Peer Instruction or Gaming the System: Does displaying class results affect quality of student discussion?

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Methods
Introductory Biology for Biology Majors is a large (8 sections of ~95 students each) team-taught class. Student grades were based on lecture exams, D2L quizzes, assignments, and lab. Grades were assigned using the following percentage scale: A (90-100), B (89-80), C (79-70), DF (<69). In this experiment, we developed 18 common clicker questions used in all sections. For each question students were allowed to vote and then given an opportunity to discuss with their neighbors before revoting. In one treatment students were shown a graph of the class responses before initiating discussion, in the other treatment they were not. The treatments were set up so that each group of students saw the graph for 50% of the questions.

Study Questions and Results

Fig. 4. Does displaying the class response before peer discussion result in students simply moving to the answer with the most votes? (N=not shown class response, Y=shown class response).

Figs. 5 & 6. Is there an effect of the number of possible responses on a student’s behavior?

Figs. 7-9. Do A, B, C, or DF students respond differently to seeing the class responses?

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References