THE UTILIZATION OF TELECONFERENCING BY COMMUNITY COLLEGES
IN FACULTY AND STAFF DEVELOPMENT PRESENTATIONS

DISSERTATION

Presented to the Graduate Council of the University of North Texas in Partial Fulfillment of the Requirements For the Degree of DOCTOR OF PHILOSOPHY

By

Alan Maples, B.A., B.B.A., M.C.S.
Denton, Texas
August, 1996
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Members of the Instructional Teleconference Consortium (ITC) were mailed a survey instrument. A total list of 375 teleconference coordinators generated 137 usable responses.

The purposes of this study of faculty and staff development presentations by teleconferencing were to determine the amount of usage; which subject areas are utilized; what delivery methods (live, interactive, prerecorded, multimedia, etc.) are utilized; barriers (size or location of college, size of teleconference or travel budget, etc.) to implementing teleconferences; and the sources of presentations utilized in teleconferences.

Larger community colleges are the greater users of teleconferencing and even produce some for distribution to other community colleges, whereas smaller community colleges have just begun to receive equipment that enables them to receive telecasts for this purpose. No clear subject area has yet been defined that dominates these teleconferences, and the trend is toward two-way audio and one-way video as the delivery media as communication costs decline. Barriers
of money for staff, equipment, and programming appear to be the principal objections to the use of teleconferencing for faculty and staff development presentations. There appear to be few sources of presentations except for the Public Broadcasting System (PBS).
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CHAPTER I
INTRODUCTION

According to Al Bond, president of Satellite Management International Corporation, the use of teleconferences for professional development in industry increased at the rate of more than 20 percent per annum from 1991 to 1994, and education and government institutions cannot be far behind in utilizing this emerging medium (personal communication, March 15, 1995). Bond observed that teleconferencing offers the advantages of keeping people productive at their job site and of reducing travel expenses. He stated that the primary disadvantages include (a) adaptation by attenders to a change of environment through distance learning rather than through attending conferences in person and (b) the retraining of presenters to the teleconference medium. Bond felt confident that the advantages far outweigh the disadvantages and that the trend of more utilization of teleconferences for professional development in both industry and education will continue.

As evidence that teleconferencing has grown rapidly in the 1990’s, the International Teleconferencing Association indicated that the teleconferencing industry had total revenues of $2.3 billion in 1993, a growth of 31% over the
$1.75 billion reported in 1992. Revenues for 1994 were over the $3 billion mark (Galbreath, 1995). The increasing use of teleconferencing in higher education and, more specifically, in community colleges, has brought about the establishment of centers for teleconferencing at over 400 of the more than 1500 community colleges in the United States (Clifford, 1994). The increased use of teleconferencing is due, in part, to the declining cost of the delivery of information and the increased use by community colleges of technology to lower administrative expenses.

Faculty and staff presentations are increasingly administered by teleconference, which offers the convenience of personnel's remaining on campus while gaining knowledge from experts on timely subjects. Professional development can take place even though most community college travel budgets allow a limited number of conferences per respective discipline or instructor every year (LeBaron, & Bragg, 1994).

As the technology evolves, teleconferencing has meant different things to different people. By definition of its Greek/Latin root, teleconferencing literally means "bringing people together over a distance." Technically, teleconferencing occurs when a group of people communicate from two or more separate locations and participate interactively. In the past this has been accomplished with
teleconferencing. Currently the desktop video delivers voice, picture, and data from almost anywhere to almost anywhere. Whether live or prerecorded information is transmitted, teleconferencing utilizes a vast network of telephone lines, microwave towers, and satellites to quickly communicate either in one direction only or interactively between the participants. Teleconferencing is in its infancy in terms of general use, especially in higher education in the United States (Chute, 1994).

Centers for teleconferencing in community colleges have broadcast live interactive teleconference classes with some prerecorded segments, delivered prerecorded telecourses, or produced and delivered live teleconferences. Their services are offered to anyone in their college system, to other colleges or universities, to private industry, or to governmental agencies. These teleconferences are produced by the centers themselves or are bought from others and transmitted into their network via satellite. Usually, teleconferences are a single event, but they can be a series of related teleconferences grouped together. Teleconference formats usually consist of a documentary or lecture, an interview with an expert, or, more commonly, a panel of experts lecturing and answering questions. The teleconference cost may be justified because from the timely expert information transmitted over some distance so that travel costs are eliminated (Clifford, 1994).
Faculty and staff at community colleges are faced with an increasing demand for professional development at a time when budgets are being stretched by increased costs and declining revenues. Colleges are increasingly aware that, to the extent that their faculty and staff fail to learn new skills and become aware of new approaches, their productivity declines. As fewer positions become available, the existing faculty and staff are not revitalized with recent graduates who bring new approaches and technology. Also, the demands for faculty to stay current have increased as change has occurred in the demographics of students (older, more diverse, and fewer in number), in competition both from other colleges and from private industry, and in the technological enhancement of education skills. Development budgets are small and do not allow for much travel even though experts in faculty and staff development are almost never local. Education and training could upgrade human capital in the same way that similar investments are made to upgrade and maintain mechanical and electrical equipment (Cuffman, 1994).

Teleconferencing offers an excellent solution to the problem of faculty and staff development. The matching of needs and capabilities is overcoming the financial restraints, the time utilization, and the quality of training. Further justification is the ability to record the teleconference for later viewing. Although other means exist
to deliver faculty and staff development programs, such as written material, conferences, seminars, and interactive software, the teleconference offers the opportunity to bring experts in a specific field together utilizing an interactive medium that stimulates learning through participation. Administrators, staff, and faculty view teleconferences from different perceptions. Some view them as depersonalized, whereas others welcome the convenience. Usually the timeliness of the information overcomes any inhibitions participants have about the method of delivery (Dahmer, 1993).

Faculty and staff presentations by teleconference are classified by purpose as follows: awareness of a specified area, information through communication between the participants, and instruction in certain skills. These teleconferences are a mixture of live and prerecorded programs that call for the participants to interact with the presenters and other participants. Many variables have influenced the success of the teleconference: the presenter, the technical quality of the production, and the content of the subject matter. As these teleconferences overlap with what the community colleges are attempting to do locally, both ascertaining their needs and matching those needs with the teleconference objectives become crucial to the success of the teleconference (Dillon, 1994).
Theoretical Framework

Such a suitable match of lowering costs while providing timely information would produce a community college-teleconference partnership benefitting producers of teleconferences and participants from the respective community colleges. By meeting the needs of the community colleges for better trained faculty and staff through more economical means, revenue is generated for the producers of the teleconferences. Determining the utilization of teleconferencing by community colleges in faculty and staff development presentations is the first step in the process of successfully developing and marketing teleconferences to community colleges that have not yet utilized teleconferences for faculty and staff presentations. This study focused on the development of a broad profile of faculty and staff presentations by teleconferencing in community colleges and ascertained various categories of comparison of the utilization of those faculty and staff development presentations. The study identified the state-of-the-art of teleconferencing of faculty and staff development presentations by community colleges in the United States. This study was conducted primarily as a way of developing relevant information from each institution included.

A search through Dissertation Abstracts International revealed that, since 1985, various aspects of
teleconferencing have been investigated in 14 doctoral dissertations. Four are technical in nature; 5 deal with corporate or secondary school environments; and the remainder deal with higher education teleconference applications. These concern the use of a process to check for a low-rate of speech (Davidson, 1988); corporate teleconferencing (Noor Al-deen, 1988); the implications of a video-conference installation for diffusion of innovation research (Sayers, 1988); corporate opinions on teleconference training (Arnoff, 1989); the impact of video conferencing on perceived group cohesiveness (Mbaatyo, 1989); teleconferencing in continuing education (Nichols, 1989); factors influencing the use of video conferencing for organizational communications (Pease, 1989); analysis, design, and performance evaluation of a video teleconference (Stubblebine, 1989); investigation of international teleconferences (Sclater, 1990); learning style preferences of engineering faculty and students on video-based distance learning course achievement (Winant, 1990); factors influencing the adoption of teleconferencing in the university-based hospital (Karnes, 1991); desktop teleconferencing (Lauwers, 1991); and an analysis of continuing education curriculum of associated general contractors of America for delivery by satellite teleconferencing (Johnson, 1994).

In a study done with physician/instructors who received
faculty development via teleconferencing, Williams (1994) found that instruction was more motivating and was delivered in a more effective manner through teleconferencing than through traditional means. According to Williams, adult educators need advice about the problems and challenges of teaching. Adult educators generally are experts in the content they teach, but they are not adequately prepared for the challenges of teaching in non-traditional learning environments (Williams, 1994).

A search of the literature revealed that little research has been done on the utilization of teleconferencing at community colleges in faculty and staff development. Existing information concerned either the technical aspects of teleconferencing or the utilization of teleconferencing in environments other than the community college setting. Few studies dealt with faculty and staff development presentations by teleconference, with little specific information on how these teleconferences are advertised, what subject areas are addressed, and how they are presented. If specific information on community college faculty and staff presentations utilizing teleconferencing could be obtained, producers of teleconferences, as well as community colleges themselves, could be better prepared to meet the needs of participants. It is hoped that this study can benefit those involved in the process of faculty and staff development utilizing teleconferencing.
Statement of the Problem

The problem addressed by this study was the utilization of teleconferencing by community colleges in faculty and staff development presentations.

Purposes of the Study

The purposes of this study were as follows: (a) to determine the amount of usage of faculty and staff development presentations by teleconferencing by community colleges in the United States; (b) to determine which subject areas are utilized for faculty and staff development presentations with teleconferencing by community colleges in the United States; (c) to determine what delivery methods (live, interactive, pre-recorded, multimedia, etc.) are utilized for teleconferences for faculty and staff development presentations by community colleges in the United States; (d) to identify barriers (size or location of college, size of teleconference or travel budget, etc.) to implementing teleconferences for faculty and staff development presentations at community colleges in the United States; (e) to determine the sources of presentations utilized in teleconferences for faculty and staff development presentations.

Research Questions

To carry out the purposes of this study, the following questions were addressed:

1. To what extent are community colleges in the United States...
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States utilizing the teleconference as a delivery method for faculty and staff development?

2. Which delivery methods (live interactive video, two-way audio, one-way video and two-way audio, etc.) of teleconferences are used by community colleges in faculty and staff development presentations?

3. How much do community colleges spend on teleconferences for faculty and staff development presentations?

4. Are budgets for faculty and staff development presentations through teleconferencing increasing, decreasing, or remaining the same? What is the budget forecast for the future? What are the constraints on the budget for faculty and staff development presentations by teleconferencing?

5. What subject matter titles are utilized in the faculty and staff development presentations delivered by teleconferencing?

6. Do community colleges in the United States produce their own teleconference presentations for faculty and staff development, or do they obtain them from other sources? If so, what are the sources of these presentations?

Definition of Terms

Faculty and staff development presentations: those teleconference presentations in which presenters either communicate information, interview an expert on some
subject, or moderate a panel of experts on some subject while allowing for the interactive exchange of questions and answers. This professional development presentation can be prerecorded for part of the presentation, but the ability to participate interactively by two-way audio and one-way video or two-way audio and two-way video is present for all participants.

Teleconference: the use of a telecommunication system for communicating with a group of people at two or more locations. The system used allows communications to flow interactively by way of two-way video and audio or two-way audio and one-way video. When desktop computer teleconferencing is used, picture, data, and sound can be transmitted and received interactively by computer. Presentations may be a single event or a series of related events.

Utilization: a quantified amount of usage that may be measured in time, dollar amount, and number of events, for comparison purposes. The comparison results can be helpful in determining what variables may influence usage or utilization and possibly in predicting what combination of variables either enhance or decrease utilization.

Significance of the Study

As telecommunication costs decline, teleconferencing has proven to be a cost-effective means of delivering faculty and staff development information in a timely
manner. As more community colleges are able to afford this technology, its use will increase. This research enables community college personnel to learn more about how other community colleges are using this technology so that institutions can more quickly implement its use in faculty and staff development presentations.

Faculty and staff development presentations are increasingly important as institutions attempt to make their employees more productive. Change is occurring at an ever-increasing rate, and, as changes take place, people need information on how to cope with those changes.

