

PRACTICES IN STUDENT EVALUATION OF DISTANCE EDUCATION COURSES AMONG LAND GRANT INSTITUTIONS

T. Grady Roberts, Assistant Professor

Texas A&M University

Tracy Irani, Assistant Professor

Lisa K. Lundy, Graduate Research Assistant

Ricky Telg, Associate Professor

University of Florida

Abstract

Student attitudes are one of the most important factors when assessing the quality of a distance education program (Keegan, 1990). When examining the research base, a few studies were found that examined the use of student attitudes in evaluating distance education (Biner, 1993; Cheung, 1998). However, sufficient research does not exist to develop a broader picture of the use of student attitudes, particularly when examining agriculturally related institutions. The purpose of this case study was to develop a picture of how instruments that assess student attitudes are used in the distance education evaluation practices of higher education institutions that deliver agriculturally related content. When examining the institutions in this case study, most are delivering distance education to both undergraduate and graduate students. Most of the institutions are using course management software and video conferencing for delivering instruction. Instructors are the most common focus of evaluations, closely followed by course organization and delivery. The most common method for developing a distance education evaluation instrument was to make a few revisions to the on-campus instrument already utilized at each institution.

Introduction

Today's educational environment is outcome-driven. One can easily look at any level of education from kindergarten to higher education to examine the myriad assessments and evaluations employed to determine outcomes. This phenomenon is partially driven by policymakers who look for observable results from the educational programs they fund and partially driven by the desire to improve these programs.

Evaluation can take many forms. Formative evaluation takes place during the educational activity and is used for continuous improvement, while summative evaluation is conducted at the conclusion of an educational activity to measure outcomes (Woolfolk, 1993). Educational evaluation can also be undertaken at four levels (Kirkpatrick, 1998). Evaluation at the first-level attempts to determine student reactions (see Figure 1). Second-level

evaluation seeks to determine the amount of learning that has occurred. Evaluation at the third-level focuses on a change in student behavior. Fourth-level evaluation examines holistic results.

In the higher education setting, including agricultural institutions, evaluating courses at the second, third, and fourth levels can be problematic, especially if course evaluation data is used for promotion and tenure decisions regarding instructors who are teaching the courses being evaluated. Given the broad range of courses offered at most institutions and the variance in academic rigor of these courses, it would be nearly impossible to establish base-line data on the amount of student learning that has occurred or changes in student behavior. Thus comparison of instructors across, or even within, disciplines would be difficult. Ehrmann and Zuniga (1997), developers of a well known database inventory of questions for use in student evaluations of course

technology, liken the problem to that of trying to find an elephant in a dark cave with a flashlight. "Seeing everything in the cave is impossible—it's too large and complex, and your flashlight (evaluation) is too weak" (p. ix).

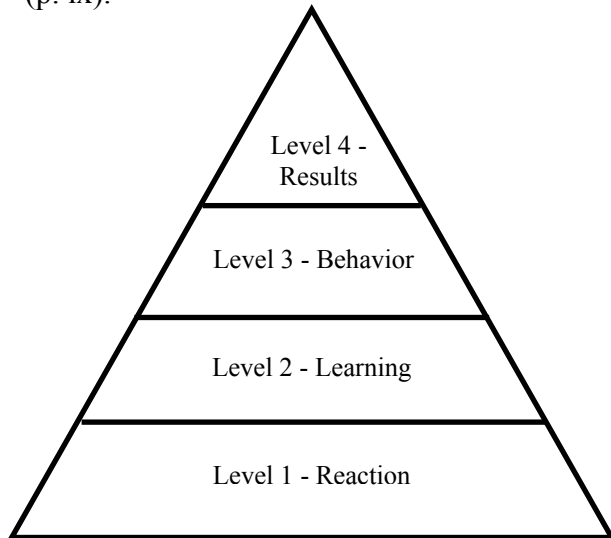


Figure 1. Kirkpatrick's Levels of Evaluation

Therefore, in higher education institutions, courses are often evaluated at the first-level by assessing student reactions or attitudes toward a course they are taking. This is often achieved by a standardized evaluation instrument that is administered at the conclusion of a course for summative evaluation purposes. These instruments are often characterized by a series of Likert-type questions and may include a few open-ended questions. For agricultural academic programs in particular, the validity and reliability of these instruments is critical, as the data collected by these instruments is often used in the promotion and tenure process as a measurement of teaching ability for a faculty member (E.J. Luzar, personal communication, December 10, 2002).

