Implementing Distance Education: Issues Impacting Administration

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Abstract

Through a modified Delphi study, an expert panel identified 62 concepts organized in eight issue categories that impact administrative decisions as higher education institutions commit to implementing distance education courses and programs. Using a mail survey, 62 department chairs in Colleges of Agriculture in Land-Grant Universities ranked the impact these concepts had on their decisions to implement distance education courses and programs. Follow-up telephone interviews with six department chairs confirmed survey findings. In descending order of importance, the issues were: faculty commitment and skill development, technology integration and support, incorporation of distance education into the departmental focus, financial issues, student engagement and support, quality control for courses and documentation of outcomes, developing policies and governances for course and delivery processes, and compliance with regulations and legal matters. Issue rankings were consistent between department chairs in the hard and social sciences; department size and years of experience as a department chair made no difference in the rankings. However, department chairs with zero students enrolled in distance education were more concerned about financial issues and establishing policies and governances. This research indicates that implementing distance education must be a collaborative effort between the department, college, and central administration.

Introduction

Distance education has complemented face-to-face instruction since the mid-1800s when advances in print media made communication between distant students and instructors possible. As early as the 1960s and continuing through the mid-1990s, educators experimented and started adopting multiple technologies (i.e., cassette, television, radio, audio tape and fax) to overcome geographic distances (National Center for Educational Statistics [NCES], 1999). Educational delivery alternatives continued to expand with the emergence of computers and networking in the mid-1980s, and with the more robust and new network-based technologies (i.e., Internet, World Wide Web, and streaming-media) of the mid-1990s, distance education was moved to center stage in higher education (NCES, 1999).

Distance education's early correspondence format has evolved into an Internet-based multi-media, interactive virtual learning environment that may use the Internet or other technological systems for distance learning classrooms. The new technologies, along with the economic environment, are shaping a "different" university as they fundamentally change the educational atmosphere, and the market for distance education programs has increased exponentially as the nation's social and economic structure undergoes radical change. The decision to embrace or reject new technologies, expand market opportunities, and engage in cooperative activities has created a real strategic question institutions face today as the revolution of higher education occurs. Each university will need to customize its response to the higher educational changes (Collis, 2001; Howard, Schenk & Discenza, 2004). Consequently, distance education opportunities are now being integrated into the mainstream of the higher education environment which challenges university departments to provide educational services to new populations (Bates, 2000; Berg, 2002; Fields, Hoiberg, & Othman, 2003; Munkittrick, 2000; Noam, 1996; Whitaker, 2001).

The consumers growing demand for technology-based distance education alternatives and services presents challenges for faculty, academic leadership, administration, and support staff. While this technology-driven change is significant in all areas of higher education, two groups immediately impacted are department chairs and faculty (Berg, 2002). Retraining faculty and

helping them adapt to a new environment that places the learner at the focal point of a virtual learning environment, rather than a teacher-centered one, is a serious bottleneck in advancing distance education communities (Lever, 1992; Turoff, 1998). Designing interactive instructional materials and applying selected technologies are critical issues for faculty development; faculty indicated they need assistance with marketing a course, selecting an appropriate curriculum for distance delivery, designing and evaluating the course, selecting appropriate technologies, and attending to student services. They viewed overall policies for teaching via distance as the responsibility of higher administration (Rockwell, Schauer, Fritz & Marx, 1999, 2000).

Decision-making responsibilities in a department or discipline rest with the department members. Faculty and department chairs are the "local line leaders" with department chairs being the ones who exercise leadership through the role of facilitator, coach, and catalyst. The department chair position involves managing educational changes by harnessing the energies of others in order to achieve a particular purpose (Robinson & Latchem, 2003; Williams, 2003). Through a team approach, faculty led by the department chair, will transform the educational system. Thus, innovative leadership strategies in universities need to center on clusters of faculty (departments) with primarily the department chairs providing leadership skills, as they are in the forefront leading faculty in educational changes (Lucas, 2000; Senge, 2000).