Community colleges are currently under extreme pressure to increase the productivity of their faculty and staff. Because of budgetary constraints, providing developmental presentations in the most cost-effective way possible means that community colleges must look to technology for solutions. Teleconferencing can be an effective means to match these two goals provided it is known how these teleconferences are implemented at institutions presently utilizing them.
CHAPTER II

REVIEW OF THE LITERATURE

Historical Overview

While teleconferencing is only about fifty years old, much of its early history seems to be lost or ignored based on what is in the literature. Yet in that fifty years, it has developed to the point that there is practically no place on earth from which we cannot originate a teleconference, or receive its program (America’s Information Highway, 1994).

Educators generally think of bringing people together in a classroom for the purpose of dispensing information. However, in tracing the application of teleconferencing, educators were the first group to adopt and apply teleconferencing systems, primarily to extend educational opportunities to people in distant locations (Dillon, 1990).

Thus, technology has created a university without walls today. But what of the future? Some believe that those who think teleconferencing’s growth is spectacular will be astounded by the decade from 1990 to 2010 (Ely, 1990).

The first use was related to medical information. Several pharmaceutical companies used the closed circuit television (CCTV) for the education of thousands of...
physicians at association meetings throughout the country. This interactive teleconferencing included large screen, color, presentations. Educators became involved when the University of Illinois College of Dentistry presented the first college-level audio teleconferencing in 1947 (Ellis, 1992).

In the early sixties, a few organizations on either side of the Atlantic installed closed-circuit television linkages and used them for business meetings between two locations. Since dedicated transmission generally had to be leased from telecommunications administrations and was expensive, distances tended to be small (Hannafin, 1993).

The history of utilizing teleconferences for faculty and staff development presentations has been one of much contention. Many have resisted change of any kind; others have felt it to be too depersonalized; and others have genuinely not liked the use of the medium for professional development. Much experimentation in terms of format and delivery method has been attempted. A clear strategy for implementing these development presentations is evolving, and research has dealt with specific situations for diverse environments of a particular type of higher education institution. In some cases, however, the medium of interactivity, the timeliness of subject matter content, and the convenience have persuaded faculty and staff to choose development by teleconferencing (Needham, 1986).

In education, we usually think of bringing people
together in a classroom for the purpose of dispensing information. However, in tracing the application of teleconferencing, educators were the first group to adopt and apply teleconferencing systems, primarily to extend educational opportunities to people in distant locations. The educational establishment has been at the forefront of developing the practice of audio conferencing, particularly for purposes of continuing education (Kjelgaard, 1994).

As questions have arisen from employers and political leaders about the level of graduates' knowledge and skills and the quality of their values, educators have needed to increase significantly their effectiveness. Severe fiscal limitations on traditional sources of revenue have provoked demands for cost containment higher productivity, and organizational efficiency in using resources. Whether as long-time, permanent members of the faculty or as part-time staff, teachers have directly influenced the quality of the educational process available to students in the classroom, during advising, and elsewhere and they strongly affect the psychological climate of the campus. Each person has required continued effective professional development to keep up to date, not only within his or her disciplinary speciality, but now also with modern educational and management practices. As faculty retire in increasing numbers in the next decade, a need to develop new faculty members presents a challenge (Weiner, 1990).

While the University of Wisconsin - Extension has found
teleconferencing to be very beneficial in its educational strategy, there are about fifty organizations using teleconferencing for some type of post secondary education or training (LeBaron & Bragg, 1994).

Faculty development traces its roots in recent American higher education to the late 1960s and early 1970s. It has attempted to train graduate students as teachers, provide workshops on teaching for faculty members, and improve the functioning of colleges as organizations. During the mid-1970s many institutions established centers on their campuses to support faculty teaching efforts. In 1977 the National Council for Staff, Professional, and Organizational Development (NCSPOD-"niks-pod") was established to serve specifically community, junior, and technical college professionals (Ely & Plomp, 1986).

The organizational culture of higher education, in many cases set in a much earlier time, has not yet responded either to the need for changed educational practices for current students or, concomitantly, to the need for professional development to accompany these changes (Janzow & Eison, 1988).

Technical Overview

When looking at the history of teleconferencing, there was a lot of technology discussed. It does seem to be true that the technology has both enabled teleconferencing to grow and limited its growth. Some of the limitations have included the high cost of the technology, malfunctioning
equipment, obtrusive equipment designs, the lack of satellite capacity, and difficulties in establishing multi-site and intercompany communications (Bohn & Templeton, 1984).

Audio conferencing can easily be compared to the current technology most people are familiar with: telephone systems, speaker phones, and conference calls. The technology required is a telephone line, a speaker phone or multi-headphone and microphone at each location, and a means of connecting the multi-locations, i.e., the conference call. While this is a simplistic description, it contains all the basic parts.

One-way slow-scan video with two-way audio is basically audio conferencing with "snapshot" video added. The video image is limited to still photographs or "freeze-frame" video being transmitted, one picture at a time. The image may be that of the instructor or a student, but more often it is limited to a picture, graphic, or thing being discussed. The instructor determines what is to be transmitted, takes a video snapshot, and then transmits the video image. One-way full-motion video with two-way audio is like watching television at home with the ability to talk to the person on the television. Two-way video with two-way audio enables people at multiple locations to see and talk to each other. One-way multi-media video with two-way audio is a technology that expands one-way video to include information sources other than only video. The first
technology which is introduced is usually computer technology. This may be in the form of test signals from special equipment or it may include computer data. However, the audience is still limited to only two-way audio.

Finally, two-way multi-media is really a technology of the future. In this system all locations would have all technologies interactive. This could mean that everyone at every location could see and be seen, hear and speak, and have direct input via computer, electronic blackboard, etc. (Widner, 1993).

With all this potential for communication, why are there so few users of teleconferencing? Expense, costs, money, whichever of these words you want to use, the user has to realize that teleconferencing does cost something. Currently a coast to coast, occasional use terrestrial circuit would cost less than $100 an hour for a 56 thousand bits per second line (Hansel, 1990).

The Bell System studios are furnished in a style appropriate to senior-level meetings. Typically, they are designed to accommodate about six active participants; an additional ten can be seated, but will not be in comfortable range of microphones and cameras. Cameras transmit an image of the person who is speaking; alternatively they can transmit an overview image of all participants. Camera switching is usually automatic, being activated by the speakers' voices. Alternatively, whoever is chairing the meeting can manually override the voice-activated switching.
All controls are of the near-end variety, i.e., one has no control of cameras at the distant location. There are two monitors, one for the incoming and the other for the outgoing image. A push-button facility may be used for making a hard-copy of the image of a graphic on the incoming monitor. Conferences may be recorded automatically on videotape (Azarma, 1991).

One reason people would pay to use the AT&T system was that a fully equipped full-motion video teleconferencing room easily cost more than $1 million excluding the cost of the telecommunications facilities (Azarma, 1991).

One of the reasons why the market was volatile in the beginning of the decade of the 80s, was because satellite technology had just been launched. As of March 1994, there are 95 operational U.S. and Canadian communication satellites, with an additional 23 planned for launching, and the amount of traffic through U.S. domestic satellites is doubling every three years. Video technology was also changing with new cameras and monitors. These changes were enabling prices for high tech products to come down (Schultz, 1994).

Five factors from the past are barriers to the growth of teleconferencing: high cost of the technology, malfunctioning equipment, obtrusive equipment designs, the lack of satellite capacity, and difficulties in establishing multi-site and intercompany communications. The cost has continued to come down. Concerning the other technological
barriers, the newest systems have been designed to overcome these barriers. Production and communication equipment have been redesigned with more redundancy to reduce agonizing delays caused by "technical difficulties" which result in lost interest (Milheim, 1989).

The student clientele have greatly changed at the same time as newer, more powerful educational techniques such as cooperative learning methods have been developed. Changes of this sort require continuous retraining and professional staff development. The recognition today that our increasingly complex institutions require professional, trained management adds leadership management development to the need for training classroom educators (Diamond, 1989).

Five factors identified as barriers to the growth of teleconferencing are: high cost of the technology, malfunctioning equipment, obtrusive equipment designs, the lack of satellite capacity, and difficulties in establishing multi-site and intercompany communications. The cost is coming down. Concerning the other technological barriers, the newest systems have been designed to overcome these barriers. Production and communication equipment have been redesigned with more redundancy to reduce agonizing delays caused by technical difficulties which result in lost interest. Video teleconferencing rooms have been redesigned to hide the studio equipment. Microphones are available in recessed cabinets and meeting rooms are made to resemble ordinary conference rooms. Satellite capacity is no longer
scarce and multi-site conferences can be arranged through a network of agents and brokers (Fjeldstad, 1991).

Some observers conclude that since the mid-1990s, advancements in satellite technology, digital signal compression, microwave transmission and various audio and video capabilities, together with the soaring cost of travel and the business community's increasing need for effective communications have all led to the development of highly effective and increasingly accessible methods of teleconferencing (Heidenneiter, 1995). But others warn that technology need not be our concern. Today, there are more than enough individuals available who can handle the electronic portions of teleconferencing, but the missing ingredient has been those sensitive to human communication issues who can direct the technicians to develop the appropriate hardware so that the communication systems can support an organization's unique information exchange problems (Kaha, 1990).

Research Literature

"Within five years students instead of 'attending a factory like school,' will stay home and interact with other young people across the country and around the world through their computers," said Dr. Timothy Leary while speaking in Dallas (Galloway, 1991). Edward Miller, president of National Center for Manufacturing Sciences in Ann Arbor, Michigan, selected TSTI in Waco, Texas, for a $35 million grant to create a "teaching factory". He estimates that more
than $1 billion will be spent by the manufacturing industry consortium across the country. These teaching factories get to be very advanced models of what U.S. industry will be like in the future. Wired with optic cable communication, they allow the institute to provide the capacity to allow students in the largely residential school to study in their homes. Teachers combine video, audio, text and other media in interactive formats that can be accessed by computer (Bruder, 1992).

Among the organizations active in research on teleconferencing are AT&T, the British Broadcasting Corp. (BBC), the Corporation for Public Broadcasting (CPB), the Defense Advanced Research Projects Agency (DARPA), Future Systems, Inc., the Institute for the Future, the International Association of Business Communications (IABC), the National Aeronautics and Space Administration (NASA), the National Technical Information Services (NTIS), the Public Service Satellite Consortium (PSSC), Satellite Business Systems, Inc. (SBS), and Western Union. Most of the studies that have been conducted are proprietary to one institution and/or focus on specifics, such as the size of the market for one kind of teleconferencing service, which teleconferencing format works best for a certain application, or user perceptions of one kind of teleconference used for one kind of meeting (Warger & Zorfass, 1994).

Alford Bork of UCLA spoke at the 1991 spring lecture
(as part of the Computer Education and Cognitive Systems series of "Visiting Scholars" program at the University of North Texas College of Education) about the Open University that has existed in England for over twenty years. Fifty miles north of London, this institution of higher education uses distance learning concepts to educate the student at one-half the conventional university cost per student. It has 120,000 students, offers 130 courses, ships 35 tons of material per week, has 600 professors with 2400 staff, has a budget of $110 million, and devotes $2 million and 2 1/2 years to the development of one course. They produce twenty courses per year. A course usually lasts seven years with updates at its midpoint. A 10%+ improvement over conventional classroom-style education has been noted consistently when students are tested on the same material being taught by teleconferencing.

The researchers who did a study in 1991 decided that rather than argue from a wholly theoretical viewpoint, we consider the best way to learn the dos' and don'ts of introducing teleconferencing would be to draw on the experience of organizations which had some years of learning what can go right and wrong. Case histories of success stories are told often and with pride and conviction. But without wishing to denigrate those successes, they are, by and large, less informative than instances where problems were found and overcome. The principle of learning by mistakes is sound, provided the mistakes are made at someone
else's expense (Knapczyk, 1993).

In order to be more effective, teachers utilizing distance learning technologies need to grade papers as soon as possible, maintain regular office hours for student calls, collect assignments weekly, advise program staff of any technical problems, maintain and update materials used, and develop syllabi and examinations as needed. Collaborative learning can even be done and encouraged among students. Faculty can even do more of their preparation and support work for classes remote from the campus, at home (Beaudoin, 1990).

