How the Perspectives of Administrators, Faculty, and Support Units Impact the Rate of Distance Education Adoption

Kim E. Dooley, Assistant Professor
Department of Agricultural Education
Texas A&M University
College Station, TX 77843-2116
Phone: (979) 862-7180
Fax: (979) 458-2698
k-dooley@tamu.edu

Theresa Pesl Murphrey, Visiting Assistant Professor
Department of Agricultural Education
Texas A&M University
College Station, TX 77843-2116
Phone: (979) 458-2749
Fax: (979) 458-2698
t-murphrey@tamu.edu

Abstract

As higher education institutions increase the use of technology to further distance education initiatives, it is important to recognize the role that perspectives within the institution play in formulating a strategy for effective development and implementation of distance education. This study seeks to provide insight to these perspectives by examining the strengths, weaknesses, opportunities, and threats (Goodstein, Nolan & Pfeiffer, 1993) associated with using distance education (DE) technologies from the perspective of administrators, faculty, and support units within higher education. Analysis revealed that respondents recognized the opportunity to utilize DE technologies to improve instruction and reach new audiences through collaboration and new courses/programs, however, needs were expressed to expand policies/procedures to address critical issues (e.g., incentives, support, training, quality control, careers, and communication channels). The perspectives of administrators, faculty and support units were not found to be dramatically different, in fact many of the perspectives were the same. Based on Rogers' attributes (1995), it was concluded that the rate of adoption of DE technologies could be enhanced through revised policies/procedures and the development of strategies to address critical issues.

Introduction

In 1989, Connie Dillon addressed the perceptions of faculty participation in instructional telecommunications. "Comparing the perceptions of telecourse teaching among chief academic officers, telecourse faculty, and telecourse coordinators at selected Oklahoma colleges and universities, this study [provided] insight into the factors that influence the integration of telecommunications teaching within the higher education system" (pp. 35-36). A decade has passed and many higher education institutions are still struggling to integrate and utilize distance education technologies. The technologies have changed, but attitudes often remain the same.

"Major organizational changes and new developments in higher education are being

accelerated by dynamic advances in global digital communications and increasingly sophisticated learning technologies…Barriers to accessing higher education learning opportunities are being reduced globally because of improved learning technologies" (Hanna, 1999, p. 19).

The movement of higher education institutions to utilize technology to deliver education is often the result of administrative decisions to reach a broader audience in an efficient manner. Resources have been and are continuing to be put in place for high-speed Internet connections and interactive videoconferencing. Specifically, continuing education, academic courses, and full degree programs are being developed to meet demand from individuals seeking non-traditional access.

Theoretical Framework

The theoretical foundation for this study stems from Rogers' diffusion of innovation research. Rogers defined an innovation as "an idea, practice or object that is perceived as new by an individual or other unit of adoption" (1995, p. 11). "Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system" (Rogers, 1995, p. 5). The innovation-decision process is the "process through which an individual (or other decision-making unit) passes from first knowledge of an innovation, to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision" (Rogers, 1995, p. 20). There are also influences on the process, such as the prior conditions, characteristics of the decision-making unit, the perceived characteristics of the innovation, and communication channels.

Rogers (1995) discussed five attributes that impact the rate of adoption: 1) relative advantage, 2) compatibility, 3) complexity, 4) trialability, and 5) observability. "Relative advantage is the degree to which an innovation is perceived as being better than the idea it supersedes" (p. 212). Many administrators use incentives to increase the rate of adoption. The main function of an incentive is to increase the degree of relative advantage. The second attribute, compatibility, "is the degree to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters" (p. 224). The third attribute, complexity, "is the degree to which an innovation is perceived as relatively difficult to understand and use" (p. 242). The rate of adoption is slower with more complex innovations. The fourth, trialability, "is the degree to which an innovation may be experimented with on a limited basis. New ideas that can be tried on the installment plan are generally adopted more rapidly than innovations that are not divisible" (p. 243). The last attribute, observability, "is the degree to which the results of an innovation are visible to others" (p. 244).

