

COMPARISON OF CAMPUS AND DISTANCE UNDERGRADUATE LEADERSHIP STUDENTS' ATTITUDES

**Susan Fritz, Associate Professor
University of Nebraska**

**Terri Jo Bek, Associate Professor
Nebraska College of Technical Agriculture**

**David L. Hall, Graduate Student
University of Nebraska**

Abstract

Among the many questions faculty pose about distance delivery are concerns about the quality of students' learning experiences. Specifically, when comparing distance delivery to classroom delivery, is the education as effective, is satisfaction as high, and can distance delivery accommodate all types of learning styles, classes, and subjects? This study explored some of these questions by comparing the pre and post-test attitudes of students enrolled in a satellite-delivered, undergraduate leadership course and experiencing the course at a distance or on the campus. The results indicate that overall students in the distance class reported less attitudinal change, were less satisfied with their interaction with the instructor and peers, felt the majority of the teaching methods were less effective, and their course evaluations were lower than their peers in the campus class. Recommendations were made for student orientation to distance technologies and instructional design expertise to vary interaction strategies.

Introduction

The public expects education to be accessible in the workplace, marketplace, and home, as well as in traditional educational settings (Nebraska Network 21 Project Team, 1995). These expectations are increasingly met by using technology to deliver both credit and non-credit education via distance. A recent article in the Chronicle of Higher Education reported that distance delivery, as an industry, has moved from barely existing three years prior to an activity level described as "dizzying" (April 9, 1999, A27). Research conducted in 1997 and 1998 indicated 44% of two-year and four-year higher education institutions were offering distance education courses, up 11% from a previous study in 1995 (Lewis, Snow, Farris, Levin & Greene, 1999). With the increase in distance offerings have come concerns voiced by stakeholder groups (e.g. the public, the legislature, and consumers) about the quality of off-campus course offerings (Olcott, 1991; 1999).

Research has determined faculty and students also have concerns about course quality (The Institute for Higher Education Policy, 1999). Miller and Pilcher's (1999) study of students and faculty in a college of agriculture found both groups perceived off-campus courses to be of lower quality than on-campus courses. They concluded that if off-campus courses are to be offered, emphasis must be placed on "improving the production, quality control, and distribution systems for courses and course materials (p. 375)." A meta-analysis of research studies regarding the effectiveness of distance courses (telecourses) determined instructional features which impacted learner achievement were the kind of interaction during the broadcast, the kind of course and the kind of remote site (Machtmes & Asher, 2000).

In the conversion from classroom based to distance delivery, the instructor must consider a number of issues related to quality, and of paramount concern is the issue of social interaction (Cyrs & Conway, 1997). Social interaction in distance education traditionally described a process between the student and instructor that was mediated via correspondence. Unfortunately, this method of delivery has been plagued with problems associated with the student's sense of isolation and lack of affiliation contributing to drop out rates in correspondence courses of between 40 to 90 percent (Garrison, 1989).

To combat the problems associated with mail-delayed correspondence teacher-student communications and to capitalize on emerging technology, distance education now encompasses a

broader array of communication forms. One form, the interactive satellite system, is believed to most closely replicate a “real classroom” environment for the off-campus student partially because of the increased potential for social interaction. For the off-campus student, this delivery method greatly enhanced both student-to-student and student-to-instructor interaction. Unlike some other forms of distance delivery it offers the student and teacher the opportunity for synchronous social interaction bridging the gap of distance (Dille & Mezack, 1992). Enhanced social interaction is predicted to have the potential to increase the perception of quality and to lower notoriously high drop out rates because students may not feel as isolated or alienated by the delivery system.

The University of Nebraska, much like other institutions of higher education, is recognizing the need to convert classroom-based courses to distance offerings to meet learner demands for educational opportunities throughout the state (Schauer, Rockwell, Fritz & Marx, 1998a & b). This study focuses on student reaction to a formerly classroom-based leadership course that was converted to a campus/distance offering.

The subject of leadership is one in which the process of teaching the subject, and social interaction of the students is almost as important as the material or medium that is being used (Cini, 1998). For this reason, naturally questions arose regarding whether leadership courses that are taught from a distance are as effective, and students are as satisfied, as when they are taught in a traditional classroom. Therefore, comparisons were made of campus and distance undergraduate leadership students’ attitudes towards the following:

- 1) The impact of the course on the likelihood of student involvement in the classroom, on campus and in the community;
- 2) Distance technology;
- 3) Teaching methods;
- 4) Comfort level prior to and after experiencing the distance-delivered course; and
- 5) Course evaluations.

