

Influence of Web-based Distance Education on the Academic Department Chair Role

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ABSTRACT

The purpose of this study was to examine academic department chair perceptions about the future influence of web-based distance education on departmental operations and their changing role as academic leader. Using a rating, modified-policy Delphi method, the researcher worked with 22 department chairs employed at public, urban universities in the United States to develop 76 factor statements about the opportunities, pressures, changing relationships, and role of the chair. In a three-step process, the chairs reduced the 76 factors into 29 predictive statements. Furthermore, the researcher merged the predictions into six themes covering topics such as the importance of external agencies to the successful implementation of web-based education and concerns about future funding. Based on the findings, the researcher argued that the most efficient strategies to promote web-based distance education are through the efforts of the department chair due to the closer proximity of the department to external markets.

Keywords

Distance education, Web-based instruction, Delphi Study, Higher Education, Department Chair

Introduction

There is little doubt that web-based distance education provides public universities and colleges with a variety of opportunities to enhance visibility, sustain growth, and improve access to higher education. These same opportunities, however, come with inherent pressures on the status quo and traditional methods of knowledge construction and dissemination. Contemporary universities struggle to find strategies to fully capitalize on the possibilities while minimizing the problems. In turn, these combined opportunities and pressures influence important internal and external relationships for the academy. Just as the introduction of printing with moveable type and the classroom blackboard revolutionized educational practice -- following close on the heels of the influence of radio, television, and film on knowledge presentation and exploration -- web-based distance education is the next technological wave to flood educational thought and transform the academy (Daniel, 2002; Vrasidas & Glass, 2002).

Web-based distance education does not stand apart in the rapidly changing educational environment at the turn of the millennium. It is simply the most visible and outward sign of major transitions in higher education (Eoyang, 2004) due to the "need to innovate" by education constituents (Westera, 2005, p. 28). Web-based education is a driving force in its own right as well as a key component of contemporary educational movements, including equity of access and lifelong learning (Anderson, 2001; Caret, 2001; Connell, 1995; Holland, 2001); workforce preparation and business-university connections (Bates, 1999; Caret; Turoff, 1997); student consumerism and commercialization of higher education (Callan & Finney, 1997; Oblinger, Barone, & Hawkins, 2001; Rowley, Lujan, & Dolence, 1998; Turoff, 1997); improved capabilities of educational technologies, the Internet, and telecommunications (Bates; Oblinger et. al); and student-centered learning (Lucas, 2000; Palloff & Pratt, 1999; Tait & Mandell, 1999).

Its symbiotic relationship with other educational movements draws web-based distance education into debates over how higher education is delivered, to whom it is delivered, when and where it is delivered, and the goal of delivery (Eastmond, 1998; Oblinger et al.; Van Dusen, 2000). Responding to the needs and expectations of society, public universities are challenged to transform higher education from a place-bound campus-based learning system to one that provides accessible, high-quality, and low-cost education (Rowley, et al., 1998). Because of their role as the voice of faculty and administrative link for the college dean (Gmelch & Miskin, 1995), academic department chairs operate in a pivotal position related to transforming the academy. The

purpose of this paper, therefore, is to explore the perceptions of chairs employed at public, urban universities about their predictions for future implementation of web-based distance education.

The Urban University

The challenge of responding to the needs and expectations of society is of paramount importance to those higher education institutions that serve an urban or metropolitan area. These institutions, often located in the heart of a metropolis, attract a diverse student population that reside and work in the surrounding urban area. These students are typically older, more ethnically diverse, and attend multiple institutions generally taking more than four years to graduate (Johnson & Bell, 1995; Lynton, 1995; Twigg, 2000). The characteristics of the metropolitan university student closely resemble those best served by web-based distance education (Emil, 2001).

Dziuban and Moskal (2001) declared that “the metropolitan university’s emergence and technology’s rapid growth are the definitive educational movements in the latter part of the 20th century” (p. 42). The public university began to be a significant presence in large urban centers in the 1950s and 1960s. By the 1980s and 1990s, these universities embraced a mission of service to the local community. Each metropolitan university typically has a student population of 10,000 to 20,000 and provides undergraduate and graduate programs in both traditional and nontraditional formats (Lynton, 1995).

Due to a mission of serving nontraditional students commuting from work and home to the classroom, metropolitan universities rely on web-based technologies. In the mid-1990s, Connell (1995) urged metropolitan universities to use the latest generation of technology to enhance their mission related to workforce preparation and make connections with the business community in the surrounding metropolitan area. By the early 21st century, urban and metropolitan universities took the lead, in many cases, in the development and use of innovative instructional technology methods to meet the needs of a diverse student population and to achieve the mission of the institution (Warner, 2001).

Role of the Department Chair

As universities attempt to develop web-based courses and programs to capture a share of the on-line market and to respond to societal demands, the academic department plays a vital role in connecting development with implementation. Obviously, the reality of web-based distance education resides in the desire of faculty to effectively use on-line delivery and the ability of the academic department to garner the resources to support faculty efforts. Because the academic department chair is the resource gatekeeper, the chair is influential in the success or failure of any new initiative within the department. Through his or her multiple responsibilities of influencing departmental policies, goals, and objectives, and evaluating faculty performance, the chair has the ability to guide faculty interest (Carroll & Wolverson, 2004). With that said, it is apparent that one critical voice in the web-based education discussion is that of the academic department chair.

