate students. Sallie has been working in the field of international education since 2006, previously working at Clemson University as Associate Director for Program Management and Faculty Support. She became a Qualified Administrator of the IDI in 2016, and a Qualified Facilitator of the Global Competence Certificate in 2021. Sallie is passionate about inclusion and equity and works within the field of international education to provide programs that are accessible to all students and encourages discussions around intercultural competence.

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Tim joined Clemson University in 2020 as a Clinical Assistant Professor of Mechanical Engineering (ME) after an enriching career in Michelin. He joined Michelin in 1993 immediately after obtaining his BS in ME from Purdue University, and in his 26 years career in Michelin held a variety of roles in manufacturing operations and process development at a global scale. During this time, he also obtained a MS in ME from Georgia Tech (2002). He has lived and worked in multiple countries including the USA, France, where we worked on the development of a new mining tire manufacturing process and expanded his knowledge of the Michelin organization, and in China, where he led the project to build the rubber manufacturing portion of a new state-of-the-art factory. He has a 15+ years' experience in international teamwork as well as leading international teams. For example, in his assignment in China, he worked alongside more than 150 inpatriates from 14 different countries, local employees, as well as many more on an extended international team supporting the interconnected projects. In his final role at Michelin, Tim was the North America process improvement

manager for the rubber and tissue process perimeter. At Clemson University, he teaches the senior design sequence (ME 4010 and ME 4020) and coordinates the industry sponsored projects in ME 4020. Design problems are inherently team-based and open-ended, like most challenges faced by industry. His teaching embraces these elements, using projects to enhance appreciation for recognizing uncertainty, developing and justifying solutions, and the importance of communication.

Juan Dobarganes

Identifying Best Practices to sustain a US-Mexico International Program integrated into an engineering curriculum

Abstract. International teamwork is increasingly becoming the norm rather than the exception. Multinational organizations must be able to apply the skills of their people to best address their business opportunities, whatever the origins of the team members or the geographic locations of the projects. Yet, the educational experiences that incorporate internationalization to prepare the students accordingly are limited. A small percentage of students get the opportunity to study abroad and/or benefit from working with international partners in their co-operative or internship programs. However, there is value in integrating international programs in the engineering curriculum to provide these experiences to most students, permitting them to get a global education and increase their value to potential employers. To this end, the authors at Clemson University in the US, and Universidad de Guanajuato in Mexico worked together with an industry sponsor in a capstone design project course. The industry sponsor provided a problem common to their operations in the states of South Carolina, US and Guanajuato, Mexico and challenged the student teams to find a solution that would be as common to both locations as possible. Student teams were formed by mixing students from both partner institutions. The original problem description was deliberately written with multiple unknowns, towards encouraging collaborative active research and inquiry from the international student teams. 34 students from three different programs: mechanical, metallurgy, and mining engineering; and 6 faculty from both institutions and similar backgrounds than the students participated in this 5-week program in the summer of 2021. The program was held entirely online, and the official language was English. The course was a requirement for graduation for all students. Assessment was performed by implementation of the Intercultural Development Inventory (IDI) before and after the program. Here we report on the challenges during the preparation of, during and after the program; as well as feedback from students and the result of the assessment. The overall objective is to identify best practices towards making this program sustainable.

1. Introduction

International teamwork is increasingly becoming the norm rather than the exception. In the US alone, multinational companies (MNCs) hire around 26% of the workforce, 72% of those in manufacturing, who will immediately become part of internationally diverse teams with members of different backgrounds and geographical locations[1]. An ASEE-hosted workshop of 34 representatives from industry, four staffers and officials from the US intelligence community, and 8 academics recently identified additional competencies that are rising in importance for future engineers: the ability to identify, formulate and solve problems; systems integration; cultural awareness and economics and business acumen[2]. A recent worldwide survey of professionals at MNCs in multiple industries showed that 82% of the respondents rated the international component of their companies business as extremely significant; 45% spend more

than half of their time on international business activity; and 24% spend more than 76% of their time in international activity. After classifying the companies those surveyed professionals belong to as over- or under-achievers, depending on performance when meeting their business targets, 81% of respondents at overachieving companies believe their organization supports employees developing a global perspective, compared to only 38% at underachieving companies [3]. These concerns are not limited to traditional, large multinational companies. Small and medium enterprises (SME) are also expanding their reach beyond domestic markets. Called "micro multinationals", these businesses leverage digital platforms to build teams and connect to their markets. A 2016 report by HSBC cites a 2013 study by Oxford Economics and SAP where a survey of 2100 SME in 21 countries found that the number of SME generating more than 40% of their revenue outside their home country was predicted to increase by 66% by 2016. The report also cites a Radius Global CFO Survey which found that 83% of SME said overseas expansion was a top priority [4].