Methodology

Annually, faculty in the Department of Agricultural Leadership, Education and Communication, University of Nebraska, teach a course entitled "Interpersonal Skills for Leadership" to more than 600 undergraduate students on campus. The course fulfills a communication requirement in several colleges and is widely subscribed. Because of the reputation and impact of the course, Nebraska College of Technical Agriculture, a sister campus and two-year college located at the opposite end of the state, contracted with the Department of Agricultural Leadership, Education and Communication to deliver the course to their campus via satellite for credit from their institution.

In the fall of 1998, 23 University of Nebraska students (on campus) and 18 Nebraska College of Technical Agriculture students (distance) registered for the course. The course was delivered via satellite with two-way audio and one-way video transmission, and no distance site facilitation. Synchronous student-to-student and student-to-teacher interaction was achieved through suspended microphones in the campus classroom, and a "push-to-talk" microphone located in the center of the distance students' classroom. Assignments and course expectations were equal for both groups of students. (For example, students in both classes were expected to submit weekly journal entries to the instructor via e-mail.) Two weeks into the semester, two campus students dropped the course; 21 campus and 18 distance students completed the course.

A quasi-experimental pre, post test design was used to measure campus and distance undergraduate leadership students' attitudes towards the impact of the course on the likelihood of their student involvement in the classroom, on campus, and in the community, attitudes toward distance technology, teaching methods, comfort level prior to and after experiencing the distance-delivered course, and comparisons of course evaluations (Campbell & Stanley, 1963).

One component of the survey was designed by Foster and Fritz (1992) to measure the likelihood of student involvement in the areas of: (1) academic (classroom) setting, (2) university organizations, (3) social organizations, (4) volunteerism, (5) organizations related to their major, and (6) community activities (non-university). Each subscale contained statements that related to dimensions of involvement. A Likert-scale was used, with "1" indicating "not likely" to participate, "3" indicating "moderately likely" to participate, and "5" indicating "highly likely" to participate. These statements were randomly dispersed throughout the survey. Responses were collapsed into six subscales.

A jury of University of Nebraska faculty members reviewed the survey to establish face validity. A Cronbach Alpha of $r = .94$ was calculated for the entire survey, indicating a highly reliable data collection instrument.

In addition to the pre-test items, the post-test also contained statements that measured the: (1) attitudes toward distance education, (2) attitudes toward teaching methods used, and (3) comfort level of students before and after the class in regards to distance delivered courses. Attitudes toward distance education were measured with a series of eight statements. The instructions for this section are as follows: "You have just completed Interpersonal Skills for Leadership using distance education methodology. Please think about your learning experience and hypothesize how it would compare to a learning experience in a traditional classroom. In other words, do you feel that the distance education format provided education experiences that were better than, equal to, or less than educational experiences in a traditional classroom?" The eight questions could be answered on a three point scale with "1" being "better than", "2" being "equal to", and "3" being "less than". Two open-ended questions were included that allowed the students to write openly about their feelings toward this learning experience, and to suggest any strategies that might have enhanced their learning experience.

A Likert scale was used to measure the students' attitudes towards different teaching methods used throughout the semester. Twelve statements were used to measure the attitudes with a "1" indicating "quite unsuccessful", "3" indicating "somewhat unsuccessful", and a "5" indicating "not

applicable". A question was included to give the students an opportunity to make suggestions on different teaching methods that might be helpful.

The students were asked to use a one through five Likert scale to measure the students' comfort level at the end of the course, and also asked to answer the same statement on another one through five Likert scale that measured their comfort level at the start of the course. Both of the Likert scales had "1" indicating "very comfortable", "3" indicating "uncomfortable", and "5" indicating "not applicable". A question was included that allowed students to describe any problems they may have had with the distance learning methodology.

Students evaluated the course at the end of the semester using the Course Instructor Evaluation Questionnaire (CIEQ). The CIEQ contains 21 Likert items with "1" indicating "strongly agree", "2" indicating "agree", "3" indicating "disagree" and "4" indicating "strongly disagree." The 21 items are collapsed into five subscales: general attitude, method, content, interest, and instructor. The first four subscales are comprised of four (each) of the 21 items, the fifth subscale, instructor, is comprised of five items.