The multi-faceted role of the department chair is well-documented in the literature. This academic leader serves as an important link between the administrative requirements of the university and the faculty values of academic departments (Gmelch & Miskin, 1995; Carroll & Wolverson, 2004). Increasingly, the chair functions as a front-line manager for the university acting as the primary spokesperson for department faculty, staff, and students by articulating their needs to the administration (Hecht et. al., 1999). Likewise, the academic chair channels information from senior administration to faculty implementing policies and programs related to the institutional mission. According to Gmelch & Miskin, the department chair is situated at the “heart of the tension” between the department and the institution (p. 113) placing the chair in a pivotal position related to any academic programmatic change, such as web-based education (Hecht, Higgerson, Gmelch, & Tucker, 1999). Because of this position, the perception of academic chairs about web-based distance education can serve as a valuable conceptual framework in understanding the future development of on-line courses and programs offered by public universities.

Significance of the Study

Because of the symbiotic link between web-based distance education, the mission of the public, urban university, and the importance of the academic department in the successful implementation of web-based education, this

study adds worthy insight into those issues that bolster or hamper web-based instruction. Likewise, due to the vital relationship between the academic department and the urban university mission, the department chair resides at a critical point of policy implementation. As stated earlier, this position makes the perception of the department chair an important consideration in the development of future web-based education policies and procedures. Whereas this study is only an exploration of a phenomenon and, therefore, is not generalizable to a target population, it is an important start in research about web-based instruction and the department chair.

To date, extant literature does not examine evolving opportunities, pressures, and newly found institutional relationships due to web-based technology from the perspective of the academic chair. Nor does the literature explore the future role of the department chair as a result of web-based education. Furthermore, research has not explored those constructs as related to the operations of an urban university. This study aims to fill the research gap by combining all of these constructs into an in-depth examination of the issues that may influence the future of web-based education. The resulting theoretical framework from this study provides senior administrators with a model for encouraging academic department chair support in the use of web technology for instruction. Even for those urban institutions that practice centralized governance, the department chair or division head is still influential in helping faculty form opinions of web-based instruction, opinions that are connected to their willingness to offer courses via the web.

The Delphi Technique

The Delphi technique, first introduced during the 1950s, has been defined as “a method for systematic solicitation and collection of judgments on a particular topic through a set of carefully designed sequential questionnaires interspersed with summarized information and feedback of opinions derived from earlier responses” (Delbecq, Van de Ven, & Gustafson, 1975, pg. 10). The technique has matured into one of the core tools for futures forecasting focused on surveying the environment to determine likely issues which will impact an organization, community, or individual (Lang, 1994). The Delphi method was developed to answer questions about the future when uncertainty and complexity exists (Sweigert & Schabacker, 1974, Conhaim, 1999). Martino (1972) described the areas well suited to Delphi methods as those in which (a) there is no adequate historical information, (b) judgment about the impact of many converging factors is required, and (c) technological progress depends more on the decisions of others than it does on the technology.

The technique is not a single method, but rather a family of methods with many variations and modifications (Martino, 1972). Every Delphi study is a structured group communication process with the following essential characteristics: (a) sequential questionnaires, (b) controlled feedback, (c) reiteration, and (d) anonymity of respondents (Lang, 1994). Delphi studies are accomplished through a series of either written, e-mail, or online questionnaires completed by experts on the subject (Stewart, 2001). The nature of each round of questionnaire and analysis is dictated by the nature of the previous round (Moore, 1987). The series of questionnaires is interspersed with feedback derived from participant responses through the informed judgment of a monitor (Fazio, 1984). The sequence of questionnaires and feedback continues until consensus is approached or until sufficient information has been exchanged (Delbecq et al., 1975).

Linstone and Turoff (1975) described three types of Delphi methods distinguished by their intent: (a) classical Delphi functioning as a forum for establishing facts, (b) policy Delphi functioning as a forum for generating ideas, and (c) decision-making Delphi functioning as a forum for decision making. Objectives of a policy Delphi study are “to ensure that all possible options have been put on the table for consideration, to estimate impact and consequences of any particular option, and to examine and estimate the acceptability of any particular option” (Turoff, 1975, p. 87). Moore (1987) differentiated the policy Delphi method from the more traditional Delphi method in that policy Delphi begins with a set of ideas gleaned from external sources, such as a literature review, from which the researcher formulates the initial questionnaire. According to Martino (1972), the initial questionnaire has the advantage of starting the panel off with a common base and context.

Many variations of Delphi methods, called modified Delphi methods, have been developed and used (Stewart, 2001). Ranking-type Delphi, a modified Delphi method created by Delbecq et al. (1975), is characterized by a rank ordering of all options by panelists. Lang (1994) found a modified policy Delphi method using ratings to be appropriate for detecting and describing structural changes in an organization. A modified policy Delphi is especially well suited when striving for stability rather than consensus and when divergent opinions must be acknowledged and included in the findings (Eggers & Jones, 1998; Lang, 1994). For these reasons, a rating Delphi, a common variation of the ranking-type Delphi using ratings on a 5, 7, 9, or 11-point scale to indicate the importance of an issue, was used for this study.

Research Method

The researcher purposively selected panelists from urban universities with an expertise about (a) academic department leadership, (b) the characteristics of a public university, and (c) web-based education. Two sampling frames were used related to these three criteria. The first sampling frame selected was the institutional membership directory for the Coalition of Urban and Metropolitan Universities (Coalition of Metropolitan Universities retrieved March 23, 2002, <http://www.metrouniversities.com/directory.htm>). The second sampling frame was Petersons.com Distance Learning website which provides a complete list of all universities offering courses or degrees, or both, via web-based distance education (Petersons.com Distance Learning, retrieved March 26, 2002, <http://www.petersons.com/distancelearning/>). As of March 2002, there were 58 members of the Coalition with 37 of those members listed on Petersons.com. The final sample included four institutions located in the Midwest, two in the Pacific Northwest, two in the South, two in the South Central, three on the East Coast, and one in the Mountain region. Twenty-two department chairs volunteered to participate on the Delphi panel.

