Predicting Support for Doctoral Programs in Media Information Technologies

by

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Abstract

This study assesses interest in curricular development in new technologies among communication faculty, with a special focus on doctoral-level programs. Diffusion of innovations theory explains both individual- and organizational-level factors that may account for adoption of innovations, including those stemming from new technologies. In the field of communication, media information technology programs represent an organizational-level innovation of clear importance but with uncertain faculty support, due to individual factors (e.g., interest area, age), and departmental constraints, such as a lack of resources. In light of this, several research questions are advanced to address (A) current level of support for media information technology programs among communication faculty members, and (B) predictors of faculty interest in having more media information technology programs. Data were collected through a random sample of faculty members who filled out a survey on the World Wide Web. Results indicate that media information technology programs are viewed as the most needed type of communication program by faculty. Findings from a logistic regression analysis also reveal several predictors of support for such programs. The implications of the findings are discussed, again in light of diffusion theory.

Predicting Support for Doctoral Programs in Media Information Technologies

The new millennium finds high interest among administrators and educators in the potential for academic technologies such as distance learning, DVD-ROM, and web-based instruction (e.g., Zurovchak, 1999). Perhaps no field is poised to make greater use of these emerging technologies--and be transformed by them--than communication (e.g., Craig & Carlone, 1998). Yet, despite the existence of a large body of literature focusing on technology and innovation adoption (e.g., Rogers, 1995), scholars are only beginning to track the growth of information technologies as a viable area of study within communication education.

As the Clinton administration's National Information Initiative suggests, eventually we will all be part of the "integrated communication grid" (Dizard, 2000), a network of diverse yet compatible hardwares, through which anyone can send or receive messages in any mode to virtually anyone anywhere. And, the growth of the information sector is already documented; the decade ending 2003 will witness a doubling in the proportion of Gross Domestic Product attributable to the telecommunications and information industry (Jessel, 1994).

Such initiatives may help document the *raison d'etre* of communication to our emerging information economy (Berko, Brooks, & Spielvogel, 1994; Dizard, 1989), which can in turn help fend off attacks on the discipline from established members of the academy (e.g., Atkin, 1996; Atwater, 1993). This study is designed to assess interest in curricular development in new technologies among communication faculty, with a special focus on doctoral-level programs.

Background

Herling (1996) notes that research on faculty adoption of (or resistance to) technology in the academic sector is needed if communication programs are to meet the needs of students in an increasingly

"hi-tech" job market where, for instance, digital technology is transforming the study of journalism and promotional communication. As commentators (e.g., Atkin & Jeffres, 1998) note, by incorporating these perspectives into their pedagogy and research, communication educators can better prepare their students for the changes technology and other emerging applications bring to the workplace:

> . . . the boundaries between print, broadcast, film and wire media are blurring in editing systems that pool content and images--in print as well as video formats--to construct messages that may emerge in several forms (p. 19).

As they recount, merging definitions of technology can help unify academic traditions that study them. These may range in scope from the mass media applications, mentioned above, to interpersonal and organizational applications like e-mail and personal computing (e.g., Rice & Case, 1983).

The ongoing convergence of communication media is ushering in a "communications" or "information" revolution that is based on collecting, storing, processing and communicating information.[1] Yet, despite the fact that scholars are entrusted with the task of identifying and documenting the impact of such technologies and of preparing the workforce for the information future, the academy often proceeds at a "glacial" pace when moving to adopt technology itself (Entman, 1994). And, even when academic units make the decision to move in the direction of information technology, those hoping to hire instructors trained in the theory and practice of "new tech" find themselves in a seller's market. This apparent mismatch between market forces and academic emphases can be seen in numerous anecdotal examples of unfilled "new tech" teaching positions at colleges and universities. Ironically, those who study the diffusion of innovations may be relatively slow to "adopt" new doctoral programs that threaten the status quo.