While both faculty and department chairs are critical in adapting from traditional delivery to distance delivery, the primary responsibility to promote and sustain the educational delivery falls on the department chair as the first-line academic leader. Today's department chair is being asked to provide the vision, encouragement, direction, guidance, resources, and coordination as faculty create, develop, and deliver distance education courses and programs. In the decision-making and change process, chairs provide leadership for their individual departments, and collectively for their colleges; they are in a primary position to make things happen (Creswell, Wheeler, Seagren, Egly, & Beyer, 1990; Doucette, 1997; Edgerton, 1990).

Integrating technology in distance learning is one of the key issues facing department chairs because it makes the fundamental change in higher education possible. The department chair's role in implementing technology, and developing the distance education programs that it supports, is an issue to be addressed (Bates, 2000; Lucas, 2000). Therefore, with department chairs facing a difficult challenge to integrate technology into the teaching and learning process, a study was designed to better understand issues department chairs face as they guide departmental efforts to implement distance courses and programs. Specifically, the study identified issues department chairs face as they implement technology-based distance education programs and identifies which ones have a greater impact upon their decisions. It also identified whether the issues are impacted by the department's scientific orientation (i.e., hard science verses social science), student enrollment in the department's distance education offerings, faculty size, and number of years the individual has been a department chair (Schauer, 2002).

Methodology

Mixed methods were used to determine and understand issues affecting department chairs' decisions to implement distance education courses and programs. First, nine distance education experts participated in a modified Delphi study (Wholey, Hatry, & Newcomer, 1994) to identify issues that impact decisions to offer courses via distance in higher education. A survey was then developed and mailed to 121 department chairs at Land-grant Universities to help understand which issues affected their decisions to implement distance courses and programs. Follow-up telephone interviews with six of the survey respondents provided additional insights about their decision-making processes as they implemented distance courses and programs into departmental

offerings.

Delphi Study

After a literature search, nine university administrative leaders with experience implementing distance delivery into their university curricula were identified to participate in the modified Delphi study. Their experience focused on either leading efforts to implement distance delivery for individual courses or for an entire program in their universities. Since their work on distance delivery was nationally recognized, they were considered to be distance education experts knowledgeable about implementing distance education programs and courses.

Step One

A list of 35 concerns that department chairs address as they implement distance education courses and programs was identified through the combination of four sources: (a) a national presentation on the role of chairs in implementing distance education (Seagren, Ansorge, Glandon, & Kinley, 2000), (b) research on incentives and obstacles influencing faculty and administrators' receptivity toward distance education (Rockwell et al., 1999, 2000), (c) a survey on barriers to distance education (Berge, 1999), and (d) ideas synthesized from a literature review. These concerns were grouped into seven descriptive categories: quality and effectiveness, finance, policy and governance, regulatory and legal, direction setting, faculty, and student. This became Draft I.

Step Two

Draft I was emailed to the expert panel to (a) evaluate the validity of each concern, (b) add other concerns or issues about implementing distance courses and programs, and (c) assess the appropriateness of the way concerns were grouped. The categories of issues were modified according to the expert panel's feedback for Draft II.

Step Three

Draft II was then emailed to the expert panel for their comments about the revised list and they were asked to again add or delete items, evaluate the appropriateness of the groupings, and assess if other categories would be more appropriate. Feedback was incorporated for Draft III.

Step Four

Draft III was then emailed to the expert panel for their final review in which they could add, delete, or regroup items. Feedback was incorporated; the result was a taxonomy of 62 issues grouped in eight categories: (a) Quality and Effectiveness, (b) Finance, (c) Policy and Governance, (d) Regulatory and Legal, (e) Setting Distance Education Direction, (f) Faculty, (g) Student, and (h) Technology.

Mail Survey

Instrument and Pilot Testing

The taxonomy of issues department chairs face when implementing distance education was formatted for a mail survey. On a 6-point Likert scale, respondents ranked each item on the degree of impact the item had on their decision to incorporate distance courses or programs.