One of the more famous studies that appears in the literature was conducted by the Satellite Business Systems/Booz Allen and Hamilton. The study, done in 1992, surveyed all the companies which had been using teleconferencing for at least one year, for at least 20 hours per month (Earon, 1994). Some of the findings included:

1. 9 out of 10 users of video teleconferencing were either satisfied, or very satisfied, with their systems.
2. One-third experienced an improvement in the quality of decision making.
3. Seventy-five percent of the respondents reported an increase in personal productivity resulting from video teleconferencing.
4. Fifty percent of those surveyed felt there was an
increase in overall communication within the company, and many of these felt the result was greater responsiveness to a changing world.

(5) Fifty percent reported increased meeting effectiveness.

(6) Seventy-five percent reported reduced travel expenses.

(7) Seventy-five percent reported a decrease in time spent away from the office.

(8) Only ten percent were dissatisfied with the results of their video teleconferencing experiences.

If the current trends continue, the majority (60% of all enrollments) of students enrolled in higher education (including rural, older, part-time, working, and physically disabled learners) will receive their education remote from the college campus by the year 2000. $1.8 million in funds were just privately donated to seven colleges and universities to research applications of innovation in information and telecommunications technologies in learning (Lippitt & Mirijamian, 1990). Studies have shown that interactive teaching is preferred by the student, but is not necessary for effective learning. Student attitude is probably affected by learner age and motivation, education alternatives, and the need for information (Ritchie, 1990).

In 1991, the Center for Interactive Programs at the University of Wisconsin - Extension conducted a study of 147 organizations that were using interactive teleconferencing.
The study involved a questionnaire survey of organizations that currently use teleconferencing on a regular basis; that is, teleconferencing has been incorporated into the organization as a communication tool (Williams, 1994). The types of systems included:

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<td></td>
<td>(62)</td>
<td>(55)</td>
</tr>
<tr>
<td>Audio</td>
<td>44%</td>
<td>74%</td>
</tr>
<tr>
<td>Audiographics</td>
<td>18%</td>
<td>2%</td>
</tr>
<tr>
<td>Slow-scan Video</td>
<td>29%</td>
<td>7%</td>
</tr>
<tr>
<td>Full-motion Video</td>
<td>10%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Some of the findings included:

1. The main uses of teleconferencing were administrative, management, and staff meetings; continuing professional education and training; and formal instruction for public school or college students.

2. The main reasons for implementing teleconferencing were to reduce travel costs; to reduce travel time; to increase or improve communications; to provide more educational opportunities more conveniently.

3. Eighty-one percent of the organizations perceived their teleconferencing system as effective. Teleconferences can be as effective, or more effective, than face-to-face meetings for a variety of applications. Teleconferencing meetings tend to be shorter and better organized than face-to-face meetings. Teleconferencing can
improve productivity through reduced travel time and more efficient communication. Teleconferencing provides faster decision-making and quick access to additional resource people; problems can be addressed as they arise. Teleconferencing allows for rapid follow-up meetings to put decisions into action. Teleconferencing can improve the quality and quantity of communications among remote sites. Teleconferencing can be used for at least 50 to 60 percent of all meetings to reduce travel costs. Teleconferencing is an efficient means of accessing and communicating information, and it can be integrated with other automated office technologies. Teleconferencing can provide additional opportunities for professional education and training more conveniently. Teleconferencing can increase the participation of employees to heighten commitment to the organization. Teleconferencing can increase profits through new marketing opportunities, improved communication with people, and through a better trained and motivated staff (Earon, 1994).

Another survey that appears repeatedly in the literature was done in spring 1994 by Knowledge Industry Publications, Inc. One hundred seventy-three usable responses were received from 96 for-profit and 77 non-profit organizations (Lauro, 1995). Some of the findings were:

(1) Eighteen of the participants planned to do video conferencing in 1994; forty-three planned to do video conferencing by 1995.
(2) Of the participants who did not plan to do video conferences, forty-four said it was too expensive, twenty-eight indicated the benefits were not clear, and twenty-eight indicated that no needs for teleconferencing had developed.

(3) Forty-five of the participants who did video conferences had in-house teleconferencing facilities; fifteen participants rented facilities.

(4) Forty-three participants planned to do demonstration video conferences; thirty-four had plans to install an in-house video conference network; twenty-nine planned to use outside services in the future; thirty-nine planned to expand their existing telephone conference system; thirty-two planned to install an audio conference system; fifteen planned to establish a teleconference department.

(5) The most frequently cited advantages of teleconferencing (80%) were reduced travel time and made meetings more cost-effective.

(6) Other important advantages cited included that it enabled more people to attend more meetings and it enabled the communication of important information quickly; it improved communication and unified the organization.

(7) The most important disadvantage was cost.

(8) About half of the participants felt that teleconferencing was less effective than face-to-face
meetings.

(9) The third highest disadvantage was the loss of executive travel.

The shift from a tradition-based, primarily a theoretical educational process to a research- and-theory-based process will require not only constant innovation but also the high-quality faculty, instructional, and organizational development necessary to support this innovation throughout each teacher’s and manager’s career (Katz, 1988).

In 1993, the University of Nebraska conducted a Delphi study to investigate the technical, utilization, policy and procedure questions related to satellite teleconferencing in continuing education. The study considered what technology would be needed to conduct satellite teleconferencing and related activities, what formats could be developed to foster and improve utilization of teleconferencing, and what policies and procedures needed development to govern and guide the operation of teleconferences (Rifkind, 1994). Some of the predictions included:

(1) Members of the panel were not certain that satellite teleconferences in higher education would be administered by the continuing education unit on their campuses.

(2) Members of the panel were not certain that satellite teleconferences. This person would most likely be responsible for the combined technical and
educational needs called for in satellite teleconferences.

(3) Members of the panel agreed that satellite will actually include a mixture of technology including satellite transmissions, computers, audio networks, facsimile, videodisc, and others.

(4) Members of the panel generally agreed that there would be satellite receive facilities constructed or at least available at many institutions of higher education by 1994.

(5) Members of the panel predicted that Direct Broadcast Satellites (DBS) would be in service by 1994; professional education would be provided via DBS to places of work, homes, and community learning centers.

Summary of the Literature

Some people, John Naisbitt for example, in the early eighties did not have much hope for teleconferencing. He concluded that teleconferencing "is a trend that will not happen. Talking to people via television cannot begin to substitute for the high touch of a meeting, no matter how rational it is in saving fuel and overhead. Teleconferencing is so rational, it will never succeed" (Cowan, 1984, p. 10).

One of the more futuristic studies was done in 1992 by the Institute for the Future (IFTF). "The data were based on a survey of 317 respondents from eighteen U.S. companies and government agencies - the largest survey of this kind to
Some of the conclusions were:

1. Users of the next-generation teleconferencing systems will be computer literate and relatively technical, but not narrow computer or telecommunication professionals. They will define their needs in business language, not bits and bytes.

2. They will be time-driven and skeptical about oversold products.

3. Many of their needs will be met by general purpose systems, but among the subgroups of users there will be specialized needs.

4. Users will have strong needs for both telecommunications and computing capabilities, as well as a wide range of computer-based support functions.

5. They will want a graceful integration of diverse functions, not isolated components.

6. The three benefits of a multimedia system that the users want most are: better access to information resources; better information dissemination within the company; the integration of communications and computing capabilities.

7. Users will want to do more work per unit time; an improved ability to respond to crises; an increased access to new ideas; a greater long-term continuity of communication.

8. The primary user need involves the management of time. Respondents, with all their diversity, share a
work style dominated by time. They are bothered by interruptions, frustrated when they cannot reach people, and they are constantly looking for ways to manage the flood of information around them. If new information presented not simply as electronic technology, but as time organizers.

(9) The pattern of responses by professional groups indicate that there are some consistency of needs for multimedia across there professional groupings.

(10) Users are skeptical about those they perceive as technology types. Also, users are cautious about new computer and telecommunications products. Often users feel a sense of animosity toward vendors and in-house providers of technical services.

(11) Users feel high pain levels regarding present systems. During the thirty-five seminars, users expressed many feelings of pain and described many problems. The problems included:

- Systems not integrated 85%
- Too many interruptions 85%
- Can't reach people 85%
- Time wasted at meetings 85%
- Can't find right information 83%
- Communication slow 83%
- No continuity 77%
- Too many meetings 71%
- Systems undependable 69%
Access to systems 64%
Can’t reach outside company 64%
Too much information 60%

"The introduction of new technologies that require change in working habits is seldom easy. One would do well to assume that the implementation of teleconferencing, which generally requires the joint acceptance of dispersed individuals, will be difficult" (Elton, 1982, p. 53).

A summary of research published in 1993 summarized the major benefits that researchers and users point out (Warger & Zorfass, 1994). The summary states:

(1) Teleconferences can be as effective, or more effective, than face-to-face meetings for a variety of applications.
(2) Teleconferencing meetings tend to be shorter and better organized than face-to-face meetings.
(3) Teleconferencing can improve productivity through reduced travel time and more efficient communication.
(4) Teleconferencing provides faster decision-making and quick access to additional resource people; problems can be addressed as they arise.
(5) Teleconferencing allows for rapid follow-up meetings to put decisions into action.
(6) Teleconferencing can improve the quality and quantity of communications among branch offices and headquarters.
(7) Teleconferencing can be used for at least 50 to 60
percent of all meetings to reduce travel costs.

(8) Teleconferencing is an efficient means of accessing and communicating information, and it can be integrated with other automated office technologies.

(9) Teleconferencing can provide additional opportunities for professional education and training more conveniently.

(10) Teleconferencing can increase the participation of employees to heighten commitment to the organization.

(11) Teleconferencing can increase profits through new marketing opportunities, improved communication with sales people, and through a better trained and motivated sales force.

(12) Teleconferencing can enhance a company as a business leader.

It is generally acknowledged if not accepted, that teleconferencing seems poised for growth. A number of factors are contributing to a readiness posture. They include advances in technology and a maturing of the industry that are meshing with organizational concerns about productivity, communications, operating costs, competition. Teleconferencing has also proven its effectiveness in many situations, and it has demonstrated its ability to meet diverse needs (Lewis, 1993).

But there are issues and warning signs which must be addressed. Most involve human factors and those soft areas that relate to users and applications. Emerging as primary
issues are the design of user-oriented systems, implementation strategies, training, software, and support infrastructures that promote successful applications and the integration of teleconferencing into the organization. There has been a tendency for people to put technology first, rather than focusing on applications and end-users. The growth of teleconferencing depends on the recognition of human factors (Lemke, 1993).

Principal among these human factors is the growing need to improve managerial and professional productivity. This need prompts some people to view teleconferencing as a marvelous means of reducing the time spent in traveling to and from face-to-face meetings and perhaps even as a means of leading more effective meetings that result in better decision making (MacDonagh, 1994).

Another concern is related to the organization. As we expand our communication options and begin to communicate in entirely new ways, it will change how we conduct business, how we organize ourselves, and even how we think. The very nature of the organizational environment in which the teleconferencing system is placed will have significant impact upon the degree of success. The new technologies will only be successful if the organizational environment supports participatory sharing of information (Mason, 1989).

When teleconferencing fails, it seems not to be attributed to the technology, it usually is a lack of well-thought-out objectives as to what the teleconferencing
system is to accomplish. As the popularity of teleconferencing increases, there may be a tendency for some to initiate teleconferencing without sufficient thought as to the expected outcome. The more detailed the objective, the higher the probability of success (Marker, 1991).

While this may imply a casualness about teleconferencing, others are concerned about sustaining interest in the new technology. Once the novelty has worn off with presenters and participants, sustaining interest, expanding into new endeavors and developing programming to become self-sustaining seems to be a problem (Neal, 1991).

Some people approach teleconferencing with a bit of skepticism. For most people, teleconferencing is new. As a society, we have adapted to situations in which this option was essentially unavailable. Now that it is available, suitable uses may be recognized and the systems may be used. Initially, people will bring to them [teleconference systems] the habits they have developed with previously existing alternatives. Gradually, they will use them in more innovative ways. Eventually, society may become to a greater or lesser extent dependent upon them, but this will take time (Mosley, 1993).

Most of the research indicates that teleconferencing seems to work best (1) in situations where demonstrations are required and (2) when all the information is coming from a single source. The most common applications for one-way video/two-way audio conferencing are for sales and training
meetings, new product introductions, video press conferences and annual meetings, because these events often place heavy importance on visual aids and graphic material (Murphy, 1994).

