Arkansas Barriers to Real Time Agricultural Distance Education Initiatives: A Survey of Institution Schedules[1]

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Abstract

Agricultural distance education provides an opportunity for offering higher education to students beyond the traditional, individual classroom on a particular college campus. Institutions that offer coordinated courses taught by shared faculty may also realize economic savings compared to offering the courses individually. Potential barriers to teaching such agricultural courses in real time revolve around the academic calendar and class schedule of each cooperating institution. A review of Arkansas college and university academic calendars and class schedules reveals four major barriers and three minimal barriers to coordinated, shared courses in real time. Possible solutions to these barriers are offered with a discussion of some steps necessary to achieve the changes. Recognition of the extent and nature of these barriers in Arkansas may benefit educators in other states who are currently offering agricultural distance education courses or are considering the development of similar programs in the future.

Introduction

Distance education evolved from the correspondence courses of the late nineteenth century. During the middle of the 20th century, instruction began to embrace radio and television outlets (Imel, 1998). Students in more recent years who could not meet simultaneously used videotaped and audio taped lectures. Faculty began to use the World Wide Web as a class instructional aid and eventually as a primary course delivery mode. Most recently, streaming video through the Internet and Compressed Interactive Video (CIV) technology has permitted simultaneous real time instruction at multiple locations (Valentine, 2002). Distance education is now defined to be when a teacher and student(s) are separated by physical distance and technology is used to bridge the instructional gap (Willis, 1994).

The acceptance of distance education has occurred somewhat grudgingly by traditional colleges and universities. Much of this reluctance may have stemmed from questionable reputations for integrity associated with the old correspondence courses (Stenerson, 1998). New issues have arisen regarding residency requirements, fee structure, articulation agreements, and technical support for all involved (Olcott, 1992). Opportunities to increase student numbers, stretch limited resources, expand geographical boundaries, and reach into previously untapped workforce and underserved populations have now drawn the traditional institutions into distance education. After entering, however, some assert that these institutions became the major barrier to distance education development. The effects from the institutions surfaced in federal program funding procedures, regional accreditation agencies, state legislative funding formulae, and institutional administrative rules and regulations (Moore, 1994). With respect to the institutional administrative level, one recurring issue is scheduling (Hillman and Colker, 1987; Miller and Miller, 2000; Muilenburg and Berge, 2001; and Seehusen, 2002). Arkansas distance educators identified this issue as a point of concern as early as 1999 (Arkansas Department of Higher Education, 1999).

Arkansas initiated several programs over the past decade to promote distance education. Arkansas Virtual School is a pilot program of the Arkansas Department of Higher Education that uses technology to deliver public instruction to K-7 students (ARVS, 2003). Governor Mike Hucabee serves as a member of The Southern Regional Education Board (SREB), a consortium of 16 states that developed the SREB Electronic Campus where colleges and universities share courses and degree programs. This consortium recently announced a "Ways in Mentor" program that will combine the Electronic Campus with Xap Corporation to facilitate distance education opportunities (SREB, 2003). The Arkansas Distance Learning Association (ARDLA), a state chapter of the United States Distance Learning Association, holds an annual conference to discuss distance education issues and observe the latest technology developments. ARDLA reports that 153 videoconferencing units exist statewide in colleges, hospitals, educational cooperatives, public schools, and health education centers (ARDLA, 2003). The Arkansas Association of Two-Year Colleges supports ACCESS

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Arkansas, a website program where such colleges can advertise distance education course offerings (AATYC, 2003).

Distance education offerings of agricultural courses in Arkansas have been motivated by opportunities similar to those that attracted traditional institutions to distance education. These offerings have also been hindered by similar institutional barriers. The University of Arkansas System offers agriculture courses at one non-land grant state university and two land grant universities. The non-land grant University of Arkansas at Monticello (UAM) offers undergraduate agriculture courses and houses research and extension faculty within the Southeast Research & Extension Center of the University of Arkansas System. The land grant institutions, The University of Arkansas (UAF) and The University of Arkansas at Pine Bluff (UAPB), teach a broad undergraduate and graduate curriculum of agricultural courses in addition to conducting research and extension. All three universities have offered distance education agriculture courses in real time (simultaneously) over multiple locations. The UA System also includes a number of two-year colleges that offer undergraduate agriculture courses.