The instrument, in both a hard copy and a Web-based version, was piloted with 192 department chairs in seven institutions of higher education actively engaged in distance education in one western state. The return rate was 51%. The Web-based surveys were completed inaccurately and inconsistently, and there was a preference for the hard copy. Therefore, only a hard copy version was developed for the study. Appropriate comments and suggestions from the pilot test were incorporated into the final instrument.

Sample

A purposeful stratified sampling technique (Patton, 1990) was used to identify university department heads for the study. Criteria established to ensure the sample would represent the population of interest were:

- Geographical location: North Central & Southern Regions of the U. S. as classified by USDA (United States Department of Agriculture, 2001)
- Type of higher education institution: Land-Grant Universities
- College within the Land-Grant System: Agriculture
- Hard and social science departments as classified by the Biglan Model (Biglan, 1973a)
    - Hard science departments: Animal Science and Agronomy
    - Social science departments: Agricultural Education and Agricultural Economics

Through a Web site listing of Land-Grant Universities (Institute of Food and Agricultural Science, 2001), 156 Colleges of Agriculture were identified. Within these Colleges of Agriculture, 121 department chairs were identified – 63 from social science departments and 58 from hard science departments.

Data Collection

The instrument, a cover letter, and a postage paid return envelope were mailed to the 121 department chairs. Non-respondents were sent follow-up reminders two and four weeks after the initial mailing. The response rate was 52%.

Data Analysis

For statistical comparisons, demographic variables were grouped as follows: (a) student enrollment in distance education college-level credit courses [0, 1 - 36, and 37 or more students], (b) number of full-time faculty [1-19, 20-39, 40-55], and (c) years of experience in the department chair position [1-5, 6 or more].

Independent t-tests were used to compare differences between those in the hard and social sciences and the years of experience as department head. A Generalized linear model with Least Square Means follow-up was used to compare differences among student enrollments and department size groups. The level of significance was set at .05.

In the issues categories, a Principle Component Analysis showed the percentage explained by the first eigen vector ranged from 38.3 to 68.3. This, and consistent Cronbach Alpha reliabilities ranging from .76 to .91, indicated that a grand mean could represent the contribution of the issue category (Table 1)

Table 1. Issues Addressed in Implementing Distance Education

Issues	Percentage of variance for first eigen vector	Cronbach Alpha (")
Quality and Effectiveness	56.17	.8753
Finance	38.28	.7586
Policy and Governance	50.07	.8518
Regulatory and Legal	68.32	.9051
Setting Distance Education Direction	50.08	.8569
Faculty	49.84	.8498
Student Issues	54.05	.8766
Technology	54.84	.8800

Follow-up Telephone Interviews

Instrument and Pilot Testing

Five open-ended questions explored issues on department-level processes that lead to decisions to implement distance education, how distance education fit with their institution's mission, and the department chair's role in the process. The questions were piloted consecutively with the mail survey instrument with 24 of the original mail survey's pilot test participants. Questions were revised and verified to be non-directive in nature.

Interview and Analysis Process

Six department chairs, who indicated a willingness to be part of a follow-up interview, were randomly selected from the mail survey respondents; three from hard science departments and three from social science departments. Initial telephone interviews were limited to one hour and tape-recorded. Follow-up probes were used to clarify points or obtain additional explanations, if necessary. A 30-minute follow-up session was scheduled if additional clarification was required.

Telephone interviews were transcribed verbatim. Responses were categorized and sorted according to themes or issues that emerged through the interviews. These themes were then compared with the issues and results from the mail survey to identify similar issues and to better understand, enhance, or reinforce the findings.

Findings

Issues related to faculty, technology and setting distance education direction have the most impact on department chairs' decisions to implement distance courses and programs. Policy and governance issues, along with those related to regulatory and legal matters, have the least impact. Financial and student related issues, along with those focused on quality and effectiveness, fell in between those exerting the most and the least impact. Themes emerging from the follow-up telephone interviews matched the issues listed in the survey and helped to

better define them (Table 2).