Diffusion theory

Herling (1996) notes that majority of innovation studies published address innovations that have

successfully diffused, but rather less is known about unsuccessful innovations. He recounts examples of rejected communication technologies, including educational television in the 1960s, pioneer videotext services and interactive cable television. Even research on more promising computer applications (Rice & Case, 1983) provides little basis for understanding the reasons for disinterest in new technology exhibited by some academics. And, most extant research has examined individual-level adoption, as opposed to group or organizational *collective* adoption decisions, such as the development of new academic programs.

With regard to the individual-level adoption process, social locators are typically important predictors of likelihood of adoption. As reviews by Rogers (1995) and Dutton, Rogers, and Jun (1987a; 1987b) suggest, diffusion studies find a fairly consistent positive relationship between early adoption and income, education, and higher status occupations (e.g., Adcock, Hirschman, & Goldstucker, 1977; Robertson, 1971). With regard to income, adoption is a natural function of the disposable financial resources one has available; higher costs of course present a less imposing barrier for wealthier households. Similarly, educational attainment is linked to a higher need to process and understand information technologies. This was traditionally perceived as a daunting barrier to the adoption of computer services, but has recently been ameliorated by the drive to provide more user-friendly systems. Related to these attributes, higher occupational status can drive adoption owing to a professional's greater work-related need to receive constantly updated information.

As Rogers' (1995) seminal review suggests, innovation studies often yield conflicting results with respect to age. Although the confluence of research suggests that the elderly are relatively slow to adopt innovations, younger consumers are typically only able to adopt low-cost innovations. In the realm of interactive media, for instance, younger consumers are among the most receptive for low cost, high

technology products such as automatic teller machines (Adcock et al. 1977; LaRose & Atkin, 1992).

Given that the median age of Internet adopters is 38, and that of the average faculty member is about ten years older (***, 1999), age-related dynamics do not bode well for the adoption of computer applications among the professorate. In fact, generational technology adoption dynamics suggest that faculty face a deficit in computer skills, relative to their students (e.g., Beniger, 1996). Specifically, while most communication faculty (97%) use a PC for some purpose (e.g., word processing), and 94% have access to a computer at work, there is no association between workplace computer access and usage of either Lexis/Nexis or e-mail (Herling, 1996).

Similarly, Zurovchak's (1999) survey of faculty technology use across all fields suggests that e-mail uses of the Internet were most common, followed by writing memos/letters and conducting writing. Fewer than half of respondents used the Internet to create presentations, conduct research, conduct data analysis, or participate in discussion groups.

Generally, innovativeness has been positively linked to several personality factors not widely considered in the communication literature, including achievement motivation, receptivity to change and venturesomeness. Innovators are also typically less inner-directed and dogmatic than their nonadopting counterparts (Rogers, 1995). Hirschman (1980) argues that the causes for innovativeness can be traced back to the underlying construct of novelty-seeking motives. These novelty-seeking motives, as noted by Fliegel and Kilvin (1966), may serve two purposes: enhancement of self-preservation and problem-solving skills. Individuals with stronger novelty seeking motives may proceed to either (1) develop a novelty-seeking orientation (or willingness to adopt) or (2) to actualize this novelty seeking intention (or engage in actual adoption).

Herling notes that resistance to technology adoption can occur at any stage of adoption. In

particular, he notes that "such resistance is tied to a need for stability because of the difficulty of expending one's energies continuously on making decisions" (1996, p. 50). In an academic context, this might encompass a skeptical professor who questions the relative advantage of adopting a new Web-based application, particularly in light of the time and monetary investments that adoption might entail. Or, as the National Resources Committee (1937) notes:

> An innovation, especially one which affects one's economic status as in the case of technologies, rudely shatters whatever equilibrium a person has attained. It demands...reorganization of personality to meet the needs of the new situation. It is little wonder that an innovation, whatever its nature, may be, provokes feelings of impropriety, and...attitudes of ridicule and disparagement, or is deliberately ignored (p. 61).

