

Teaching Sustainable Crop Production through Collaborative Learning

Teaching sustainable practices to a diverse group of students with varied background and divergent perception of sustainable agriculture is a challenge. For instance, students differ in their perception about use of genetically modified organisms; organic agriculture; conservation tillage etc. One of the methods to teach about such topics could be through collaborative learning. Collaborative learning is an active learning technique where students work and learn together in groups to accomplish shared goals. According to Gerlach (1994), "Collaborative learning is based on the principle that learning is a naturally social act where the participants talk among themselves and that it is through the talk that learning occurs". In the collaborative learning, the learners have the opportunity to converse with peers; present and defend their ideas; exchange diverse beliefs; question other conceptual frameworks and are actively engaged (Smith and MacGregor, 1992). The goal of collaborative learning is to shift the learning from a teacher-centered model to student-centered model (Smith and MacGregor, 1992). Two conditions are a must for collaborative learning to be effective and successful: i) there must be a group goal or shared responsibility for the whole group; and ii) there must be individual accountability.

A group discussion project was introduced in a senior level class in sustainable crop production where students were divided into four groups. A reading was assigned a week before the class discussion on topics in sustainable crop production. Each of the four groups was assigned a specific role to play during the group discussion. First group, called 'Presenters' presented the findings from the assigned reading highlighting the salient points. The second group, called 'Enquirers' submitted their questions based on the reading at least two days in advance to the class via the course website. The third group, 'Problem Solvers,' presented solutions to the questions/issues raised by the 'Enquirer' group. Finally, the fourth group, 'Supervisors,' took notes and summarized the whole activity including the salient findings presented, the questions raised and the solutions offered during the group discussion. The group roles were rotated among the groups so that each group was assigned each of the four tasks at least once during the semester (Figure 1). During each discussion activity, each group was evaluated on a range of questions specific to their group role by the peer students, the instructor and the TA. The students were also asked to provide their anonymous feedback about what they thought was the most important lesson that they learned from the group discussion. These results were then analyzed to assess how the group activity impacted the student learning. The percent of student participants who correctly answered the question ranged from 70-100% during the semester.

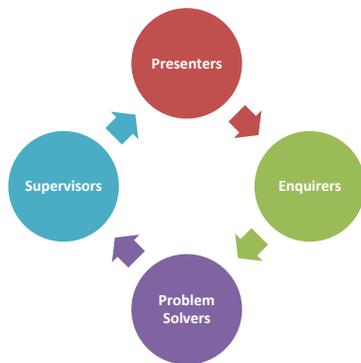


Figure 1. Switching of the four tasks among groups.

References

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