Yet, the educational experiences that prepare the students accordingly are limited. For example, a small percentage of students get the opportunity to study abroad and/or benefit from working with international partners in their co-operative or internship programs. According to the Institute for International Education, the share of students with a reported international experience in Higher Education Institutions in the US is only 1% in 2018/19, falling drastically in 2019/2020 due to covid-19 to only .06%. Within engineering, the percentage of students participating in a for-credit international experience is 5.5% in 2018/19, falling to 4.3% in 2019/20. This is compared to 20% of study abroad students identifying business and management as their field of study [5], [6]. According to the World Economic Forum, many of their Top 10 skills of 2025, students can begin to develop through a high impact practice such as an international experience, for example resilience, stress tolerance, and flexibility; critical thinking and analysis; as well as reasoning, problem-solving and ideation [7].

There is value in integrating international programs in the engineering curriculum to provide these experiences to most students, permitting them to engage in international team work to increase their global preparedness and increase their value to potential employers. To this end, the authors at Clemson University (CU) in the US with time zone UTC-5, and Universidad de Guanajuato (UG) in Mexico, with time zone UTC-6, worked together with an industry sponsor in an international capstone design project course. 34 students from three different programs: mechanical, metallurgy, and mining engineering; and 6 faculty from both institutions and similar backgrounds than the students participated in this 5-week program in the summer of 2021. The industry sponsor provided a problem common to their operations in the states of South Carolina, US and Guanajuato, Mexico and challenged the student teams to find a solution that would be as common to both locations as possible. This paper focuses on identifying best practices that improve the sustainability of this program.

2. Program Description and Assessment Methodology

2.1 Program Inception and Problem definition

Like many undergraduate engineering programs, CU mechanical engineering (ME) curriculum includes two semesters of design courses in the senior year of a Bachelor in Science. Clemson ME has, for many years, used problems provided by local industry as the culminating, or "capstone" design experience for undergraduates during the second semester. Situated in the middle of the so-called Piedmont Atlantic mega-region in the US, companies local to CU include major MNCs, such as BMW, Michelin, Solvay, Siemens, Bosch, and GE to name a few. These existing relationships made this course a logical candidate to consider for an international academic exchange. Within one of these companies, connections already existed to authors at both CU and UG. With manufacturing operations in both the state of Guanajuato, Mexico and in South Carolina, US, the company was able to identify a challenge having similar characteristics and impact at both plants. Successful global companies such as these know well the importance and value of standardizing manufacturing processes across the globe. Therefore, a project which aimed to provide a common solution for both facilities was well-received.

Initial meetings between CU and UG faculty were held in March-April 2021 and spaced 2-3 weeks apart. These serve the purpose of discussing general details of the project such as expected size of groups, involvement of faculty, and program dates. Regular weekly meetings between the faculties, 2 from CU and 4 from UG, were started 1.5 months before the start of the program. All the preparation meetings were held online. In parallel, faculty worked with the company towards scoping the problem. The course has a list of several characteristics of a good problem to help companies form an initial problem description. These are as follows:

- There is a clear problem to be solved. It is unique and has not been solved thoroughly before.
- The customer requirements are known.
- Many concepts are possible, and not just one natural solution to which the students will gravitate.
- The solutions require application of engineering principles learned in the ME curriculum and create appropriate analytical challenges.
- Solving the problem fulfills a practical need.
- The project is reasonable in scope and complexity.
- Faculty, facilities & resources are available to the students to fulfill the project requirements.

The original problem description provided by the company was reviewed during several meetings between the faculty and company. Minor revisions include such things as explaining company specific language and acronyms, ensuring customer requirements do not point to a specific solution, and ensuring that corporate knowledge which may otherwise go unstated is included. Company representatives from the South Carolina and Guanajuato sites were included in these meetings, ensuring that the scope and requirements covered both.