In addition to a consideration of the roles of individual charateristics in determining adoption of technology, dynamics of the collective decision-making process are also important. (Curricular adoption is, typically, a collective decision at the end of a consensus-building process.) To the extent that the collective (e.g., an academic department) holds characteristics associated with lower organizational innovativeness in general (Rogers, 1995), the unit may be expected to resist all changes, as threats to the integrity of the collective body. Academic units are likely to be high in complexity and interconnectedness, and low in centralization, all contributors to greater organizational innovativeness. On the other hand, they tend to be high in formalization (i.e., many rules and procedures) and lacking in organizational slack (i.e., short on available resources). These two factors are likely to inhibit innovative change. Particularly, in the case of low organizational slack, dynamics of *competition* for resources may emerge. If this does happen, the academic unit (e.g., a communication department) may resist adopting a high-tech curricula based, for example, on the perception that such a program requires too much monetary investment or technical knowledge to implement. This type of collectivist thinking can limit potential support for new tech programs despite an economy in which such programs would surely thrive.

Research Questions

The diffusion principles outlined above raise a number of questions about the likelihood of communication faculty supporting new curricula in media information technologies. The importance of technology programs seems clear, in light of the emerging information economy, and this should be especially evident to communication scholars. Faculty also have several characteristics (e.g., high education) that match those of early innovation adopters. However, some diffusion-based adopter characteristics (e.g., age) may limit their acceptance of new media technologies. In addition, faculty face organizational pressures and constraints that can stifle support for such programs, even when such approval would otherwise exist. The present study addresses these points by examining faculty support for new doctoral programs in media information technologies. We pose the following research questions:

Research Question Set 1: What is the relative level of support among communication academics for new doctoral programs in media information technologies? Does interest in such programs outstrip support for growth in other communication subfields?

Research Question Set 2: What factors predict faculty support for new doctoral programs in media information technologies? Is a "competition" function apparent, such that subfields are more or less likely to evince support? Do traditional, individual-level predictors of innovativeness come into play?

Methods

Study data were collected through the use of a survey posted on the World Wide Web in the fall of 1999.[2] The survey instrument was created on word processing software and then converted to HTML with Raosoft EZSurvey, a web survey creation program. Additional editing of the survey (e.g., aesthetic changes) was done using Microsoft Front Page. After the survey form was completed, it was loaded onto a Microsoft Front Page Extensions web server, which allowed data to be easily collected and saved. The

survey then went through an extensive testing and refinement process to eliminate "bugs" and other technical problems.

The population chosen for this study was faculty members from U.S. universities who belong to at least one of three major communication organizations (Association for Education in Journalism & Mass Communication [AEJMC], International Communication Association [ICA] and National Communication Association [NCA]). The sampling frame was the set of organization membership directories. Using a systematic random sampling method, equal proportions of names and e-mail addresses were selected from each of the three directories. Names that did not have an e-mail address were ruled ineligible and substitutes were randomly chosen. And, names of individuals who reside outside the U.S., who are not affiliated with a college or university-- or whose primary position is that of an administrator--were ruled ineligible and substitutes were randomly chosen.

A total of 1264 faculty members were selected for inclusion in the sample. The e-mail addresses of individuals selected via the sampling procedure were used to invite participation in the survey. Each address was imported into an Eudora address book. E-mail messages were written with the header "Help evaluate doctoral programs." The text of the messages included information about the survey and how it could be accessed. The e-mail invitations were sent using the BCC (blind carbon copy) function in Eudora. Approximately 350 of the invitations did not reach their intended targets, however, due to address changes and/or human error.