A fourth major agriculture university is Arkansas State University (ASU). ASU is not part of the UA System and operates a separate administrative system of its own that includes both 4-year and 2-year member institutions where agriculture courses are taught. Establishment of the Arkansas Consortium for Teaching Agriculture (ACTA) in 1997 was an attempt by the UAF and various community colleges both within and outside the University of Arkansas System to establish "a seamless transfer of credits for students at the two-year colleges who elect to pursue a baccalaureate degree [in agriculture] at the four-year institutions." The consortium effort has eventually developed an Associate of Science degree in agricultural, food, and life sciences that is granted by the University of Arkansas system with all courses transferable into a four-year degree at the three state public universities in the UA System. The courses in this degree program are primarily offered under a distance education format with students at multiple campus locations. For 2003, six CIV and two Web courses in agriculture were offered in the Spring Semester from the UAF campus to other locations with two of each type scheduled for offering in the Fall Semester (ACTA, 2003). The potential for much broader cooperation among Arkansas higher education institutions seems good, but has not materialized.

This study examines schedule and calendar barriers that may have limited real time agriculture distance education offerings in Arkansas. Recognition of the extent and nature of these barriers in Arkansas may benefit educators in other states who are currently offering agricultural distance education courses or are considering the development of similar programs in the future.

Methods

Fall 2003 Academic Calendars and Class Schedules were requested from all 45 public and independent colleges and universities listed by the Arkansas Department of Higher Education (ADHE, 2003). Data were collected from institutional websites, telephone conversations with college/university administrators, and publications from the respective institutions. In addition to whether the institution was public/independent and two-year or four-year, other specific items considered in this study were: (1) whether the institution currently had agriculture courses offered on the campus, (2) starting times for Monday-Wednesday-Friday and Tuesday-Thursday classes, (3) Monday-Wednesday-Friday and Tuesday-Thursday class lengths, (4) first semester class day, (5) length of Thanksgiving holiday, (6) last semester class day, (7) number of other holidays during the semester, and (8) total number of class instruction days during the semester.

Results and Discussion

Data was collected from 44 of the colleges and universities including all two-year and independent institutions. The University of Arkansas for Medical Sciences was not included since it offers only professional medical courses. Both two-year and four-year institutions were included in the study to span all possible in-state opportunities for academic collaboration. Offering a statewide, comprehensive academic program in agriculture should consider all possible campus locations. Agriculture is a prominent industry in Arkansas with diverse agricultural production and agribusiness entities in all geographical regions. The diversity and broad scope of this industry attract both rural and urban students to study agriculture from all areas of the state. While some courses require special laboratory facilities and subjects, many agriculture courses can be taught through real time distance education technology to any equipped campus of the state-not just on the traditional land grant or other agriculture schools. Twenty of the institutions in this study were four-year colleges/universities and twenty-four were two-year colleges. The two-year colleges included both community colleges and technical colleges where college degree level courses were offered. Ten of the four-year universities were public and ten were independent institutions supported by a religious denomination or other private entity. The two-year colleges included nine public colleges affiliated with four-year universities, thirteen unaffiliated public colleges, and one independent two-year private college.

The extent of existing agricultural course offerings can indicate the market size for such

offerings. Nineteen separate colleges or universities currently offer or provide facilities for agricultural courses on their campus (Table 1). Slightly more than half of the institutions in both the four-year and two-year categories offer one or more agricultural courses, while only one independent institution reported an agricultural offering. This number of participating institutions suggests that other courses might be desired in these locations if sufficient student numbers existed and well-qualified faculty were available to offer the courses. Distance education offers one means to meet this demand in an effective manner. Faculty specializing in a particular topic or discipline can teach a real time class of geographically dispersed students when insufficient numbers exist to offer the course at any single location.