Further complicating this issue is the current enrollment increase in distance education courses in institutions of all types – land grants and agriculturally related institutions, state-related schools, and even private schools. In the 2000-2001 school year, nearly 2.9 million students were enrolled in college-level distance education

courses (U.S. Department of Education, 2003). This was nearly double the enrollment from the 1997-1998 school year. Distance education courses can create new challenges for agricultural institutions seeking to evaluate faculty, as they introduce a technology component, which adds complexity to standard course evaluation techniques. How are agriculturally related institutions of higher learning coping with the challenges of evaluating their distance education courses? Do student evaluations for distance courses include items measuring the technology component? How are evaluations disseminated in a distance education course where instructors may not meet with students face-to-face? And, given that such courses may include diverse elements such as multiple delivery technologies and remote sites, are evaluations specific to the course situation, or do distance courses share the same evaluation form as traditional, live classes?

Theoretical Framework

Although many universities currently offer distance education courses and/or programs of study, many of the largest and most significant program offerings are housed in agricultural colleges and institutions, which represent a unique opportunity with respect to developing a better understanding of the factors that influence distance learners' performance and success. As one of the tenets of their mission to provide "life-long learning," many land-grant agricultural institutions have developed extensive infrastructures to facilitate distance education delivery of courses to a diverse community of learners both traditional and non-traditional (Miller & Pilcher, 1999). Most of these programs involve technological delivery of distance education coursework in a variety of majors at both the graduate and undergraduate levels utilizing teleconferencing, videotape, and the Internet. A study by the National Center for Education Statistics (1998) lists agriculture within the top ten disciplines in terms of development of distance education at the post-secondary institutional level.

Gibson, Brewer, Dholakia, Vouk, and Bitzer (1995) contended that one of the most important characteristics of any technology-based learning environment was its ability to evaluate knowledge acquisition and retention, in order to readapt to students' needs. In agricultural institutions offering distance education courses and programs, the need to provide appropriate and programmatic evaluation has become increasingly more important, both in terms of institutional accountability as well as in order to meet national and regional accreditation standards. As a result of the tremendous growth in distance education, however, university accreditation has been forced to deal with many new challenges (WICHE, 2000b). In addition to national advisory associations, such as the American Distance Education Consortium (ADEC), which consists of predominantly land-grant member institutions engaged in distance education, regional higher education accrediting agencies are charged with ensuring that distance education programs meet the same standards as on-campus programs (Lezberg, 1998). In response to this new paradigm of higher education, the eight regional accrediting agencies have collaborated to establish best practices for accrediting electronically offered degrees and certificate programs (SACSCOC, 2000; WICHE, 2000a). As a result of the effort by the accrediting agencies, the resulting best practices were divided into the five components of institutional context and commitment, curriculum and instruction, faculty support, student support, and evaluation and assessment. From an accreditation standpoint, institutions that address these five components in their distance education programs are seen as likely delivering a quality educational experience to their students (WICHE, 2000b).

The current study addressed distance education evaluation. The concept of evaluation involves the process of making a determination of the value or worth of the experience as perceived by those who are participants (Katzner, Cook, & Crouch, 1982). Keegan (1990) agreed when he indicated that student attitudes are one of the most important factors when assessing the

quality of a distance education program.

In higher education, students typically evaluate a course experience, with respect to specific aspects of the course content, materials, and instructional methods. In distance education, the student course experience is additionally impacted by delivery methods employed, as well as by the effectiveness of instructional strategies aimed at creating social interaction in a mediated context. Consequently, although a distance course is hopefully equivalent in terms of performance, it is not experienced in the same way as a live instruction class.