With the increase in distance education technologies in higher education, the implementation of systematic initiatives and the management of innovation become increasingly important (Keast, 1997). "The view of distance education as an innovation provides an important means for understanding the phenomena of distance education, particularly from the perspective of those upon whom its acceptance depends: the faculty" (Dillon & Walsh, 1992, p. 6). How people perceive and react to these technologies is far more important than the technical obstacles in influencing implementation and use. As quoted by Keast, Moore (1994) recognized the major obstacles associated with the acceptance or adoption of distance education technologies, namely "organizational change, change in faculty roles, and change in administrative structures" (p. 42).

Linda Wolcott reported that rapid technological change will "dramatically reshape faculty members' roles and their work environment," and that the faculty reward system must consider

innovativeness and technological change (1997, p. 3). Dillon and Walsh (1992) also noted that faculty attitudes concerning participation in distance education are often neglected in the research. Even fewer studies consider the perspectives of administrators and support staff. As programs are implemented, it is important to determine a broader array of perceptions, concerns, and interests regarding distance education (DE) technologies. This understanding can facilitate the diffusion/adoption of DE technologies throughout the institution to enhance student learning while maintaining employee (administrator, faculty, and staff) engagement and satisfaction.

Context for the Study

The higher education institution under investigation was a major Research 1 university that had been engaged in distance education delivery for over ten years. In determining the perceptions and reactions of administrators, faculty, and support units, the researchers chose to use a SWOT (strengths, weaknesses, opportunities, and threats) Analysis (Goodstein, Nolan & Pfeiffer, 1993). Based upon Rogers' attributes impacting the rate of adoption, the researchers chose to couple strengths and opportunities as promoters of innovations, and weaknesses and threats as retardants of adoption. Strengths and opportunities refer to those things that currently exist within an organization and those things that have not been realized but may be able to be taken advantage of to achieve the organization's desired future, respectively. Weaknesses and threats refer to those things that currently exist within the organization and those things that, while not realized, can prevent the organization from achieving its desired future. The researchers were particularly interested in determining if differences existed among the varying perspectives of administrators, faculty, and support units. Using a holistic approach, the researchers sought to provide a snapshot for the development of intervention strategies to alter how people perceive and react to these technologies.

Methodology

Respondents were selected using the snowball sampling technique (Babbie, 1989). The process began with a high level official that mentioned key employees who were innovators in using distance education technologies. The interviews continued until the researchers felt there was a consensus of information and redundancy in responses. A total of 42 interviews were conducted. The interviewees consisted of 16 administrators, 15 faculty members, and 11 support unit employees. Total respondents consisted of 8 females and 34 males. Similar to Dillon's study (1989), the majority of those nominated were veteran faculty. Approximately half (22) of the respondents were professors, 7 were associate professors, 1 was an assistant professor, 1 held the title of research assistant, and 11 were professional staff. All respondents were familiar with distance education technologies (i.e., interactive videoconferencing, Internet, CD-ROM).

The researchers used a variety of qualitative methods to ensure truth value, applicability, consistency, and neutrality (Erlandson, Harris, Skipper & Allen, 1993, pp. 133-161): 1) Prolonged Engagement - The researchers interviewed respondents from August - December, 1999. Interviews typically ranged from 30 minutes to 1½ hours. 2) Interview Protocol Development was based on the review of the literature, specifically with regard to procedures for a SWOT Analysis (Goodstein, Nolan & Pfeiffer, 1993) and diffusion of innovations (Rogers 1995). 3) The Interview Process served as the primary data collection instrument. Individuals were asked probing questions to gather descriptive information. The interviews were semi-structured with each interview beginning with a brief explanation of the reason for the meeting. Questions included items such as "How do you see this technology impacting your department?" and "In relation to distance education technologies - what strengths, weaknesses, opportunities, and threats do you see?" Interviews were reconstructed using field notes. 4)

Member Checking was done throughout the interview by asking for verification or clarification of the information. 5) Triangulation was used to verify the data. A variety of individuals with varying perspectives were interviewed over the four-month period. In addition to interviews/field notes, some respondents provided additional documents that were reviewed. The researchers also used triangulation in analyzing the data based upon the theoretical framework (Rogers, 1995). 6) A Reflexive Journal and Audit Trail included interview scheduling, logistical information, insights/reflections, methodological decisions, and respondent codes to document original data sources.