2.2 Course structure

The dates of the 5-week program coincided with the second short summer session at CU. Students in UG enrolled as part of an internship . Students at CU enrolled in a traditional summer section of the course Internship for Engineering Design. 34 students total participated, 22 from CU and 12 from UG. CU students were all mechanical engineers; UG students were from mining or metallurgy engineering programs. The average composition of the teams was 4 students from CU and 2 from UG. Team assignments were made by faculty. Teams were built with the intention of combining students which seem likely to work well together along with strengths in different skills essential to the project. Such skills included team leadership, analytical abilities, and writing / presenting. The faculty was familiar with most students due to instruction of previous courses in the program. UG faculty provided pairs of student names which they deemed as complementary, while CU faculty did the same for groups of 3-4 students. These UG + CU groupings were combined to form teams of 5 or 6 students. The program was held entirely online, and the official language was English. The course was a requirement for graduation for all students.

The educational content and supporting activities of the course were structured as follows: The class was scheduled 5 days per week, for 2 hours per day. Core content to support the design process was delivered as "refreshers" on topics students would have practiced in detail during the first semester design course. Topics such as establishing project requirements, progress reports, oral and written communication, and team organization were discussed within the first two weeks. Students received detailed information about the project motivation, goals, and constraints from the company in Day 1. In-person by the local students and virtual visits of the manufacturing facilities of the company both in Mexico and the US were organized. Also during that time, international collaboration was reinforced in a panel discussion with representatives from the company. The remaining 3 weeks consisted of progress review meetings, an interim presentation to the company, and the final presentation to the company. The company remain involved during the entire duration of the program by responding to inquiries as necessary. There were 6 progress review meetings for each team, occurring every 2-3 days except during the presentation periods. The progress reviews consisted of each team meeting separately with a panel of 3 faculty, one from CU and two from UG, for approximately 40 minutes, during which time the team presented its progress, upcoming activities, and key issues. The instructors asked follow-up questions, guided the teams to other resources, and suggested possible routes of investigation. Because of the time constraints of a summer semester and the number of teams (6), there were 2 "advisor paths" with 3 teams meeting with each set of advisors. For consistency, a team always met with the same set of advisors. There were 5 "work days" distributed over these 3 weeks. During these days, teams did not meet with advisors and were free to use the time according to the needs of their project. Interim and final written reports were submitted by each team within a few days of the respective oral presentation.

2.3 Assessment

Academic assessment was done using the standard grading guidelines for the course, which were based on the following areas:

- Product (Design Artifact): Includes potential usefulness for the customer. Customer feedback is gathered and factored into the assessment. This area also includes evidence of considerations of professional responsibility such as economic, environmental, global and societal impacts, as applicable to the problem.
- Process (Design Tools): Evidence of application of the design process using appropriate tools, some of which may require external research. Evaluation of the application of engineering judgment is also done in this area, including the use of data and analysis, along with appropriate synthesis to draw conclusions and make design decisions.
- Communication: Clarity, completeness, and conciseness of presentations and reports. This area also includes professionalism of communications with other parties at the appropriate level of formality.
- Teamwork: Assessed by the faculty as well as by the use of peer reviews. Considerations include providing leadership as a unit, creating a collaborative and inclusive environment, establishing goals, planning tasks, and meeting objectives.
- "If this were industry": Evaluates the overall quality of the project from the perspective of the level of recognition that it would garner in a workplace.

The Intercultural Development Inventory (IDI) was implemented before and after the program. One of the authors is a certified administrator of the IDI. The IDI is an assessment of intercultural competence grounded in a comprehensive, cross-culturally validated theory. It has been psychometrically tested and found to possess strong content and construct validity and reliability across diverse cultural groups. Additional validity includes predictive validity within both the corporate and educational sectors [8]. The purpose of the assessment is to introduce an individual into how they interact with culture and introduce them to ways in which to expand their self and other-awareness. The assessment was also used as a pre and posttest to set a marker upon which to further assess student development through an international experience. Feedback from the students was received in English and Spanish in the form of course evaluations and discussion during meetings. Multiple debriefings were done after the program: among CU faculty, between CU and UG faculty, and between faculty and multiple employees of the sponsoring company.

