

Bringing Problems to Life: Using Multimedia Case Studies to Encourage Critical Thinking

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Introduction/Need for Innovation

Case studies are an effective pedagogical tool to encourage students to take an active role in the learning process and improve their critical thinking skills (Naumes & Naumes, 2012). Erskine, Leenders, and Mauffette-Leenders (2007) found case studies strengthen students' analytical skills, enhance decision-making skills, and improve communication skills. The case study teaching method helps "learners reach specific learning objectives with the teaching case as a basis for discussion" (Lynn, 1999, p. 2). Case studies help students "learn to evaluate a situation or identify problems in a variety of settings" (Naumes & Naumes, 2012, p. 4) then use that information to draw conclusions, make predictions, explore relationships, and observe changes.

Good case studies are drawn from real-life problems, or as Wassermann (1994) described, "'big ideas' — those significant issues in a subject that warrant serious, in-depth examination" (p. 3). Enhancing case studies with multimedia (e.g. videos, web resources) can further improve the learning experience. Multimedia case studies provide more context for the situation and "bring the problem alive" (Chattaraman, Sankar, & Vallone, 2010, p. 187). Naumes and Naumes (2012) advocated for the inclusion of multimedia – specifically video – in case studies because today's students are surrounded with technology. Using multimedia with a case study "can offer an exciting opportunity for exposure to a wide range of factors that affected the people and situation in a case" (Naumes & Naumes, 2012, p. 226). As the agriculture industry continues to face a number of complicated issues, it is vital students are able to think critically about them. This poster describes the development and integration of three multimedia case studies that address agricultural issues with emphasis on how the issues are communicated.

How it Works

Instructors at two universities developed three case studies – one at [university] and two at [university]. The topics were selected to leverage expertise at each campus while appealing to post-secondary agriculture students regardless of the university. The agricultural issues addressed in the case studies were antibiotics in animal agriculture, the Blue Bell ice cream recall, and water conservation in agriculture. For each case study, the instructors worked with graduate students to produce informational videos, PowerPoint slides (with links to the online videos), and application activities to demonstrate learning. The individual videos varied in length from 2 to 11 minutes and contained interviews with industry experts, farmers, ranchers, and other key informants. Table 1 provides the learning objectives for each case study. The case studies were implemented in the Fall 2016 semester in a course at [University]. The purpose of this course is to equip students to be more effective communicators about agricultural issues.

Table 1

Student Learning Objectives for the Multimedia Case Studies

Case Study	Learning Objectives
Antibiotic Use in Animal Agriculture	<ol style="list-style-type: none"> 1. Describe the problem of antimicrobial resistance and its connection to antibiotic usage in animal agriculture 2. Describe why antibiotic usage in animal agriculture is controversial 3. Analyze sources of controversy in the issue 4. Describe and apply relevant communication theories and concepts

	<ol style="list-style-type: none"> 5. Analyze and critique communication efforts 6. Create messaging
Blue Bell Ice Cream Recall	<ol style="list-style-type: none"> 1. Define crisis communication and how it relates to a food recall situation 2. Identify communication strategies to prepare and respond to a crisis 3. Discuss how brand reputation management can influence a crisis response 4. Develop effective social media messages to use during a crisis situation.
Water Conservation in Agriculture	<ol style="list-style-type: none"> 1. Describe the relationship between the Ogallala aquifer and agricultural production in the Texas High Plains. 2. Discuss the need for water conservation in the Texas High Plains. 3. Apply relevant communication theories to analyze how communication efforts can influence water conservation behaviors 4. Identify agricultural producers' barriers and incentives to implementing water management practices. 5. Suggest communication strategies to influence the adoption of water management practices.

Results to Date/Implications

The use of the case studies was a positive experience for both the instructor and the students. Thirty students were in the course and provided written reflections after each case to identify what they enjoyed and where adjustments should be made. Overall, the students appreciated the multimedia aspects and having an opportunity to apply classroom concepts to real-world problems. The video component allowed students the opportunity to learn from industry experts through rich media experiences. The use of more, shorter videos also kept the students' attention throughout the class sessions. Additional data were collected regarding agricultural knowledge and critical thinking before and after the course, but those results are reported elsewhere.

Future Plans/Advice to Others

The case studies will continue to be used in this class with slight adjustments. They are also being taught at two other universities in the Spring 2017 semester to make additional improvements. The case studies were developed with the goal that others will adopt them. This means they do have some structure, but can also be adjusted to meet individual instructor's preferences and available class time. Effective use of case studies relies heavily on discussion, which may not be a familiar pedagogical strategy for some instructors. However, facilitating discussion effectively will lead to greater student engagement and achievement of the learning objectives. Pacing the case studies is necessary to allow adequate time to discuss the concepts while also providing content knowledge. These case studies also incorporated application activities that required time in class to explain and out of class time to complete.

Costs/Resources Needed

These case studies were developed as part of a USDA Higher Education Challenge grant. This paid for graduate students to shoot and edit the videos. However, others could apply this active learning strategy by using already developed case studies such as the case studies described in this poster narrative. They will be made available at no charge for broader adoption so others can implement them in their classes after this initial pilot phase is complete.

References

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