Included in the survey were a variety of social locator measures tailored to the academic sample: age, gender, highest degree, academic rank, and teaching specialties/research areas of interest, plus name of department/university and degrees offered by that unit (i.e., B.A., M.A., etc.). Since several of these variables were nominal (i.e., open-ended), they were dummy coded after being collected so they could be

used in later analyses. Specifically, the highest degree, academic rank, and teaching/research interest variables were dummy coded, with a "1" indicating presence and "0" indicating absence of the item. In the case of the teaching and research interest variables, dummy coding was especially important because some faculty members identified several areas of interest, such as mass communication, political communication, and rhetoric. These types of responses were coded according to the categories presented in Table 2, so that each faculty member could have up to 17 teaching interests and 17 research interests.

The survey instrument contained one section asking respondents to rate how important certain qualities are in advising students interested in obtaining a doctorate in communication. This section used an 11-point (0=not at all important; 10=very important) scale to tap the importance of each item. The rated qualities were as follows:

National research reputation of communication faculty
International research reputation of communication faculty
Reputation of the university
Commitment of professors to teaching
Opportunities for student internships
Opportunities for students to apply research to non-academic issues
Opportunities for students to teach undergraduate courses
Student involvement in faculty research
Student co-authorship with faculty on papers/publications
Student sole authorship on papers/publications
Up-to-date computer facilities
A survey research lab
A video/audio production facility
A film production facility
Experimental labs
Multimedia teaching facilities
The quality of the university library
The university's proximity to a major metropolitan area
A communication faculty that regularly engages in non-academic consulting
A communication faculty that regularly obtains research grants
A communication faculty with professional (i.e., non-academic) experience
The breadth of the communication faculty's theoretic and/or methodological orientations
Faculty encouragement of students to explore diverse perspectives on communication research

Student attendance at academic conferences
Qualitative methods coursework
Critical/cultural studies coursework
Quantitative methods coursework
Rhetoric coursework
Coursework on media industries
Coursework in a broad range of theoretical perspectives
Methods courses taught within the Ph.D.-granting department or school
The quality of course offerings outside the Ph.D.-granting department or school
The breadth of course offerings outside the Ph.D.-granting department or school
Required preliminary or qualifying exams
Required comprehensive exams or project

Also included in the instrument was a section asking respondents to indicate whether there are not enough, just the right amount, or too many doctoral programs that emphasize the following types of communication: (1) applied research, (2) law and policy, (3) international/development, (4) dispute resolution, (5) general communication, (6) health, (7) instructional, (8) interpersonal, (9) mass, (10) media information technologies, (11) organizational, (12) organizational technology, (13) applied organizational, (14) political, (15) promotional, (16) relational, and (17) rhetoric. These items were also dummy coded after the data was collected so that "1" indicated not enough programs and "0" indicated the right amount or too many programs with the particular emphasis, or that the respondent didn't know.

Results

A total of 221 faculty members responded to the survey, resulting in a response rate of approximately 25%. The sample was 39.7% female, with a mean age of 45.48 years. A majority of respondents had a Ph.D. degree (89%) and were either assistant (26.2%), associate (40.2%), or full professors (29%).

Table 1 presents the descriptive results of respondent ratings for a wide array of criteria applied to doctoral programs in the field of communication, when considering advising a student interested in doctoral studies. In the questionnaire and in this table, the criteria were split into general factors and

factors specific to the curriculum. As assessed by the faculty sample, when advising a student on doctoral programs, the top general criteria were the quality of the university library, up-to-date computer facilities, student attendance at academic conferences, the national research reputation of the communication faculty, and faculty encouragement of students to explore diverse perspectives on communication research.

With regard to curricular factors, the faculty ratings resulted in these top criteria for programs they recommend to students: coursework in a broad range of theoretical perspectives, quantitative methods coursework, methods courses that are taught within the Ph.D.-granting department or school, the quality of course offerings outside the Ph.D.-granting department or school, and qualitative methods coursework.