Most of the research indicates that video conferencing enjoys its strongest advantages relative to other forms of teleconferencing when there is a need for a sense of occasion because it is more upbeat and more memorable or it would be regarded as unbecoming to appear cost conscious or the content would not stand alone (Nesbitt, 1994).

The introduction of new technologies that require change in working habits is seldom easy. One would do well to assume that the implementation of teleconferencing, which generally requires the joint acceptance of dispersed individuals, will be difficult (Knapczyk, 1993).

But teleconferencing does not just happen. An implementation strategy will be necessary. Awareness - prospective users need to be kept aware of the teleconferencing possibilities until it becomes a natural option to them. Training - some training may be necessary to enable people to get the best out of the available media. However, too great an emphasis may be counterproductive, since it will raise the threat that teleconferencing is complicated. Probably the best approach is to offer a few simple instructions beforehand and rely on the chairperson or facilitator to offer further advice as necessary during early uses. Accessibility means unnecessary barriers should
not be raised by awkward reservation systems and shared facilities should be located conveniently (Norton, 1990).

The majority of the literature reviewed implied that supporters of teleconferencing and most users almost have a religious fervor for discussing the issues and expounding its worth. The issue is not so much cost effectiveness in the reduction of travel, but business education effectiveness: an improvement of overall operating teaching effectiveness stemming from improved communication learning (Schrum, 1992).

"It is becoming most evident that distance learning can be effective and that adults are willing to look to distance learning for their professional and continuing education needs.... now it's up to adult educators to fully utilize distance learning most imaginatively and creatively, not being hesitant to adopt and use additional technological resources as they become practical and available" (Parker & Olgren, 1984, p. 311).

"It is imperative that everyone so fortunate to have distance learning potential available retain an excitement about the potential that this medium has for reaching people. At all times being in the people business must be paramount in one's thinking. There must be imagination. There must be vision. There must be a sense of adventure. Through the marvels of the electronic age reaching people and serving their needs
is possible as never before in the history of civilization" (Parker & Olgren, 1984, p. 307).

There is a continual push for quality improvement in higher education's faculty and staff professional development. But a team approach rather than isolated individual approach has yielded faster and better results. The cooperative learning that proved so valuable for students works for the teacher as well. The teleconference offers an excellent forum for this sharing process. This interactivity of the participants makes teleconferencing have that human factor so missing in video tape, CD-ROM, and printed material (Stout, 1991).

The focus for the next decade will be on making strategic investments to improve academic productivity. While maintaining a caring teacher/student relationship, faculty will need to learn how to overcome time and location to reach students in more convenient ways. Teleconferencing offers faculty a timely and cost effective manner to learn these new interactive multimedia distance learning tools which can supplement their gifted lectures. For better or worse, an age of constant, turbulent change lies ahead, making continuous learning by faculty a requirement. Faculty workshops providing high-quality, cost-efficient professional training and that promote improved communications among geographically dispersed instructors are conducted on a scheduled basis via compressed digital video (Walsh, 1995).
Before a professional development method is selected and implemented, the processes of improving education in a cost-effective way must be considered. Conferences are a great resource as attenders can obtain massive amounts of information in a conservative amount of time. Many different ideas, theories and practices are presented and displayed at conferences, providing participants with an abundance of information. Because of the amount of information presented, attenders are responsible for determining which ideas are valuable to them personally. Accepting new ideas can be difficult as the attenders do not have the same base of experience as the presenters. Faculty often benefit most from seeing other faculty teaching. Group discussion generates ideas and aligns personal goals of attenders with the subject matter presented. More effective teaching leading to more successful students along with faculty motivation are the goals but teleconferencing offers the effective means, cost-effective delivery systems for a staff willing to learn (Lauro, 1995).

In a study of the effects of interactive teleconferencing versus face-to-face learning the research demonstrated that there is little difference in outcomes. The learning process may be altered as teaching methods, group interactions, and presenter/attenders interaction may differ from the traditional setting of face-to-face training. Attendees differed in their response to the medium based upon learning style and personality type (Foster,
Large organizations, whether higher education or business organization, consistently have higher usage of teleconferencing, more locations involved, higher budgets for teleconferencing, tend to favor the distance learning medium, and management applications. Small organizations favor one-way video or pre-recorded video applications for training and learning applications. Differences were found between business usage of teleconferencing and education usage but size of the organization seemed to be a dominate factor (Baron, 1994).

The best current evidence is that media are mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition. The process of learning needs to be the focus of instruction rather the delivery of the content. The instructor today must wear many hats: that of facilitator, supporter, communicator, instructional designer, media expert, and coordinator. The collaborative learning environment that the teleconference allows complements faculty development presentations by helping introverts to open up and participate in discussions (Heidenreiter, 1995).

Teleconferences are most successful when faculty interacted and feedback concerns. Faculty preparation linking technology, pedagogy, and curriculum requires examples that each attaint can identify. Learning from each
other via the teleconference often is a complex issue of personalities, experiences, and abilities. Peer coaching and observation of model teaching can be accomplished via teleconferencing (Warger, 1994).

Telecommunication networks provide a path for better collaboration as well as opening up an unlimited amount of information access. An exciting concept of team teaching between school faculty is emerging and holds great potential for teacher training programs. Modern technologies are essential to the success of the professional development movement. Advanced communications technologies are necessary for collaboration and information access (Knapczyk, 1993).
CHAPTER III

RESEARCH DESIGN

This study was designed to explore and assess the role of attend by community colleges in faculty and staff development presentations. A mailed questionnaire was used to obtain information about the utilization of teleconferencing by community colleges in faculty and staff development presentations.

Population

The population included community colleges that are part of the Instructional Teleconference Consortium, a Washington, D.C., nonprofit organization that is a member of the American Association of Community Colleges. These 375 community colleges represent a variety of sizes and locations in the United States and are current teleconference users. Educational professionals who coordinate teleconferences at their respective institutions provided the information on the survey questionnaire.

Sample

A list of 460 professionals from the Instructional Teleconference Consortium was reduced to 375 through the selection of community colleges only. Those selected represent institutions who utilize teleconferencing.
Individuals listed as consultants or governmental agencies were not included on the list. Only 375 were selected as only community college respondents were used for the questionnaire. Because all of the surveys were sent to the teleconference coordinators, it was possible to obtain 137 (37%) useable responses.

Description of the Instrument

The questionnaire was divided into three sections. Section 1 gathered demographic information about the community college sampled. Section 2 gathered information about teleconference usage by the academic institution. Section 3 gathered information on faculty and staff development presentations conducted by teleconferencing.

To obtain content and construct validity in the instrument, three subject-matter experts in higher education, educational research with a background in teleconferencing and/or faculty and staff development presentations were requested to review the questionnaire. Each member was provided with a statement of the problem, purposes of the study, and the research questionnaire. Any item considered inappropriate by a majority of the panel was either revised and resubmitted or eliminated. The three subject-matter experts were Ron Brey, Vice-President of Non-Traditional Learning at Austin Community College in Austin, Texas; Ted Pohrte, special assistant to the director of the Lecroy Center for Telecommunications of Dallas County Community College District, Dallas, Texas; and Dr. Jennie
Ball, teleconference coordinator for the Lecroy Center for Telecommunications.

Procedures for the Collection of Data

The study begun at the end of February 1995, in order to maximize the convenience of returning the survey response, since participants work on an academic calendar. In addition, a paper and pencil instrument that elicits responses to questions was mailed to teleconference coordinators who identified activities and training interests, and who had the authority to act on teleconferences made available at their respective institutions. (See Appendix B for a copy of the master list).

A questionnaire and a cover letter, as seen in Appendix A and Appendix C, respectively, were mailed to arrive in the middle of the week. The questionnaire was completed by the teleconference coordinator, returned to the researcher in a self-mailer, and coded for compilation and analysis.

In an effort to maximize the response rate, the Total Design Method (TDM), designed by Dillman (1978) and suggested by Rossi, Wright, and Anderson (1983), was employed in the design and construction of the survey and mailing procedures. Based on TDM findings, the following recommendations were used to encourage survey response:

1. Cover letter from Pam Quinn, director of the Lecroy Center, encouraging respondents to return questionnaire.

2. Self-mailer envelop that is returned with the
questionnaire to the researcher.

3. Questionnaire that takes no more than 30 minutes to complete the twenty-five questions.

4. Produced questionnaire with small type fonts and photo reduced such that the entire questionnaire layout took only two pages. The brevity assured a higher return.

5. Official sponsorship of survey (The LeCroy Center for Telecommunications).

6. Personalization of correspondence.

7. Anonymity and confidentiality.

8. Cover letter composition: permissive, reasoned, a plea for help, a request for favor, stress on social usefulness of study, and importance of respondent to study success.


Procedures for the Treatment of Data

Data were reported in frequencies and were arranged into tables for ease of comprehension and interpretation. Frequency response was tallied by a computerized spreadsheet software program.

All forced-choice or multiple-choice survey questions allowed each response to be tallied into a category for comparison through frequency counts.

Sampling Instrument

The questionnaire was printed such that the front had a cover letter and address of the respondent and the last two pages included the survey questions in a photo reduced
size (see Appendix A).
CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The data presented are the results obtained from a survey of professionals responsible for teleconferences who (a) are currently utilizing teleconferencing in their institution and (b) are affiliated with a community college or its equivalent. The survey instrument was designed to measure utilization of teleconferences in the residents' institutions, opinions on delivery methods, budgets for faculty and staff development, and topics suitable for faculty and staff development by teleconference at the institution.

Survey Results

Three hundred seventy-five survey instruments were mailed to representatives identified from the Instructional Teleconference Consortium (ITC). To establish a valid data base, it was decided a 30% return of the population would be desirable, or a minimum of 100 responses.

Sixty-four responses were received within the first week after the initial mailing. The second week yielded 41 responses, and during the third week 23 responses were received. Weeks 4 and 5 yielded five and four responses.
respectively. The collection of survey instruments was then suspended because a valid data base was established. The response was so high and so soon because the target population of responders had great interest in the subject. It should be noted that this time period coincided with spring break for many of the schools, thus allowing more time for respondents to complete the questionnaire.

The first three questions (Section 1) of the survey instrument addressed respondent demographics and gathered information about the respondents. Information about the work environment of responding teleconference contacts was presented in Tables 1 to 3. Not all of the 137 respondents included information for these items.

Table 1

<table>
<thead>
<tr>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>16  Under 5,000 students</td>
</tr>
<tr>
<td>17  From 5,000 to 10,000</td>
</tr>
<tr>
<td>21  From 10,000 to 20,000</td>
</tr>
<tr>
<td>9   From 20,000 to 40,000</td>
</tr>
<tr>
<td>3   Over 40,000 students</td>
</tr>
</tbody>
</table>

An examination of Table 1 reveals that 21 of the 66 respondents to this item worked in institutions from having 10,000 to 20,000 students; however, 17 respondents represented the category of from 5,000 to 10,000 students and 16 respondents represented institutions having under 5,000 students. No other categories were as well represented: Nine of the respondents were from schools with 20,000 to 40,000 students, and 3 were from schools with over
40,000 students.

Respondents were asked to select the category that best described the number of employees at their institution. A majority of the 115 respondents to this item identified their colleges as having either from 100 to 250 employees or (36 respondents) from 250 to 500 employees (36 respondents). Of the remaining responses, 13 selected, "from 500 to 1,000 employees" to indicate that their institution was not the largest but was larger than the other two. Seven respondents selected the category of over 1,000 employees. The respondents' number of employees are presented in Table 2.

Table 2

<table>
<thead>
<tr>
<th>Number of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
</tr>
<tr>
<td>36</td>
</tr>
<tr>
<td>36</td>
</tr>
<tr>
<td>13</td>
</tr>
<tr>
<td>07</td>
</tr>
</tbody>
</table>

The respondents were also asked to indicate a category that best described their institution. A majority of the 192 respondents to this item described their institution as 2-year community/junior college (114). The remaining responses were as follows: suburban community college (30); 2-year technical/vocational school (22); rural (14); other (8); inner city community college (4). The reason for more respondents than the number of questionnaires received must have been that some people felt that their institution belonged in several categories. These results are presented
in Table 3.