Demographic Survey

At the beginning of the Delphi process a demographic survey was e-mailed, to each volunteer. The purpose of the survey was to provide information about the panelists related to their experience as a department chair and with web-based distance education. Based on the findings of the demographic survey, the 22 panelists who volunteered for this Delphi study were individuals who had some level of experience with and knowledge about the use of technology in their professional lives and as an instructional tool in the classroom. For the most part, these individuals viewed themselves as leaders in web-based distance education in their department and college. However, they were less likely to channel that expertise into committee service for their college, university, or state. A near majority of the panelists represented departments that used web-based instructional technology for undergraduate as well as graduate students. Likewise, a clear majority worked with an academic department that had the potential to tap into an income-producing market due to online courses and degree programs. Finally, the majority of the panelists indicated that their institution relied on individual faculty and academic departments for the creation and implementation of web-based courses and programs.

First Phase Questionnaire (FPQ)

Once the 22 panelists returned a completed demographic survey, the researcher sent an e-mail message to each panelist with an embedded hyperlink for the first questionnaire in the Delphi process. As prescribed by the modified policy Delphi procedure, the researcher prepared the FPQ using extant literature about web-based distance education courses and programs. The questionnaire was divided into four sections: (a) opportunities for the academic department because of web-based distance education courses and programs, (b) pressures placed on the academic department because of web-based courses and programs, (c) relationship changes influenced by the opportunities and pressures of web-based distance education, and (d) the future role of the department chair due to these new opportunities, pressures, and relationship changes.

At the beginning of each section, instructions were provided requesting panelists to rate their perception of the importance of factor statements on a 5-point Likert Scale with '0' indicating 'no opinion', '1' indicating 'not important' and '5' indicating 'critically important'. For example, the instructions for the 'opportunities' section stated, "*Please rate your perception as a department chair of the IMPORTANCE of the following opportunities, in the context of web-based distance education*". Each of the remaining three sections had similar instructions. The 'opportunity' section included 24 factor statements to include the following examples:

- Access to higher education for underserved student population
- Access for students located in the metropolitan area

The 'pressures' section of the questionnaire included 22 factor statements with the 'relationship' section totaling 17 factor statements. The 'department chair role' section included 13 statements for a total of 76 factor statements in FPQ. In addition to rating the factor statements, panelists were given the opportunity to make comments related to each section. The comments were shared with panelists in the second round and were coded in search of new factor statements. Thirty-six comments were analyzed for inclusion in SPQ resulting in 26 new factor statements.

Second Phase Questionnaire (SPQ)

The purpose of the SPQ was to fully explore the divergent opinions of panelists about each of the factor statements in the four sections. The outcome of the SPQ was the development of the final questionnaire in the Delphi process that contained predictive statements related to operating an academic department with web-based distance education. Just as the purpose of the FPQ was to ‘jump start’ the conversation, the purpose of the SPQ was to provide some level of stability in the diverse opinions offered by panelists. The SPQ was developed after the analysis of the ratings and comments submitted for the FPQ. The second questionnaire retained the same format as FPQ with four sections and factor statements within each section. Once again, the panelists were requested to rate their perception of the importance of opportunities, pressures, relationships, and chair role as influenced by web-based distance education. However with the SPQ, the researcher customized the questionnaire specifically for each panelist. On the newly customized questionnaire, the researcher included a statistical table for each section with the factor statement number, the 25 to 75% interquartile range for each factor statement, and the answer provided by the panelist. With that information at hand, each panelist could quickly ascertain how their responses to the FPQ correlated with the responses of their peers.

The instructions for the SPQ requested that the panelists use the interquartile information and reconsider their original response. The new factor statements developed based on the qualitative data from the FPQ were presented to the panelists for the first time in the SPQ and did not have interquartile information. Therefore, the value of the SPQ was threefold, providing panelists with a: (a) second opportunity to rate their perceptions allowing sufficient time for critical and reflective thought, (b) context for their ratings based on the ratings of their peers, and (c) new set of factor statements to considered based on their comments from the FPQ. The ratings for the SPQ were used to determine what factors would be presented to panelists in the culminating questionnaire #3.

Two primary methods were used to determine which factors were highly important as compared with those that were controversial. To determine the most important factor statements, the researcher compared the mean score for all factors using a ‘cut-off’ mean of 3.7 on the 5-point scale. Therefore, those factor statements with a 3.7 mean or higher were of significant importance to the panelists to remain in questionnaire #3. To determine controversial factor statements, the researcher compared the standard deviation of factor statements with a mean factor rating of less than 3.8. This method exposed additional factor statements for which the ratings indicated a spread of opinion and, therefore, were controversial. Because of the controversial nature of these factor statements, they were included in questionnaire #3. Finally, the qualitative data collected in SPQ was categorized and used to fine tune questionnaire #3.

Predictive Statements Questionnaire (PSQ)

The PSQ was the culminating questionnaire for this Delphi study. The purpose was to synthesis the ‘important’ factor statements, the ‘controversial factor statements, and qualitative comments from FPQ and SPQ to develop predictive statements. A total of 29 predictive statements were included in the PSQ. (See Table 1)

The format of the third questionnaire was similar to the first and second questionnaire, in that, panelists were given the new predictive statements grouped together by the four previous sections of (a) opportunities, (b) pressures (c) relationships, and (d) chair roles. For this third round, however, panelists were requested to rate their ‘desirability’ for each predictive statement on a 5-point Likert Scale with ‘1’ representing ‘highly desirable’, “3” as ‘neutral’ and ‘5’ representing ‘highly undesirable’. Immediately following the desirability rating, panelists were instructed to rate the ‘likelihood’ of the predictive statement occurring using the same 5-point Likert Scale with ‘1’ representing ‘highly likely’ and ‘5’ representing ‘highly unlikely’.