In response to the first set of RQs, Table 2 presents the results for the items in the questionnaire that probed perceptions of various disciplinary divisions and specialties in doctoral programs. The specialty that emerged with the most support was Media Information Technologies. More than half of the faculty respondents (53%), in fact, indicated that there are "not enough" programs in Media Information Technologies. Other specialties for which a sizeable number of respondents felt that there are "not enough" programs include Applied Communication Research (35%), Organizational Communication Technology (32%), Dispute Resolution (28%), Health Communication (27%), and International/Development Communication (23%).

Another way to examine the data in the table is to look at specialties that garnered a substantial number of votes indicating that there are "too many" such programs at present. Such emphases included Interpersonal Communication (34%), Mass Communication (31%), Rhetoric (30%), Promotional Communication (27%), Relational Communication (23%).

To address the second set of RQs, Table 3 presents the results of a stepwise logistic regression

with support for more doctoral programs in media information technologies as the dummy-coded dependent variable (1 = not enough; 0 = just right/too many/don't know). The independent variables, entered into the equation in a hierarchical model with forward stepwise order using the Wald method within blocks, included social locators (age, gender, academic rank) in Block 1, teaching and research interest areas (dummy coded) in Block 2, perceptions of the adequacy of the number of doctoral programs in various types of communication (dummy coded) in Block 3, and evaluations of qualities of Ph. D. programs deemed important in Block 4.

The overall model included eight predictor variables, one from Block 1 (gender), two from Block 2 (teaching interest in organizational communication technology, research interest in mass communication), three from Block 3 (perceived adequacy of number of health communication doctoral programs, perceived adequacy of number of organizational communication doctoral programs, perceived adequacy of number of organizational communication technology doctoral programs), and two from Block 4 (perceived importance of multimedia teaching facilities to a doctoral programs, perceived importance of comprehensive exams or projects to a doctoral program). The model was highly significant, with a Goodness of Fit statistic of 70.337 ($p < .0001$), a "pseudo" R^2 of .280, and a Nagelkerke R^2 of .429. The Hosmer and Lemeshow chi-square was non-significant, a sign of a strong predictive model. Positive predictors of support for new doctoral programs in media information technologies in the final equation included being male, having an organizational communication technology teaching interest, having a mass communication research interest, supporting more programs in health communication, organizational communication and organizational communication technology, and believing that multimedia teaching facilities are important, but that required exams or projects are not important, in a doctoral program. The classification matrix revealed a 78% "hit" rate, well above the .50 chance

criterion. A Press' Q analysis showed a highly significant chi-square statistic (56.4, $p < .0001$), indicating a large improvement over chance.

Discussion

This study set out to establish a baseline for areas of faculty demand for academic doctoral programs focusing on communication technology. The present findings help bolster the rationale for enhancing the study of new communication technology. Of all the communication areas included in the adequacy assessment section of our survey, media information technologies was the only type of program that a majority of faculty members thought there should be more of. To the extent that these digital applications assume a central role in our economy, their study can help identify sources of resistance to innovation.

It is perhaps as instructive to examine what faculty characteristics do *not* predict enthusiasm for the development of media technology doctoral programs as it is to look at those that do. For example, Rogers' (1995) criterion of innovation compatibility would lead us to believe that faculty with specialties in interpersonal communication and rhetoric might be unlikely to support new doctoral programs that would be at odds with their traditional orientations to the field. Yet, teaching and research emphases in these specialties were not predictive. And, typical social locators did not emerge as predictive of innovativeness; age and faculty rank were non-significant, while gender was significant. This minor role for social locators is typical of recent research that identifies a growing role for attitudinal predictors of innovativeness (Neuendorf, Atkin, & Jeffres, 1998).

Indeed, positive predictors of faculty support for media information technology programs in the present study included several attitudinal variables assessing interest in and support for technological innovations. Specifically, having organizational technology as a teaching focus, being in favor of more

organizational communication technology programs, and even the belief that multimedia teaching facilities are important all emerged as significant predictors. This suggests that faculty who are in favor of media information technology programs are generally supportive of high-tech innovations, across settings and contexts. This may be an indication that some of the traditional divisions between communication subfields (e.g., rhetoric, mass, organizational, interpersonal) may diminish when there is a common interest in new technology. Perhaps having department members who are interested in the study and application of new technology fosters a sense of cooperation, and this type of organizational climate could enhance the prospects for technology-related programs being adopted.