The constant comparative method was used for the data analysis (Lincoln & Guba, 1985, pp. 339-344). This method includes four stages: 1) comparing incidents applicable to each category, 2) integrating categories and their properties, 3) delimiting the construction, and 4) writing the construction. For the first stage, the researchers studied the detailed field notes to determine trends in the data from the varying perspectives. Each idea (unit) was initially listed, without placement into categories. The investigators drew upon tacit knowledge in making these initial judgments for early category formulation. Colored markers were used to differentiate respondent themes so that the data would remain in context and provide visual indications of emerging categories.

"The first rule of the constant comparative method is that while coding an incident for a category, compare it with the previous incidents in the same and different groups coded in the same category. This constant comparison of the incidents very soon starts to generate theoretical properties of the category....Thus the process of constant comparison stimulates thought that leads to both descriptive and explanatory categories" (Lincoln & Guba, 1985, p. 341). From this process, the researchers established categories across the data set.

For the second stage of the constant comparative method, a peer debriefing was conducted in February 2000 with a distance education workgroup. This group was familiar with distance education issues at the university level, but was not interviewed in the study. This session and subsequent e-mail correspondence allowed the researchers to test emerging categories and move into the next stage of the constant-comparative method. As the data analysis progressed, the researchers were able to combine and more specifically define categories based on overlying themes in the data. Once the categories emerged, fewer modifications were required as more data were processed. Delimiting the construction occurred as the data sources became saturated and the categories were integrated.

Results

Using a holistic approach, the data were summarized using Venn diagrams for each component of the SWOT Analysis. Circles representing the three perspectives of respondents were drawn in an overlapping fashion. Each of the integrated categories derived from the interviews was listed in a key and the code was placed in the Venn diagram to depict which respondents indicated that category. Categories that were prominent based upon the number of times mentioned were indicated with an asterisk. Categories that were shared or unique to a particular perspective can be viewed by observing the overlapping circles (see Figures 1-4).

Review of the Venn diagrams revealed that the majority of the categories were shared among administrators, faculty and support units. The predominant category was found to be identical among the groups in relation to strengths, opportunities, and weaknesses while each group expressed a unique prominent category in relation to threats.

Figure 1. Strengths Expressed by Respondents based on Group Affiliation
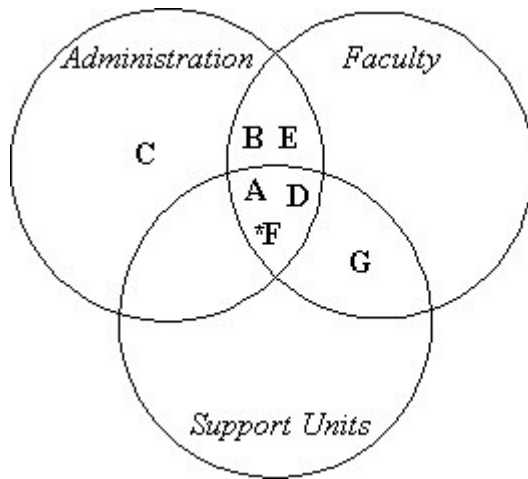
A. Continuous improvement of DE technologies
B. Ability to reach new audiences and existing demand
C. Presence of early adopters and proximity to technology
D. Reputation for quality content
E. Extensive infrastructure and network
F. Use of technology to enhance teaching and learning
G. Administrative encouragement and support
*   *Notes prominent category for all groups*

