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Overview

International experiences, such as study abroad, are a signature feature of the Purdue commitment to transformative education. From 2013 to 2018, Purdue experienced an 85% increase in study abroad participation, most of it in the form of short “departmental” programs, designed and led by Purdue faculty or staff, during spring break, winter break or summer.

In this report, we explore the outcomes of two dozen Purdue short-term, departmental programs as measured by the *Intercultural Development Inventory* (the IDI), a widely used quantitative instrument, known to have very little social desirability bias¹. The majority of these programs (16 of the 24), were led by faculty or staff from the College of Engineering, which has recently committed to a Global Learning initiative that includes regular assessment with the IDI. In addition, seventeen of the programs had leaders who had completed formal training intended to enhance their capacity to mentor students towards intercultural competence.

Significance of the Present Study

It is generally agreed that developing intercultural competence takes years of effort. Perhaps because of this belief, published studies that employ quantitative methods to measure outcomes for learners in short-term study abroad programs are quite rare². As of fall 2018, the highest aggregate IDI outcome gain reported in a short-term study abroad context has been 6.7 points, in a dissertation study that compared eight short-term programs of less than a month’s duration, at another Midwestern land-grant university³. By comparison, a well-designed semester program abroad may produce as much as 13 points or more on the IDI instrument⁴. However, research strongly suggests that without intentional, guided reflection as well as frequent feedback by a cultural mentor, the most common result of a semester abroad is a group mean change of only a few IDI points⁵. Short-term faculty-led programs often feature copious faculty-student mentoring time and would seem to offer a fruitful environment for intercultural development. Few doctoral programs, however, prepare future faculty to excel in intercultural mentoring.

About the Instrument

The Intercultural Development Inventory or IDI is a 50-item questionnaire, which uses a 5-point Likert-type scale ranging from disagree (1) to agree (5), to assess an individual’s response to cultural difference. It is grounded in a developmental model, which states that the ability to work effectively across cultures progresses along a recognizable five-stage continuum, from denial of difference to adaptation, with each stage requiring differing support and challenge needs in order for practitioner development to occur⁶. The mid-point of the continuum is Minimization, a transitional stage where the learner is frequently able to find common ground across difference, and needs to work on self-awareness in order to move forward. It is typical of study abroad participants that they measure in low Minimization as they prepare to depart.

Figure 1: Intercultural Development Continuum



Hammer, Bennett & Wiseman (2012)

Descriptive Statistics

Although all Purdue departmental program leaders are now required to assess intercultural outcomes, only some of them choose to do so with quantitative measures. This particular sample, comprising roughly 20% of the total 2017-18 Purdue departmental programs, exists because the study abroad leader or the leader’s College chose to use the IDI to assess learning outcomes. It analyzes data from twenty-four programs, which ranged in length of time abroad from 8 days to 26 days; they served 336 undergraduates. All students in the sample completed both a pre-departure and a post-sojourn iteration of the Intercultural Development Inventory. The initial mean developmental orientation (DO) score for all students in this sample was 87.16 (e.g. just barely into minimization); however, 49% of the cohort measured below minimization. Slightly more than a third of the programs (fifty-one percent of all surveyed undergraduates) went to Europe or Australia, e.g. to a locale that is relatively culturally similar to the USA.

The specific destination nations and the defined regions of programs in this study are as follows:

- “Europe+” Region: Australia, France, Germany, Italy, Ireland, Netherlands, Spain, Ukraine
- Asia Region: Japan, Singapore, South Korea, Taiwan, Vietnam
- Global South: Bolivia, Brazil, Colombia, Ecuador, Mexico, Morocco, Peru

Sixty-one percent of the students surveyed were engineering majors; ninety-four percent were STEM majors. Fourteen of the programs had female leaders, while ten had male leaders. Sixty percent of the student participants were female.

Methods

Data preparation for this study consisted of verifying that all students had completed both a pre and post survey. Then, initial analysis compared the pre-departure group profile score (e.g. mean IDI developmental orientation or “DO” score) for each leader’s program to the post-program group profile DO score for that same program to determine presence or absence of IDI growth within each program. This allowed a clustering and comparison of programs according to absence or intensity of intercultural mentoring pedagogies.

Although very widely used in the research literature, the comparison of group mean pre-and-post IDI scores can easily mask large gains or regressions at the individual student level. Therefore, secondary analysis employed individual matched-pairs analysis of pre and post IDI data (again, the developmental orientation score) for each student; then coded for instructor gender & college, student gender, length of program, degree of use of intentional intercultural pedagogies, and region of program. This enabled two additional forms of understanding the data:

- tabulating the “success rate” of each pedagogical method in terms of percentage of participants who experienced significant growth on the IDI, and
- regression analysis for exploring relationships among variables.

Initial Findings

A seven-point change, half a standard deviation in developmental orientation (DO), is considered a significant change with this instrument. The raw mean DO gain for all 336 students in this study was 7.19 IDI points. Upon comparison of program-level outcomes by instructional method, however, a disparity of outcome patterns emerged (see table 1).