To determine a final ‘desirability score’ and ‘likelihood score’, the researcher assigned weights to the desirability and likelihood scales. For example, the researcher multiplied the total number of panelists that rated a predictive statement as ‘highly desirable’ with a weight of ‘2’, the total of panelists that rated a statement as ‘desirable’ with a weight of ‘1’, and so on until all of the ratings were converted into a final desirability score. The same procedure was used for the likelihood rating. The final step in the process was to label a predictive statement based on the overall desirability and likelihood score. All statements receiving a score greater than ‘23’ were labeled as ‘highly desirable’ and ‘highly likely’, a score between ‘5 – 23’ were labeled as ‘desirable’ and ‘likely’, and so on until all predictive statements were given a label.

Table 1. Predictive Statements

Predictive Opportunities (PO)

Academic departments housed in a public metropolitan university will use web-based distance education to:

1. Increase matriculation of non-traditional students. (D:HL)
2. Increase matriculation of rural students. (HD:L)
3. Develop a regional and /or national niche by offering:
 - a) Degrees in areas of critical workforce shortages (D:L)
 - b) Specialized degrees and certifications not commonly available (D:L)
 - c) Degree completion programs (D:L)
 - d) Educational opportunities at business locations (D:L)
4. Enhance the quality of courses taught in the department by employing technological advances whether the courses are designated as 'wed-based' or 'web-enabled. (D:L)
5. Create a student-centered learning environment. (D:L)

Academic departments housed in a public metropolitan university will operate in an environment where:

1. State and federal funding received for for-credit distance education enrollment is comparable to funding for on-campus student enrollment. (D:UL)
2. There is no funding differential between web-based courses and on-campus courses resulting in a course scheduling process based on the needs and demands of students. (D:L)
3. State, system, and institution-wide initiatives fund web-based course development and implementation. (D:N)
4. State, system, and institution-wide initiatives support the development and maintenance of a telecommunications infrastructure supporting web-based higher education. (HD:N)

Predictive Pressures (PP)

Because of the use of web-based distance education, academic departments housed in a public metropolitan university will:

1. Rely on grants, contracts, or other sources of external funding to support the creation of web-based programs and/or the development of web-based courses. (D:L)
2. Support already established web-based degrees and courses without requiring external funding such as grants and contracts. (D:N)
3. Continue to offer web-based distance education courses to:
4. Keep the metropolitan university competitive and viable. (D:L)
5. Keep the department competitive and viable. (D:L)
6. Accept and adopt new concepts related to the evaluation of student performance and the effectiveness of web-based educational experiences. (D:L)
7. Develop new pedagogic and technical skills to effectively use web-based capabilities appropriately. (HD:L)
8. Adopt work release and financial incentives commensurate with the effort involved in the creation of web-based distance education courses and conversion of traditional courses resulting in increased participation by faculty. (D:N)
9. Offer a course structure where web-based distance education courses and degrees co-exist in appropriate balance with traditional on-campus courses and degrees without negatively affecting on-campus offerings. (D:L)

Note: The following abbreviations are applicable: HD = highly desirable; D=desirable; N=neutral; UD=undesirable; HUD=highly undesirable; HL=highly likely; L=likely; UL=unlikely; HUL=highly unlikely

Predictive Relationships (PR)

1. Web-based distance education will be instrumental in the development of greater ties with external stakeholders such as business/industry and government agencies in providing higher and continuing education. (D:L)
2. The development and implementation of web-based courses and degrees will be primarily the responsibility of the academic department with little support or coordination from the institution. (N:N)
3. Institutional strategic planning for web-based distance education will include the administration, faculty, and other appropriate support units. (HD:L)

4. Information technology and other support units will act as advisors, not controllers, to faculty developing and implementing web-based distance education courses and degrees. (D:L)
5. Administration will provide a robust infrastructure to support web-based distance education, to include:
 - a. Telecommunications networking including fast Internet connections. (HD:L)
 - b. Faculty development related to web-based course preparation. (HD:L)
 - c. A centralized unit to prepare courses working with faculty input and content. (D:L)
 - d. An information technology unit that is aware of and abides by the academic calendar and other academic needs in their operations. (D:L)
 - e. A distance education component of the institution that handles marketing and coordination of web-based distance education. (D:L)
6. The administration of the institution will plan realistically for the costs and revenues of web-based distance education. (D:N)

Predictive Chair Role (PCR)

1. Chairs heading departments offering online degrees and/or a significant number of web-based distance education courses will take a more proactive leadership role in programmatic decision making within the department. (D:L)
2. The chair will be more involved at the college, institution, and/or state level in strategic planning for web-based distance education. (D:N)
3. The chair will act as a vital communication link and departmental advocate channeling faculty needs to the administration. (HD:L)
4. The chair will play an active role in creating an environment conducive to web-based distance education by mitigating internal departmental politics surrounding web-based education and supporting the morale of all faculty. (HD:L)
5. Departmental resources such as staff, money, and equipment will be judiciously allocated to support web-based distance education efforts at an appropriate level that reflects its role in the department strategic plan. (HD:L)
6. The chair will lead the department in ascertaining the external market for web-based distance education offerings and identifying sources of funding for distance education efforts. (D:L)
7. The culture and operations of the department developing web-based distance education will be based on shared governance of departmental faculty. (D:L)

Note: The following abbreviations are applicable: HD = highly desirable; D=desirable; N=neutral; UD=undesirable; HUD=highly undesirable; HL=highly likely; L=likely; UL=unlikely; HUL=highly unlikely

Limitations of the Delphi Method

Several potential weaknesses found at various phases of a Delphi study are commonly noted. Perhaps the most daunting is that certain questions, indeed key questions, are not asked because they do not seem important when the study is started. Simmonds (1977) acknowledged that missing the target in the early stages could either invalidate a study or cause significant hardship on everyone involved. This might occur if the monitor of a modified policy Delphi study either creates an initial list of statements that does not define the issues/questions well enough to provide panelists with an adequate starting point or if the monitor does not incorporate the issue statements from the panelists appropriately. Even when the correct questions are asked it is vital that panelists understand that question and its related statements. Panelists might answer inappropriately or be frustrated to the point of losing interest.