When searching for research related to student evaluation of distance education, several studies were found that sought to identify the appropriate items to include in an evaluation instrument that assesses student attitudes of distance education. For example, Biner (1993) used empirical data to develop the Telecourse Evaluation Questionnaire (TEQ). Used strictly in interactive television courses, this instrument consisted of the four constructs of Instruction/Instructor Characteristics, Technological Characteristics, Course Management and Coordination, and General and Demographic Information. Thirty-four Likert-type questions were used to address the first three constructs. The General and Demographics construct consisted of an additional eight questions. In a similar study, Cheung (1998) identified four dimensions that should comprise student evaluation of distance education courses: Student Development, Assessment, Learning Materials, and Face-to-Face Component. These dimensions were comprised of a total of thirty-five Likert-type questions. Reliability for this instrument was determined by interrater reliability and produced values between .76 and .89 for each scale.

Studies such as these indicate how individual institutions evaluate student attitudes and perceptions of distance education courses. However, sufficient research was not found to garner a more global perspective of how student attitudes are used in distance education course evaluation. Research on one segment of distance education, agriculturally related institutions, was particularly deficient. No

studies were found that examined agricultural institutions' practices in using student attitudes to evaluate distance education.

Purpose

Based on the above, a research deficiency apparently exists on issues related to the evaluation of agriculturally related distance education. One such issue is the use of student attitudes in evaluating distance-delivered courses. Therefore, the purpose of this study was to develop a picture of how instruments that assess student attitudes are used in the distance education evaluation practices of higher education institutions that deliver agriculturally related content. To achieve this purpose, this study had four objectives:

1. Describe the participating agriculturally related institutions of higher education.
2. Describe the distance education evaluation focus of these institutions.
3. Describe the evaluation data collection methods used by these institutions.
4. Describe the instrument development methods used by these institutions.

Methodology

This research utilized a case study approach to examine evaluation practices of agriculturally related higher education institutions that offer distance education programs. Gall, Gall, and Borg (2003) define a case study as an, "in-depth study of instances of a phenomenon in its natural context and from the perspective of the participants involved in the phenomenon" (p. 436). The phenomenon of interest was distance education evaluation practices. This methodology was chosen to provide pertinent information about distance education evaluation at institutions of interest to the researchers.

The institutions of interest, or units of analysis, were agriculturally related higher education institutions that offer distance education programs. These institutions were identified by their membership in the

American Distance Education Consortium (ADEC). Although not a comprehensive list, it was deemed that ADEC member institutions were representative and could provide information necessary for this study. Given that the unit of analysis was the institution, it was necessary to identify a knowledgeable contact person for each institution. For ADEC member institutions, a list of primary contact officers ($N = 57$) was available and utilized for this study. Each of these contact officers was invited to participate in this study. Eighteen agreed and were included in this case study. Participants represented a cross section of personnel involved in distance education and included instructional designers, faculty, and administrators.

To assess the perspectives of participants in this study, a researcher-developed questionnaire was utilized. This questionnaire was developed based on a review of the literature and consisted of a series of descriptive items. A panel of experts evaluated the instrument for face and content validity. Reliability was not an issue on this instrument, because questions had "an accurate, ready-made answer." The questions did not elicit demands for considerable time, thought, nor variation and, therefore, posed no reliability risks (Dillman, 2000).

Given the technology comfort of people associated with distance education, email was chosen as the initial delivery method for the questionnaire. Following procedures outlined by Dillman (2000), a notice was sent by email to inform participants about the study and of the questionnaire that would follow in a few days. Three days later, the questionnaire itself was sent by email. A week after the initial questionnaire was sent, a second copy was sent to non-respondents. After another week had passed, to further increase responses to this study, an email message with the questionnaire attached was sent out over the ADEC listserv to this same group of people. After yet another week, all remaining non-respondents were sent a copy of the questionnaire through the mail. Finally, this postal mailing was then followed by an email with a copy of the instrument attached.

Results

The first objective of this study sought to describe the participating institutions. Overall, 18 institutions participated in this study. The institutions varied from small community colleges to large nationally recognized research universities. A list of participating institutions can be seen in Table 1.

As seen in Table 2, exactly half of the surveyed institutions deliver distance education courses to both undergraduate and graduate students, while slightly over a quarter (27.8%) deliver only to undergraduate students. The remaining institutions (22.2%) deliver only to graduate students.

