

Student Preference of Modules in Virtual Introduction to Animal Sciences Course



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Abstract

Virtual Introduction to Animal Sciences 101 was designed to teach the fundamentals of animal agriculture through a series of modules ($n=20$). There are two different formats for the course modules, modules seven and 20 were writing assignments with broad but specific objectives to be completed by the interviewee, an expert in the field selected by the student and following the interview, must be written up by the student for a grade. The remaining 18 modules were arranged with specified objectives and composed of reading materials, interactive multimedia pages, and online quizzes. Student surveys showed these written assignments were beneficial and significantly ($P < 0.0001$) preferred when compared to any of the other 18 modules. Within the 18 digital modules, only one was significantly ($P < 0.02$) lower when compared to the others. Students significantly ($P < 0.01$) perceived the work load to be greater for the writing assignments. When students were quizzed on why these two modules stood out, they consistently replied that the interaction with a real person and expert was the major factor in choosing the writing modules. This study demonstrated that personal interaction could be incorporated in a distance learning course, and it was desired by students.

Introduction

In terms of designing a distance learning course, the range of possibilities on how to deliver that material is broad. Today, instructors can incorporate a wide variety of media, i.e., PowerPoint presentations, email, on-line chats, bulletin boards, and interactive QuickTime clips are tools used to teach online courses. In some cases, these distance learning courses have been assembled such that individuals can participate in a degree program while maintaining current obligations. Thus are sought by mature students wanting to further their education. The momentum driving these distance learning courses are those mature students seeking to obtain knowledge or a degree, while pursuing a fulltime career and this format has become a great way for many individuals to take college courses (Latour and Collodi, 2003). Distance learning is very popular among lifelong learners, particularly because it allows them the flexibility to pursue their present commitments while learning up-to-date information. Braido et al. (2005) also noted that continuing medical education programs are very popular among older and mature

students.

Through the use of Internet multimedia combined with textbook readings and some face-to-face contact, our group discovered students do equally as well on matched exams when compared to an identical course on-campus (Day et al., 2005). Because the range of possibilities (what type of multimedia platform to use) are vast, instructors may use any combination to teach class; that is, some instructors teaching at a distance may only use one type of format, i.e., teleconferencing versus another instructor using different combinations of multimedia platforms (QuickTime video clips, PowerPoint, text readings, etc.) to teach class. The present study utilized different types of media. The focus of this study was to identify student preference of course modules and what factors contribute to that satisfaction in Virtual Introduction to Animal Sciences (VANSC).

Methods

Over the past five years, VANSC has served approximately 30-40 students each Fall and Spring semester. The course is composed of 20-learning modules (Table 1) with 18 modules being interactive using QuickTime clips, PowerPoint presentations, rollover identification of items and interactive point/click task utilizing WebCT (WebCT, 2003). Even though the 18 modules are different in terms of content, the modules represent a mixture of materials; that is, students must work through some specific written objectives, which in turn are directly linked back to the assigned reading within the textbook, so there is approximately one to two hours of pure reading material for each module. In addition, there are video clips as well as PowerPoint presentations (students can click on QuickTime player and/or Real player and visualize segments, approximately four per module and takes 30-minutes per segment) with assigned written objectives. Student would be expected to take hand written notes from these video clips. At the end of each module (not modules 7 and 20), students are given an interactive quiz, which is graded and if they miss an item they are redirected back to the area where the problem occurred. Unlike the other modules, modules 7 and 20 are writing assignments and designed for students to utilize the basic concepts learned in the other modules and conduct interviews within his or her area of interest.

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In order to give the student some direction, an example paper is given online, so students can read and understand the level of detail expected in the paper. In addition, students are expected to establish a contact person (sometimes this is directly arranged by the professor if they are unable to secure a person), visit with them either verbally or in person, and write up the interview. Students do have the option to ask the professor to read the paper before turning it in, so they can receive constructive feedback and polish it before the deadline. Topics for the writing assignments, modules 7 and 20 are shown in Table 2. Regardless of module assignment, they were design through beta testing to take similar effort by the student.

At semesters end, students were asked to complete a rank the course modules. More specifically, students were asked to rank (1-20 from highest to lowest), the course modules as it related to preference and workload (two separate columns). By using the Wilcoxon signed rank test, direct comparisons were made between modules using the students as replicates. Following the rankings, students were given an opportunity to express his or her reason why one module was favored over another as well as comment on the overall workload associated with course modules (Stayrook, 1973). Following a summary of

findings, students were asked to agree on which statements best described the findings of preference and workload. Statistical analysis for the non-parametric parameters were performed using the Wilcoxon Signed-Rank Test of SAS® (2003) and all statistical differences were reported at $P < 0.05$ unless otherwise noted.