The monitor also exercises a critical role because they control the key elements of implementation and analysis of the study (Stewart & Shamdasani, 1990). Moore (1987) suggested that the monitor might be a limiting factor if bias distorts either the formulation of the questionnaire or the results in such a way as to affect the outcome of the study. Imposing a process that is too restrictive on the panelists diminishes their input (Moore). Abusing the privacy of the panelists diminishes the free flow of opinions and insights (Moore).

Lang (1994) suggested that if the process of reaching consensus suppresses extreme points of view important new information or new insights may be lost. A policy Delphi study that seeks to illuminate issues fails in its mission if the study methods lose the valuable viewpoints of the individual panelists as the study pursues consensus and conformity rather than idea generation. The monitor should take concrete steps to ensure the

compilation and consideration of outliers (Blow & Sprenkle, 2001). In addition, if the monitor does not permit exploration of disagreements, discouraged dissenters might drop, thereby creating an artificial consensus (Linstone & Turoff, 1975).

The Delphi method cannot fulfill phenomenological purposes, but is best used for pretest and exploratory research (Frey & Fontana, 1992). According to Moore (1987), Delphi is not an end in itself and should be used within a larger process or to lay the groundwork for further investigation. The validity and reliability of a Delphi study rests in the selection of the panel, the creation of the instruments for collecting responses, the care with which the researchers used the responses of the panelists to improve upon the instruments as suggested by the panelists, and the interpretation of the data.

In this study, the researcher developed the research method after reviewing extant literature on the criticisms of the Delphi method and designed a protocol sensitive to those issues. Each phase of the Delphi method included opportunities for open-ended questions to allow nonrestrictive discussion by participants. As outlined in the research method below, the researcher used a web-based program that protected the privacy of panelists, only the researcher knew the identity of each panelist. Panel selection followed a strict protocol to ensure the selection of a representative sample. Finally, outliers were identified in the study, included in the questionnaire for each phase, and used to encourage continued debate through the comments section of the questionnaire.

The only criticism remaining that was valid as a limitation to this study was the use of initial key questions by the researcher. As noted, the researcher developed the first questionnaire based on a review of extant literature. Therefore, the limitation exists that the researcher may have inadvertently influenced the answers of panelist or the direction of thought. However, through the three phases of discussion and the practice of the researcher in encouraging debate and in-depth comments, participants in this study had, and took, the opportunity to add to the initial key questions.

Results

The majority of the predictive statements had scores representing a certain level of 'desirability'. This finding was congruent with the Delphi process keeping in mind that the purpose of Delphi is to reach some level of stability in opinions through continuous rounds of discussion about a given topic. Therefore, finding that most of the predictive statements were desirable to the panelists was not surprising. In fact the only statement that deviated from the desirability score was related to the role of academic departments supporting web-based distance education without support from the college or institution. This statement received a 'neutral' total score on both desirability and likelihood.

Opportunities

The predictive statements were written as a result of panelists' quantitative ratings of factor statements in the FPQ and SPQ as well as their qualitative comments. Therefore, these statements were a product of department chair perceptions about the influence of web-based distance education and the operation of the academic department. With this in mind, the themes embedded within the predictive statements are as telling as the desirability and likelihood scores. For example in the first five predictive opportunity statements, the theme for two statements revolved around enhancing opportunities for the department by improving access for students. A third theme related to developing a student-centered, as opposed to teacher-centered, learning environment within the department. All three of these 'student-oriented' opportunity statements received high desirability scores.

The remaining predictive opportunity statements centered on themes related to enhancing the (a) visibility of the department, (b) quality of courses, and (c) federal, state, system, and institution-wide involvement in web-based distance education. The majority of panelist desired support from stakeholders external to the academic department for web-based distance education with most remaining unoptimistic about those predictive statements coming to fruition.

Pressures

Unlike the common 'student' theme found within the predictive opportunity statements, the statements predicting future departmental pressures due to web-based distance education were more diverse. Of the seven

pressure statements, two statements were polar opposites as related to funding web-based courses and programs. Both of these statements evolved from panelists' comments on the first two questionnaires and reflected the funding dichotomy experienced by these department chairs. On the one hand, the panelists desired a funding situation where the academic department could support web-based education without the need for attracting grant and contract dollars. However, the majority of panelists indicated that they were 'neutral' as to the likelihood of this possibility. On the other hand, panelists were lukewarm in their support for attracting outside grant and contract monies indicating, however, that this pressure on the department to become more 'grant-savvy' was closer to reality.

The panelists also recognized the likelihood that future academic departments housed in a public, urban university would continue to receive pressure to offer web-based courses and programs with the goal of achieving the mission of the university and ensuring that departments remain competitive. Additionally, these department chairs predicted that there would be ongoing pressure to design and implement assessment tools for the web-based learning environment. Related to that unique learning environment, these department chairs supported the predicted pressure of developing faculty incentive packages commensurate with the time investment required for developing courses and programs online. They also supported the pressure of providing a strategy to allow online and on-campus courses to co-exist. Interestingly, however, the panelists were neutral as to the likelihood of either of the latter two becoming a reality.

