Electronic Course Delivery: Do Students Care and Do They Think Its Worthwhile?

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Abstract

Developments in communication technology have created new opportunities in higher education, but they have also created new challenges. As the focus shifts from providing quality teaching to providing quality learning environments, faculty and administrators need to acquire a better understanding of student perceptions of these new technologies in order to intelligently plan academic programs. This research summarizes student perceptions of electronic delivery methods in selected agricultural economics courses at Louisiana State University during the 2002-03 and 2004-05 academic years. Preliminary results suggest that the "traditional" chalkboard classroom is rapidly disappearing across all curriculums and that students favor this change even though they do not necessarily think the new approaches increase educational quality.

Problem

Advances in internet technology and its usability are driving rapid changes in the university teaching environment. As suggested by the U.S. Web-Based Education Commission (2000), these changes should make it possible for more individuals to access university-level education programs. As pointed out by Kumar et al. (2002), however, implementation of the new technologies require a pedagogical shift from teaching to learning. This shift places responsibility for knowledge acquisition more heavily on the students, even though there is little evidence that most students are prepared to accept this responsibility. Thus, while universities and college administrators have invested in the "electronic classroom," a number of faculty have not adopted these technologies because evidence for their efficacy, efficiency, and acceptance by students is largely hypothesized and/or anecdotal. Further, there is some evidence that while students like the convenience of web-based courses, they do not perceive any improvement in the quality of teaching (Vandeveer, et al., 2003).

Several pedagogical questions become important as the classroom availability of electronic technology increases:

- What is the extent of student exposure to electronic teaching methods?
- Do electronic teaching tools affect student interest?
- Do electronic teaching tools affect course learning?
- Is there a relationship between electronic tools and teaching quality?
- What are student opinions concerning web-based teaching?
- Do students need a different skill set to learn within an electronic environment?

Objectives

The general objective of this research is to provide information about student perceptions of and adaptation to the multimedia classroom and electronic teaching technologies. Specific objectives include:

- Describing tools and information used in a multimedia classroom;
- Providing information on the advantages and limitations of electronic multimedia teaching tools;
- Describing student perceptions of providing course information via course websites;
- Describing student perceptions of teaching using course websites; and
- Comparing survey results from two different time periods in terms of evaluating the rate of change in multimedia adoption.

Approach

Information presented in this paper is based on student responses to surveys conducted in three Agricultural Economics classes during 2002-03 and five classes taught during 2004-05. Classes in 2002-03 included freshman-level *Introduction to Agricultural Business*, junior-level *Natural Resource Economics* and senior-level *Agricultural Finance*. The 2004-05 data included the original courses, plus a senior-level *Agricultural Policy* and senior-level *Rural Land Appraisal* class.

A four page Classroom Perceptions Survey was developed to collect information from the students. Student responses were elicited using a Likert scale. The instrument was structured to elicit perceptions of teaching using traditional versus electronically enhanced methods. In the survey "traditional" teaching was defined as lecture with a blackboard and/or overhead projector. "Electronic," or multimedia teaching, was defined as delivery of information using electronic tools such as power point, spreadsheets, document viewer, internet, course website and other audio-visual devices.

The survey was conducted in the Fall and Spring semesters of the 2002-03 and 2004-05 academic years using both paper and electronic, web-based formats. The number of completed survey by course is shown in Table 1. A total of 125 surveys were returned in 2002-03 and 161 in 2004-05

Table 1. Completed Surveys by Course.

Course	2002-03	2004-05
AGEC 1003 – Intro to Ag. Business (Freshman)	67	31
AGEC 3503 – Natural Resource Economics (Junior)	30	54
AGEC 4403 – Ag. Finance (Senior)	28	19
AGEC 4443 – Rural Land Appraisal (Senior)		21
AGEC 4603 – Ag. Policy (Senior)		36
Total	125	161

This paper will focus on analysis of the 2004-05 survey, with some comparison to the 2002-03 data later in the paper. In both time periods, most students responding to the survey were either junior or seniors. There are several reasons for this. The undergraduate degree program (Agricultural Business) has only two courses at the freshmen and sophomore level. The program also has a large number of transfers into the program, such that sophomores and juniors may be taking lower level courses. The 2004-05 survey had over 90 percent of the students at the junior

rank or higher, with 58 percent being classified as seniors. Eighty-one percent of the students were enrolled in the courses above because it was required as part of the major or minor degree program.