3. Results and Discussion

3.1 Program Planning

The CU and UG academic calendars did not align well for the preparation phase. There was some interference with the end of the prior semester and vacation period, leading to some difficulties to have full participation at organizational meetings. For this reason, there was some difficulty to get all faculty in initial meetings. Given the pilot nature of the program, faculty were also pulled in other established directions within their roles, preventing them from fully engaging with planning.

Engagement from the company plants during program planning was different, which sometimes created expectations on the knowledge and facilities that were not met. This is understandable as plants shift their resources to meet their performance. However, this limited the availability of

personnel to contribute to the development of the project description during planning and the gathering of relevant data to inform the design process during program implementation.
A further challenge was that access to course materials needed to be established for all students. As this was a course originating in the CU curriculum, it was necessary to establish access to CU's learning management system (LMS) for both UG faculty and students. CU did not have experience doing this, requiring time and research on the part of support staff. UG faculty were also required to complete FERPA (Family Educational Rights and Privacy Act) training, which further delayed their access to the system.

The students in UG were mainly recruited from the mines and metallurgy programs, while all CU students were mechanical engineers. After discussion between CU and UG faculty, and considering this program was modeled after the existent CU course in mechanical engineering, it was determined that UG students would benefit from a crash course on the principles of design as well as refreshers on the use of Matlab and AutoCAD 3D. These were implemented online during the two weeks prior to the start of the program.

Because the company provided detailed information about their current process and invited students into their facilities, the company required a non-disclosure agreement (NDA). Such an agreement already existed with Clemson University based on past collaborations. The CU students in this course were required to agree to its terms. For the UG students, a separate NDA was established with the Mexico legal entity of the company.

3.2 Program Implementation

Although all students could access course materials through a unified LMS (Learning Management System), faculty only had access to student information from their own institution. This was necessary to protect student privacy but created a convoluted LMS since a separate course was created for each of the UG students. The UG faculty was thus required to manage 12 identical but separate courses, which created confusion and caused delays in their reporting of grades to their students. Although the LMS used by CU can also be accessed for free, the free account was not able to be interfaced to CU's LMS. This created logistical barriers during the implementation of the program. Although other LMS could have been used, the team decided to remain with CU LMS to guarantee confidentiality of the documentation facilitated by the company.

The discussion panel on international work featured panelists of both Mexican and US origin who had expatriated to the US and Mexico respectively. Hence, they could speak to the similarities and differences of the challenges they encountered were assigned abroad. The panel was very well received by the students and feedback received was that it reinforced the importance of the international program and also reassured students that the effort was both doable and rewarding. Few UG students reported that although they were demotivated at the start of the program because they doubted their proficiency in English, hearing from a Mexican co-national about challenges of communicating in the US boosted their motivation to continue forward. We intend to replicate such panel in future iterations of the program.

Language was expected to be a challenge. The significance of the barrier depended on the individual and the team. In all cases, it took at least a week for UG students to become active contributors to the progress reports held with the instructors. This created delays during reporting sessions, since all team members were required to present in all progress reports. Looking forward, we plan on requiring further language training from UG students prior to enrollment in the program. Such training is already available at UG. Additionally, we plan on assessing the Spanish proficiency of CU students towards strategically distributing such individuals throughout the teams. This is expected to kickstart the communication between all members of the team.

The timeline of the program was set following examples of previous summers where the international component was not implemented. While strong emphasis on the international activities was placed at the beginning of the program, the emphasis diminished towards the end. At that point, the limited time available during progress reviews was solely dedicated to the process to design a solution to the problem at hand. While international components related to the problem were discussed, we realized there was not significant discussion about how the team was functioning. Periodic check-ins will have to be implemented in future iterations to dedicate time for students to reflect and internalize their experience through group discussion.

The UG students did not have the same first semester design course as the CU students. A design process overview was provided via a specific lecture to the UG students and by making relevant materials available for their reference. However, they voiced concerns of feeling at a disadvantage because of this, which may have affected their comfort or ability to contribute, at least initially. Ongoing discussions are on how UG faculty can incorporate a more formal training on the principles of design to their students during the academic semester prior to program implementation.