Collection of the Data

Students completed the survey during the first week of classes. The post-test was given during the final week of classes, prior to final examinations (Fritz & Foster, 1992). The post-test contained the same questions that were asked on the pre-test, with areas added on the post-test measuring students' attitudes toward distance education, teaching methods, and their comfort level before and after the class in regards to distance delivered courses.

Once the instruments were administered and collected, coding of the data was done so the information could be entered into SPSS. Students completed the CIEQ at the end of the semester. This information was coded and analyzed as well. Significance for this study was set at .05.

Analysis of Data

Once the data was coded and entered into SPSS, a comparison of overall, campus, and distance pre-test means were computed for the following subscales: (1) academic (classroom) setting, (2) university organizations, (3) social organizations, (4) volunteerism, (5) organizations related to their major, and (6) community activities (non-university). T-test comparisons were made of the overall, campus, and distance post-test subscale means.

The post-test examined the attitudes of on-campus and distance students towards distance education, teaching methods, and comfort level of students before and after the class with regard to distance-delivered courses. Chi-square comparisons of student attitudes toward distance technology were computed.

An ANOVA comparison was used to contrast the comfort level of on campus and distance students prior to, and after the distance-delivered course. ANOVA was also used to compare on-campus and distance student evaluations of the general attitude, method, content, interest and the instructor.

Findings

Student Involvement

Campus student pre-test mean scores were significantly higher than distance mean scores on the subscales of university organizations and social organizations (see Table 1). Campus student post-test scores on the subscales academic involvement, university organizations, social organizations, and organizations related to major were significantly higher than distance student mean scores.

Distance Technology

Distance students reported significantly less learning in the class than the campus students did, and significantly less change in their opinions (see Table 2). Distance students reported significantly less interaction with the instructor than campus students. Distance students also reported significantly less interaction with other participants than campus students.

Teaching Methods

Campus student mean scores were higher than distance student mean scores on all 12 teaching method dimensions. However, their responses were significantly different on the following nine teaching method dimensions: classroom discussion, e-mail journal entries, TA facilitation of group discussions, all written assignments, the video exam, the service project, and simulations (see Table 3).

Comfort Level

No significant differences were found between the comfort levels of both student groups at the start of course, nor at the end of the course (See Table 4). As reported earlier, distance students used a push-to-talk microphone in the center of their classroom. Distance students reported they were uncomfortable interacting over it initially but moved toward being more comfortable at the end of the class.

Course Evaluations

A T-test comparison determined campus students were significantly (.00) more positive about their course experience than distance students on all CIEQ subscale means (general attitude--2.45 campus/3.59 distance; method--2.25 campus/3.30 distance; content-- 2.44 campus/3.37 distance; interest--2.05 campus/2.97 distance; and instructor--2.97 campus/3.79 distance).

Conclusions and Recommendations

The differences in pre-test attitudinal subscale means indicate that differences between student

groups existed at the start of the course. Although hard to discern from the results of this study, these differences may be related to the difference in student populations and expectations at four-year and two-year campuses. Another possible reason for this difference in pre-test attitudinal subscale means could be related to students' perceiving distance courses are of lesser quality than traditional courses (Miller & Pilcher, 1999). It is possible that students' preconceived notions of the quality of the distance classes led to them to be more critical, as a whole.

As traditional courses are converted for distance delivery, it is important that instructors realize they may be reaching a student population different than the one on campus, and therefore, these students may have a different set of needs and expectations. In this situation, further research is needed into whether students with a two-year degree objective have a different level of involvement in institutional and social organizations than four-year degree students, and whether distance students initially perceive distance courses to be of lesser quality than traditional courses.

The amount of learning and change in opinions reported by distance students reported parallels the results of the attitudinal instrument. Distance students felt they had less interaction with the instructor and the campus class than they would have had in a traditional classroom, but yet campus students reported they had a better or equal interaction. While interaction strategies are highly important and impact student achievement (Cyrus & Conway, 1997; Schauer et al., 1998a), distance interaction strategies in this course were apparently ineffective. The addition of a site facilitator may have improved distance students' satisfaction with social interaction. Therefore, when redesigning a course for distance delivery, site facilitation and instructional design assistance should be sought in incorporating a broader mix of interaction strategies than employed in the traditional classroom (Machtmes & Asher, 2000).