Table 2. The Eight Issues

Issue	n	Standard Error	Grand Mean[a]	Themes emerging from telephone interviews
Faculty	56	0.26	4.60	Obtaining faculty buy-in and their involvement in implementing distance education.
Technology	58	0.26	4.44	Appropriate media supplied for transmitting instruction and the availability of various technologies.
Setting Distance Education Direction	53	0.25	4.32	Making the decision to implement distance education, determining who leads the implementation process, and then following the chain of command.
Issue	n	Standard Error	Grand Mean[a]	Themes emerging from telephone interviews
Finance	57	0.27	3.74	Integrating funds into the budget for distance education, therefore, having minimal long-term reliance on grants and contracts for supporting distance education.
Student Issues	59	0.29	3.71	Provision and availability of resources and materials for distance classes. Providing an interactive environment between students, university faculty, and support staff and services.
Quality and Effectiveness	54	0.29	3.70	Course development to include planning for quality courses and evaluation of their effectiveness. The offering of distance courses as a complete thesis process and not just a course here or there provided.
Policy and Governance	56	0.28	2.77	Policies related to implementing and maintaining distance education courses and delivery are responsibilities of higher administration. The governance of courses and overall logistics related to distance education implementation are higher administration's responsibilities.

Regulatory and Legal	55	0.34	2.59	Regulating the offering of distance education in regard to copyright, crossing state boundaries, etc. Maintaining the rigor of distance courses and programs.

[a]1 = no impact to 6 = significant impact

When the multivariate analysis was run to explore if student enrollment in distance courses influenced the amount of impact the issue had on the chairs' decisions to implement distance education; it was significant. Therefore, univariate analyses were conducted and are presented in Table 3.

Department chairs having zero student enrollments in distance education were more concerned about the issues of finance and policy and governance than those with student enrollments. These issues had more of an impact on those chairs' decisions to implement distance education courses and programs than they did for the department chairs having students enrolled in courses (Table 3).

Table 3. Comparisons of Issues Affecting Department Chair's Decisions by Student Enrollment

Issues	N	M[a]	F-value	P-value
Quality and Effectiveness				
Student Enrollment				
0 students	27	4.23		
1-36 students	8	3.67		
Greater than 36 students	21	3.63	1.06	0.35
Finance				
Student Enrollment				
0 students	29	4.65_a		
1-36 students	9	3.74_b		
Greater than 36 students	21	3.41_b	5.61	0.01*
Policy and Governance				
Student Enrollment				
0 students	29	3.61_a		
1-36 students	8	2.75_b		
Greater than 36 students	21	2.56_b	3.25	0.05*
Regulatory and Legal				
Student Enrollment				

0 students	27	3.41		
1-36 students	9	2.61		
Greater than 36 students	21	2.27	2. 77	0.07
Setting Distance Education Direction				
Student Enrollment				
0 students	27	4.83		
1-36 students	8	4.39		
Greater than 36 students	20	4.07	2.19	0.12

Table 3. *Comparisons of Issues Affecting Department Chairs' Decisions by Student Enrollment (continued)*

Issues	N	M[a]	F-value	Probability
Faculty				
Student Enrollment				
0 students				
1-36 students	27	4.69		
Greater than 36 students	10	4.53		
	21	4.56	0.09	0.91
Student Issues				
Student Enrollment				
0 students	30	4.22		
1-36 students	10	3.72		
Greater than 36 students	21	3.54	1.36	0.26
Technology				
Student Enrollment				
0 students	30	4.59		
1-36 students	10	4.39		
Greater than 36 students	20	4.50	0.16	0.85

[a]1 = no impact to 6 = significant impact

*Means in the same comparison that have different subscripts differ at $p < .05$.

Through the modified Delphi study, specific items were identified and grouped under eight broad issue categories. These items, as listed in Table 4, suggest that the groups are interdependent and that implementing distance delivery in educational institutions must be a collaborative venture between administrative levels.