A fulltime student at LSU carries 12 hours or more of coursework, and may carry no more than 19 hours in a semester without permission of the dean. Four or more course would be considered a fulltime student, assuming courses are for three credit hours or more. In that scenario, 94 percent of the students were considered fulltime, based on their survey response. Seventy-two percent of students were carrying 15 or more hours a semester.

Preliminary Results of 2004-05 Survey

This paper presents a preliminary analysis of the 2004-05 survey of students. More detailed analysis will be available at the AAEA meetings in Providence, Rhode Island, in July 2005. In this paper, we report the results from six questions previously discussed in the 2002-03 AAEA poster by Vandeveer, et al.

<u>Teaching Quality</u>

The introduction of web-based material in the classroom expands the level of access the student has to material, both class-based and from Internet sources. But do students perceive any improvement in the quality of the teaching/learning experience in electronic classrooms?

Two questions were posed to the students. Table 2 shows the results from the question, "Teaching quality is best in classes that use electronic delivery teaching methods." Overall, an equal, but small percentage (7 percent) disagree strongly and agree strongly with this statement. But 35 percent disagree the statement, while only 22 percent agreed. The response appears evenly distributed across the courses.

Table 2. Teaching Quality is Best in Classes That Use Electronic Delivery Teaching Methods.

Course (% of Total Responding)	Disagree Strongly (%)	Disagree (%)	Neutral (%)	Agree (%)	Agree Strongly (%)
AGEC 1003 (19)	< 1	8	6	3	1
AGEC 3503 (34)	2	10	10	9	2
AGEC 4403 (12)	0	6	3	2	2
AGEC 4443 (13)	1	5	3	4	0
AGEC 4603 (22)	3	6	7	4	2
Overall	7	35	29	22	7

Table 3 shows the response to the statement, "Teaching quality is best in classes that use traditional delivery teaching methods." Again, no clear signal is indicated by students that quality is better or worse based on the delivery method. The percentage disagreeing and neutral to both questions in Tables 2 and 3 is essentially the same. Since all of these courses rely heavily on Internet access to materials, its may be telling us that we have not touched into the true benefits of electronic delivery.

Table 3. Teaching Quality is Best in Classes That Use Traditional Delivery Teaching Methods.

Course (% of Total Responding)	Disagree Strongly (%)	Disagree (%)	Neutral (%)	Agree (%)	Agree Strongly (%)
AGEC 1003 (19)	1	8	4	3	3
AGEC 3503 (34)	2	6	12	11	4
AGEC 4403 (12)	0	6	2	2	1
AGEC 4443 (13)	< 1	6	2	2	1
AGEC 4603 (22)	4	9	7	< 1	2
Overall	8	35	27	19	11

Learning

If quality of teaching hasn't improved, are there other gains to be had from electronic delivery of courses? To get at that question, students were asked to respond to the statement, "I learn more from classes that use electronic delivery teaching methods" in Table 4. Overall, only 29 percent of the students responding disagreed or disagreed strongly with the statement. Another 40 percent agreed or agreed strongly with the statement. One possible conclusion from this outcome is that web-based delivery of material allows the instructor to expose students to more material, hence more learning. The rub is that the quality of that learning experience is not as great as we would like it.

Table 4. I Learn More From Classes That Use Electronic Delivery Teaching Methods.

Course (% of Total Responding)	Disagree Strongly (%)	Disagree (%)	Neutral (%)	Agree (%)	Agree Strongly (%)
AGEC 1003 (19)	< 1	7	4	5	3
AGEC 3503 (34)	2	7	13	9	3
AGEC 4403 (12)	0	3	3	2	3
AGEC 4443 (13)	< 1	2	4	6	< 1
AGEC 4603 (22)	0	7	7	6	3
Overall	3	26	31	28	12

Interest in Web-Driven Courses

Given the responses in the previous tables, do student want electronic delivery of course content? The last three questions presented here attempt to identify student preferences for electronic delivery. Table 5 poses the statement, "Given two elective courses at the same level of interest, I

would choose one with a website over one without a website." Overall, 56 percent of the responding students agreed or agreed strongly. Only 16 percent disagreed strongly or disagreed with the statement. In general, the response in all five courses were similar.

