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Research Result Summaries

2018

# Addressing Attrition and Low Success in Large-Enrolment Introductory Economics Courses at the University of Windsor: A Case for Course Redesign

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*Addressing Attrition and Low Success in Large-Enrolment Introductory Economics Courses at the University of Windsor: A Case for Course Redesign*

**This is Report 1 of a 2-part study.**

**Background:** Individuals at the University of Windsor have been working to identify courses with high rates of D's, failures, and voluntary withdrawals in an effort to enhance student success and retention. Research shows that many courses have common variables that can be targeted for these purposes, and that identifying threshold and bottleneck concepts can aid in the development of strategic interventions or course refinements. Supplemental Instruction – a peer-facilitated learning model developed in the 1970s – is one example of programming shown to enhance performance across many institutions and disciplines. Further, technology-enhanced learning methods have garnered much attention and support as new technologies provide greater flexibility and accessibility for learners.

**Purpose:** The purpose of this study was to identify factors contributing to student performance in two first-year economics courses. These factors informed the refinement of the course, which were then evaluated for effectiveness and sustainability.

**Method:** Data for 2,031 students was collected via the Student Information System, in order to understand the demographic characteristics of students enrolled in these courses, and the characteristics that most predict performance. Course assessments were examined using item analysis to identify threshold and bottleneck concepts contributing to student difficulty. From these findings, two course refinement measures were developed – Supplemental Instruction (called Peer Assisted Learning Sessions – PALS) and online video tutorials – which were implemented across two semesters and evaluated for effectiveness. Of the 761 students enrolled in the target courses at the time of the project, 319 completed surveys in-class or online, and 21 participated in on-campus focus groups.

**Findings:** Overall, both PALS and the video tutorials demonstrated promising results, especially for the first course, and especially for international students. For Course 1, students attending at least one Supplemental Instruction session ($n$=98; 23%) achieved final exam scores approximately 3% higher than those who attended none; and students who viewed at least one online video tutorial ($n$=340; 80%) earned a final exam score of 4.8% higher than their counterparts. These differences are even greater for international students who earned scored between 8.1 and 19.5 percentage points higher. And interestingly, there were some concept-level performance changes indicated by the item-analysis, suggesting that the targeted sessions and videos helped students overcome difficulties in key topic areas such as short-run cost curves.

Overall, rates of withdrawal for students who did not engage with any of the interventions ranged from 23% for Course 2 to 40% for Course 1, compared to those who engaged at least once and withdrew at a much lower rate of 0% for those watching videos in Course 2 to 6.3% for students attending sessions in Course 2 (0.2% and 1% respectively, for Course 1). Students indicated a general satisfaction with both initiatives, but were more likely to engage in online components such as online Supplemental Instruction or online video tutorials, since they did not require extra time on campus. Participants reported enjoying the flexibility of the videos, and that they used them along with other aids while studying for exams. Researchers will continue to investigate the effects of such course refinements across courses and disciplines at the University of Windsor.