

Structured Class Discussion within a Learning Management System to Facilitate Student Learning

Introduction

With the rapid and unexpected transition from face-to-face to on-line instruction during spring semester 2020, many course instructors were challenged with developing new ways to engage students in the discussion that ordinarily would have occurred in the physical classroom setting. Live-streaming of lectures and concomitant discussion was discouraged institutionally because of potential student limitations of internet access. Thus, it was important to devise a synchronous (live) discussion experience, devoid of live-streaming video, to simulate the in-class discussion that would have occurred during face-to-face instruction.

Procedure

Synchronous (live) discussions were incorporated into an international animal agriculture course during the latter part of spring semester 2020. The international animal agriculture course is an elective senior-level undergraduate course that fulfills the university's international perspectives requirement and/or requirements for the international agriculture secondary major or minor. Course enrollment is typically fewer than 20 students, and students come from majors within the College of Agriculture and Life Sciences (e.g., animal science, dairy science, agricultural business, agricultural biochemistry). The focus of the course is on animal agriculture in developing countries; issues related to global food security, sustainability of livestock production systems, alternative livestock species, gender, and resilience are discussed.

Students enrolled in the international animal agriculture course were asked to prepare a PowerPoint presentation on animal agriculture in a developing country. Their presentations were strategically placed near the end of the semester to provide students with an opportunity to synthesize information gleaned throughout the semester into a capstone-type project. The course instructor provided guidance on required elements for the presentations so that students could compare and contrast animal agriculture in their assigned country with that in countries discussed by their classmates. For example, students were required to address geographical location and history of the country, demographics of the country's citizens, predominant

languages and religions, economic indicators (e.g., gross national income per capita), human development index, agricultural characteristics of the country (e.g., land and water resources, climate), livestock and poultry numbers and productivity, commonly available breeds and feed resources, and common livestock and poultry diseases. Students were expected to use publicly-available and reputable databases such as World Bank and FAOSTAT (from the United Nations Food and Agriculture Organization) to provide a consistent source of information, and this approach enabled better comparisons across countries.

A pdf copy of each student’s presentation was posted on a learning management system (Canvas), with the expectation that all students would read and study the presentation before a designated class period (i.e., a flipped classroom approach) where the presentations would be discussed - but not orally presented - by the student authors. Prior to the first designated day of discussion, the course instructor posted six questions to serve as examples of topics that could be discussed. Similarly, seven questions were posted by the course instructor prior to the second designated day of discussion. Students were specifically asked not to limit their discussion posts to the questions posed by the course instructor. Students were not given points for participating in the discussion.

Assessment

The structured on-line class discussion was embraced by students, as evidenced by 100% student participation during one of more of the two discussion days. Table 1 provides an overview of student participation during each discussion day.

Table 1. Student participation in on-line structured discussions in an international animal agriculture course.

Discussion Period	Student Participation in Discussion			Proportion of Discussion Comments From		Multiple Contributions to Discussion		
	Overall	Female students	Male students	Students	Course Instructor	Overall	Female students	Male Students
1	91.6%	88.9%	100%	51.3%	48.7%	63.6%	71.4%	33.3%
2	75.0%	77.7%	66.7%	68.4%	31.6%	100%	100%	100%

Although fewer students participated in the second day of discussion than the first, 100% of students who participated the second day contributed multiple discussion posts. This increase in multiple discussion posts suggests that the students who chose to engage in discussion really enjoyed this instructional approach. After the first discussion day, one student e-mailed the course instructor to indicate that he really liked the instructor’s potential discussion points because it not only gave him options of topics he could address but also kept him somewhat focused on the main topics; he specifically requested a set of potential discussion points for the second discussion day. The proportion of discussion comments made by students (versus the

course instructor) increased from the first day to the second day of discussion. On both days of discussion students posted their own unique discussion points unrelated to the instructor's suggested discussion points, and the integration of student discussion points with instructor discussion points occurred with much greater frequency on the second day of discussion.

Having a synchronous (live) discussion during the designated class lecture period encouraged students to interact with one another, and they did so with greater frequency than had occurred earlier in the semester (presumably due to their greater comfort with expressing their ideas and opinions on-line versus face-to-face). From the perspective of the course instructor, this discussion feature enabled me to immediately respond to student comments and to link those student comments with knowledge they had acquired earlier in the semester – just as I would do during face-to-face instruction. The structured discussion periods provided a within-course capstone experience near the end of the semester that integrated numerous dimensions of the course.

Student learning probably could have been further enhanced by: 1) implementing the structured discussions at the beginning of the semester, 2) using a few minutes during a lecture period early in the semester to conduct a “mock” on-line discussion to give students greater familiarity with the discussion feature of the learning management system, and 3) awarding participation points each day to entice 100% student participation.

This instructional approach is not limited for use with on-line instruction only. It could easily be incorporated, either synchronously or asynchronously, during face-to-face instruction to enhance student participation and learning.

Submitted by:

Curtis R. Youngs, PhD
ME Ensminger Chair of International Animal Agriculture
Iowa State University
Department of Animal Science
2356B Kildee Hall
806 Stange Road
Ames, Iowa 50011-1178 USA

Voice: 1-515-294-5541
FAX: 1-515-294-4471
E-MAIL: cryoungs@iastate.edu