Distance students' reactions to the teaching methods indicate, as a whole, they were less satisfied with the course components than campus students. These results could also be an indicator that as currently designed, this course, and possibly this topic, does not lend itself to distance delivery. This study supports the conclusion of Machtmes and Asher (2000) that distance learner achievement is impacted by the type of the course being delivered.

Just as the instructor of a distance course needs to be comfortable with the technology, so must the students. In particular, distance students need to be fully aware and comfortable with the distance technology (Web, Satellite, and electronic mail) before beginning a class. Preliminary training for these students would have likely assisted all students understand the format and "tools" of the course initially.

Oblinger and Rush (1997) suggested that with regard to distance learning, today's student choices are complex, and involve a myriad of factors that are not always easily distinguishable. Therefore, it is suggested that comprehensive studies be developed that capture as much information from students as possible about the leadership distance course experience. At such time as a sufficient body of research has been completed, it is recommended that leadership faculty conduct a meta-analysis of the results to determine the appropriateness of teaching leadership courses via distance, and, if found appropriate, ascertain the strategies which increase student achievement.

Table 1 (cont.)

Subscales and Post-Test Attitudinal Statements		Pre-Test															
Overall	Campus	Distance	Overall		Campus		Distance		T-Prob.								
N=39		T-prob.		N=39						a	b	c					
M	SD	<u>M</u>	SD	<u>M</u>	SD	d	e	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	a	b	c	
Social Organizations																	
1.19	3.11	1.40	2.71	.90	.51	.18		3.21	.99	3.38	1.13	3.02	.82	.03*	.01*	.18	2.97
Become a member of a university/college-recognized social organization																	
3.33	1.90	2.50	1.29				3.46	1.40	3.57	1.51	3.35	1.41				2.95	1.61
(e.g., sorority, fraternity)																	
Seek office in a university/college recognized social organization																	
1.49	3.14	1.70	2.33	1.01				2.98	1.31	3.14	1.42	2.80	1.20				2.77
(e.g., sorority, fraternity)																	
Seek information about a university-recognized organization																	
1.50	3.00	1.70	2.83	1.07				3.15	1.21	3.43	1.30	2.85	1.00				2.92
(e.g., sorority, fraternity)																	
Be involved in alumni after graduation																	
1.09	3.33	1.10	3.17	1.10				3.24	1.00	3.38	1.00	3.10	1.01				3.26
Community Service																	
.70	3.31	.63	3.02	.72	.32	.24		3.26	.59	3.40	.59	3.12	.56	.64	.86	.58	3.21
Contribute time as a part of a group to a community volunteer program																	
3.62	.91	3.81	.75	3.39	1.01			3.61	.95	3.81	.87	3.40	.99				
Contribute time to an individual client of a community volunteer program																	
3.56	.94	3.71	.90	3.39	.98			3.61	.70	3.90	.62	3.30	.66				
Contribute money to an individual client of a community volunteer program																	
2.69	.95	2.86	.91	2.50	.99			2.85	.73	3.05	.67	2.65	.75				
Seek a leadership role (e.g., committee chair, board member) in a community volunteer program																	
3.26	1.20	3.43	1.10	3.06	1.20			3.20	.98	3.24	1.10	3.15	.81				
Contribute money to a community volunteer program																	
2.90	.94	3.00	1.11	2.78	.81			3.05	.80	3.00	.71	3.10	.91				

Table 1 (cont.)