Finally, just as these department chairs predicted the opportunity of using web-based technologies to enhance the quality of courses offered, they predicted that their academic departments would receive continued pressure related to this opportunity. In fact of all seven predictive pressure statements, the statement related to the development of new pedagogic and technical skills to effectively use web-based technologies received the highest desirability and likelihood score.

Relationships

The predictive relationship statements addressed a host of themes ranging from the relationship between the academic department and (a) stakeholders external to the university, (b) the institution, and (c) the administrative unit responsible for providing technology support. Of the six relationship statements, one statement continued the theme threaded through the opportunity and pressures section of connecting the academic department to external constituencies because of web-based distance education. The panelists agreed on both the desirability and likelihood of connecting their departments with outside groups due to a common interest in the effectiveness of web-based courses and programs.

These panelists predicted that web-based distance education would influence the relationship between the academic department and the institution through the strategic planning process needed to plan and implement web-based education. They looked to the institution to develop and implement quality telecommunications networks, faculty development related to web-based education, and a centralized unit to manage the marketing of web-based courses and programs. So much so, in fact, that these department chairs were neutral both in their desire for and predicted likelihood of a relationship with the institution in which the academic department was solely responsible for the implementation of web-based courses and programs. They were lukewarm in their desire to have a centralized unit of the institution to prepare online courses even with faculty input on content. However, they did believe that this type of centralized unit was likely for the future. Whereas, they desired an institution that was realistic in determining the costs of and revenues for web-based distance education, they were neutral in their prediction of the likelihood that this relationship would actually develop.

The final relationship important to these department chairs was with the information technology support unit for the institution. They indicated a desire for and predicted the likelihood of an information technology unit that served as 'advisors' to, and not 'controllers' of, faculty developing and implementing web-based courses and programs. They also desired a relationship with the information technology unit that resulted in the sensitivity of the unit to the demands and needs of the academic department.

Chair Roles

The culminating section of the predictive statements was the influence of the opportunities, pressures, and relationships on the chair's role as predicted by these panelists. The seven predictive statements related to the future role of the department chair merged into three overarching themes. Those themes included the planning

for web-based distance education, implementation of web-based courses and programs, and departmental governance of web-based education. These panelists highly desired a strategic departmental plan that judiciously allocated departmental resources toward web-based distance education based on the goals of the department. They supported the role of the department chair in ascertaining the external market for distance education courses and programs, and in identifying sources of funding from those markets. These department chairs, however, indicated a weaker desire with a neutral perception of likelihood for the chair taking a role in strategic planning for web-based education at the state, institution, or college level.

Related to the implementation of web-based distance education courses and programs, the panelists highly desired and deemed likely the future role of the chair in developing an environment conducive to effective web-based offerings and supporting the morale of faculty. Of equal desirability and with the likelihood of occurring, these panelists predicted a significant future role for department chairs as serving as a faculty advocate related to the unique needs of providing distance education courses. Likewise, the department chairs serving on this Delphi panel provided information that informed the development of two predictive statements related to the governance of web-based distance education courses and programs. First, they indicated a strong desire for the development of web-based courses and programs based on shared governance by departmental faculty. Second, they supported a more proactive role by the chair in making programmatic decisions related to online and on-campus courses for their department.

Theoretical Framework

The predictive statements included in this study were a culmination of a three-step questionnaire process. (See Table 1) Twenty-two department chairs representing a variety of disciplines in a variety of public, urban universities with some experience in web-based distance education shared their thoughts on the future of web-based education and the role of the department within that future. The panelists merged 76 factor statements about the opportunities, pressures, relationships, and the changing role of the department chair as related to web-based distance education into 29 predictive statements. The purpose of these statements was to predict the influence of web-based distance education on the future operations of the department.

To form a theoretical framework from the 29 predictive statements, the researcher merged the statements into six overarching themes explaining the phenomena of web-based distance education as academic departments learn to operate in that environment into the future. (See Table 2). Those themes included: (a) the relationship between the academic department and external agencies, (b) funding web-based courses, (c) ensuring the viability of the university and the academic department, (d) enhancing learning, (e) ensuring faculty development and compensation, and (f) developing a sound technology infrastructure. These themes, or theoretical constructs, explain the contemporary thinking of academic department chairs about web-based technology and, perhaps, influenced their willingness to support web-based instruction. Whereas, these constructs may not provide startlingly new revelations, they do offer researchers and senior administrators with a guide for future strategic planning from the perspective of the chair.

Theoretical Constructs

As noted in Table 2, the first theoretical construct – External Agencies -- blends predictive statements related to the importance of external agencies to a department chair in providing necessary support for web-based technology. Chairs want involvement at the state, system, and institution level in maintaining a sound telecommunication network and providing necessary funding to support that network. The chairs in this study predicted the need for valid strategic planning related to web-based education recognizing that their involvement in that planning would be an important future role for the chair. Improving relationships with business, industry, and government agencies was an important opportunity for academic departments due to web-based access.

The second construct, funding web-based education, explains the importance department chairs place on resource development for the support of web-based technologies. These department chairs debated the need for procuring grant dollars to fund technology or relying on already established support from the state, system, or institution. While all chairs participating in the study found either option desirable, they agreed that most urban institutions would place pressure on the academic department to procure grant funding. They also predicted that a new role for the department chair would revolve around their leadership in procuring that funding. Linked to funding, these chairs predicted increased pressure on institutions to plan realistically for the true costs and revenues associated with web-based offerings.