Table 5. Given Two Elective Courses at the Same Level of Interest, I would Choose One with a Website over One Without a Website.

Course (% of Total Responding)	Disagree Strongly (%)	Disagree (%)	Neutral (%)	Agree (%)	Agree Strongly (%)
AGEC 1003 (19)	1	3	6	6	3
AGEC 3503 (34)	< 1	5	5	13	10
AGEC 4403 (12)	< 1	< 1	6	2	2
AGEC 4443 (13)	1	0	3	4	5
AGEC 4603 (22)	2	1	8	6	5
Overall	6	10	28	31	25

Table 6 shows the results for the statement, "In the future, I would like to see more classes with websites." Sixty-one percent of the students responding agreed or agreed strongly to this statement.

Table 6. In the Future, I Would Like To See More Classes With Websites.

Course (% of Total Responding)	Disagree Strongly (%)	Disagree (%)	Neutral (%)	Agree (%)	Agree Strongly (%)
AGEC 1003 (19)	0	< 1	10	2	6
AGEC 3503 (34)	1	< 1	5	17	10
AGEC 4403 (12)	0	1	4	< 1	6
AGEC 4443 (13)	0	0	4	4	4
AGEC 4603 (22)	0	1	11	4	6
Overall	1	4	34	29	32

The results from the last question presented in this paper are shown in Table 7. The statement, "I prefer classes with a website over classes that do not have a website," received agree strongly or agree responses from 69 percent of the students.

Table 7. I Prefer Classes With A Website Over Classes That Do Not Have A Website.

Course (% of Total Responding)	Disagree Strongly (%)	Disagree (%)	Neutral (%)	Agree (%)	Agree Strongly (%)
AGEC 1003 (19)	0	3	2	6	8
AGEC 3503 (34)	< 1	< 1	4	12	16
AGEC 4403 (12)	0	2	2	2	6
AGEC 4443 (13)	0	0	4	6	4
AGEC 4603 (22)	< 1	2	9	5	6
Overall	1	8	21	31	39

Comparison to 2002-03 Survey

The results of the 2002-03 survey did not provide conclusive evidence that students believe electronic delivery of course material resulted in greater teaching quality than traditional methods. However, more than 50% of the student respondents indicated that three or more of their classes relied on some form of electronic delivery. This suggests that electronic delivery methods are becoming more widely dispersed across the curriculum. And preliminary results of the 2004-05 survey suggest that most students no longer are taught in a traditional manner.

There were favorable elements of the multimedia approach that students clearly identified in the 2002-03 survey. The majority of students favored more classes with websites, with this preference being strongest among students in the junior- and senior-level classes. The majority of students also indicated that they were either neutral or had a preference for classes with a website. The 2004-05 results are similar.

Conclusions

Results from both surveys regarding the relationship between electronic delivery methods and teaching quality were inconclusive. One interpretation is that teaching quality is related to a number of other factors. Another explanation is that while faculty are learning to use these new tools, students have yet to gain the benefits of better teaching and higher quality in terms of the learning experience. One strong potential downside to these new tools is that teachers and students will prize the efficiency aspect of delivery (in terms of time spent) more than the potential to learn more.

An additional issue is how well students have adopted to electronic deliver methods. While students realize the convenience of 24 hour access to materials, for the learning experience to be enhanced, student will need to have the discipline to stay current with assignments and other course material. How do we teach students a better way to learn?

The majority of student respondents in the first survey indicated a preference for classes with websites. The 2002-03 survey results also indicated that a sizeable proportion of classes are using electronic delivery teaching methods, and selected student comments indicated that electronic technologies offer opportunities for efficiency in delivery of information and learning. The most recent survey had the same results. Traditional blackboard/overhead delivery of course content is rapidly disappearing in the department. A quick review of the teaching roster in Agricultural Economics and Agribusiness found that every faculty member uses web delivery and computer presentation to some degree. Students have come to expect it. They want more web-based delivery.

One lesson to be learned by instructors and administrators is the recognition that technology adoption, in and of itself, is not necessarily an indicator of improved teaching quality or learning outcomes. The challenge to each of us is to find ways to push the learning curve, not only of our best students, but our average student.

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