Subscales and Post-Test Attitudinal Statements		Pre-Test															
		Overall		Campus		Distance		T-Prob.									
Overall	Campus	Distance							a	b	c						
N=39		T-Prob.		N=39		N=39											
<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	d	e	<u>M</u>	SD	<u>M</u>	SD						
Organizations Related Major																	
.72	3.64	.83	3.51	.55	.07	.17		3.48	.83	3.55	.94	3.41	.71	.27	.05*	.47	3.61
Seek information about a university/college																	
.97	4.10	1.10	3.89	.83				3.73	1.01	3.90	1.10	3.55	.89				4.00
Seek office in a university/college																	
1.20	3.38	1.32	3.33	.97				3.34	1.11	3.38	1.11	3.30	1.14				3.36
Become a member of an organization																	
.85	3.86	.91	3.61	.78				3.80	1.01	3.86	1.19	3.75	.85				3.74
Volunteer as a student representative of a																	
.98	3.43	1.01	3.22	.94				3.05	.95	3.05	1.11	3.05	.83				3.33
Community Activities																	
.58	3.64	.83	3.51	.55	.35	.73		3.81	.62	4.00	.60	3.60	.58	.60	.11	.24	3.96
Feel comfortable relating to the elderly																	
.94	3.57	.68	3.56	1.20				3.37	1.01	3.67	.80	3.05	1.19				3.56
Feel comfortable relating to your parents																	
.71	4.43	.75	4.33	.69				4.15	.82	4.33	.73	3.95	.89				4.38
Feel comfortable relating to your peers																	
.97	4.43	.60	3.61	1.09				3.83	.97	4.00	.95	3.65	.99				4.05
Be at ease at a social function at the																	
1.20	3.81	1.30	3.39	1.07				3.71	.75	3.95	.74	3.45	.69				3.62
Feel good about yourself																	
.89	4.38	.59	4.00	1.08				4.00	.74	4.10	.77	3.90	.72				4.21

Note. 1=Not Likely, 3=Moderately Likely, 5=Highly Likely. * $p \leq .05$. T-Prob. a=pre-test comparisons between campus and distance, T-Prob. b=post-test comparison between campus and distance, T-Prob. c=comparison of campus pre-test with campus posttest, T-Prob. d= comparison of distance pre-test with distance post-test, T-Prob. e=overall pre-test and post-test comparison.

Table 2

Comparison of Campus and Distance Students' Attitudes Toward Distance Technology

Statement Distance	Overall						Campus									
	N=39						N=21									
	1	%	2	%	3	%	1	%	2	%	3	%	1			
N=18	Prob.	Chi-Sq.														
The amount that you learned	3	.07	28	.72	7	.18	2	.09	18	.86	0	.00	1	.06	10	
.56 7 .39	.02	10.07														
Skill(s) you gained	8	.25	25	.64	5	.13	5	.24	15	.71	0	.00	3	.17	10	
.56 5 .28	.07	7.08														
Opinions that changed	6	.15	26	.67	6	.15	5	.24	15	.71	0	.00	1	.06		
11 .61 6 .33	.02*	9.95														
Desires that changed	5	.13	26	.67	7	.18	2	.09	15	.71	3	.14	2	.11	12	
.67 4 .22	.73	1.28														
Practices that changed	4	.10	26	.67	7	.18	2	.10	14	.67	3	.14	2	.11	11	
.61 5 .28	.75	1.20														
Quality of your project	6	.15	22	.56	10	.26	4	.19	14	.67	2	.09	2	.11	8	.44
8 .44	.10	6.37														
Interacting with instructor	7	.18	16	.41	15	.38	6	.29	13	.62	1	.05	1	.06		
3 .17 14 .78	.00*	21.19														
Interacting with other participants	10	.26	14	.36	14	.36	8	.38	10	.48	2	.09	2	.11	4	
.22 12 .67	.00*	13.60														

Note. 1=Better than, 2=Equal to, 3=Less than. *p≤.05

Table 3

Comparison of Overall, Campus and Distance Students' Attitudes Toward Teaching Methods

How successful did you feel these methods were in helping you expand your awareness or knowledge level?	Overall N=39		Campus N=21		Distance N=18		Sign.
	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	
Using classroom discussion			1.74	.72	1.33	.48	2.22 .65
Having students e-mail journal entries	2.21	.98	1.90	1.04	2.56	.78	.05*
Using teaching assistants to facilitate group discussions		1.74 .64		1.48 .51		2.06 .64	.00*
Basic lecture with overheads		1.67 .66		1.52 .68		1.83 .62	.19
Weekly readings from textbooks		2.46 .88		2.33 .91		2.61 .85	.46
Written assignments:							
Project outline		1.77 .74		1.48 .68		2.11 .68	.01*
Project notebook		1.82 .79		1.52 .68		2.17 .79	.01*
Project paper		1.74 .76		1.40 .60		2.11 .76	.00*
Research project and presentation		2.16 .89		1.86 .85		2.53 .80	.27
Video exam		1.55 .77		1.18 .64		2.00 .68	.00*
Project		1.56 .88		1.14 .65		2.06 .87	.01*
Simulations		1.91 .85		1.50 .69		2.47 .74	.00*