This general lack of intra-disciplinary competitiveness apparent in the findings may be the legacy of a relatively "plush" position enjoyed by the communication field overall, with a recognition of a growing gap between baccalaureate and doctoral education. Craig and Carlone (1998) have identified a 534% increase in bachelor degrees awarded in all communication subfields from 1968 to 1993, and a 288% increase in masters degrees. During the same period, the number of doctorates rose only 92%.

In the end, it may be outside competitive pressures that determine the communication discipline's response to pedagogy in the new media. For instance, several business schools are developing e-commerce programs, hoping to serve a growing market segment that's expected to grow from $43 billion to $1.3 trillion between 1998-2003 (Brin, 1999). Education programs are quickly staking out a presence in the growing $250 billion distance learning market (Grimes, 2000).

This study establishes that communication faculty are generally supportive of new technology programs and offers several possible predictors for faculty being in favor of such programs. Most interestingly, perhaps, it suggests that an interest in technology may transcend communication contexts, something academic curricula need to respond to. The recent focus on the Information Superhighway has

crystallized attention on high-tech industries, showcasing their vital role in the nation's current and future economy. At the same time, reports of jobs in the industry being left unfilled highlights the necessity of having more "tech" programs in the field of communication to train tomorrow's media professionals and scholars. In doing so, the discipline can maintain (and even enhance) its standing in the academic community and generate and diffuse knowledge at a pace reflective of the constant and continual evolution of technology itself.

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Table 1. Evaluations of qualities of Ph.D. programs.

How important is each of the following for a Ph.D. program in communication? (0=not at all important; 10=very important)	Average rating by faculty
1-The quality of the university library	9.00
2-Up-to-date computer facilities	8.52
3-Student attendance at academic conferences	8.51
4-National research reputation of communication faculty	8.34
5-Faculty encouragement of students to explore diverse perspectives on communication research	8.33
6-Student involvement in faculty research	8.28
7-The breadth of the communication faculty's theoretic and/or methodological orientations	8.24
8-Commitment of professors to teaching	8.17
9-Student sole authorship on papers/publications	8.10
10-Opportunities for students to teach undergraduate courses	7.93
11-Student co-authorship with faculty on papers/publications	7.86
12-Reputation of the university	7.84
13-A communication faculty that regularly obtains research grants	7.00
14-Multimedia teaching facilities	6.55
15-International research reputation of communication faculty	6.30
16-A survey research lab	6.23
17-Opportunities for students to apply research to non-academic issues	5.99
18-Opportunities for students to learn organizational communication technologies (e.g., tele-, video-, computer-conferencing, virtual teams and decision making)	5.79
19-Experimental research labs	5.74
20-A communication faculty with professional (i.e., non-academic) experience	5.72
21-A video/audio production facility	5.10
22-Opportunities for student internships	4.98
23-The university's proximity to a major metropolitan area	4.97
24-A communication faculty that regularly engages in non-academic consulting	4.36
25-A film production facility	3.47

Table 1. Evaluations of qualities of Ph.D. programs (cont.).

How important is each of the following to the curriculum of a doctoral program? (0=not at all impt.; 10=very impt.)	Average rating by faculty
1-Coursework in a broad range of theoretical perspectives	8.63
2-Quantitative methods coursework	8.46
3-Methods courses taught within the Ph.D.-granting department or school	8.10
4-The quality of course offerings outside the Ph.D.-granting department or school	8.04
5-Qualitative methods coursework	7.93
6-Required comprehensive exams or project	7.72
7-The breadth of course offerings outside the Ph.D.-granting department or school	7.67
8-Required preliminary or qualifying exams	6.59
9-Critical/cultural studies coursework	6.45
10-Coursework on the economics and law of communication industries	5.73
11-Rhetoric coursework	5.45

Table 2. Perceptions of adequacy of number of doctoral programs. (All figures are percentages.)