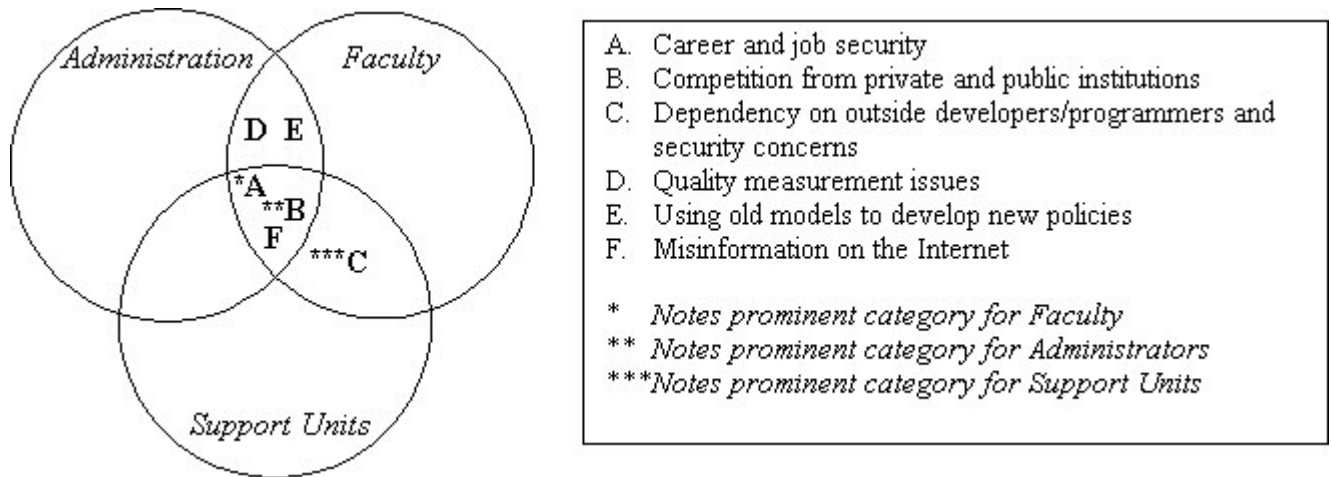Figure 2. Opportunities Expressed by Respondents based on Group Affiliation
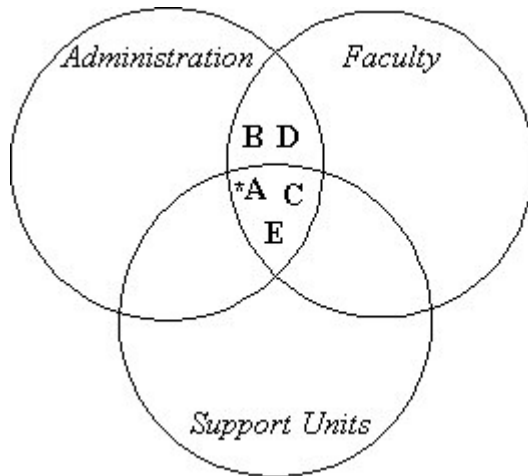
A. Expansion of audience base to reach nontraditional students
B. Expansion of collaboration with private and public institutions
C. Create an individualized and enhanced interactive learning experience
D. Provide unique and specialized courses/programs
E. Extensive infrastructure and network
F. Advancement of technology
*   *Notes prominent category for all groups*

Figure 3. Weaknesses Expressed by Respondents based on Group Affiliation
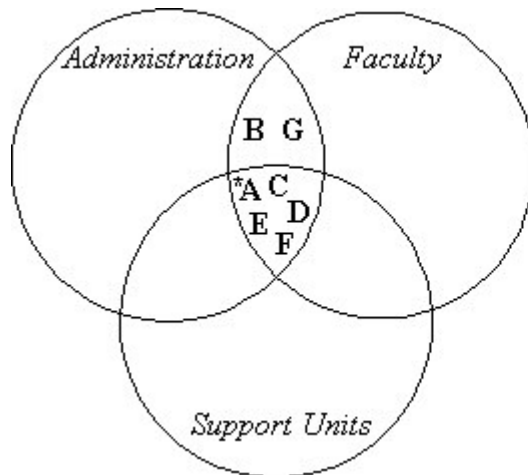
A. Limited incentives, development support, and funding
B. Limited knowledge regarding copyright and intellectual property
C. Weak communication channels
D. Slow action on critical issues
E. Current technological limitations
F. Lack of skill, expertise, and desire to develop interactive DE courses
G. Loss of interaction
*   *Notes prominent category for all groups*