Note. 1=Quite successful to 4=Quite unsuccessful * $p \leq .05$

Table 4

Comfort Level of Distance and Campus Students Prior to and After the Distance Delivered Course

Statement course STARTED, I was...	At the END of the course I was...						When the						
	Overall		Campus		Distance		Overall						
Campus Distance	N=39		N=21		N=18		N=39						
N=21 N=18	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD	Sign.	<u>M</u>	SD	<u>M</u>	SD	<u>M</u>	SD
Interacting via telephone during class time	2.06	1.01	1.78	1.00	2.33	.97		.14		2.84	.87		
2.58 .90 3.11 .76 .08													
Using handouts provided in the text	1.76	.54	1.71	.64	1.82	.39		.68		2.05	.73		
2.00 .71 2.12 .78 .64													
Communicating outside of class electronically	1.82	.87	1.67	.80	2.00	.94		.30		2.37	.91		
2.43 .98 2.29 .85 .62													
Submitting papers via e-mail	1.74	.88	1.62	.80	1.89	.96		.41		2.23	1.04		
2.29 1.06 2.17 1.04 .70													

Note. 1=Very comfortable to 4=Very uncomfortable. * $p \leq .05$

References

Campbell, D. T., & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research. Rand McNally: Chicago, IL.

Cini, A., (1998). Learning Leadership Online: A Synergy of the Medium and Message. The Journal of Leadership Studies, 5, 104-115.

Cyrs, E., & Conway, D. (1997). Teaching at a distance with the merging technologies: An instructional systems approach. New Mexico: New Mexico State University.

Dille, B., & Mezack, M. (1992). Identifying predictors of high risk among community college telecourse students. Proceedings of the Eighth Annual Conference on Distance Teaching and Learning, 1-12.

Fritz, S., & Foster, M. (1992). Impact of interpersonal skills instruction on the likelihood of increased student participation in community and university activities. NACTA Journal, 36, 18-20.

Garrison, R.D. (1989). Distance education. In S.B. Merriam and P.M. Cunningham (Eds.), Handbook of adult and continuing education (pp. 221-232). San Francisco: Jossey-Bass.

Lewis, L., Snow, K., Farris, E., Levin, D., & Greene, B. (1999). Distance education at post-secondary education institutions: 1997-98 (Report No. NCES 2000-013). Washington, D. C.: U.S. Department of Education.

Machtmes, K., & Asher, J. W. (2000). A meta-analysis of the effectiveness of telecourses in distance education. The American Journal of Distance Education, *14*(1), 27-46.

Miller, G., & Pilcher, C. (1999). The quality of on- and off-campus courses: A comparison of the perceptions held by off-campus students and agriculture teaching faculty. Proceedings of the 26th Annual National Agricultural Education Research Conference, Orlando, FL.

Nebraska Network 21 Project Team. (1995). A Vision for 2020: Communities of Learning for Food Systems Education in Nebraska. (Available from Nebraska Network 21, 309 Biochemistry Hall, University of Nebraska, Lincoln, NE 68583-0701).

Oblinger, D. G., & Rush S. C. (1997). The learning revolution. In D. G. Oblinger & S. C. Rush (Eds.), The learning revolution: The challenge of information technology in the academy (pp. 2-19). Bolton, MA: Anker.

Olcott, D., Jr. (1991). Bridging the gap: Distance learning and academic policy. Continuing Higher Education Review, *55*, 49-60.

Olcott, D. (1999). Transformational markets and the new students: The enigmatic response of continuing and distance education. Distance Education Report, *2* (4).

Schauer, J., Rockwell, S.K., Fritz, S., & Marx, D. (1998a). Faculty education, assistance and support needed to deliver education via distance. University of Nebraska Agricultural Research Division RB332.

Schauer, J., Rockwell, S.K., Fritz, S., & Marx, D. (1998b). Incentives and obstacles influencing faculty and administrators to teach via distance. University of Nebraska Agricultural Research Division RB331.

The Institute for Higher Education Policy. (1999, April). What's the difference?: A review of contemporary research on the effectiveness of distance learning in higher education. Washington, DC: Author.

The marketing intensifies in distance learning. (1999, April 9). Chronicle of Higher Education, A27.