Table 3

**Type of Institution**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Two-year technical/vocational school</td>
</tr>
<tr>
<td>114</td>
<td>Two-year community/junior college</td>
</tr>
<tr>
<td>30</td>
<td>Suburban community college</td>
</tr>
<tr>
<td>4</td>
<td>Inner city community college</td>
</tr>
<tr>
<td>14</td>
<td>Rural</td>
</tr>
<tr>
<td>8</td>
<td>Other</td>
</tr>
</tbody>
</table>

The amount of money spent on faculty and staff-development-related travel, lodging, and entertainment would reflect how much could possibly be saved by utilizing teleconferencing. Of the 114 respondents to this item, 46 reported that their budget was less than $25,000; 28 respondents reported from $50,000 to $100,000; 24 respondents reported from $25,000 to $50,000; 14 respondents reported from $100,000 to $500,000; and 2 respondents reported over $500,000 in their budget. These results are presented in Table 4.

Table 4

**Amount of Travel Budget**

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>Less than $25,000</td>
</tr>
<tr>
<td>24</td>
<td>From $25,000 to $50,000</td>
</tr>
<tr>
<td>28</td>
<td>From $50,000 to $100,000</td>
</tr>
<tr>
<td>14</td>
<td>From $100,000 to $500,000</td>
</tr>
<tr>
<td>2</td>
<td>Over $500,000</td>
</tr>
</tbody>
</table>

The form of teleconferencing utilized for faculty and staff presentations at each institution indicates the most popular method of delivery. There were 80 respondents and 76
respondents, respectively, for one-way full-motion video/two-way audio and for audio or telephone teleconferencing. Other responses included 52 for slow-scan video with audio; 34 for computer to computer conferencing; 24 for two-way full motion video/two-way audio; 12 for one-way multimedia, 8 for two-way multimedia, and 8 for other, which often had satellite downlink with fax and/or telephone written in the space provided. These results are presented in Table 5.

Table 5
Forms of Teleconferencing Utilized

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>one-way full-motion video/two-way audio</td>
</tr>
<tr>
<td>76</td>
<td>audio (telephone conferencing)</td>
</tr>
<tr>
<td>52</td>
<td>slow-scan video with audio</td>
</tr>
<tr>
<td>34</td>
<td>computer to computer conferencing</td>
</tr>
<tr>
<td>24</td>
<td>two-way full-motion video/two-way audio</td>
</tr>
<tr>
<td>12</td>
<td>one-way multimedia with two-way audio</td>
</tr>
<tr>
<td>8</td>
<td>two-way multimedia</td>
</tr>
<tr>
<td>8</td>
<td>other</td>
</tr>
</tbody>
</table>

Although almost all of the participants currently utilize teleconferences for faculty and staff presentations, those who did not stated that they were too expensive. A few respondents noted that no institutional needs have developed, that they were not as effective as face-to-face methods, or either faculty or administration were uninterested. These results are presented in Table 6.
Table 6

Reasons for Not Utilizing Teleconferences

<table>
<thead>
<tr>
<th>Number</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Too expensive</td>
</tr>
<tr>
<td>0</td>
<td>Benefits not clear</td>
</tr>
<tr>
<td>2</td>
<td>No institutional needs have developed</td>
</tr>
<tr>
<td>0</td>
<td>Unnecessary</td>
</tr>
<tr>
<td>0</td>
<td>Reluctance to give up travel</td>
</tr>
<tr>
<td>4</td>
<td>Not as effective as face-to-face method</td>
</tr>
<tr>
<td>4</td>
<td>Top administration uninterested</td>
</tr>
<tr>
<td>4</td>
<td>Faculty uninterested</td>
</tr>
<tr>
<td>2</td>
<td>Other</td>
</tr>
</tbody>
</table>

Plans in the next 2 years for institutions offering teleconferencing include the following categories of responses: 64 plan to expand their existing teleconference network, 22 plan to participate in a demonstration teleconference, 16 plan to set up an in-house teleconference network, 14 plan to contract with outside services to provide teleconference equipment, 10 plan to establish a formal teleconference administrator, 10 plan to do something concerning teleconferencing, and none plan to do anything concerning teleconferencing. These results are presented in Table 7.

Table 7

Plans in the Next 2 Years

<table>
<thead>
<tr>
<th>Number</th>
<th>Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>Plan to expand your existing system</td>
</tr>
<tr>
<td>22</td>
<td>Participate in a demonstration teleconference</td>
</tr>
<tr>
<td>16</td>
<td>Plan to set up an in-house teleconference network</td>
</tr>
<tr>
<td>14</td>
<td>Plan contact with outside services to provide teleconferencing equipment</td>
</tr>
<tr>
<td>10</td>
<td>Plan to establish a formal teleconference administrator</td>
</tr>
<tr>
<td>10</td>
<td>Plan to do something concerning teleconferencing</td>
</tr>
<tr>
<td>0</td>
<td>Plan to do nothing concerning teleconferencing</td>
</tr>
</tbody>
</table>

In response to the question concerning how many
institutions had an in-house system, 88 replied that they did, and 36 replied that they did not, with the average number of sites varying from 1 to 200 and 36 responding that their institution had no in-house system. The number of respondents stating they had an in-house computer network was 60 versus 40 who said they did not have a computer network, with the number of locations varying from 8 to 500 including bulletin board systems.

When asked how they planned to acquire their proposed equipment needs, respondents proposed the following methods of acquisition: audio equipment (18 gift/grant, 0 lease, 28 buy), video equipment (22 gift/grant, 0 lease, 32 buy), production equipment (12 gift/grant, 0 lease, 16 buy), earth station (receive only) (2 gift/grant, 2 lease, 20 buy), and earth station (send/receive) (4 gift/grant, 2 lease, 4 buy). These results are presented in Table 8.

Table 8
Acquisition of Teleconference Equipment

<table>
<thead>
<tr>
<th></th>
<th>Gift/Grant</th>
<th>Lease</th>
<th>Buy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio equipment (internal)</td>
<td>18</td>
<td>0</td>
<td>28</td>
</tr>
<tr>
<td>Video equipment (internal)</td>
<td>22</td>
<td>0</td>
<td>32</td>
</tr>
<tr>
<td>Production equipment</td>
<td>12</td>
<td>0</td>
<td>16</td>
</tr>
<tr>
<td>Earth station (receive only)</td>
<td>2</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Earth station (send/receive)</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

When respondents were asked what administrative function at their institution was responsible for teleconferencing, the following responses in the following categories were given: 48 through the learning resources
center, 36 through the media services (separate from the library), 22 through the broadcast department, 14 through the information services (computer center), 14 through the electronics department, 12 through the communications department, 10 through the academic department, 10 through continuing education, 6 through office services, 4 through groups other than the ones listed, and 2 through the library (separate from media services). These results are presented in Table 9.

Table 9

<table>
<thead>
<tr>
<th>Teleconference Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 Learning resources center</td>
</tr>
<tr>
<td>36 Media services</td>
</tr>
<tr>
<td>22 Broadcast department</td>
</tr>
<tr>
<td>14 Information services</td>
</tr>
<tr>
<td>14 Electronic department</td>
</tr>
<tr>
<td>12 Communications department</td>
</tr>
<tr>
<td>10 Telecommunications center</td>
</tr>
<tr>
<td>10 Academic department</td>
</tr>
<tr>
<td>10 Continuing education</td>
</tr>
<tr>
<td>6 Office services</td>
</tr>
<tr>
<td>4 Other</td>
</tr>
<tr>
<td>2 Library (separate from media services)</td>
</tr>
</tbody>
</table>

Institutions managed their teleconferencing systems in different ways. The respondents replied overwhelmingly with 108 responses that they used campus facilities management. Eighteen of the institutions managed through a consortium. Eight of the respondents used outside services to manage their teleconference systems, and 6 rented as needed. These results are presented in Table 10.
Table 10
Management of the Teleconference System

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>108</td>
<td>Campus facilities management</td>
</tr>
<tr>
<td>18</td>
<td>Consortium</td>
</tr>
<tr>
<td>8</td>
<td>Outside services</td>
</tr>
<tr>
<td>6</td>
<td>Rentals, as needed</td>
</tr>
</tbody>
</table>

Question 12 solicited the title of the person who manages teleconferencing at the respondents' institution. The respondents varied so much in their responses that a list of these responses which has been included in Appendix. Additionally, because of the variety of responses, to question 13, the numerous titles given to the individual whom the manager of the teleconferencing system reports to were also included in appendix.

As to which administrative office manages the teleconferencing function, the respondents stated the following: academic affairs (44), other (44), office of continuing education (22), office of the chancellor/president (4), office of business affairs (2), and office of student affairs (0). These results are presented in Table 11.
Table 11

Management of Teleconferencing

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>Office of academic affairs</td>
</tr>
<tr>
<td>44</td>
<td>Other</td>
</tr>
<tr>
<td>22</td>
<td>Office of continuing education</td>
</tr>
<tr>
<td>4</td>
<td>Office of the chancellor/president</td>
</tr>
<tr>
<td>2</td>
<td>Office of business affairs</td>
</tr>
<tr>
<td>0</td>
<td>Office of student services</td>
</tr>
</tbody>
</table>

In response to question 15, of the respondents, 82 indicated that they had never dealt with a commercial service regarding teleconferencing, and 38 respondents indicated that they had used commercial services for teleconferencing. Several listed the commercial service that they used.

On the question dealing with how long they had been involved with teleconferencing at their institution, 56 respondents noted 5 to 10 years; 32, 1 to 3 years; 32, 3 to 5 years; 24, 10 to 20 years. No respondents indicated over 20 years, and there was no one who checked none. These results are presented in Table 12.

Table 12

Teleconference Experience

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>56</td>
<td>5-10 years</td>
</tr>
<tr>
<td>32</td>
<td>1-3 years</td>
</tr>
<tr>
<td>32</td>
<td>3-5 years</td>
</tr>
<tr>
<td>24</td>
<td>10-20 years</td>
</tr>
<tr>
<td>0</td>
<td>over 20 years</td>
</tr>
<tr>
<td>0</td>
<td>none</td>
</tr>
</tbody>
</table>

Teleconference expenditures varied among the
institutions, but 84 respondents indicated that their institutions spent under $100,000, whereas 16 spent between $100,000 to $250,000. Twelve spent nothing for teleconferencing, whereas 6 spent between $1,000,000 to $5,000,000, and 2 spent between $500,000 to $1,000,000. No institution spent over $5,000,000 for teleconferencing. These results are presented in Table 13.

Table 13

Teleconference Expenditures

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>84</td>
<td>Under $100,000</td>
</tr>
<tr>
<td>16</td>
<td>From $100,000 to $500,000</td>
</tr>
<tr>
<td>12</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>From $1,000,000 to $5,000,000</td>
</tr>
<tr>
<td>2</td>
<td>From $500,000 to $1,000,000</td>
</tr>
<tr>
<td>0</td>
<td>Over $5,000,000</td>
</tr>
</tbody>
</table>

Each institution had submitted the following budgets for the upcoming academic year: 76 for under $50,000, 20 with no budget, 10 for between $50,000 and $100,000, 4 with from $100,000 to $250,000, 2 from $500,000 to $1,000,000, none from $250,000 to $500,000, and none over $1,000,000. All of these seem to be lesser amounts than their current budgets. These results are presented in Table 14.
The subject matter of the teleconferences either participated in or produced by responding institutions varied; these are listed in Table 16. There were very few uplinks (produced teleconferences), but many downlinks (bought teleconferences from others). The four basic categories of the teleconferences are: technology, instructional, awareness, and vocational.

Future technologies to be implemented in the next 2 or 3 years are the following: multimedia (92), desktop video (44), compact disc interactive (42), video on demand (24), and other, but not specific (4). These results are presented in Table 15.

Table 14

Next Year’s Projected Teleconference Budget

<table>
<thead>
<tr>
<th>Budget Range</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $50,000</td>
<td>76</td>
</tr>
<tr>
<td>None</td>
<td>20</td>
</tr>
<tr>
<td>From $50,000 to $100,000</td>
<td>10</td>
</tr>
<tr>
<td>From $100,000 to $250,000</td>
<td>4</td>
</tr>
<tr>
<td>From $500,000 to $1,000,000</td>
<td>2</td>
</tr>
<tr>
<td>From $250,000 to $500,000</td>
<td>0</td>
</tr>
<tr>
<td>Over $1,000,000</td>
<td>0</td>
</tr>
</tbody>
</table>

The subject matter areas most requested by
faculty/staff in development presentations by responding institutions were the following: skills-based programs (58), responded continuing education classes (34), responded managerial programs (32), responded credit classes (22), responded other areas than those offered (10), responded training by contract from outside contractors (8), and responded wellness programs (4). These results are presented in Table 16.

