

A Recitation Program to Improve Student Success in Majors and Non-Majors Introductory Biology Courses

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Extended Abstract

A recitation program was developed to serve students enrolled in our majors and non-majors Introductory Biology courses at the University of Houston. The initiative was one component of a multi-faceted Comprehensive Student Success Program funded through the Texas Higher Education Coordinating Board. These courses typically serve between 170-530 students per section. The goal of the program was to reduce the high rate of grades of D, F, and W in these courses and to improve retention in college and specifically in STEM majors.

A peer-led group learning approach was implemented. Recitations were led by a pair of undergraduate teaching assistants. Each pair of teaching assistants led four recitation sections per week. Larger lecture classes were assigned multiple teams of teaching assistants to allow many opportunities for students to attend. Teaching assistants met once a week with the course instructor and project co-director to discuss the activity for the upcoming week and issues that arose in the classroom or lecture hall. The teaching assistants also meet every other week with the project co-director for training in educational pedagogy. Topics included developing positive classroom dynamics, discussion skills and quality questioning, the value of cooperative learning, the psychology of learning and development, how memory occurs, cultural competence in the classroom, motivating students, the value of repetition and elaboration, reading for college, and working with students in crises.

The curriculum for recitations was designed to provide reinforcement and practice of concepts covered in the lecture part of the course. The activities were intended to be completed in groups of four. The maximum capacity of a single recitation section was 30 students. Hands-on activities were incorporated as often as possible. The activities were also designed to teach and reinforce good study skills and habits in the context of the subject matter at hand. Teaching assistants were asked to emphasize to students the value of the activity to content mastery and the value of the material itself. Study skills emphasized in recitation included using the online resources provided by the textbook publisher, self-testing, reading the textbook effectively, concept mapping, and taking notes in lecture.

Recitations were open to any student enrolled in the course but any student who scored below a 70% on the first course exam was required to attend one session per week for the remainder of the semester. Early data analysis suggests that the recitations were effective. Comparing results for our program implementation instructor from year to year, we saw a 22% improvement in outcomes. In the Fall 2011 semester, only 30% of the students who scored below a 70% on the first exam managed to successfully complete the BIOL1361 Introductory Biology course. In the Fall 2012 semester when recitation was required for the same cohort of students, 52% of the students who scored below a 70% on the first exam successfully completed the course. The recitation program will be expanded to include three more sections of the majors course in Fall 2013.

Keywords: biology, recitation, teaching assistants

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