Table 1
Case Study Participants

University of Arkansas at Pine Bluff ²	College of the Menominee Nation ³
Chief Dull Knife College ³	University of Missouri – Columbia ¹
Delaware State University ²	University of Nebraska – Lincoln ¹
Florida A & M University ²	Pennsylvania State University ¹
University of Idaho ¹	Rutgers University ¹
Kansas State University ¹	University of Tennessee ¹
University of Kentucky ¹	Texas A & M University ¹
Louisiana State University ¹	Washington State University ¹
University of Maryland – Eastern Shore ²	West Virginia University ¹

¹1862 Land Grant Institution; ²1890 Land Grant Institution; ³1994 Land Grant Institution

Table 2
Distance Education Program Delivery Audience Level (n = 18)

Level	Frequency	Percent
Undergraduate Courses	5	27.8
Graduate Courses	4	22.2
Both Undergraduate and Graduate Courses	9	50.0

Table 3 shows the distance education technologies utilized by the institutions in this study. Course management software (WebCT, Blackboard, etc.) and interactive video conferencing were utilized most extensively (94.4% and 88.9% respectively). Additionally, 72.2% of the institutions used the World Wide Web. Less than half (44.4%) of the institutions in this study also used videotapes.

The second objective of this study was to describe the focus of the distance

education evaluation efforts used by the institutions in this study. As seen in Table 4, nearly all (94.4%) of the surveyed institutions evaluate distance education to some degree. Noticeably, every institution that evaluates their distance education courses provides for evaluation of instructors. Almost 89% also allow students to evaluate course organization and delivery. Almost two-thirds (61.1%) of the institutions surveyed provide for evaluation of distance education support services.

Table 3
Distance Technologies Utilized (n = 18)

Technology	Frequency	Percent
Course Management Software	17	94.4
Interactive Video Conferencing	16	88.9
World Wide Web	13	72.2
Videotapes	8	44.4

Table 4
Focus of Distance Education Evaluation Instrument(s) (n = 18)

Focus	Frequency	Percent
Instructors	17	94.4
Course Organization & Delivery	16	88.9
Support Services	11	61.1
No Evaluation Utilized	1	5.5

The third objective sought to describe the data collection methods used by the participating institutions (see Table 5). The most commonly used method was to administer the evaluation only electronically ($n = 5$, 27.8%). An additional 16.7% ($n = 3$) used a combination of electronically and

mail-delivered instruments, and another 11.1% ($n = 2$) used electronically and in-person delivered instruments. Thus, 55% ($n = 10$) of the surveyed institutions use electronically delivered evaluation instruments to some degree. Nearly 17% ($n = 3$) used only mail-delivered instruments

and one institution (5.5%) indicated that in-person was its only method of delivering distance education evaluation. Two institutions indicated “other” without identifying the methodology and one institution did not evaluate its distance education courses.

The final objective of this study was to identify the methodology utilized by each institution to develop the instrument used to evaluate distance education courses. As seen

in Table 6, the majority of the institutions surveyed (61.1%) slightly modified the evaluation instrument used for their on-campus courses to evaluate their distance education courses. In contrast, 27.8% of the institutions in this study used an evaluation instrument developed specifically for distance education courses. One institution used the same evaluation as on-campus courses, and one did not evaluate its distance education courses.

Table 5
Evaluation Data Collection Methods (n = 18)

Method	Frequency	Percent
Electronically Only	5	27.8
Electronically & Mail	3	16.7
Mail Only	3	16.7
Electronically & In-Person	2	11.1
Other	2	11.1
In Person	1	5.5
Not Indicated	1	5.5
No Evaluation Utilized	1	5.5

Table 6
Instrument Development Method (n = 18)

Source	Frequency	Percent
Used On-Campus Evaluation Instrument	1	5.5
Revised On-Campus Evaluation Instrument	11	61.1
Designed Evaluation Instrument Specifically for Distance Education	5	27.8
No Evaluation Utilized	1	5.1