The viability of the university and department was the third theoretical construct and included the perception by department chairs of the value of web-based technology in helping the institution and department build a national or regional niche by offering specialized degrees in critical need areas. This construct pointed to the need for future chairs to take a leadership role in programmatic and curricula decision making to ensure that courses were offered on-line that was congruent to these needed degrees. In the fourth construct, department chairs predicted the ability of web-based instruction toward enhanced learning due to the matriculation of students not otherwise served by higher education, quality of web-based courses, and student-centered nature of web technology. Interestingly, however, these chairs did not develop a predictive statement as to their role related to enhance learning through web-based distance education. Perhaps, this role of ensuring quality learning is so embedded in the job of the department chair that these chairs did not believe it necessary to develop a predictive statement related to this theme. Or, these department chairs may view enhanced learning as a responsibility of faculty and therefore not within the discussion of predicting the future role of the department chair.

It comes as no surprise that academic department chairs developed predictive statements addressing the importance of faculty development and compensation for the success of web-based distance education. In this fifth construct, these chairs predicted the continued importance of providing work release and financial incentives for faculty willing to tackle web-based education. They underscored the need for faculty development related to course preparation for on-line courses and the possibility of a centralized unit on campus to help faculty prepare courses. Chairs participating in this study predicted a new role for future department chairs in creating an environment conducive to web-based instruction.

The final theme, technology infrastructure, includes predictive statements made by these department chairs as to the importance of providing a sound technology infrastructure to ensure the success of web-based courses. The participants in this study predicted the continued need for an information technology support unit that acted as advisors to faculty helping in course development and implementation, a unit that understands and abides by the needs of the academic department. Additionally, they predicted the need for a centralized unit that would manage the marketing component of distance education along with coordination of courses offered on the web.

Table 2. Theoretical Framework

Construct #1: External Agencies

1. There is no funding differential between web-based courses and on-campus courses resulting in a course scheduling process based on the needs and demands of students.
2. State, system, and institution-wide initiatives fund web-based course development and implementation.
3. State, system, and institution-wide initiatives support the development and maintenance of a telecommunications infrastructure supporting web-based higher education.
4. Web-based distance education will be instrumental in the development of greater ties with external stakeholders such as business/industry and government agencies in providing higher and continuing education.
5. Institutional strategic planning for web-based distance education will include the administration, faculty, and other appropriate support units.
6. The chair will be more involved at the college, institution, and/or state level in strategic planning for web-based distance education.

Construct #2: Funding Web-based Distance Education

1. State and federal funding received for for-credit distance education enrollment is comparable to funding for on-campus student enrollment.
2. Departments will rely on grants, contracts, or other sources of external funding to support the creation of web-based programs and/or the development of web-based courses.
3. Support already established for web-based degrees and courses without requiring external funding such as grants and contracts.
4. The administration of the institution will plan realistically for the costs and revenues of web-based distance education.
5. Departmental resources such as staff, money, and equipment will be judiciously allocated to support web-based distance education efforts at an appropriate level that reflects its role in the department strategic plan.
6. The chair will lead the department in ascertaining the external market for web-based distance education offerings and identifying sources of funding for distance education efforts.

Construct #3: Viability of the University and Department

1. Department will develop a regional and /or national niche by offering degrees in areas of critical workforce shortages; specialized degrees and certifications not commonly available; degree completion programs; and educational opportunities at business locations.
2. Department will continue to offer web-based distance education courses to keep the metropolitan university and department competitive and viable.
3. Chairs heading departments offering online degrees and/or a significant number of web-based distance education courses will take a more proactive leadership role in programmatic decision making within the department.

Construct #4: Enhance Learning

1. Web-based education will increase matriculation of non-traditional students and rural students.
2. Web-based education will enhance the quality of courses taught in the department by employing technological advances whether the courses are designated as 'wed-based' or 'web-enabled.
3. Web-based education will create a student-centered learning environment.
4. Departments will accept and adopt new concepts related to the evaluation of student performance and the effectiveness of web-based educational experiences.
5. Universities will offer a course structure where web-based distance education courses and degrees co-exist in appropriate balance with traditional on-campus courses and degrees without negatively affecting on-campus offerings.

Construct #5: Faculty Development and Compensation

1. Departments will develop new pedagogic and technical skills to effectively use web-based capabilities appropriately.
2. Departments will adopt work release and financial incentives commensurate with the effort involved in the creation of web-based distance education courses and conversion of traditional courses resulting in increased participation by faculty.
3. Administration will provide a robust infrastructure to support web-based distance education including faculty development related to web-based course preparation and a centralized unit to prepare courses working with faculty input and content.
4. The culture and operations of the department developing web-based distance education will be based on shared governance of departmental faculty.
5. The chair will act as a vital communication link and departmental advocate channeling faculty needs to the administration.
6. The chair will play an active role in creating an environment conducive to web-based distance education by mitigating internal departmental politics surrounding web-based education and supporting the morale of all faculty.
- 7.

Construct #6: Technology Infrastructure

1. Information technology and other support units will act as advisors, not controllers, to faculty developing and implementing web-based distance education courses and degrees.
2. Administration will provide a robust infrastructure to support web-based distance education including telecommunications networking including fast Internet connections.
3. Administration will design an information technology unit that is aware of and abides by the academic calendar and other academic needs in their operations.
4. Administration will provide a distance education unit that handles marketing and coordination of web-based distance education.

Use of Framework to Guide Strategic Planning

All six constructs can guide future planning and decision making for the successful implementation of web-based distance education. Keeping in mind that the value of the Delphi method resides in the brainstorming activity of a small group about a specific topic, the theoretical framework suggested above is not generalizable to a larger population of academic chairs. It is meant instead as a starting point in the discussion about the chair role in the implementation of web-based distance education. With that said, there is worth in using the framework to include chair perceptions in the strategic planning process for web-based education implementation.