Table 1: Program-Level Intercultural Development Outcomes by Instructional Method

Program Cluster	Total Number of Programs	Instructor Trained?	Pedagogy Implemented?	Total Number of Students	Pre-Departure DO	DO Change
Cluster A -- Control	7	N	None	85	90.15	-1.30
Cluster B – Partial	8	Y	Partial	92	87.15	6.29
Cluster C – Intense	9	Y	Intensive	130	85.14	13.77

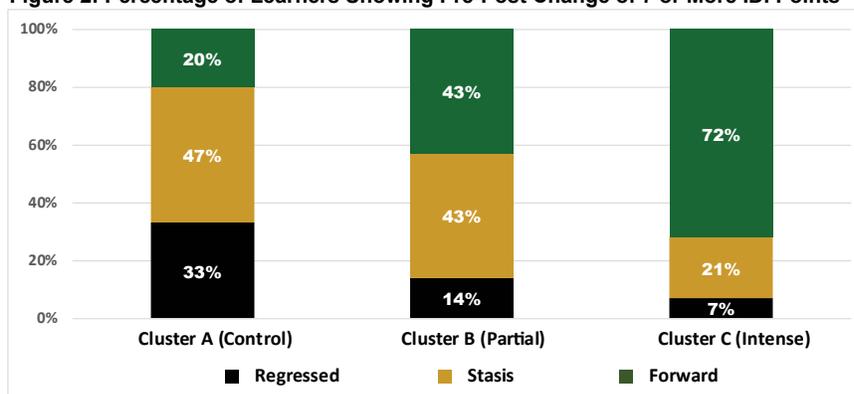
In short, programs whose leaders had participated in pedagogy training showed far higher group mean IDI gains than those whose leaders had not. Further, programs whose leaders had the instructional ‘bravado’ to help their students pursue intercultural competence full-tilt had double the group mean IDI gain of those whose leaders took a more measured approach to incorporating intercultural pedagogies. In all three instructional-methods clusters, the initial group mean IDI DO score was in Low Minimization (85-100 pts); in other words, the cohorts within each pedagogy cluster were functionally equivalent in terms of pre-existing intercultural competence.

Secondary Analysis

The disparity in learning outcomes between the three instructional-methods clusters becomes even more stark when one compares the percentage of students in a given instructional-methods cluster who moved forward on the IDI by 7 or more points, stayed in stasis (e.g. experienced no meaningful IDI change), or moved backwards 7 or more points.

Only 20% of students whose program was led by an untrained faculty member made meaningful gains on the IDI. When the instructor was trained, but cautious about incorporating intercultural pedagogies, the percentage showing IDI gain doubled, while students whose leader was an avid intercultural mentoring “convert” were three times as likely to show IDI progress.

Figure 2: Percentage of Learners Showing Pre-Post Change of 7 or More IDI Points



Regression Analysis

Following the above matched-pairs analysis, a regression model was built to further explore possible relationships between variables. Factors explored included: gender of instructor, gender of student, length of program, and program location. This study did not explore foreign language proficiency since research (already cited) has indicated it does not correlate well to competence development in short-term contexts. The regression modelling revealed the following:

- There is a small but significant negative correlation between a student's initial developmental orientation and growth on the IDI. In other words, a student whose initial score is lower is more likely to make large gains than one who started at a higher stage.
- There is a large and positive correlation between the use of intercultural pedagogies (specifically regular guided reflection and feedback) and IDI gains.
- There was a negative correlation between length of program and IDI gains, e.g. shorter programs in this particular sample were more impactful than longer programs.
- In this sample of programs, there is a correlation between having a female program leader and meaningful IDI gains by the students. This is most likely attributable, however, to the fact that eight out of nine leaders in Group C (intensive mentoring) were female.
- Similarly, there appears to be a correlation between studying in a "Global South" nation and having higher IDI gains. Note, however, that Group C leaders were twice as likely to take students to a Global South nation when compared to leaders using other pedagogies.
- Finally, in contrast with foundational studies on intercultural outcomes of study abroad programs (cited earlier), there was no significant difference in IDI gains between male students and female students. As a working hypothesis to help explain this finding, we note that, by contrast with national data on study abroad⁷, nearly all of our participants were STEM majors, including all but six of the female students!

Conclusions

Failure to manifest growth along the Intercultural Development Continuum as measured by the IDI is not the same thing as failure to acquire a more "globally-focused" perspective during study abroad. For example, an earlier review of Purdue intercultural learning outcomes⁸ found that short-term programs often lead our students to the dual realization that culture-crossing skills are important to STEM careers and that they "need to work harder" at acquisition of intercultural competence. This study does, however, challenge the commonly held assumption that *only* study abroad programs of a semester's duration or longer can create significant growth in a student's ability to work effectively and appropriately across cultural difference.

References

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