

Katherine N. Yngve

Exploring the 'Belongingness' Effect of Using Formative Intercultural Assessment in Core or Foundational Courses

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Introduction

In 2014-2015, two pioneering associate deans in separate Purdue colleges chose, with some assistance from the office now known as IDA+A, to integrate the use of intercultural competence survey instruments into a frequently offered, large-enrollment undergraduate course. Studies too numerous to cite here have shown each of these survey instruments to be effective, when used <u>formatively</u>, in helping students or professionals to recognize their own intercultural strengths (and/or weaknesses), to develop a personal commitment to improvement, and, ultimately to become more competent at bridging differences.

It is the purpose of this white paper to explore the possible impact of these two continuing core courses on 'belongingness' of marginalized students at Purdue. We do so not by looking at students' individual or group intercultural outcomes, however, but by exploring whether the colleges in question have experienced changes in retention and graduation among underrepresented students during the period of years since 2014.

Context: the courses

The courses on question are Tech 330, *Technology and Global Society*, offered in the Purdue Polytechnic, and Agriculture 201, *Communicating across Cultures*. Both courses are taught every semester, and enrollment for each has ranged from 80-300 participants per semester since 2014. Tech 330 uses an instrument called the *Intercultural Development Inventory* (the IDI); while Agriculture 201 uses an instrument called the *Beliefs, Events and Values Inventory* (the BEVI). Students receive, in class, a debrief of the group's aggregate profile and what that may suggest for success in team-based class projects as well as in career settings; as well as receiving, privately, supportive individualized feedback on their own competency profile¹.

Hypothesis & Research Question

According to a large study by Glass and Westmont², inclusive coursework can increase cross-cultural interaction, and to the extent that these courses and interactions result in a decrease in discriminatory experiences for some students, they can have a powerful effect on academic success. This caused this IDA+A specialist to wonder, in the fall of 2018, whether Purdue

¹ A free, recorded webinar describing the curriculum design, outcomes and student responses to one of these courses, Tech 330, can be downloaded for viewing from: https://hubicl.org/publications/115/1

² Glass, C. R., & Westmont, C. M. (2014). Comparative effects of belongingness on the academic success and cross-cultural interactions of domestic and international students. *International journal of intercultural relations*, *38*, 106-119.



institutional data on retention and graduation might indicate positive changes for certain groups in the colleges where these two courses had been taking place?

Research Question:

What is the effect, if any, on retention and graduation for under-represented minority students at Purdue, in cases where:

- a) a valid and reliable intercultural assessment instrument is used by the instructor, and
- b) professional excellence is defined as including the improvement of one's intercultural or multicultural competence,
- c) as part of a frequently-taught, large-enrollment course in the student's home college?

Definition

At Purdue, the official Data Cookbook definition of "under-represented minorities" (often shortened to "URMs") applies to <u>domestic</u> students who identify as one of the following:

- American Indian or Alaska Native,
- Black or African American,
- Hispanic or Latino,
- Native Hawaiian/Other Pacific Islanders, or
- Two or more races, so long as one of the two is one of the choices named above.

Methodology

The researcher began by assuming that a student who felt a sense of **belongingness** in the Polytechnic Institute or the College of Agriculture would demonstrate this in part by choosing <u>not</u> to transfer into a different Purdue College or to drop out, and that this sense of belonging would also increase the likelihood of that student graduating in four years.

Records on student graduation and retention were accessed via the Purdue Data Digest interactive dashboards. After logging into the system, the researcher first created a baseline 4-year graduation rate for specific ethnic or racial groups for each of the two colleges, consisting of an average of the 4-year graduation rates (for the given group) for the five years preceding 2014. Students who graduated from Purdue, but from a college other than the one in which they began were, for the purpose of this study, not counted as having demonstrated "belongingness" to their initial College. Also, to better ensure accuracy, the researcher did not use the automated "under-represented minorities" feature on the dashboard, but individually selected the groups named above, using, instead, the race/ethnicity dropdown menu.



Data points for the baseline for each College as well as for the graduation years of each entering cohort for each College (meaning 2018 for those who entered in 2014; 2019 for those who entered in 2015; etc.) were then entered into Excel spreadsheets and charts were generated to help visualize any differences.

Caveat

As the very nature of the term "under-represented" should indicate, the total number of students belonging to these demographic groups runs smaller than would be fully desirable for data disaggregation, and/or the search for generalizability. In 2014, 686 new undergraduates from under-represented groups started their BA program at Purdue, of whom <u>109</u> individuals formed the 2014 entering URM cohort for the two Colleges who offered Tech 330 and AGR 201.

The tables below indicate the total number of URM's in each of the two Colleges for the years under consideration in this inquiry. It is important to remember that each number below represents an array of <u>disparate</u> identities, e.g. a clustering of considerable smaller URM cohorts, each with different identities, needs, and support systems at Purdue.