3.3 Program Assessment

Academic performance for the CU students was consistent with what is observed during semesters in the traditional format, i.e. without international collaboration. No historical assessment information is available from UG as this was the first time these students experienced this course. The project itself was somewhat more complex than usual by involving two company locations in different countries. Combined with the additional intercultural content and the short summer semester (5 weeks vs 16 for a traditional semester), overall, the situation facing the students was more complex and time-pressured. A project with a smaller technical perimeter may be more appropriate to allow “bandwidth” for the geographical and intercultural complexities less present in the traditional version of the course. An in-person version of the course, bringing students together for 5 weeks as a cohort who learns and live together, would allow the relationships to build outside of formal team meetings and class sessions. Such social interactions can be an important component of team building.

The IDI measures how individuals and groups interact with cultural differences and commonalities as framed by the Intercultural Development Continuum (IDC). The IDC is based on the Developmental Model of Intercultural Sensitivity (DMIS) originally proposed by Milton Bennett[8]. It identifies a range of mindsets (orientations) along a continuum that moves from monocultural to intercultural. IDI reports include: perceived orientation (PO), or how one intends or aspires to interact; developmental orientation (DO), or how others perceive their interaction. The gap between the perceived and developmental orientation is referred to as the Orientation Gap (OG).

The continuum begins with the monocultural orientations of Denial, Polarization, and Minimization. It then moves into the intercultural orientations of Acceptance and Adaptation. A Denial orientation is typically seen in individuals who have little to no experience in living or working with different cultures, they have spent most of their life in a homogenous environment and therefore do not associate culture as having a role in differences or commonalities. Polarization is a judgemental orientation and can manifest as either Defense or Reversal. In a Polarization Defense orientation an individual will more critically judge the "other" culture. In Polarization Reversal, an individual will more critically judge their own culture. The Minimization orientation is considered a transitional mindset. An individual in Minimization will focus only on the commonalities between cultures and discount or ignore any differences. For non-dominant culture members, minimization can also be a form of "camouflage", masking their differences in an attempt to be perceived as part of the dominant culture. In the intercultural mindsets of Acceptance and Adaptation, individuals move into a deeper understanding of how culture impacts similarities and differences, they are comfortable with these and curious. In Acceptance, however, an individual may find they experience an ethical paralysis when attempting to bridge between cultures, whereas an individual in Adaptation can authentically bridge between cultures. These definitions are important to note as we move to review the results of this group. The numerical differences between post- and pre-program assessment for all the students who participated in the program are shown in Fig. 1.

The mean score for the different IDI indicators pre-program placed the group in Acceptance as Perceived Orientation (PO) 118.77 and Minimization for Developmental Orientation, DO 87.45. The orientation gap showed a mean value of 31.32. This is a fairly typical pre-test assessment. As a group, the mindset they are aspiring to is that they are understanding of all group member's differences and commonalities and taking those into consideration when having discussions and making decisions. Their developmental orientation of Minimization indicates that it is more likely that discussions and decisions will be made from the dominant culture perspective. An orientation gap of greater than 30 points indicates that the group had overestimated their ability to interact with differences and commonalities within the cultural groups represented. Furthermore, due to this overestimation, they may also be surprised by their results. Because individuals in the pre-assessment range in their DO from Minimization to Denial, they may find it challenging to reach a group consensus and it is possible that they will not accomplish their task due to lack of shared vision and focus[8]. If they are able to accomplish their task, results will be targeted to the dominant culture, recognizing only the commonalities between cultures.

