

COMPARISON OF STUDENT ENGAGEMENT OF A LARGE FIRST-YEAR STATISTICS UNIT IN A FLIPPED AND FACE-TO-FACE CLASSROOMS

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PURPOSE

Flipped classroom experiences and literature on flipped classrooms have been increasing globally over the last decade. With the COVID-19 pandemic, many universities closed their premises and transitioned to online learning overnight. Therefore, academics decided to implement synchronous online learning that mimicked face-to-face or flipped classrooms. Undoubtedly, COVID-19 adversely impacted student engagement and learning outcomes around the world, in part due to none of the activities being face-to-face. The disengagement of students increased during COVID-19 and is not unique to our university (e.g., Dhawan, 2020; Jaques & Salmon, 2007). Our research shows that flipped classes can engage students in large units through carefully planned learning activities.

DESIGN

This paper sheds light on the benefits and challenges of flipped classrooms by comparing student engagement before and during COVID-19, when Zoom classes replaced on-campus learning activities. We adopted our face-to-face activities to flipped classroom online activities and collected attendance data for all learning activities during both time periods to compare student engagement and learning outcomes. Learning activities included non-compulsory lectures, mandatory small group teaching activities (SGTA), and Practical classes (Prac). During SGTAs, students discuss problems with their peers and with tutors to solve problems, whereas students use software to apply statistical techniques to answer research questions during Prac classes.

RESULTS

Compared to lecture engagement, a substantial percentage of students engaged in small group peer and tutor-assisted classes (SGTA and Prac) during the pandemic, peaking in weeks where graded assessments were held in class. Students learning outcomes were similar before and during COVID-19 (Bilgin & Lin, 2021).

IMPLICATIONS FOR THEORY AND PRACTICE

Our research results inform academics on the possibility of maintaining or improving student engagement by using flipped classrooms in first-year, large statistics units. The implications of our research suggest that we could maintain or improve student learning outcomes while students are learning online by using well-designed assessments and learning activities. To achieve better results, lecturers could aim to develop a teacher-student rapport similar to that established between students and their tutors in a smaller class setting. Additionally, graded/non-graded in-class quizzes during lectures may incentivise students to attend lectures and engage them with lecture activities.

ORIGINALITY AND VALUE

Most flipped classroom implementations do not include a control group for comparison. In contrast, this paper controls for factors such as the impact of the lecturers and teaching materials.

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