Figure 4. Threats Expressed by Respondents based on Group Affiliation (n=42)

A. Career and job security
B. Competition from private and public institutions
C. Dependency on outside developers/programmers and security concerns
D. Quality measurement issues
E. Using old models to develop new policies
F. Misinformation on the Internet

* *Notes prominent category for Faculty*
** *Notes prominent category for Administrators*
****Notes prominent category for Support Units*

Discussion

Strengths. Evaluation and synthesis of the responses revealed topics related to technology, audiences, content, the institution, enhancement of teaching and learning, and collaboration. Out of the seven categories, enhancement of teaching and learning was identified as the most significant strength by all groups. The recognition of the potential for enhancement was an important milestone for the diffusion of distance education due to the recognition of relative advantage (Rogers, 1995). Because of the continuous improvement of distance education technologies and the institutions' reputation for high quality content, it was not surprising that all three groups mentioned these as strengths. Only administrators mentioned the importance of an early adopter and proximity to technology as factors positively impacting the rate of diffusion. The finding that faculty and support units (not administrators) indicated administrative encouragement and support as a strength leads to the conclusion that administrators were unaware of the impact that they have on the diffusion of distance education.

Opportunities. Many of the categories that evolved for opportunities were similar to those indicated as strengths. Out of the five categories that surfaced out of comments provided by the respondents, the opportunity most frequently expressed by all groups was expansion of the audience base to reach nontraditional students. As noted by Dillon (1989), faculty members who participate in distance education often have "an altruism toward the nontraditional learner." Other opportunities included the ability to create an individualized and enhanced interactive learning experience to be delivered through the system network. This parallels with the predominant strength of using technology to enhance teaching and learning. Administrators and faculty proposed more focused opportunities including collaboration with private and public institutions and development of unique and specialized courses/programs.

Weaknesses. As was the case in Connie Dillon's 1989 study, the prominent weaknesses included limited incentives, development support, and funding to support development. Other weaknesses noted by all groups included not knowing what support is available (problems with communication channels), slow action on critical issues (i.e. using old policies to address evolving distance education issues), technological glitches, and overall lack of skill, expertise, and the desire to develop interactive DE courses. Recognition of the loss of interaction as a weakness of distance education is well documented in other studies (Gehlauf, Shatz, & Frye 1991; Dillon, 1989; Wolcott, 1997). The findings in this study lend further support, as

administrators and faculty indicated the loss of interaction between faculty and students, limited knowledge on copyright and intellectual property issues as additional weaknesses.

Threats. While administrators, faculty, and support units consistently viewed identical categories as their prominent strength, opportunity, and weakness, threats were not consistent based upon varying perspectives. All three groups noted career and job security, competition from private and public institutions, and misinformation on the Internet as threats. Faculty perceived career and job security as their prominent threat. A belief that tenure and promotion policies needed to be revised in order for faculty to embrace distance education was very strong. Faculty also expressed a fear that capturing their intellectual property through multimedia might eliminate positions. In contrast, administrators perceived the greatest threat stemming from competition from private and public institutions. However, it is interesting to note that collaboration with public and private institutions was indicated as an opportunity! Administrators indicated concern that the DE market could encourage students to select courses and programs globally, causing resident campuses to lose enrollments (e.g., tuition, fees, etc.). Support units felt that higher education institutions relied too heavily upon outside developers and programmers and this in turn created financial, development time, and security concerns (i.e. hackers). Although all groups mentioned misinformation on the Internet due to ease of publishing, lack of peer review, etc. it was not prominent.

