Title of Study: Inflection Points of Economics Majors: A closer look at enrollments in Intermediate Microeconomics (E321)
Principal Investigator Name and Department: Paul Graf, Economics Department
Co-investigators Names and Departments: None
Year/Semester Awarded: Fall 2015
Number of undergraduate students who were subjects of your study: 1,462 & 3,451
Number of graduate students who were subjects of your study: 0

Executive Summary: Please briefly describe the key findings of your study in one paragraph or less, similar to an abstract for a research article or conference presentation.

Out of 1,462 who chose Economics as their major while enrolled at Indiana University Bloomington from the fall semester of 2006 to fall semester of 2011 (6 semesters), 266 (18.2%) students entered IU choosing Economics as their major. Most of these 266 students were White (48.5%) or Non-US (37.6%), Male (72.5%), and Non-Resident (65.0%). The number of students entering IU as Economics majors steady increased each year from 14 in the fall of 2006 to 75 in the fall of 2011. Many of these students switched out of the Economics major, but many, mostly from the Business, College, students switched into the Economics major.

The second data set focuses on 3,451 students taking Intermediate Microeconomics (E321) at Indiana University Bloomington from the fall semester of 2006 to fall semester of 2015 (28 semesters). As the number of students declaring Economics as their major increased, so did the class sizes for E321 from less than 30 in the fall of 2008 to over 60 students enrolled by spring 2013. The grade distribution in all E321 classes was relatively consistent, but over 20% of all E321 students withdrew by the end of the semester. Most class sizes and instructor choice did not affect these results. However, the majority of students transferring Introductory Microeconomics (E201), which is a prerequisite for E321 to IU, did perform worse in E321.

Narrative: Please discuss the outcomes of your student learning analytics project and any plans you may have for continuing the work. When writing the narrative please consider discussing the following points when appropriate.

Using a Sankey diagram created by Dawit Galen of IU BAR, of the original 266 students only 119 (44.7%) remained Economics majors after one year. By the end of the second year, 94 students (35.3%) continued in Economics from the original 266. This means 79% of the 119 entering their second year, which is when they would likely take E321, remained Economics majors. By the end of four years, only 30.1% of student entering IU as Economics majors graduated or were still enrolled in Economics. Similar patterns existed for various demographics, but lower percentages occurred for both Female (26.0%) and First Generation (18.9%) students. Since many students leave Economics after their first year, I will revisit my results from last year’s study on E201 and Introductory Macroeconomics (E202) to focus more on these courses to see what factors may lead to retaining and growing Economics majors.
Using the same data set and Sankey diagram of 1,462 students, 888 (60.7%) graduated with an Economics degree or were still enrolled as an Economics major. Of these 888 students, 181 (20.4%) entered IU as a Finance major, 102 (11.5%) began as a Management major, 95 (10.7%) started as Exploratory Baccalaureates, 80 (9.0%) enrolled as Economics majors, and 72 (8.1%) began as Accounting majors. Of these 888 students, 300 (33.8%) changed their major to Economics after one year, while 712 (80.2%) were Economics majors after their second year. Since Economics majors typically enroll in E321 during their second year, I turned my analysis to students taking Intermediate Microeconomics.

Not surprisingly, as Economics majors increased, E321 class sizes increased. But, the average grade distribution remained relatively consistent each semester with an overall average grade of 2.35 in E321. However, there were a few surprises. Notably, there was a significant negative grade penalty (received a lower grade) of -0.55 in E321 compared to the other courses student took the same semester as E321 and students grades were 0.32 points lower in E321 than in E201.

The most significant finding was students who transferred E201 and E202 credit into IU-Bloomington performed worse in E321. In particular, students who transferred E201 and E202 from Ivy Tech in Bloomington on average earned a 2.08 in E321 compared to 2.52 for students who took E201 and E202 at IU-Bloomington. Furthermore, of the 3,135 students who took E321, 20% (610) withdrew from the course. Interestingly, only 17.8% students transferring E201 and E202 and 15.0% of students earning Advanced Placement (AP) credit withdrew from E321.

Only class sizes between 35-38 students (1.61) and one instructor (1.54) had E321 grade point averages significantly below 2.35. While, class sizes of 21-29, 30-34, and 60-66 had lower withdrawal rates of 18.7%, 16.7%, and 12.3%, respectively.

This time I found using student data with Tableau to analyze student data in E321 to be easier. However, I still consider myself a novice in using all of the tools in Tableau. As usual, Mike Sauer and Dawit Galen from IU BAR were extremely helpful in gathering and generating student data, along with assisting with the creation of Tableau worksheets.

It’s now clear to me, if the goal is to grow Economics majors, then we should focus primarily on E201 and E202. Revisiting the data related to these courses may help to identify factors affecting the number of Economics majors. Fortuitously, my Department Chair, Dr. Gerhard Glomm, recently expressed an interest in using regression analysis to determine if transferring E201 has any effect on academic performance in E321.

As a result, I would like to continue this study and analyze students who take E201 and E321. The goal of this study is to investigate if or to what extent students who are transferring in credit to IU for E201 are (in)adequately prepared for higher level courses such as E321. I currently plan on disseminating my Sankey and E321 results to Dr. Glomm.