Using debate preparation in an interdisciplinary, capstone-style college course to promote critical thinking about food systems, sustainability, and climate change

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INTRODUCTION
The literature on classroom debates generally suggests they are an effective active learning technique (Kennedy 2009; Moeller 1985; Omelicheva and Avdeyeva 2008).

However, there is less clarity in the literature on what kind of debate preparation can help student learning and enhance the quality of classroom debates.

This led me to my teaching-as-research question: Will preparation for a classroom debate through different writing/research assignments help students think critically about food systems, sustainability, and climate change and enhance the quality of the classroom debate?

METHODS: Debate preparation/scaffolding activities and structure of the classroom debate
- During class, teams of students generated possible debate questions related to food systems, sustainability, and climate change for the classroom debate to be held later in the semester.
- In a post-class writing assignment, students generated two more debate questions, as well as a "scenario" and list of relevant stakeholders for each.
- The course TA then selected one debate question that students had generated - "Should the US government incentivize insect farming/rearing/prodution for human food consumption in the next Farm Bill?" - for the classroom debate.
- Students then wrote an essay in which they used academic literature to support "for," "against," and "middle-ground" positions on the debate question.
- The 15 student class was divided into three teams/positions ("for," "against," or "middle ground") for the classroom debate, which was to be modeled after a congressional debate.
- Students were randomly assigned both a U.S. senator and a position on the debate question that they would have to argue, in-character as that senator, during the congressional classroom debate. They were also informed of the other "senators" that shared their same position.
- Prior to the classroom debate, students outlined the argument they would be presenting as their senator on debate day and refining with their teams.
- After the debate ended, we had a class discussion about how people felt about what degree did the classroom debate help you learn about food systems, sustainability, and climate change? with "a lot" or "a great deal."
- 6/15 students changed their position on the debate question after the classroom debate.
- Written feedback on the SALG indicated that debate preparation activities enhanced the quality of the classroom debate.

METHODS: Assessments of desired learning outcomes and efficacy
- Student "debate preparation" essays were graded to assess how well the students 1) demonstrated an understanding of how food systems, climate change, and sustainability are interrelated in the "real-world" (Bloom’s classification: Synthesis) and 2) applied scientific evidence to defend different positions on the debate topic.
- Students’ senatorial argument outlines were read to assess how well the students were able to analyze a political figure and his/her background and constituency to develop plausible arguments that such a figure might use to defend a particular position in a congressional debate.
- Students were instructed to identify their personal positions on the debate topic twice: immediately before and after the classroom debate.
- Students were given a short Student Assessment of Learning Gains (SALG) questionnaire after the classroom debate for the Delta Intern to assess the efficacy of the debate and debate preparation activities.

RESULTS
- The average score on the debate preparation essay was 93/100.
- 13/15 students responded to the question, "To what degree did the debate preparation essay help you learn about food systems, sustainability, and climate change?" with "a lot" or "a great deal."
- 14/15 students responded to the question, "To what degree did the classroom debate help you learn about food systems, sustainability, and climate change?" with "a lot" or "a great deal."
- 6/15 students changed their position on the debate question after the classroom debate.
- Written feedback on the SALG indicated that debate preparation activities enhanced the quality of the classroom debate.

LESSONS FOR INSTRUCTORS
- This Delta Internship project suggests that debate preparation through multiple writing and research assignments helps students think critically about the debate topic and provides good scaffolding for the classroom debate.
- Structuring a classroom debate as a congressional debate was well-liked by the students, and students found it “really interesting to see how politicians blend policy, expenditures, science, and personal views.”

LITERATURE CITED