	2014	2015	2016	2017
Agriculture	46	46	51	68
Polytech	63	63	99	105

Findings

In the charts on the following page, we look at **belongingness outcomes** of embedding formative intercultural assessments into core or foundational courses, where 'belongingness' has been defined as (a) choosing to remain in the initial College to which you were admitted, and (b) graduating in four years' time.

We look first at Black Boilermakers, a special focus of the Purdue Equity Taskforce's efforts since August 2020. We then chart belongingness outcomes of the Agriculture and the Polytechnic efforts separately, looking at the entire URM population of each college, and comparing it to the university as a whole. Finally, we explore the possible belongingness effect of these courses on another population that frequently reports feeling marginalized: female "Techies." In this particular chart, we looked only at female 'Tech' students who identified as either White or Asian, since under-represented female students had been captured within the URM categories in previous charts, and we used the female students of the College of Science, as a comparison group, as Science did not implement a core intercultural course until 2020.



Figure 1: Belongingness Trends for Undergraduate Black Boilermakers Entering Purdue in 2009-2017

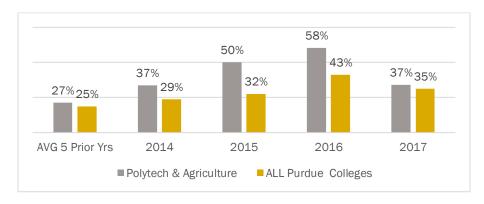


Figure 2: Belongingness Trends for all URM Undergraduate Students Entering Purdue in 2009-2017

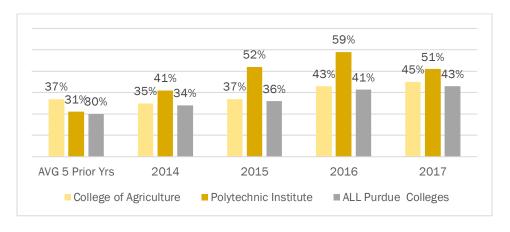
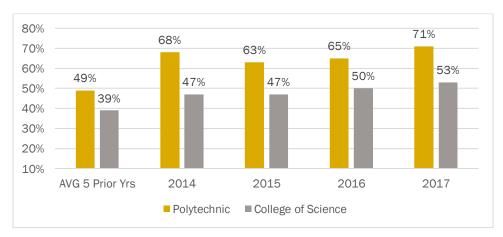


Figure 3: Belongingness Trends for Female Undergraduate STEM Students Entering Purdue in 2009-2017





Description of Findings

In Figure #1, the data suggest a strong rising trend in belongingness for Black Boilermakers in the Colleges of Agriculture and the Polytech beginning with the entering cohort of 2014 and continuing through to the class of 2016, who graduated just as the global Covid pandemic was making itself known in 2020. Given the extraordinary stresses that Black American populations have experienced since the summer of 2020, it is not surprising that the data indicate a precipitous reduction in 4-year graduate rates for all of the Black students who entered Purdue in 2017 (anticipating graduation in 2021), as compared to recent prior years.

Turning to Figure #2, the data indicate a sharp 11% growth in belongingness for undergraduates in the Polytechnic beginning with the entering class of 2015, and a more modest six-percent bump for the College of Agriculture beginning with the entering class of 2016; which seems to aligns to well to the semester in which intercultural assessments were introduced.

It is perhaps Figure #3 that is most surprising: here, the data appear to suggest that something astonishing has been happening in the Polytechnic with regard to the belongingness of female Tech students, since 2014. Clearly more research into this phenomenon is needed!

Conclusion

Many factors can influence both the academic success and the belongingness of students who come from groups that have a long history of experiencing direct as well as inadvertent marginalization in the USA. It can be difficult to imagine that one course might make a difference, even when that course uses evidence-based pedagogies to focus on fostering the skills of inclusion. What we can state with some certainty is that, during the period under consideration, these two Colleges did not benefit from sudden influxes of school-specific scholarship funding or increases in other areas that might have made their URM students feel more comfortable and supported as compared to students in other Purdue colleges. The cultural centers at Purdue serve students from all majors (and identities); most Purdue colleges have diversity offices who provide College-specific programs and mentoring; etc.

We do however note that there were 596 students in the entering cohort of the College of Agriculture in 2014, and 577 first-years in the Polytech that year. In each of those Colleges, over 300 students took one of these two courses in that year alone. The large-enrollment, repeating nature of these courses means that within a typical four-year degree cycle at Purdue, about 1200 of one's peers would have taken a course designed to lower personal ethnocentricity and build interpersonal interactive efficacy. These data suggest that such a course is most likely a good thing.