Table 4. Distance Education Concerns Grouped Under the Eight Issue Categories

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Concerns Related to Each Issue	Mean[a]
Faculty (grand mean = 4.60)	
Workload issues related to development and delivery	5.05
Faculty incentives to integrate distance education technology	4.91
Compensation for course development and delivery	4.64
Faculty acceptance of distance education	4.58
Access to appropriate professional development for faculty	4.51
Faculty awareness of new delivery alternatives and technologies	4.42
Pedagogical shift from teacher-centered to learner-centered	4.32
Recognition of distance education teaching in tenure decisions	3.95

Concerns Related to Each Issue	Mean[a]
Technology (grand mean = 4.44)	
Technology support for faculty	5.00
Appropriateness of technology for program and pedagogy	4.85
Reliability of technology supporting distance education courses	4.81
Student access to technology	4.78
Faculty access to technology	4.56
Technology support for students	4.28
Student technology literacy	4.09
Security of courses	3.16

Setting Distance Education Direction (grand mean = 4.32)	
Shared vision (buy-in) by faculty of need for distance education	5.02
Leadership within the department to pursue distance education	4.76
Development of appropriate department plans for distance education	4.27
Pace of implementation of distance education courses	4.22
Marketing and promotion of courses and programs	4.18
Justification of need for using distance education	4.11
Inclusion of distance education in institutional strategic plan	4.07
Institutional administrative acceptance of distance education	4.02
Finance (grand mean = 3.74)	
Cost of implementation and delivery of distance education	4.64
Treatment of distance education in institutional budget structure	4.33
Sufficient departmental budget to develop courses	4.31
Availability of internal and external grants	4.22
Recognition of distance education in funding formula(s)	3.76
Competition from other educational providers	2.90
Source of additional revenue for the department	2.86
Competition with on-campus courses for enrollments	2.83
Student issues (grand mean = 3.71)	
Encouraging faculty – student interaction	4.32
Development of sense of learning community in students	4.15
Encouraging students – student interaction	4.08
Access to library and instructional materials	3.78
Course and program services (admissions, registration)	3.57
Help desk support for students (course and program information)	3.53

Availability of support services (advising, counseling & tutoring)	3.48
Availability of financial aid	2.81
Concerns Related to Each Issue	**Mean[a]**
Quality and Effectiveness (grand mean = 3.70)	
Course standards (including technology tools)	4.24
Academic integrity of student work	4.05
Measuring the effectiveness of the learning experience	4.00
Program or course credibility outside of department	3.82
Assessment of course effectiveness by department	3.80
Student evaluation of distance education courses and programs	3.64
Evaluation of student performance (testing & grading)	3.16
Course enrollment limits (faculty/student ratios)	3.16
Policy and Governance (grand mean = 2.77)	
Intellectual property (course ownership)	3.50
Acceptance of distance education courses (transfer and articulation)	3.47
Academic control over course content and delivery	3.26
Appropriate academic calendar for distance education courses	3.18
Provision for consortia, partnership and commercial providers	2.55
Presence of an institutional “acceptable use policy”	2.44
Compliance with ADA regulations	2.36
Collective bargaining agreements	1.74
Regulatory and Legal (grand mean = 2.59)	
Copyright and “fair use”	3.21
Establishment and participation in consortia and partnerships	3.05
Recognition and treatment by accrediting agencies	2.70

Regulations imposed by state/system higher education boards, councils and offices	2.63
Regulations imposed by taxing authorities (legislatures)	2.12
Regulations imposed by the federal government	1.95

Note. [a]1 = no impact to 6 = significant impact

Implications

As the issues are grouped according to the amount of impact, they roughly sort into administrative levels within educational institutions. Departments concern themselves primarily with faculty needs, technology implementation, and setting the educational direction in which programs and courses are delivered. Colleges, connecting administrative structures between departments and central administration, concern themselves with general financial support, student needs, and program quality and effectiveness. Central administration addresses institution-wide policy and governance issues as well as legal and regulatory needs.