Table 16

Most Requested Subject Matter Areas

<table>
<thead>
<tr>
<th>Rank</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Skills-based programs</td>
</tr>
<tr>
<td>2</td>
<td>Continuing education programs</td>
</tr>
<tr>
<td>3</td>
<td>Managerial programs</td>
</tr>
<tr>
<td>4</td>
<td>Credit classes</td>
</tr>
<tr>
<td>5</td>
<td>Other</td>
</tr>
<tr>
<td>6</td>
<td>Training by contract from outside contractors</td>
</tr>
<tr>
<td>7</td>
<td>Wellness programs</td>
</tr>
</tbody>
</table>

In response to the question of what was the greatest value of interactivity in teleconference, the respondents replied as follows: 52 had a feeling of actively learning, learned from other questions asked; 46 got a clearer understanding of the subject matter; 14 said it allowed one to interrupt the presenter for clarification; 8 said it allowed participants to overcome their inhibitions; and 8 said other things were of greater value. These results are presented in Table 17.
Table 17

Greatest Value of Interactivity

<table>
<thead>
<tr>
<th>Rank</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>52</td>
<td>A feeling of actively learning</td>
</tr>
<tr>
<td>46</td>
<td>Clearer understanding of the subject matter</td>
</tr>
<tr>
<td>46</td>
<td>Learn from other questions asked</td>
</tr>
<tr>
<td>14</td>
<td>Allows you to interrupt the presenter for clarification</td>
</tr>
<tr>
<td>8</td>
<td>Other</td>
</tr>
<tr>
<td>8</td>
<td>Allows participants to overcome their inhibitions</td>
</tr>
</tbody>
</table>

Other instructional methods used for faculty/staff development presentations besides teleconferencing are:

video tapes (136), lectures (122), one-on-one instruction (60), computer-based training (60), films (32), interactive video (30), CD-ROM (26), audio tapes (26), and role playing (18). These results are presented in Table 18.

Table 18

Other Instructional Methods Used Besides Teleconferencing

<table>
<thead>
<tr>
<th>Rank</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>136</td>
<td>Video tapes</td>
</tr>
<tr>
<td>122</td>
<td>Lectures</td>
</tr>
<tr>
<td>60</td>
<td>One-on-one instruction</td>
</tr>
<tr>
<td>60</td>
<td>Computer-based training</td>
</tr>
<tr>
<td>32</td>
<td>Films</td>
</tr>
<tr>
<td>30</td>
<td>Interactive video</td>
</tr>
<tr>
<td>26</td>
<td>Audio tapes</td>
</tr>
<tr>
<td>26</td>
<td>CD-ROM</td>
</tr>
<tr>
<td>18</td>
<td>Role playing</td>
</tr>
</tbody>
</table>

Faculty topics of presentations that are addressed by teleconference were as follows: applying technology (90), addressing differences in learning styles of students (80), improving teaching performances (80), staying current in academic or technical field (78), addressing special needs
of special populations (72), overcoming cultural bias (58), improving career counseling/job placement assistance (30), increasing productivity (30), complying with the policies and mission of college (26), and responded other (8). These results are presented in Table 19.

Table 19

Faculty Topics Addressed by Teleconferences

<table>
<thead>
<tr>
<th></th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>Applying technology</td>
</tr>
<tr>
<td>80</td>
<td>Addressing differences in learning styles of students</td>
</tr>
<tr>
<td>80</td>
<td>Improving teacher performance</td>
</tr>
<tr>
<td>78</td>
<td>Staying current in academic or technical field</td>
</tr>
<tr>
<td>72</td>
<td>Addressing special needs of special populations</td>
</tr>
<tr>
<td>58</td>
<td>Overcoming cultural bias</td>
</tr>
<tr>
<td>30</td>
<td>Improving career/job placement assistance</td>
</tr>
<tr>
<td>30</td>
<td>Increasing productivity</td>
</tr>
<tr>
<td>26</td>
<td>Complying with the policies and mission of college</td>
</tr>
<tr>
<td>8</td>
<td>Other</td>
</tr>
</tbody>
</table>

Summary of Major Findings

This study described how community colleges utilized teleconferencing in faculty and staff development presentations. On the basis of the major findings of this research study, the following statements seem justified.

1. Concerning the usage of teleconferencing, community colleges in the United States utilize teleconferences only sparingly to present faculty and staff development. A clearer understanding of why teleconferences are not used can be seen in the illustration labeled Teleconference Usage in Appendix D which shows the expense as the primary reason. An illustration labeled Teleconference Experience shows the amount of experience those who responded had in
teleconferencing which shows responders had enough experience to know if they really wanted to use teleconferencing or not. Finally, the illustration labeled Plans for Next Two Years in Appendix D illustrates the high degree of activity level in teleconferencing that those who responded planned in the next two years from March, 1995, when the study was done.

2. Delivery methods utilized were dominated by audio teleconferencing with video teleconferencing being the second method of delivery of teleconferences of faculty and staff development presentations. The illustration labeled Forms of Teleconferencing Utilized in Appendix D shows the percentage usage of various methods of delivery. When asked about the value of interactivity in delivering teleconferences, responders listed their greatest value as learning from other questions followed closely by a clearer understanding. These are best seen in an illustration labeled Greatest Value of Interactivity in Appendix D. As to future technologies to be implemented with teleconferencing, responders showed the areas of greatest interest to be desktop video and compact disc interactive as seen in an illustration labeled Future Technologies to be Implemented in Appendix D.

3. Budgets in most community colleges averaged less than $100,000 annually on teleconferences for faculty and staff development presentation. The amount of budget allocated to teleconferencing is illustrated in Appendix D.
labelled Teleconference Expenditures. Variation in budgets may be caused by the variation in reporting structure of administrating departments responsible for teleconferencing as illustrated in Appendix D under the illustration labeled Teleconference Administration.

4. Budgets for faculty and staff development presentations through teleconferencing are increasing as indicated by responders in the illustration in Appendix D labeled Plans for Next Two Years.

5. Subject matter titles varied so much that no dominate area or subject was utilized through teleconferencing for faculty and development presentations. The illustration in Appendix D labeled Faculty Topics By Teleconference illustrates this point. Also the illustration labeled Most Requested Subjects shows what areas are of interest to responders.

6. Only the largest of the community colleges produced faculty and staff development presentations; otherwise, Public Broadcasting System provided most of the faculty and staff presentations through teleconference. The illustration labeled Other Instructional Methods Used Besides Teleconferencing in Appendix D illustrates all of the alternatives available to the responders besides teleconferencing.

Many of the survey respondents worked in a community college institution and were classified primarily as a training/human resource development specialist. Their
departments were typically identified as training/human resource development.

Most of the respondents did utilize teleconferencing at their academic institutions for training. They verified this use level by indicating their budgets now and in the future for teleconferencing, the number of presentations done annually by teleconference, and the length of time, in years, utilizing teleconferencing at their institutions. There was no consensus among the respondents about the necessity or value of teleconferencing by academic institutions in their training programs. The majority of respondents were neutral about the use of academic teleconferencing.

For the academic year 1994-1995, a large number of the respondents reported that their organization spent under $100,000 for teleconferencing. A majority of this teleconferencing was managed by the campus rather than by outside services. The projected expenditures for 1995-1996 were lower than actual 1994-1995 expenditures. Expenditures for teleconferencing by academic institutions were expected to be minimal.

The surprises that resulted from the findings of this study were as follows: 1. Few leased their equipment but, rather, purchased it or relied on gifts or grants. 2. The titles of those people responsible for teleconference presentations for faculty/staff development had no consistency. 3. Videotape and lectures were the primary
technologies listed other than teleconferencing for faculty and staff development. 4. Multimedia was the primary technology to be implemented in connection with teleconferencing for faculty and staff development in the next 2 to 3 years.

Additional findings of this study can be found in Chapter V of this dissertation study. Findings that pertained to the research questions of this study were as follows: the extent that community colleges in the United States utilize the teleconference as a delivery method for faculty and staff development was based on whether the community college was large (over 20,000 students or over 1000 employees), which delivery method of teleconferences used by community colleges in faculty and staff development presentations was determined by how much budget they had for teleconferences (over $100,000 used video teleconferencing), how much community colleges spent on teleconferences for faculty and staff development presentations was so insignificant that responders did not have any separately reported data for this purpose, all responders felt that budgets for faculty and staff development presentations through teleconferencing would definitely increase as more constraints on their travel budgets took place in the future and most felt that video tapes would be used individually by faculty and staff in the interim until centers for teleconferencing could be established, topics and subject matter for these faculty and staff presentations delivered
by teleconferencing were mostly skills-based programs but several programs for continuing education and management were also used, and finally very few of the community colleges (mostly the largest institutions) produced their own teleconferences with Public Broadcasting System being the biggest supplier.

Findings of this study are based upon frequencies of responses to the questions of the survey instrument. Totals were calculated by computer programs and tabulated in tables for display. These tables were illustrated with pie and bar charts and placed in Appendix D of this study. The findings of this study correspond to the research questions presented in Chapter I of this study and demonstrate the utilization of teleconferencing in community colleges for faculty and staff development presentations. The questions were as follows: To what extent are community colleges in the United States utilizing the teleconference as a delivery method for faculty and staff development? Which delivery methods of teleconferences are used by community colleges in faculty and staff development presentations? How much do community colleges spend on teleconferences for faculty and staff development presentations? Are budgets for faculty and staff development presentations through teleconferencing increasing, decreasing, or remaining the same? What is the budget forecast for the future? What are the constraints on the budget for faculty and staff development presentations by teleconferencing? What subject matter titles are utilized
in the faculty and staff development presentations delivered by teleconferencing? Do community colleges in the United States produce their own teleconference presentations for faculty and staff development, or do they obtain them from other sources? If so, what are the sources of these presentations?
CHAPTER V

SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS FOR FUTURE STUDY

Summary

This study examined the utilization of teleconferencing for faculty and staff development presentations by community colleges in the United States. A descriptive survey instrument was designed to include five research areas: respondent demographics (three questions), methods of delivery of the teleconferences (five questions), amount of usage of teleconferencing for faculty and staff development presentations in community colleges (six questions), ascertaining the subject areas utilized in teleconferences for faculty and staff development presentations (three questions), barriers to implementing teleconferences for faculty and staff development presentations (seven questions), and sources of presentations used in teleconferences for faculty and staff development presentations (one question). A panel of experts in teleconferences evaluated the instrument. A copy of the survey was mailed to members of the Instructional Teleconference Consortium.

From a total pool of 375 members of the Instructional
Teleconference Consortium, 137 responded to the survey. Factors impacting the number of responses included (a) the difficulty in determining who should respond since teleconferencing management crossed over multiple areas of responsibility; (b) the detail of information requested, and (c) the timing of the mailing at college spring break. Data from the study were computed in frequencies and were presented in tabular form in chapter 4, accompanied by an analysis and discussion of the data.

Summary of Findings

Based on the review of literature and data obtained from this study, the following is a summary of the major findings.

A full range of community colleges was represented in the population of respondents to the survey (by geography, size, and type of community college). A number of managers of teleconferences in large community colleges responded to the survey, indicating that they are heavy users of teleconferences at their respective community colleges.

Survey respondents largely classified themselves as teleconference managers or administrators or as teleconference specialists, and they described their primary function as providing teleconferences for a variety of purposes, including faculty/staff development presentations. A majority of respondents reported that they do not use outside services as providers of teleconferences but managed their own campus facilities.
The respondents' opinions of the delivery of the teleconferences varied widely. This result was consistent with the reported budgets for teleconferencing in which there was little money allocated at some institutions for expensive delivery options such as two-way full-motion video and two-way audio.

Almost all the respondents' budgets were under $50,000 annually. Future teleconferencing budgets for most seem to be declining. Travel budgets to attend conferences were large and were increasing for the next year.

Large, medium, and small organizations were represented by the respondents, with the majority classified as 2-year community/junior colleges. Respondents were split almost equally between those with less than 3 years' experience with teleconferencing and those with more than 3 years experience.

