Improving student confidence, satisfaction, and participation

Working groups is a classroom management style that engages students in small group and pair work during class time. Reserving class time (15-20 minutes) to start homework, work on problem sets, discuss readings, or engaging course concepts, leads to positive educational effects.

There is a need at UNLV to improve student retention across disciplines, which can be done by improving students’ confidence in their performance, improving their satisfaction with classes and their major selections, and providing welcoming and open spaces for participation and inclusion. To be “Different, Daring, and Diverse,” students needs space to work out ideas with their peers, aided by the supervision and guidance of faculty members.

Testing working groups in advanced biology courses

To test whether working groups led to differences in course outcomes, student learning, and course enjoyment, Dr. Rafferty ran two sections of BIOL 453 – Immunology in Spring 2017, one with working groups and one without.

Most previous work with working groups have not used comparative cases or have measured their success in introductory courses. We wanted to see if the working groups classroom management style could also be successful in advanced courses.

The measures we used were based on Kardash and Wallace’s (2000) “Perceptions of Science Class” scale modified to address biology in particular. We also included confidence measures for how confident students felt in “identifying, discussing, and explaining” learning objectives in the course.

We received a generous grant from the Office of the Vice Provost for Undergraduate Education to cover costs for prizes to incentivize students to complete the survey at the end of the course.

Spring 2017 Results

BIOL 453 – Immunology: 15 minute homework time at the end of each class

Students in the working groups class:
- were more likely to say they enjoyed the class (p=.019, t(40)=2.445)
- said the class increased their interest in science (p=.026, t(40)=2.313)
- felt more comfortable in class (p=.017, t(40)=2.490)
- had positive perceptions of the course (p=.002, t(37)=3.287)
- felt that the goals of the course were “clear and specific” (p=.039, t(40)=4.538)
- felt that it was easy to catch up if they fell behind (p=.043, t(40)=4.385)
- female students reported an increased “perceived competence in science” (p=.029 , t(23)=2.333)

Adopting this practice in classrooms and next steps

Working groups is a classroom management style that can work in any classroom, in any discipline, of any size. Because the technique involves small group work, it provides an opportunity for everyone, even in large enrollment courses, to participate in discussion. This pilot used working groups for 15-20 minutes of time, showing that the management style can be easily incorporated without consuming all, or even the bulk, of class time.

This study provides evidence that working groups can increase student confidence and enjoyment in class. Next steps for the project would be to try and replicate these results in other classrooms, such as other STEM classes and humanities classes and to perform more robust retention and grading measures (no significance in information retention or grade outcomes were found during this study).