Conclusions

The results of this study yield several interesting conclusions that, although only applicable to the institutions that participated in this case study, shed light on the use of student attitudinal-based course evaluation practices in distance education. First, in terms of the delivery audience, most of the participating agricultural institutions are delivering distance education courses to both undergraduate and graduate students. This conclusion contradicts the National Center for Education Statistics report, which indicated that, in general, most institutions offer distance education courses only at the undergraduate level (Lewis, Snow, Farris, Levin, & Greene, 1999). This may be reflective of agricultural institutions' broad-based mission to serve a variety of audiences. Most of these participating institutions are using course management software and video conferencing. Additionally, to a lesser extent, the World Wide Web and videotapes are used to deliver distance education. This conclusion is consistent with the National Center for Education Statistics report of distance technologies use by institutions of higher education (Lewis et al., 1999).

In the participating institutions, instructors are the most common focus of evaluations, closely followed by course organization and delivery. The evaluation of these two facets of distance education is supported by Biner, Dean, and Mellinger (1994). However, their research also reported that support services should be evaluated, which is undertaken by barely half of the institutions in this study.

Although most of the participating institutions utilize an electronically delivered format to collect evaluation data, a wide range of methods was reported. It is not surprising that electronic methods were most widely reported, as Dillman (2000) indicates that delivering surveys electronically can save time and money, but it does suggest that there may be few standards, as yet, for optimum delivery of evaluation instrumentation.

The most common method for developing a distance education evaluation instrument by the participating institutions

was to make a few revisions to the on-campus instrument already utilized at each institution. This procedure is supported by the literature. For example, in their study evaluating a distance education course, Dooley, Patil, and Lineberger (2000) utilized the existing on-campus evaluation form, along with additional formative and summative evaluation instruments.

Implications/Recommendations

Although the results of this study are limited to the participating institutions, some implications and recommendations supported by this and previous studies can be made. As most institutions in this study are delivering distance education to both undergraduate and graduate students, it follows that programmatic evaluations need to be developed to evaluate both undergraduate and graduate courses. The challenge of developing evaluations for both undergraduate and graduate courses and programs is reflective of the greater challenge, however, of developing evaluations for courses with different content and delivery methods. As stated, institutions in this study are using a variety of course management software and video conferencing, as well as the World Wide Web and videotapes, to deliver distance education. The delivery method also has implications for evaluating distance education courses. Distance education course evaluations need to address all the technologies used to deliver the content, as well as the instructor. This concept is especially important at institutions where instructor evaluations are used for promotion and tenure decisions. It is plausible that, if students do not have the ability to evaluate the technology separately, they will indicate their attitudes toward the technology through their evaluation of the instructor. Thus, technical difficulties beyond the control of the instructor could cause poor evaluations of the instructor's performance.

Currently, most distance education course evaluations focus on instructors. Others look at course organization and delivery. The implication for programmatic evaluation is the need to take a more holistic

approach to evaluate distance education programs. In addition to evaluating instructors, course organization, and delivery, such areas as support services and competencies should also be evaluated. Without the opportunity to evaluate these other areas, distance education students may express their dissatisfaction toward support services and the like in their evaluations of instructors. Aside from the implications toward promotion and tenure of the instructor, evaluation and improvements in support services and other administrative areas are difficult without input from stakeholders.

Finally, in this study, most distance education courses were evaluated by simply making a few revisions to the on-campus instrument already utilized at each institution. While there is a foundation for this methodology in research (Dooley, Patil, & Lineberger, 2000), there may be a need for an evaluation developed uniquely for the purpose of evaluating distance education at the course and program level. Distance education courses occur in an environment that is often very different than a face-to-face class. The technologies used to deliver content and the separation between the instructor and students present unique challenges to accurately evaluating a course delivered at a distance. Simply modifying an evaluation instrument used for on-campus courses likely does not capture all the necessary facets of evaluating a distance education course. Looking at areas to include in an evaluation developed uniquely for the purpose of evaluating distance education at the course and program level is a potential direction for future research that could extend the findings of this study.