The respondents reported skills-based programs, managerial programs, and continuing education classes as the categories most important to their organization. Multimedia in connection with teleconferences was the most often cited as the technology to be implemented in the next 2 to 3 years. The greatest values of interactivity in teleconferences for faculty/staff development presentations were a feeling of actively learning, clearer understanding of the subject matter, and learning from others' questions.
Discussion of the Findings

This study found that community colleges utilize teleconferences minimally in faculty/staff development presentations. Most of the teleconferences are purchased from outside sources and downloaded to their campuses. Few colleges produced their own teleconferences due to limited budgets and staffs. Community college personnel are aware of the technology of teleconferencing, but few have implemented a comprehensive plan to increase its usage for faculty/staff development presentations.

Conclusions

Based on the findings of this study, the following conclusions seem warranted:

1. Utilization of teleconferences in community colleges for faculty/staff development presentations was not currently significant. The larger community colleges appear to have the budget allocation to experiment with teleconference usage more than the majority of smaller community colleges. The larger community colleges have a support staff in place and a defined strategy for long-term growth of this delivery medium, which may indicate why they are the heaviest users of teleconferencing. These large users are influencing the direction that teleconferencing is taking and the other smaller community colleges will probably be implementing similar strategies as the larger community colleges as equipment, staff, and communications capabilities come available to them.
2. Teleconferences for faculty/staff development presentations are purchased from outside sources most of the time and deal principally with skills-based programs, continuing education classes, and managerial programs. Whether for awareness raising or interactive discussion meetings, faculty members most want (a) future presentations on addressing differences in the learning styles and special needs of special populations, (b) to stay current in their academic areas and integrating academic and technical curricula and to improve teaching performance while applying technology to overcome cultural bias. No dominant subject areas were utilized for presentation by teleconference to faculty and staff but as utilization of teleconferencing for faculty and staff development presentations increase the subject matter choices may become more predominant.

3. The most preferred method of delivery of the teleconferences is by two-way audio and one-way video although most community colleges could not afford the necessary equipment, staff, and communications air time to implement this delivery method currently. Most campuses manage their own teleconference facilities and do not lease their equipment. Other technologies that are used in connection with teleconferences for faculty/staff development presentations are multimedia, desktop video, compact disk interactive, and video on demand. Many reasons were given for making the teleconferences interactive: a feeling of actively learning, a clearer understanding of the
subject matter, and learning from others' questions. Videotapes and lectures are the most often used instructional methods besides teleconferencing for faculty/staff development presentations. Until more budgets are allocated for teleconferencing, a dominate delivery method cannot be determined.

4. Barriers to implementing teleconferencing for faculty/staff development presentations most often related to small budgets for equipment and small staffs; however, there seemed to be adequate travel budgets that could be used for teleconferences. Only a few community colleges did not use teleconferencing, but all of those planned to utilize it as a delivery method of faculty/staff development presentations in the future. Clearly, no defined management structure seemed to dominate for administering teleconferences. Each college had a different group overseeing its use, as well as many different reporting structures which meant the coordinator of teleconferencing at each campus was titled differently. This dispersion of control may be the biggest barrier to implementing teleconferencing. Possibly in the future centers for teleconferencing will be established at each campus so that central control of equipment, personnel for support, and policies can be established.

5. Additional study will be necessary to determine which sources are available for teleconference development presentations because few currently are given and fewer are
marketed to other community colleges. Most of the categories presented were in technology, instructional, awareness, and vocational areas with the Public Broadcasting System being the biggest provider. Perhaps with increased usage of teleconferencing, more sources of presentations for faculty and staff development will emerge.

Recommendations for Future Study

Future studies should provide more specific information for a clearer picture of the environment in which academic institutions can succeed as teleconference providers of faculty/staff development presentations. Based on the findings of this study, the following recommendations for future study seem to be warranted.

1. It is critical to identify the subject areas that teleconference trainers are most likely to use in academic institutions. What are the best subject areas for faculty/staff development presentations in community colleges? As these subject areas are determined, participating institutions will be able to select the right number of subject matter experts for each teleconference.

2. What specific teleconferences are currently being provided through various providers for faculty/staff development presentations in community colleges? This will enable a common database to be gathered and later disseminated to the respective institutions so that they can choose which teleconference to attend and prepare for the teleconference.
3. It is critical to identify the categories of employees that provide the best "target" for teleconferences for faculty/staff development presentations in community colleges. Which employees are the best candidates for teleconference presentations for faculty/staff development in community colleges? Once the types of target market or audiences are determined, questionnaires can be collected that determine the teleconference subject matter and the best delivery method of multimedia or other additions that enhance the teleconference.

4. Other factors that may influence the decision to utilize teleconferences for faculty/staff development presentations in community colleges should be investigated and identified. Is cost a factor in selecting teleconferences as a medium of faculty/staff development presentations in community colleges? Can academic institutions utilize technology to deliver faculty/staff development presentations rather than attending expensive remote conferences?

5. How can community colleges demonstrate measurable, transferable learning from faculty/staff development presentations via teleconferencing? This study would go a long way toward convincing reluctant users of teleconferencing of its value and overcome any of their biases.

6. What marketing strategy is most effective for faculty/staff development presentations by teleconferencing?
What advertising media is most effective for getting attendance at teleconferences for faculty and staff development presentations?

7. Are community colleges qualified to provide faculty/staff development presentations by teleconferencing? If not, what is necessary to make them qualified to provide faculty and staff development presentations in community colleges?

8. Which community colleges are willing to purchase teleconferences for faculty/staff development presentations from which providers? What price are they willing to pay for respective subject matter teleconferences for faculty and staff development presentations for community colleges?

It is essential that community college personnel understand the utilization of teleconferencing for faculty/staff development presentations. Armed with this information, community colleges can decide which medium best meets their needs and determine the most cost-effective approach to providing the training.

Additional areas of investigation might center on the differences that a presenter must know about the medium, such as presentation skills, content differences, and the fostering of interactivity. Also marketing activities to persuade faculty and staff to utilize the medium of teleconferencing. A study could also provide information concerning the equipment, staff, and training that is necessary to produce teleconferences.
APPENDIX A

QUESTIONNAIRE
APPENDIX A

Teleconferencing Questionnaire

Your job title: ________________________________

Your name (optional): ________________________________

Your institution's name: ________________________________

Your institution's address: ________________________________

1. Please characterize the size of your institution (annual enrollment - only at your college)

   a) _____ under 5,000 students
      _____ from 5,000 to 10,000 students
      _____ from 10,000 to 20,000 students
      _____ from 20,000 to 40,000 students
      _____ over 40,000 students

   b) _____ under 100 employees
      _____ from 100 to 250 employees
      _____ from 250 to 500 employees
      _____ from 500 to 1,000 employees
      _____ over 1,000 employees

2. Which responses best describe your institution:

   (check all appropriate)

      _____ Two year technical/vocational school
      _____ Other (explain) ________________________________
      _____ Two year community/junior college
      _____ Suburban community college
3. Your institution currently spends approximately the following on faculty and staff development related travel each year (travel, lodging and entertainment expenses for meetings, training, seminars, etc.):

   ____ less than $25,000
   ____ from $25,000 to $50,000
   ____ from $50,000 to $100,000
   ____ from $100,000 to $500,000
   ____ over $500,000

4. Has your institution used any of these forms of teleconferencing for faculty and staff presentations in the past? (check all appropriate)

   ____ computer to computer conferencing
   ____ audio (telephone conferencing)
   ____ slow-scan video with audio: ____ one-way ____ two-way
   ____ one-way full-motion video, two-way audio
   ____ two-way full-motion video, two-way audio
   ____ one-way multi-media (computer, video, audio, etc.), with two-way audio
   ____ two-way multi-media
   ____ other (explain) ____________________________

5. If your institution has not used any form of teleconferencing for faculty and staff presentations in the
past does it plan to do so in the: (check all appropriate)

Audio Audio/

only video

_____ _____ next year

_____ _____ next two years

6. If your institution does not plan to use teleconferencing for faculty and staff presentations in the next two years, why not? (check all appropriate)

Audio Audio/video

_____ _____ too expensive

_____ _____ benefits not clear

_____ _____ no institutional needs have developed

_____ _____ unnecessary

_____ _____ reluctance to give up travel

_____ _____ not as effective as face-to-face method

_____ _____ top administration uninterested

_____ _____ faculty uninterested

_____ _____ other (explain) __________________________

7. In the next two years, does your institution plan to:

_____ establish a formal teleconference administrator

_____ participate in a demonstration teleconference

_____ audio _____ video

_____ set up an in-house teleconference network

_____ audio _____ video

_____ plan to expand your existing teleconference network

_____ audio _____ video _____ both
contract with outside services to provide teleconferencing equipment

as a demonstration (pilot) project

audio video

for an "ad hoc" special purpose

audio video

on a regular basis (at least quarterly)

audio video

do nothing concerning teleconferencing

do something concerning teleconferencing

(explain)

8. Does your institution currently operate an in-house:

Teleconference system? _____ Yes _____ No

Number of Sites: ________(avg. served)

Computer network? _____ Yes _____ No

Number on network:_______(locations)

9. If your institution plans to install an in-house teleconferencing network, how will you get the equipment?

(check all appropriate)

Gift/ Lease Buy

Grant _____ we have no equipment

______ audio equipment (internal)

______ video equipment (internal)

______ production equipment

______ earth station (receive only)

______ earth station (send/receive)

10. What administrative function at your institution is
responsible for teleconferencing?

_____ telecommunications center
_____ media services (separate from library)
_____ library (separate from media services)
_____ learning resources center (library/media combined)
_____ information services (computer center)
_____ office services
_____ academic department
_____ broadcast department
_____ communications department
_____ electronics department
_____ continuing education
_____ other

(explain) ______________________________________

11. How does your institution presently manage your teleconferencing system(s)?

Audio Audio/
only Video

_____ _____ outside service (by whom) ____________

_____ _____ rent as needed (from whom) ____________

_____ _____ campus facilities management

_____ _____ through a consortium

(name) ____________

12. What is the title of the person who manages
teleconferencing at your institution?

Title:

13. Who does the person that manages the teleconferencing system report to? Title: _______________________________

14. What administrative office at your institution manages teleconferencing?

____ Office of the Chancellor/President
____ Office of Academic Affairs
____ Office of Business Affairs
____ Office of Student Services
____ Office of Continuing Education
____ Other (specify) ________________________________

15. Has your institution ever dealt with a commercial service regarding teleconferencing?

____ No ____ Yes (who) ______________________________

16. How many years has your institution been involved with teleconferencing of some type?

____ none

____ 1 - 3 years
____ 3 - 5 years
____ 5 - 10 years
____ 10 - 20 years
____ over 20 years

17. What has your institution spent in total for teleconferencing?

____ none

____ under $100,000
18. What is this year's annual budget for teleconferencing at your institution? (Include hardware, software, production, transmission, personnel, facilities, and maintenance)

____ none
____ under $50,000
____ from $50,000 to $100,000
____ from $100,000 to $250,000
____ from $250,000 to $500,000
____ from $500,000 to $1,000,000
____ over $1,000,000

19. What will be next year's annual budget for teleconferencing at your institution? (Include hardware, software, production, transmission, personnel, facilities, and maintenance)

____ none
____ under $50,000
____ from $50,000 to $100,000
____ from $100,000 to $250,000
____ from $250,000 to $500,000
____ from $500,000 to $1,000,000
____ over $1,000,000

20. List the teleconferences that your institution has
produced or participated in during the past year.

Subject Title

21. Which of these technologies in connection with teleconferences for faculty and staff presentations are likely to be implemented at your campus in the next two to three years?

___ multimedia
___ compact disc interactive
___ desktop video
___ video on demand
___ other ________________________________

22. Which subject matter area is most requested by faculty/staff in their development presentations at your institution?

___ skills-based programs
___ wellness programs
___ managerial programs
___ continuing education classes
___ credit classes
___ training by contract from outside contractors
___ other ________________________________

23. What is the greatest value of interactivity in teleconferences for faculty/staff development programs?

___ allows participants to overcome their inhibitions
___ a feeling of actively learning
24. What other instructional methods are used for faculty and staff development presentations besides teleconferencing?

