

Stakeholder Summary

Not all students benefit equally from engagement technologies in large classes

Online quizzes and clickers are just some of the technologies being introduced into large university classes to improve student engagement. While these tools have shown promise in studies of science, technology, engineering and math, less is known about their effectiveness in the humanities. A new study by the Higher Education Quality Council of Ontario (HEQCO) finds that using clickers and online quizzes did help students in a large history class develop critical thinking skills, but these tools were not significantly more effective than conventional teaching strategies.

Project Description

Engaging Students to Think Critically in a Large History Class examined two groups of students in the Introduction to Historical Studies class at the University of Toronto Mississauga, which is the largest history course taught at the campus and typically includes the use of clickers and quizzes. Nearly 300 students participated in the study. Students in the fall semester used clickers in class and took part in online quizzes outside of class time as part of their overall grade. Students in the winter semester were taught in a more conventional lecture style. The same instructor taught both classes. To determine the level of improvement in critical thinking skills, students were given a pre-intervention test in the second week of the class and a post-intervention test four weeks later. They were also given a special writing assignment and a set of questions on the final exam.

Findings

While there was no significant difference for most students between those who used the clickers and quizzes and those who did not, there were some exceptions. Students with moderately good levels of academic performance improved the most when using the technology tools. On the other hand, students who performed strongest on the pre-intervention test actually improved more in a conventional class. A similar dynamic was found when educational experience was considered. Students who entered university directly from high school showed improvement with the teaching tools, while those with previous university experience were more successful with the traditional class format.

An unanticipated finding of the study was a dramatic decline in attendance for students in the winter term. Average attendance in lectures for the fall term was 78%, but dropped to an average of less than 50% in the class taught without clickers and online quizzes. Previous years, which had the tools as part of the class, had attendance rates between 70% and 80%.

There appears to be no relationship between students' evaluations of the technology interventions and learning outcomes. Students who liked the engagement tools were no more or less likely to improve their skills than those who did not like them.

Engaging Students to Think Critically in a Large History Class was written by Mairi Cowan, Tyler Evans-Tokaryk, Elaine Goettler, Jeffrey Graham, Christopher Landon, Simone Laughton, Sharon Marjadsingh, Caspian Sawczak and Alison Weir, University of Toronto Mississauga.