Table 1. Arkansas Institutions Offering One or More Agricultural Courses

Institution Classification	# Offering Agricultural Courses	# Not Offering Agricultural Courses
4-Year Public	6	4
2-Year Public	12	10
Independent	1	11
Total	19	25

Different class starting times and lengths of class sessions may exist among institutions sharing a real time distance education course. Among the 44 institutions examined, only six did not begin their first Monday-Wednesday-Friday (M-W-F) class sessions on the hour at 8:00 a.m. (Table 2). Three began their class sessions at ten minutes after the hour, two began on the half hour (8:30), and one began their first class at 7:45. Similarly, the length of the M-W-F class sessions was predominantly 50 minutes (Table 3). To better meet student needs, six of the two-year institutions have adopted 75-80 minute length class sessions with classes meeting only on Monday and Wednesday. The first Tuesday-Thursday (T-H) classes were also found to begin primarily on the 8:00 a.m. hour, although more variation was observed. One institution began at 7:30, another at 7:45, a third at 7:45, two at 8:10, one at 8:15, and three at 8:30. Lengths of T-H classes were predominantly 75 minutes with fourteen institutions having 80 minute classes and two having 85 minute class sessions. This suggests that M-W-F class starting times should represent less of a barrier for coordinating distance education initiatives than T-H starting times. Differences in class lengths will further complicate the coordination of real time classes, especially later in the day as class length and starting time interact to create wider time gaps between institutions.

Table 2. Arkansas Institutions Class Starting Times, Fall 2003

M-W-F Class Starting Time	# of Institutions
7:45	1
8:00	38
8:10	3
8:30	2
Total	44
T-H Class Starting Time	# of Institutions
7:30	1
7:35	1
7:45	1
8:00	35
8:10	2
8:15	1
8:30	3
Total	44

Greater variation among institutions appears over a semester. The semester studied was Fall 2003 and data was available for all 44 of the institutions. Instruction began on six different days over the state (Table 4). These variations represented a ten-day calendar period from the earliest to latest beginning. A course offered at institutions on the extremes would mean that some students could have completed four full class sessions (For a M-W-F course) before the later students joined the instruction. While students in institutions with later start dates could begin the "off-schedule class earlier, the longer overall semester might discourage student enrollment in the course and teaching faculty on nine-month appointment would likely oppose having to teach over a longer semester (first day of "off-schedule" course to last day of final exams for normal schedule courses also taught). Accommodating students otherwise at both locations might require that the instructor cover only optional material for the first four sessions, make out-of-class assignments to make up the missed material, delay the beginning of instruction until the latter starting date, or other similar strategies. Clearly, none of these alternatives are appealing.

The major academic holidays during the fall semester were Labor Day and Thanksgiving. Only one

Table 3. Arkansas Institutions Class Lengths, Fall 2003

M-W-F Class Length	# of Institutions
50 minutes	35
55 minutes	3
M-W 75 minutes	4
M-W 80 minutes	1
Both 50 & 75 minutes	1
Total	44
T-H Class Length	# of Institutions
75 minutes	28
80 minutes	14
85 minutes	2
Total	44

Arkansas higher education institution did not observe Labor Day. Each observing institution took one calendar day for this holiday. Number of days taken for the Thanksgiving break varied from two to five (Table 5). This variation again presents a problem for distance education since class members at one location may miss up to two sessions (M-W-F course) if they have the extended break. More variation exists when Fall Breaks or other institutional holidays during the semester are included (Table 6). Seventeen of the 44 reporting institutions had one or more holidays in addition to Labor Day. These dates become significant as the calendar variations add another class session that may be lost when a real time distance education class spans multiple institutions.

