

# Bringing the world of agriculture to the classroom

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What do obesity trends in China, barriers to export markets facing small farmers in Kenya, or alternative soil conservation strategies in Peru have in common? They are case studies on global food and agriculture issues, and represent the world's interdependence on food and populations issues. Students attending colleges expect to build experiences of a broad and diverse world, but lecture-based passive learning is not the best way to teach higher order thinking, motivate students, or inspire changes in attitude.

Colorado State University instructors Patrick F. Byrne and Marc A. Johnson, along with teaching assistant Bethany F. Econopouly integrated case studies from Cornell University into "World Interdependence: Food and Population," a three credit course that attracts a wide variety of majors and interests, from freshman to seniors. The results were published in the 2010 *Journal of Natural Resources and [Life Sciences Education](#)*, published by the American Society of Agronomy.

Although the course covers global agricultural issues, [students](#) had a wide range of experience with international and agricultural experience. The purpose of the case study portion of the course was to increase student engagement and interest with the subject matter and to promote higher level learning. The case studies would also create a link between the classroom and issues involving human health and nutrition, food production, poverty alleviation, and natural resource management in developing countries.

Students signed up for a case study with two to three other students. Each case study contained background information, stakeholder positions and a discussion of policy options. Before giving their 20 minute presentation to the entire fifty-four-student class, they were recommended to rehearse it for one of the instructors. Student groups who took advantage of the rehearsal option showed substantial improvement.

The majority of students agreed that they learned a lot about the case study topic from their own presentation that their presentation skills improved. While most agreed that the case study feature should be kept in the course, 40% of the class felt that the time devoted to case studies would have been better spent on other activities, such as guest lectures, class discussions, and videos. Student performance on case-study questions was lower than lecture questions, but the authors suggest that the multiple choice format are not the most effective tool for evaluating higher-order learning.

One notable presentation on "Food Security, Nutrition, and Health in Costa Rica's Indigenous Populations" exemplified the key components of what the authors believe represent successful integration of case studies. Showing enthusiasm for the material, being organized and knowledgeable, and skillful speakers, the presentation took the form of a television news broadcast, with students role-playing the stakeholders and reporters.

"The presentation demonstrated the ability for the case studies to encourage student initiative, collaboration, creativity, and problem-solving," remarked Bethany Econopouly. "It was obvious that this group was interested in the material and went above and beyond the requirements of the assignment."

The authors conclude that that integrating case studies successfully met

the goals of engaging students and promoting higher-order thinking. Recommending further use of case studies, they also suggest that groups use creative presentation techniques and rehearse with an instructor. To improve discussion, students should be accountable for reading presentation summaries, and student learning could be evaluated by means other than multiple-choice.

**More information:** View the abstract at [www.jnrlse.org/issues/](http://www.jnrlse.org/issues/)

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