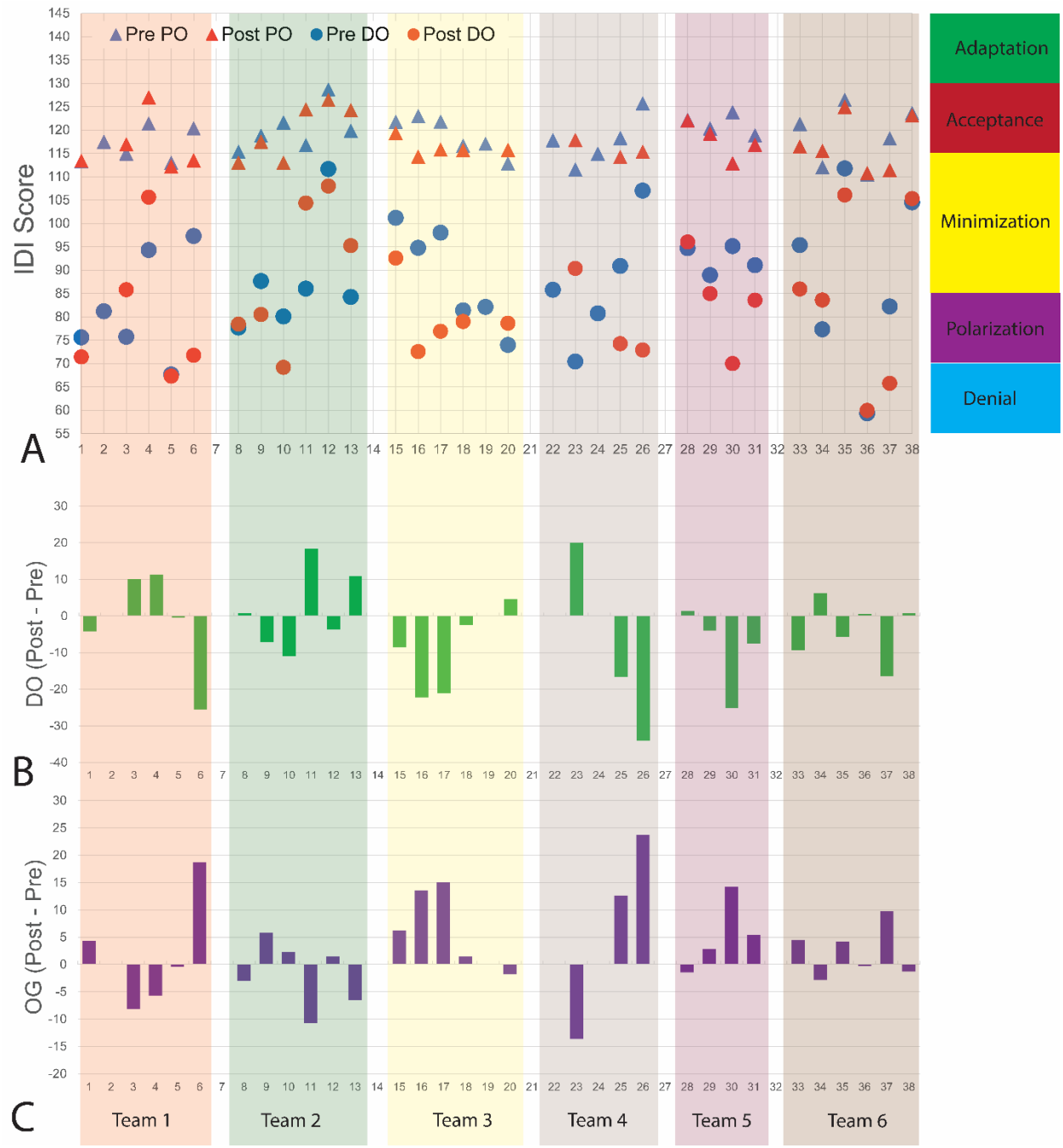

Fig. 1 *A) IDI scores for all participants, only Perceived Orientation (PO) and Developmental Orientation (DO) are plotted. B) Difference in DO Post and Pre-program, a value greater than 0 denotes a gain on the IDI score. C) Difference in Orientation Gap*

Post-program assessment showed a PO of 117.33 meaning an orientation within Acceptance and a DO of 83.31, an orientation in Polarization-Reversal. The mean value for OG was 34.02. It is not uncommon for groups to move backward from a pre to post assessment. This can be a response to being challenged when working in a diverse group, and not finding that group

consensus. A DO of Polarization-Reversal can indicate that some of this tension may have led to a self-analysis and awareness. Both the pre and post assessment indicate that these individuals would benefit from additional intercultural training that focuses on cultural-general and culture-specific frameworks, as well as cultural self-awareness building.

Interestingly, when we split the results into the CU and UG students (plot not shown), the averages are nearly identical with the exception of the pre-test DOs. In the pre-test, the DO of the CU students was 89.20, placing the group in Minimization, whereas the UG students' DO averaged at 83.94 in Polarization-Reversal. In the post-test both the CU and UG groups DO averaged in Polarization-Reversal with scores of 83.76 and 82.13 respectively. The CU student's score fell 5.44 points, which while not statistically significant, is interesting that their post scores would come closer to their UG peers.

