TEACHING STATISTICS USING TEAM-BASED POLLING

C. Kaur¹, M. Raghavan²

¹ Monash University (AUSTRALIA)
² University of Tasmania (AUSTRALIA)

Abstract

Over the last two decades, Australian universities have seen a large increase in the number of international student enrolments. This growth has exacerbated the problem surrounding student engagement and performance, given that students in large classes are reluctant to participate in answering questions. In-class passivity of international student cohorts stemming from language and cultural factors coupled with heterogeneity in statistical abilities set the scene for this case study.

In order to encourage student participation in a large, culturally diverse cohort with varying statistical abilities, we propose a collaborative approach. We combine two pedagogical methods, namely team based learning (TBL) and personal response system (PRS) in an effort to enhance peer collaboration. We implemented these methods in multiple tutorials for students enrolled in a Business Statistics unit in an Australian university. We employed a case study with a mixed methods study design to assess the students’ learning experience and performance following the implementation of the collaborative approach. Both quantitative and qualitative data are collected across two semesters. We collected data from student surveys and group discussions as well as marks obtained from questions delivered in team-based polling through PRS. Overall, the results from a large sample data indicate that the use of team-based polling within small group settings has had a positive impact on student learning. The data suggests that a collaborative approach improves students’ understanding of key statistical concepts. The students acknowledged that through group work, they are able to learn from their peers, especially when all members within the group contribute to the discussion. The analysis of the data collected through the polling system further shows an improved student results and better understanding of the subject matter when questions are answered collectively compared as compared to those answered individually.

Keywords: Team-based polling, student engagement, team-based learning, personal response system, collaborative approach.