Results

Student rankings for course modules (descriptive statistics were used to express the data by showing the percentage of individuals choosing one module) are shown in Figure 1. These data demonstrate that both Modules 7 and 20 were significantly ($P < 0.0001$) preferred and approximately four times when compared to any other modules. Modules 7 and 20 were interviews as outlined in Table 2 and require the student to setup arrangements with an expert in the field, ask him or her questions. These visits were conducted either by phone and/or actual site visit, plus assemble written report. Students must incorporate some of the basic principles learned in Modules 1-6 to complete Module 7 and likewise, principals in Modules 8-19 are needed for students to complete Module 20.

Module 15 was significantly ($P < 0.02$) ranked the lowest when compared to all other modules. The remaining digital Modules (1-6, 8-14 and 16-19) were not different ($P < 0.72$) from one another in terms of preference. When these students were asked to clarify why they chose to rank the modules in this order, the answer was equally as clear. More specifically, students stated that fundamental concepts as it relates to previous modules (genetics, nutrition, digestion, etc.,) were pulled together by the expert and condensed in such a way they began to understand and relate to the material. In many cases, the student communicate that many corresponding emails and phone calls were placed between the student and expert for clarification of specific material. It was also clear that students enjoyed personal one-on-one and face to face meetings. Students significantly ($P < 0.01$) perceive the work load to be greater for both writing assignments when compared to the other modules (Figure 2).

Table 1. Virtual Introduction to Animal Sciences course modules. Modules 1-6 and 8-19 are completely digital utilizing a wide range of multimedia platforms. Modules 7 and 20 are writing assignments.

Module	Topic
1	Introduction to Animal Agriculture
2	Animal Nutrition
3	Digestive and Metabolic Systems
4	Nutrition of Nonruminants
5	Nutrition of Ruminants
6	Nutrition of Horses and Ponies
7	Nutrition Interview
8	Physiology of Reproduction
9	Animal Behavior
10	Animal Growth and Carcass Composition
11	Animal Environment, Adaption and Health
12	Management Regime, Reproductive Efficiency
13	Companion Animals
14	Lactation
15	Processing Meat Animals
16	Business of Producing Pork
17	Cow Herd and Ewe Flock
18	Business of Dairying
19	Business of Commercial Poultry and Meat Production
20	Production Interview

Student Preference

Table 2. Description of modules 7 (Nutrition Interview) and 20 (Production Interview) used in Virtual Introduction to Animal Sciences.

Module

Module 7: Nutrition Interview

Objectives: Interview someone in the feed industry to determine the following:

- I. Investigate some nutritional aspects (specific requirements, challenges in formulating diets, opportunities, etc.) of an animal of choice.
- II. Investigate “what’s new or on the horizon” in terms of nutritional aspects for that animal. For example, is the individual(s) you are interviewing doing research on organic foods or investigating different by-products in the feed formula.
- III. Where are the centers for research for the species you choose for your report located?

Report Format

- Identify the interviewee, name, address and contact information.
- Identify the chosen specie.
- Write a summary based on objectives mentioned above, plus anything else you would like to include.
- Email your report to the instructor

Module 20: Production Interview

Objectives

- I. Locate someone in the production of animals and interview him or her. The type of animal production facility is your choice.
- II. Center your one-page interview around the following:
 - Describe the general characteristics of the production facility chosen.
 - Describe the major concerns/challenges affecting this animal production facility.
 - Describe how they plan to position their business during the next 5-10 years.

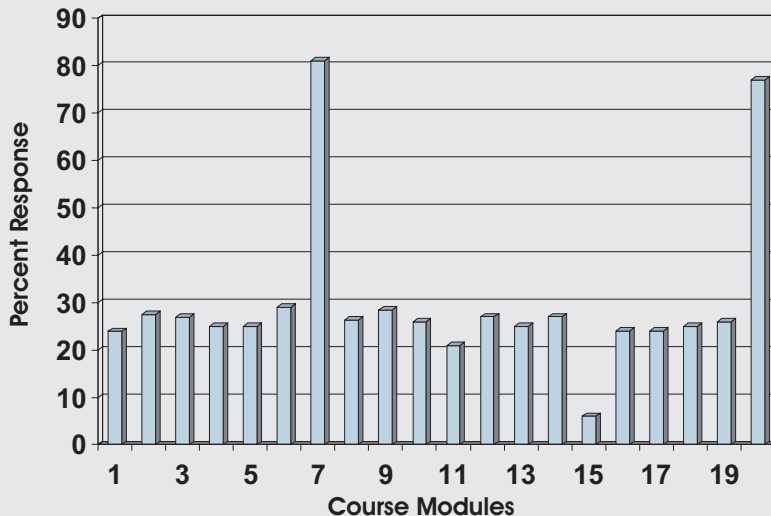
Report Format

- Identify the interviewee, name, address and contact information.
- Identify the chosen species.
- Write a summary based on objectives mentioned above, plus anything else you would like to include.