4. Identifying Best Practices

Given that the experience described in this paper contained several "first times" among all the parties, there are several areas for improvement. The following are recommended best practices based on our experience:

Plan Early. There were multiple instances where the problem at hand was unexpected and the solution was simply not known. It is key to start early with discussion to unravel the logistical details of the program. Involving stakeholders and key personnel from all contributing and impacted areas helps to both identify and remove potential roadblocks.

Formalize relationships and clarify the benefits and expectations from all involved. Participation of the various parties needs to have recognition and incentive. For many faculty and industrial liaison/sponsors, this is an "extra" that is outside of their already busy and demanding responsibilities. Recognition and support from the parent entities / institutions will be necessary to place value on these efforts to maintain interest from those initially involved but also to bring new team members. A revolving team of faculty, mentors, and company liaison/sponsors will be necessary to implement a program that is sustainable for multiple years.

Market the program early. This needs to be done in full transparency of the format and the additional demands that will bring. For students, this format can appear as an extra level of difficulty in the course compared with taking it during a regular semester, or versus another educational activity during the summer semester (e.g. internship).

While advertising helps to build interest, it is important to *match the size of the class with the available faculty support.* The course depends on the advising done by faculty to simulate how such projects may be followed in an industry setting. The temptation to spread the faculty across more teams should be resisted. Adequate time must be allotted for teams to communicate their progress and for the subsequent discussion to be meaningful.

With a short period to complete the project, such as the 5 weeks of this program, it is important that *students feel ready to participate and contribute immediately*. It is advantageous to begin early on the readiness of students, building the confidence of those who may feel at a disadvantage due to language and/or technical background.

There are many resources available aiming to support team collaboration and international activities. The aim should be to *be selective and devote enough time to these team support efforts*. Many such activities require personal reflection both before and after. Thus, the proper balance between quantity and quality must be struck.

It is necessary for faculty and other course support to *continuously practice empathy and encourage others to do the same*. As all participants navigate outside of their usual comfort zone, the first reaction should be to empathize and support rather than criticize.

Development of more methodical assessment of global competency and skills known to be important to employers would be advantageous. This is especially true if it could capture the dynamic occurring in the short time frames of this course, while still correlating to existing well-established methods of such assessment done over longer periods. Implementation of assessment of the skills that are desired for international teamwork could inform activities to develop these skills earlier in the students' curriculum.

Acknowledgements
The authors would like to thank Eduardo Santillanez, Rodrigo Gutierrez, Patrick German, Pablo Maya, Fran Cardona, Karla Moreno, Joel Everardo Valtierra Olivares, Juan Carlos Baltazar Vera, and Emilio Salcedo Martinez for their active participation in this program; and Janet Krupka, Cyndie Steffee, and Jorge Aceves for participating in a panel discussion about international teamwork.

References
[1] F. Foley, H. Hines, and D. Wessel, Eds., *Global Goliaths, Multinational corporations in the 21st century economy*, 1st ed. Washington, D.C.: The Brookings Institution, 2021.
[2] A. K. Agrawal and S. Harrington-hurd, "Preparing Next Generation Graduates for a Global Engineering Workforce : Insights from Tomorrow ' s Engineers," *J. Eng. Educ. Transform.*, vol. 29, no. 4, pp. 5–12, 2016.
[3] Seymour Insights, "Global Mindset Index Study," 2017. [Online]. Available: culturewizard.com.
[4] G. Hufbauer *et al.*, "The Rise of micro-multinationals," 2016. [Online]. Available: https://globalconnections.hsbc.com.
[5] Institute of International Education, "U.S. Study Abroad for Academic Credit Trends, 1989/90-2019/20," 2021. [Online]. Available: www.opendoorsdata.org.
[6] National center for Education Statistics, "Trend Generator." https://nces.ed.gov/ipeds/TrendGenerator/app/answer/2/2 (accessed Feb. 08, 2022).
[7] "The Future of Jobs Report," 2020. [Online]. Available:

https://www.weforum.org/reports/the-future-of-jobs-report-2020/in-full/infographics-e4e69e4de7.

[8] M. R. Hammer, “The Intercultural Development Inventory, Resource Guide,” 2021. [Online]. Available: idiinventory.com.