Opinion on number of doctoral programs that emphasize:	----Faculty sample---			
	Not enough	Just right	Too many	DK
Media Information Technologies (e.g., study of emerging communication technologies)	53	19	7	21
Applied Communication Research (e.g., using communication principles for problem-solving)	35	23	9	34
Organizational Communication Technology (inc. tele-, video-, computer conferencing, virtual teams & decision making)	32	14	10	44
Dispute Resolution (including mediation and conflict)	28	19	4	49
Health Communication (including communication about health issues and within a health context)	27	30	9	34
International/Development Communication (e.g., communication for national development)	23	23	12	41
Political Communication (e.g., study of the role of political messages)	23	33	17	27
Instructional Communication (including communication about education and within educational contexts)	21	24	15	41
Promotional Communication (e.g., study of advocacy communication, including public relations and advertising)	20	20	27	33
Communication Law and Policy (e.g., study of the operation of mass media industries)	20	34	10	37
Organizational Communication	17	39	19	26
Applied Organizational Communication (e.g., focus on consulting applications of organizational communication principles)	17	21	11	51
"General" Ph.D. in Communication (without a required specialization)	13	26	37	24
Rhetoric (including argumentation, study of freedom of speech issues, analysis of messages)	13	30	30	30
Mass Communication	11	44	31	15
Relational Communication (e.g., study of interaction in human relationships)	10	31	23	36
Interpersonal Communication	6	37	34	23

Table 3. Stepwise Logistic Regression results predicting support for more doctoral programs in Media Information Technology

Overall Model Fit: Goodness of Fit Measures	Value	Significance
Goodness of Fit	70.337	< .0001
-2 log likelihood (-2LL)	180.44	
"Pseudo" R^2	.280	
Cox and Snell R^2	.322	
Nagelkerke R^2	.429	

	Chi-square	df	Significance
Hosmer and Lemeshow	7.98	8	.435

Variables in the Equation	B	S.E.	Wald	Sig.	r	Exp(B)
Gender (femaleness)	-.605	.391	2.401	.121	-.109	.546
Org. tech. teaching interest	2.404	1.142	4.429	.035	.132	11.071
Mass com. research interest	1.192	.405	8.663	.003	.166	3.294
Support for more health com programs	.798	.435	3.355	.067	.150	2.220
Support for more org. com. programs	1.456	.646	5.084	.024	.261	4.287
Support for more org. tech. programs	1.774	.475	13.961	.000	.435	5.894
Multimedia teaching facilities important	.238	.086	7.662	.006	.185	1.269
Required comp. exam or proj. important	-.196	.082	5.745	.017	-.136	.822

Classification Matrix

Actual Group	Group 0	Group 1	Percent Correct
Group 0: Enough or too many media information tech programs	69	19	78.4
Group 1: Not enough media information tech programs	21	72	77.4
Overall Percentage			77.9

B = logistic coefficient; S.E. = standard error; Wald = Wald statistic; Signif. = significance level; r = correlation; Exp(B) = exponentiated coefficient.

ENDNOTES

[1] According to some estimates, over half of American employees today are part of the "knowledge class" in an "information age." Thus we see the emergence of a post-industrial society, where communication is increasingly replacing transportation as the major means of connecting people. The energy core of this new social framework involves new technologies of communication (Bell, 1976).

[2] Two identical surveys were posted, one for faculty and one for chairs, as part of an omnibus survey on doctoral education (from which a report and another paper were written). Other measures were collected with these instruments, in addition to the ones reported in this paper. However, only the faculty study results and the measures pertaining to the research questions posed in this paper are mentioned here.