Table 4. Arkansas Institutions First Dates of Instruction, Fall 2003

First Day of Instruction	# of Institutions
August 18	12
August 20	8
August 21	1
August 25	16
August 26	3
August 27	3
September 4	1
Total	44

Table 5. Arkansas Institutions Thanksgiving Holiday Length, Fall 2003

Thanksgiving Holiday Length	# of Institutions
2 Days	9
2.5 Days	1
3 Days	27
4 Days	1
5 Days	6
Total	44

The final date of importance is the Last Day of Instruction. Arkansas higher education entities end the Fall 2003 Semester on seven different dates (Table 7). The dates recorded represent the last day that a course might meet during the semester. This variation does not take into account the issue of a "Study Day" where some institutions insert one day between the end of instruction and the beginning of final exams.

Combining the holiday and other significant dates, Total Days of Instruction can be calculated for each institution (Table 8). Arkansas college and university students were scheduled to attend class for a minimum of 67 and a maximum of 76.5 days during the Fall 2003 Semester. Average term length over the 39 institutions was 73.3 days. Much of the difference could be eliminated if holiday variations between institutions were resolved.

Implications

Full utilization of distance education technology to offer Arkansas agricultural courses in real time could be enhanced by some standardization of academic calendars. Web-based courses, oral and visual recorded lectures, and blended courses that use a combination of technologies can accommodate, to some degree, the higher education schedule variations that have been identified. The logistically simplest solution, however, would still seem to be one statewide calendar and schedule. A more standard calendar among all state institutions would reduce the number of instructor adjustments required, equalize the amount of class time for a particular course, encourage sharing of agriculture courses between institutions of all sizes, and more fully optimize the limited state resources available for higher education. Some people may consider the academic calendar and class schedule adjustments required for this standardization to be reasonable, but the variations identified between Arkansas institutions cannot be overcome entirely by the efforts of a single school administration or board of trustees.

The Arkansas Department of Higher Education is the logical unit to take the lead and exert more influence on the individual institutions. Considerable cooperation and compromise between the governing structures and planning entities of the various institutions will be required to reconcile the identified differences and implement changes over time. The most difficult step may be to convince individual

Table 6. Arkansas Institutions Other Holidays, Fall 2003

Number of Other Holidays	# of Institutions
0	1
1	26
2	4
3	13
Total	44

Table 7. Arkansas Institutions Last Dates of Instruction, Fall 2003

Last Day of Instruction	# of Institutions
December 2	1
December 3	1
December 4	5
December 5	14
December 8	6
December 9	6
December 10	5
December 12	6
Total	44

Table 8. Arkansas Institutions Total Days of Instruction, Fall 2003

# of Days of Instruction	# of Institutions
66	1
67	1
68	1
69	1
70	5
71	1
72	3
73	6
74	10
75	6
76	8
76.5	1
Total	44

institutions of the common benefits of dropping their competitive stances toward each other and begin working together. This step will likely be most difficult for the members of the two major university systems.

Summary

Comparisons of academic calendars and class schedules for Arkansas colleges and universities reveal four barriers to real time agriculture distance education initiatives. Institutional differences were most pronounced on first dates of instruction, lengths of Thanksgiving holiday period, last dates of instruction, and total days of instruction for the Fall 2003 Semester. Reconciling these differences toward a standard, statewide academic calendar would be a major step forward to facilitate agricultural courses offered via real time distance education. Relatively smaller differences exist in the numbers of other holidays, typical class starting times, and normal class period lengths. Asynchronous delivery methods, such as web-based instruction and recorded class sessions, can be used and have been used to overcome student time limitations, but providing real time interactions between an instructor and distant class members will require a more standard academic calendar. Accomplishing increased standardization of the academic calendars would require cooperation between the respective administrative heads, boards of trustees, and possibly the state legislature. However, the economic benefits from better resource utilization and academic benefits from expanded course offerings through real time distance education initiatives in agriculture could be significant for Arkansas higher education students.

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