References

- Biner, P. M. (1993). The development of an instrument to measure student attitudes toward televised courses. *The American Journal of Distance Education*, 7(1), 62-73.
- Biner, P. M., Dean, R. S., & Mellinger, A. E. (1994). Factors underlying distance learner satisfaction with televised college-level courses. *The American Journal of Distance Education*, 8(1), 60-71.
- Cheung, D. (1998). Developing a student evaluation instrument for distance teaching. *The American Journal of Distance Education*, 19(1), 23-42.
- Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method*. New York: John Wiley & Sons, Inc.
- Dooley, K. E., Patil, B. S., & Lineberger, R. D. (2000). An evaluation of a multidisciplinary course delivered at a distance: Prescriptive principles to challenge our profession. *Proceedings of the 27th National Agricultural Education Research Conference*, 27, 449-462.
- Ehrmann, S. C., & Zuniga, R. E. (1997). *The flashlight evaluation handbook*. Washington, D.C.: Corporation for Public Broadcasting.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2003). *Educational research: An introduction* (7th ed.). Boston, MA: Allyn and Bacon.
- Gibson, B., Brewer, P., Dholakia, A., Vouk, M., & Bitzer, D. (1995). *A comparative analysis of web-based testing and evaluation systems*. Raleigh, NC: NCSU Computer Science Technical Report.
- Katzer, J., Cook, K. H., & Crouch, W. W. (1982). *Evaluating information*. New York, NY: Random House.
- Keegan, D. (1990). *Foundations of distance education* (2nd ed.). London: Routledge.
- Kirkpatrick, D. L. (1998). *Evaluating training programs: The four levels* (2nd ed.). San Francisco: Berrett-Koehler Publishers.
- Lewis, L., Snow, K., Farris, E., Levin, D., & Greene, B. (1999). *Distance education at postsecondary education institutions: 1997-98*. Washington DC: National Center for Education Statistics.

Lezberg, A. K. (1998). Quality control in distance education: The role of regional accreditation. *The American Journal of Distance Education*, 12(2), 26-35.

Miller, G., & Pilcher, C. (1999). Desired and assessed cognitive levels of instruction: Are college of agriculture courses taught on campus and at a distance comparable? *Proceedings of the 26th National Agricultural Education Research Conference*, 343-351.

National Center for Education Statistics. (1998). *Distance education in higher education institutions: Incidence, audiences, and plans to expand*. Retrieved August 26, 2002 from: <http://nces.ed.gov/pubs98/98132.html>

SACSCOC. (2000). *Best practices for electronically offered degree and certificate programs*. Decatur, Georgia: Southern Association of Colleges and Schools Commission on College.

U.S. Department of Education. (2003). *Distance education at degree-granting postsecondary institutions: 2000 – 2001*. (NCES Publication No. 2003017). Washington, DC: National Center for Education Statistics.

WICHE. (2000a). *Best practices for electronically offered degree and certificate programs*. Boulder, Colorado: Western Interstate Commission for Higher Education.

WICHE. (2000b). *DRAFT: Statement of the regional accrediting commissions on the evaluation of electronically offered degree and certificate programs and guidelines for the evaluation of electronically offered degree and certificate programs*. Boulder, Colorado: Western Interstate Commission for Higher Education.

Woolfolk, A.E. (1993). *Educational psychology* (5th ed.). Boston: Allyn and Bacon.

T. GRADY ROBERTS is an Assistant Professor in the Department of Agricultural Education at Texas A&M University, 104A Scoates Hall, 2116 TAMU, College Station, TX 77843-2116. E-mail: groberts@tamu.edu.

TRACY IRANI is an Assistant Professor in the Department of Agricultural Education and Communication at the University of Florida, P.O. Box 110540, Gainesville, FL 32611-0540. E-mail: irani@ufl.edu.

LISA K. LUNDY is a Graduate Research Assistant in the Department of Agricultural Education and Communication at the University of Florida, 305 Rolfs Hall, P.O. Box 110540, Gainesville, FL 32611-0540. E-mail: LKLundy@mail.ifas.ufl.edu.

RICKY TELG is an Associate Professor in the Department of Agricultural Education and Communication at the University of Florida, 305 Rolfs Hall, P.O. Box 110540, Gainesville, FL 32611-0540. E-mail: RTelg@mail.ifas.ufl.edu.