- video tapes
- lectures
- one-on-one instruction
- audio tapes
- films
- interactive video
- role playing
- CD-ROM
- computer-based training

25. Which of these faculty topics are addressed by your faculty development presentations by teleconference? (check all appropriate)

- Improving career counseling/job placement assistance
- Addressing differences in learning styles of students
- Addressing special needs of special populations
- Staying current in academic or technical field
- Integrating academic and technical curricula
___ Overcoming cultural bias
___ Improving teaching performance
___ Increasing productivity
___ Applying technology
___ Complying with the policies and mission of college
___ Other (describe):
Teleconferencing Questionnaire

Your job title ____________________________________________

Your name (optional) ______________________________________

Your institution’s name ____________________________________

Your institution’s address _________________________________

1. Please characterize the size of your institution (annual enrollment – size at your college):
   a) Under 5,000 students
   b) 5,000 to 10,000 students
   c) 10,000 to 20,000 students
   d) 20,000 to 40,000 students
   e) Over 40,000 students

2. When responses best describe your institution: (check all applicable)
   a) Two year technical/vocational school
   b) Two year community/technological school
   c) Suburban community college
   d) Urban community college
   e) Other (explain) ________________________________________

3. Your institution currently spends approximately the following on faculty and staff development related travel each year: travel, lodging, and entertainment expenses for meetings, training, seminars, etc.
   a) Less than $5,000
   b) $5,000 to $10,000
   c) $10,000 to $25,000
   d) $25,000 to $50,000
   e) $50,000 to $100,000
   f) $100,000 to $500,000
   g) Over $500,000

4. Has your institution used any of these terms of teleconferencing for faculty and staff presentations in the past two years? (check all applicable)
   a) Two-way audio
   b) Two-way video
   c) Two-way audio/video
   d) One-way audio
   e) One-way video
   f) One-way audio/video
   g) Other (explain) ________________________________________

5. If your institution has not used any form of teleconferencing for faculty and staff presentations in the past two years, why not? (check all applicable)
   a) Too expensive
   b) Benefits not clear
   c) Faculty uninterested
   d) Too effective as face-to-face method
   e) Administrative interest
   f) Faculty uninterested
   g) Other (explain) ________________________________________

6. In the past two years, does your institution plan to:
   a) Establish a formal teleconferencing administrator
   b) Participate in a demonstration teleconference
   c) Use an in-house teleconferencing network
   d) Expand your existing teleconferencing network
   e) Expand your existing teleconferencing equipment
   f) Set up an in-house teleconference network
   g) Expand your existing teleconferencing equipment
   h) Contract with outside services to provide teleconferencing equipment
   i) Expand your existing teleconferencing equipment
   j) Expand your existing teleconferencing equipment
   k) Expand your existing teleconferencing equipment
   l) Contract with outside services to provide teleconferencing equipment
   m) Contract with outside services to provide teleconferencing equipment
   n) Contract with outside services to provide teleconferencing equipment
   o) Contract with outside services to provide teleconferencing equipment
   p) Contract with outside services to provide teleconferencing equipment
   q) Contract with outside services to provide teleconferencing equipment
   r) Contract with outside services to provide teleconferencing equipment
   s) Contract with outside services to provide teleconferencing equipment
   t) Contract with outside services to provide teleconferencing equipment
   u) Contract with outside services to provide teleconferencing equipment
   v) Contract with outside services to provide teleconferencing equipment
   w) Contract with outside services to provide teleconferencing equipment
   x) Contract with outside services to provide teleconferencing equipment
   y) Contract with outside services to provide teleconferencing equipment
   z) Contract with outside services to provide teleconferencing equipment

7. Does your institution currently operate an in-house Teleconference system? (check all applicable)
   a) Yes
   b) No

8. Number of sites (check all applicable)
   a) Campus network
   b) Computer network

9. If your institution plans to install an in-house teleconferencing network, how will you get the equipment? (check all applicable)
   a) Gift
   b) Grant
   c) Lease
   d) Buy

10. What administrative function at your institution is responsible for teleconferencing?
    a) Telecommunications center
    b) Library services
    c) Information services
    d) Office services
    e) Academic department
    f) Communication department
    g) Electrical department
    h) Continuing education
    i) Other (explain) ________________________________________

11. How does your institution presently manage your teleconferencing system?
    a) Centralized
    b) Distributed
    c) Other (explain) ________________________________________

12. What is the title of the person who manages teleconferencing at your institution?
    a) Teleconference administrator
    b) Teleconference specialist
    c) Other (explain) ________________________________________

13. Who does the person that manages teleconferencing report to?
    a) Teleconference administrator
    b) Teleconference specialist
    c) Other (explain) ________________________________________

14. What administrative office at your institution manages teleconferencing?
    a) Office of the Chancellor
    b) Office of Academic Affairs
    c) Office of Business Affairs
    d) Office of Student Services
    e) Office of Continuing Education
    f) Other (explain) ________________________________________
Has your institution ever used a commercial service regarding teleconferencing?  

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
</table>

How many years has your institution been involved with teleconferencing of some type?  

| none | 1 - 3 years | 4 - 5 years | 6 - 10 years | 11 - 20 years | over 20 years |  
|-----|-------------|-------------|-------------|-------------|-------------|-------------|  

How many years has your institution seen use of videoconferencing?  

| none | 1 - 3 years | 4 - 5 years | 6 - 10 years | 11 - 20 years | over 20 years |  
|-----|-------------|-------------|-------------|-------------|-------------|-------------|  

What was your institution's total budget for teleconferencing?  

<table>
<thead>
<tr>
<th>none</th>
<th>under $100,000</th>
<th>from $100,000 to $500,000</th>
<th>from $500,000 to $1,000,000</th>
<th>from $1,000,000 to $5,000,000</th>
<th>over $5,000,000</th>
</tr>
</thead>
</table>

What is this year's annual budget for teleconferencing? (Include hardware, software, production, transmission, personnel, facilities, and maintenance)  

<table>
<thead>
<tr>
<th>none</th>
<th>under $50,000</th>
<th>from $50,000 to $100,000</th>
<th>from $100,000 to $250,000</th>
<th>from $250,000 to $500,000</th>
<th>from $500,000 to $1,000,000</th>
<th>over $1,000,000</th>
</tr>
</thead>
</table>

What will be next year's annual budget for teleconferencing?  

<table>
<thead>
<tr>
<th>none</th>
<th>under $50,000</th>
<th>from $50,000 to $100,000</th>
<th>from $100,000 to $250,000</th>
<th>from $250,000 to $500,000</th>
<th>from $500,000 to $1,000,000</th>
<th>over $1,000,000</th>
</tr>
</thead>
</table>

What is the next year's annual budget for teleconferencing?  

<table>
<thead>
<tr>
<th>none</th>
<th>under $50,000</th>
<th>from $50,000 to $100,000</th>
<th>from $100,000 to $250,000</th>
<th>from $250,000 to $500,000</th>
<th>from $500,000 to $1,000,000</th>
<th>over $1,000,000</th>
</tr>
</thead>
</table>

List the technologies that your institution has employed or experimented in using the past year.  

<table>
<thead>
<tr>
<th>Subject</th>
<th>Title</th>
</tr>
</thead>
</table>

Which of these technologies in connection with teleconferences for faculty and staff presentations is the way to be experimented at your campus in the next two to three years?  

<table>
<thead>
<tr>
<th>Multimedia</th>
<th>Conference call/meeting</th>
<th>Desktop video</th>
<th>Video on demand</th>
<th>Other</th>
</tr>
</thead>
</table>

When subject matter area is most requested by faculty/staff in their development presentations at your institution?  

<table>
<thead>
<tr>
<th>Skills-based programs</th>
<th>Wellness programs</th>
<th>Management programs</th>
<th>Continuing education classes</th>
<th>Credit classes</th>
<th>Training by contract from outside contractors</th>
<th>Other</th>
</tr>
</thead>
</table>

What is the greatest value of interactivity in teleconferences for faculty/staff development programs?  

<table>
<thead>
<tr>
<th>Allows participants to overcome their emotions</th>
<th>A feeling of actively learning</th>
<th>Greater understanding of the subject matter</th>
<th>Allows them to ask other questions aside</th>
<th>Allows you to interrupt the presenter for clarification</th>
<th>Other</th>
</tr>
</thead>
</table>

What other instructional methods are used for faculty and staff development presentations besides teleconferencing?  

<table>
<thead>
<tr>
<th>Video lectures</th>
<th>Lectures</th>
<th>One-on-one instruction</th>
<th>Audio lectures</th>
<th>Tutorials</th>
<th>Interactive video</th>
<th>Role playing</th>
<th>Other</th>
</tr>
</thead>
</table>

Which faculty topics are addressed by your faculty development presentations by teleconference?  

<table>
<thead>
<tr>
<th>Improving career counseling/subject matter assistance</th>
<th>Addressing differences in learning styles of students</th>
<th>Improving career counseling/subject matter assistance</th>
<th>Addressing special needs of special populations</th>
<th>Saving current scholarship of technical staff</th>
<th>Integrating academic and technical courses</th>
<th>Overcoming cultural bias</th>
<th>Improving teaching performance</th>
<th>Increasing productivity</th>
<th>Applying technology</th>
<th>Communicating with the policies and mission of college</th>
<th>Other</th>
</tr>
</thead>
</table>

Other:
APPENDIX B

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APPENDIX C

COVER LETTER
Dear Education Professional:

We know that teleconferences play an increasing role in faculty and staff development. The extent of their usage is the purpose of this survey. Teleconferences enable presentations to be made to more people at greater distances and in a timely manner at lower costs. In order that we academic institutions can learn from each other about how to use teleconferences more efficiently and effectively, please fill out the survey and the results will be tabulated and returned to you after a significant enough responses are received.

As an education professional, you are uniquely qualified to help us assess this information. Won't you please add your knowledge and judgment to this survey? In order to accurately determine the needs of faculty and staff development presentations utilizing teleconferencing, it is important that your questionnaire is completed and returned in the prepaid self-addressed envelop. This entire process will take you less than fifteen (15) minutes to complete.

You may be assured of complete confidentiality. The questionnaire has an identification number for mailing purposes only. This is so that we may check your name off the mailing list when your questionnaire is returned for purposes of sending you the results.

Though this survey is strictly voluntary, the findings will benefit all of us in sharing the knowledge of what others have done in this critical area. If you have any questions, please do not hesitate to contact Alan Maples at the LeCroy Center for Telecommunications (214) 952-0331 or (214) 349-2143.

Sincerely,

Pam Quinn
Director of the LeCroy Center
APPENDIX D

ILLUSTRATIONS
Forms of Teleconferencing Utilized

- Two-way multimedia: 4%
- One-way multimedia with two-way audio: 6%
- Slow-scan video with audio: 24%
- Audio (telephone conferencing): 36%
- Computer to computer conferencing: 16%
- Other: 4%
Faculty Topics By Teleconference

- Complying with policies: 6%
- Improving job/career: 6%
- Overcoming cultural bias: 13%
- Addressing special needs: 16%
- Differences in learning styles: 17%
- Improve teacher performance: 17%
- Current in academic field: 17%
- Increasing Productivity: 6%
- Other: 2%
Greatest Value of Interactivity

- Clearer understanding: 37%
- Allows you to interrupt: 11%
- Learn from other questions: 38%
- Overcomes inhibitions: 7%
- Other: 7%
Teleconference Experience

- 5-10 Years
- 1-3 Years
- 3-5 Years
- 10-20 Years
Teleconference Expenditures

- From $500,000 to $1,000,000: 13%
- From $1,000,000 to $5,000,000: 5%
- From $5,000,000 to $10,000,000: 2%
- From $10,000,000 to $50,000,000: 6%
- More: 10%
- None: 10%
- Total: 100%
Future Technologies to be Implemented

- Desktop video: 38%
- Compact Disc Interactive: 37%
- Video on Demand: 21%
- Other: 4%
Plans for Next Two Years

- Do Something: 14%
- Establish Administrator: 14%
- Use Outside Services: 19%
- Set Up In-house Network: 22%
- Participate in Demonstration: 31%
Teleconference Usage

- Top Expense (57.5%)
- Not As Effective As Face-to-face Method (10.5%)
- Top Administration Uninterested (10.5%)
- No Institutional Needs Have Developed (5.3%)
- Benefits Not Clear (0.0%)
- Unnecessary (0.0%)
- Faculty Uninterested (10.6%)
- Other (5.1%)
Most Requested Subjects

- Managerial programs: 29%
- Credit classes: 25%
- Continuing education: 31%
- Outside contractors: 7%
- Other: 9%
- Wellness programs: 4%
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