While the department chairs are first-line academic leaders who implement change, they work with, and rely on, the college and central administration in establishing a structure that will support their technological, financial, and policy needs. Consequently, implementing distance delivery into an educational system is a collaborative effort between three institutional levels: the department, college, and central administration.

Within each of the eight primary issues, a number of specific concerns emerge as the new educational paradigm moves into the forefront of higher education. The specific concerns each administrative level needs to assume primary leadership can be depicted as a pyramid of distance education concerns (Figure 1).

Departmental level. Faculty commitment and buy-in are essential to move into distance delivery; specific issues to address include the impact on faculty workloads, appropriate compensation and recognition, and how to provide professional development opportunities on technology use and teaching methods that promote learning communities. Technology support is essential; specific issues to address include selecting and securing appropriate and reliable technology that is user friendly for both faculty and student access and use. Once a vision is established that complements the institution's strategic plan, leadership must emerge to establish a departmental strategy over a given time frame that includes promoting, marketing, and implementing courses. Departmental leadership may also need to "push" other administrative levels to deal with providing appropriate course security, integrating the distance education effort into tenure guidelines, and providing access to student services.

College level administrative responsibilities. College level administration normally addresses financial and student related issues along with those focused on quality and effectiveness. Funding up-front costs in distance education as well as integrating financial needs into an on-going budget creates challenges. Funding formulas need to be addressed so that distance education is recognized as an intricate part of the educational process so reliance on external

grants to support distance education programs can be minimized. Addressing financial issues is crucial in bringing along department chairs who have not yet implemented distance education.

Student issues that may need attention at the college level include student participation in learning communities for peer support in the learning process, processes for accessing library and instructional materials, course and program services, a help desk support, individual services, and student financial aid. The college also needs to assume primary leadership for course quality standards that support all departments within a college as well as developing strategies for measuring the effectiveness of the educational programs.

Central administration. Integrating technology into the educational paradigm and using it for distance delivery pushes some issues to the forefront and requires special attention so the institution addresses them properly; these include intellectual property and academic control issues, transfer and articulation of courses policies, consortia and partnership relationships, and regulations imposed by accrediting agencies, boards, taxing authorities, and federal laws.

Overall, administrators at the college level and in central administration need to be actively involved in the implementation of distance education. The college and higher administration levels need to work with the faculty, support them, and build a structure that supports the distance education process. Faculty have an enormous task to learn new teaching strategies, redesign teaching methods, and provide the students with a meaningful learning experience. These findings support Lever (1992), Rockwell, et al. (1999), and Seagren et al. (2000) who found that administrators and faculty need to work together in recognizing (a) the educational benefits to implementing distance education, (b) the motivating factors for teaching via distance and the obstacles that aren't conducive, and (c) the role of department chairs and others in implementing distance education.

Follow-up Research

The implementation of distance education courses and programs must be a collaborative effort between department, college, and central administration. Therefore, more research is needed to (a) pinpoint motivational factors at the different levels in the pyramid of distance education issues, (b) further delineate the various concerns addressed at each level and (c) elaborate on how leadership responsibilities at each level support or hinder the development of a new educational paradigm. A more complete, in-depth model will help to better understand how a collaborative process can best address the issues as distance delivery continues to expand and grow.

Summary

Implementing distance delivery into a system is a collaborative venture between the department, the college, and central administration because actions at each level affect the overall implementation process. While categories of issues can be defined, the way in which the issues are addressed becomes an interactive and responsive process as distance delivery grows and matures. While faculty develop new skills to teach via distance and redesign courses, they need administration's support at the college level in putting the organizational structure into place by addressing financial needs, student issues and outcome evaluation. While faculty operate within given policies and comply with regulatory and legal issues, central administration provides the leadership in establishing the parameters within which the University will operate. As decisions are made at the college and central administration levels, the various models faculty are developing in different departments to best deliver their subject matter needs to be considered. Department chairs become the pivotal point in the entire process because they are crucial in

setting a departmental direction for distance delivery and leading the way on implementing distance education within their department; they are the ones who interact regularly with other administrative levels and provide the feedback as the institution alters educational delivery strategies.

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