Effects on Diffusion. Based upon Rogers' attributes (1995), it was apparent that respondents perceived distance education technologies to have a relative advantage in terms of reaching new audiences and enhancing teaching and learning; however, because there were limited incentives, respondents did not see it as compatible with their current situation. Respondents perceived technology usage to be extremely complex (e.g., the technology, scheduling, policy issues) and the trialability of the technology to be limited due to the required time and effort to convert courses into DE format. Unless a department had its own support staff, proximity to equipment in the office or building, or other rewards through tenure/promotion, development grants, etc., the observability was non-existent.

Summary

As indicated by Moore (1997) in his comparison of DE programs, those programs with a commitment to faculty support and training resulted in higher quality programs. Institutions that are involved in, or currently moving into the realm of distance education can benefit from the results of this study. "The environment for higher education has become much more dynamic and even more complex with the recent development of new digital technologies" (Hanna, 1999, p. 25). As the complexity continues and the desire to integrate distance education programs expands, attention must be given to critical issues.

The perspectives of administrators, faculty and support units were not found to be dramatically different, in fact many of the perspectives were the same. While each group recognized the potential for DE, intervention strategies are necessary to alter how people perceive and react to distance education technologies. Through the eyes of an administrator, faculty member, or support employee, it is apparent that steps must be taken to increase the rate of adoption. The results of this study indicate three major areas that require consideration: 1) administrative support, 2) training, and 3) incentives. Administrative support should include student/technical support and providing a seamless infrastructure and virtual presence for the distant learner. Training should not only include technology exposure, but instructional design and pedagogy/andragogy. Support must include providing the support/professional staff to assist. The importance of faculty rewards as a relative advantage cannot be overlooked by administrators. In

the words of a respondent, "Just because it is a good thing - is not enough of a reason." By providing incentives such as release time, mini-grants, continuing education stipends, and recognition in the promotion and tenure process, faculty will have more than verbal encouragement to continue, or begin, using distance education technologies and will have the reason to do so. Research 1 institutions must revise policies that are primarily focused on research agendas and establish the institutional capacity to support the development of DE courses/programs if these institutions aim to effectively utilize distance education technologies.

References

Babbie, E. (1989). The practice of social research. Belmont, CA: Wadsworth Publishing Company.

Dillon, C. L. (1989). Faculty rewards and instructional telecommunications: A view from the telecourse faculty. The American Journal of Distance Education 3 (2), 35-43.

Dillon, C. L. & Walsh, S. M. (1992). Faculty: The neglected resource in distance education. The American Journal of Distance Education 6 (3), 5-21.

Erlandson, D. A., Harris, E. L., Skipper, B. L., & Allen, S. D. (1993). Doing naturalistic inquiry. Newbury Park, CA: Sage Publications.

Gehlauf, D. N., Shatz, M. A. & Frye, T. W. (1991). Faculty perceptions of interactive television instructional strategies: Implications for training. The American Journal of Distance Education 5 (3), 20-28.

Goodstein, L., Nolan, T. & Pfeiffer, J. W. (1993). Applied strategic planning: How to develop a plan that really works. New York, NY: McGraw-Hill.

Hanna, D. E. (1999). Higher education in an era of digital competition: Choices and challenges. Madison, WI: Atwood Publishing.

Keast, D. A. (1997). Toward an effective model for implementing distance education programs. The American Journal of Distance Education 11 (2), 39-55.

Lincoln, Y. S. & Guba, E. G. (1985). Naturalistic inquiry. Newbury Park, CA: Sage.

Rogers, E. M. (1995). Diffusion of innovations. 4th Edition, New York, NY: The Free Press.

Wolcott, L. L. (1997). Tenure, promotion, and distance education: Examining the culture of faculty rewards. The American Journal of Distance Education 11 (2), 3-18.