In developing incentives for departmental participation, senior administrators should heed the value chairs place on developing viable relationships with external markets by offering specialized degrees. Designing strategies to help departments tap into those markets would certainly improve faculty willingness to participate in web-based instruction. Furthermore, administrators should be cognizant of and find strategies to address the desire by department chairs for support from the state, university system, and institution for distance education by working with these agencies to garner needed resources and communicating the availability of those resources to the department chair.

Likewise, these department chairs recognized their responsibility related to helping their department identify sources of funding and judiciously allocating resources to support web-based education within the departmental strategic plan. Because these department chairs understand the importance of their role in seeking and distributing funds, university administrators have a strong ally already in place in the implementation of web-based distance education. To fully utilize that ally, administrators must design strategies that support efforts by department chairs in the pursuit of their funding goal. Because the academic department is closer to the external market for each discipline, the most efficient investment of resources for web-based education should focus on the strategies of the department.

Evident in the findings from this study, department chairs recognize the potential of web-based education in promoting access to and quality of learning. Once again, senior administrators are encouraged to tap into this support for web-based education by communicating the possibilities of enhanced learning via the web and helping departments find pedagogic strategies for using web technologies. However, as these academic chairs predicted, all of the above strategies become moot if the institution does not provide reliable technology infrastructures. Senior staff must remain mindful of the importance of the infrastructure to academic departments and develop strategies to ensure quality and dependability.

Conclusion

The findings of this study paint a dichotomous view of web-based distance education with the opportunities for success on the one hand and the predications about lack of support outside of the department on the other. It is reasonable to assume that the academic department chairs in this study serve institutions that provide varying degrees of support for web-based distance education. Some senior administrators may believe that they offer adequate support to departments and faculty given constrained resources. However, as is evidenced in this Delphi study these department chairs do not share that perception. Web-based distance education is the next technological wave to flood the academy with department chairs serving as the front-line academic leaders. Therefore, it is imperative that administrators heed the perceptions of these individuals. Quite simply, the academic department chair can make or break an institution's desire to embrace web-based distance education.

According to Myers, Bennett, Brown, and Henderson (2004), "extant research on the [advantages and disadvantage] of educational technology and online learning environments is mixed" (p. 2), therefore emphasizing the need of academic leadership to provide direction and guidance for faculty on the use of web-based distance education. As an instructional innovation, web-based distance education demands the attention of the department chair. Ensminger, Surry, Porter, & Wright (2004) found four conditions necessary for successful implementation of an innovation. The four conditions were managed change, performance efficacy, external rewards, and resources. The researchers developed a survey instrument with 32 statements based on a theoretical framework postulated by Donald Ely (1990, 1999). The survey was administered on-line using a sampling frame of instructional designers. Instructional designers ($N = 179$) employed in a variety of environments to include K-12, higher education, business, military, government, and designers that were self-employed responded to the survey. Using factor analysis, the data merged into the four conditions mentioned explaining approximately 73% of the total variance.

The researchers defined 'managed change' as the desire of organizational members for leadership providing clear direction and guidance during the innovation and implementation stage (p. 68). 'Performance efficacy' referred to the need of members to perceive that they currently have the skills needed to accomplish implementation or that they can quickly obtain those skills. 'External rewards' simply referred to the desire by organizational members for compensation or incentives related to the work of implementing an innovation. Finally, 'resources' was defined by researchers as the need by organizational members to perceive sufficient resources to maintain quality technology before the implementation phase begins (p. 69).

Managed change is congruent with the argument offered in this study that the role of the academic department chair is crucial to the successful implementation of any innovation to include web-based distance education. This leadership role makes the perceptions of academic department chairs important to the discussion of successful web-based programs and courses. The remaining three factors are represented in the resulting theoretical framework from this study by two of the six theoretical constructs -- faculty development and compensation and funding web-based education. It seems reasonable to deduce that the academic department chairs in this study were very cognizant of the two areas of concern by faculty related to innovation implementation. Whereas a more in-depth comparison of the findings from the two studies would be invalid due to differences in research design, it is interesting to note that 'faculty development and compensation' and 'funding web-based education' may come from department chair interactions with faculty and listening to their concerns about web-based education. On the other hand, building relationships with external agencies, ensuring university and department viability, enhancing student learning, and developing a sound technology infrastructure are, perhaps, perceptions that have evolved over time due to the *process* of implementing an innovation and the unique experiences of the chair as a front-line manager.

In the final link between theory and practice, it is recommended that university administrators use the above themes as a framework for developing strategies to support the academic department chair in implementing successful web-based programs. Understanding the value these chairs place on using web-based technologies to identify their niche in the external market, enhancing student learning, and ensuring the viability of the department provides administrators with a tool for encouraging departmental participation in web-based learning. Recognizing that department chairs place an emphasis on faculty development and compensation as well as involvement in decision-making about web-based offerings should inform administrator practice in developing effective web-based programs. Focusing on the concerns of chairs related to funding web-based courses in equity with traditional courses and ensuring a sound technology infrastructure to support faculty and student work affords administrators the opportunity to attend to those concerns that are the most important to the department chair.

Recommendations for Future Research

The value of the Delphi approach is to provide a theoretical framework for future exploration based on the thoughts of an expert panel in the research area. To that end, recommendations for future research revolve around the need to take this theoretical framework and design future qualitative studies that explore in-depth the predictive statements in this study or quantitative studies that confirm the framework. Additionally, other studies are needed with a diverse sample of universities. Because this study focused on department chairs within urban universities, the data are limited to those types of institutions. Further research is needed on department chair perceptions for research universities and community colleges.

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