

Closing the Gaps - Introducing Focused In-Class Activities to Improve Student Learning

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Extended Abstract

Since 2013, we have worked to increase student learning and close grade gaps among students in Introductory Biology 151. The methods we used included:

- Introduction of in-lecture active learning activities designed improve students, analytical and problem-solving skills
- Increasing the numbers of these activities from 3 to 6 after 3 years
- Adding optional evening study skills development sessions for students
- Adding Inclusion and Diversity training for teaching assistants (TAs) to further improve the interactive environment in the classroom.

As a result of these interventions, average student exam scores increased by 4.5%, no gap in gender achievement remained after 2 years, and there were comparable ~10% increases in the proportions of students achieving >80% among both first and non-first generation students. When considering student ethnicity, however, while both male and female students from well-represented ethnicities achieved 12-20% average increases in exam scores, respectively, under-represented ethnicities achieved and maintained more modest, non-significant average gains.

In this mini workshop, I introduced the data we have gathered. However, the primary focus was on the development of the activities used to produce the improvements in student learning. Participants examined a subset of the activities and determine how they are organized and how this organization is designed to build student learning. Participants were then given time to brainstorm in small groups as to how they could use these examples in development of their own in-class activities to increase student learning. Examples of activities can be found at <https://uwmadison.box.com/v/ClosingtheGaps> or by using the following QR code:



Keywords: in-class activities, pedagogy, student learning

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