early 2000, where Cartmell and Dryer (2001) stated students who never sit in a classroom can get a quality education. Obviously, the comparison between distance learning vs. the campus-based learning can be grossly skewed when one considers the wide range of possibilities in terms of instruction at either place, but our studies examining the effects on undergraduate (Latour 2002; Day et al., 2005) and graduate student learning (Latour and Collodi, 2003) suggest that distance learning students do equally as well on exams when compared to campus-based students. In terms of acceptance of distance learning materials, (Latour and Collodi, 2003) demonstrated that mature students (graduate and/or older life long learners) do embrace the technology at a higher rate compared to undergraduates (Latour 2002).

Although the focus of this study was not centered on student grade outcome, students taught at a distance clearly enjoyed the interviews required in Modules 7 and 20. The findings of Modules 7 and 20 were not surprising because these modules allowed for direct (one-on-one) interaction between humans coupled with a common interest. Because these two writing modules required a visit (phone or otherwise), it's not surprising that students reported them to be more work. Scheduling, taking notes, writing reports, proof reading, rewriting notes, and submission of final reports take more time. Low ranking of Module 15 was expected, because Module 15 is focused on “Processing Meat Animals” and has always been ranked low by students. The low ranking is felt to be related to content rather than issues regarding the media format.

Figure 1. Outcome of student preference rankings for Virtual Introduction to Animal Sciences.



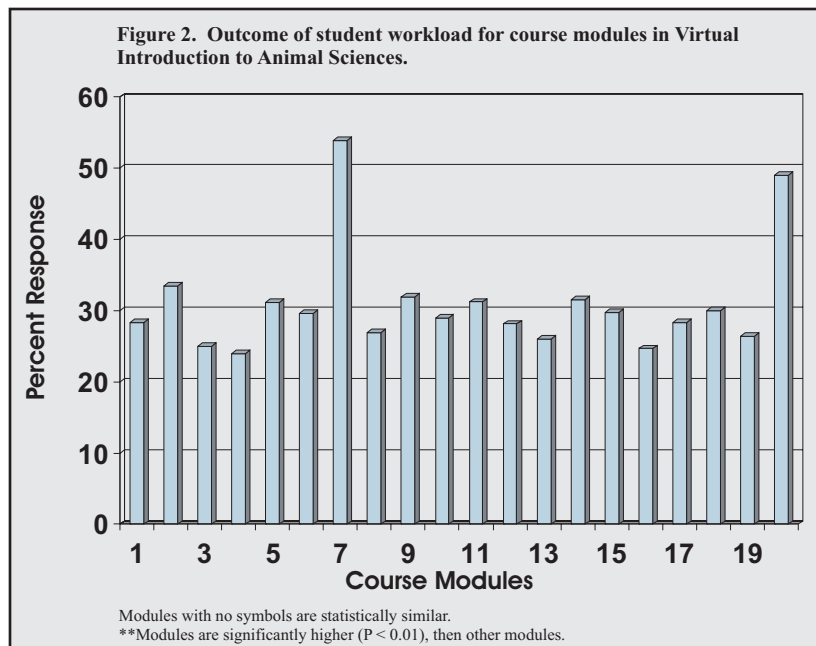
Modules with no symbols are statistically similar.
 **Modules are significantly higher ($P < 0.0001$), when compared to other modules.
 *Module 15 is significantly lower ($P < 0.02$), when compared to all other modules.

Discussion

Distance learning has been around awhile, and current data would suggest that students do learn equally as well as on-campus students (Summer et al., 2005; Day et al., 2005; Latour and Collodi, 2003). And this same feeling of quality education was felt in

Summary

When students were asked why these two writing modules stood out, they consistently replied that the personal interaction and visit with a true expert were the major factors in choosing the writing modules.



This study demonstrates that personal interaction with experts is highly valued in a distance learning course despite the additional work.

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