*PAACE Journal of Lifelong Learning*, Vol. 12, 2003, 69-84. 

## Theory-to-Practice

# *Making the Transition from Traditional to Cyberspace Classrooms*

**Barbara A. Frey and Ross Donehue**

**Abstract**

This article describes results of a Faculty Technology Skills Survey administered at the Community College of Allegheny County. As a needs assessment instrument, the survey was completed by faculty ($n$ = 101) and used to develop the training program for instructors who wanted to design and teach Web-based courses. The following six recommendations were identified from the results: (1) provide computer training at the beginner and advanced levels, (2) improve communication to promote training opportunities, (3) provide incentives for faculty to integrate online technology into their courses, (4) develop a policy for managing online courses, (5) maintain continued administrative support for technology, and (6) evaluate off-the-shelf and third party course products as an alternative to developing online courses from scratch. The survey is available at <http://www.ccac.edu/itech/fac-survey.htm>.

Community colleges have long prided themselves on providing high quality education to a wide spectrum of students. In this age of information technology the dynamics of the community college learning environment is changing rapidly, presenting both opportunities and challenges to faculty and administrators. One of the opportunities lies in the tremendous potential of the Internet and online instruction. Transcending time and distance, online courses tap a new market of learners. Both community college learners and their potential employers not only expect but demand the use of technology. However, technology does not teach stu-

Barbara Frey is an Instructional Designer with the Center for Instructional Development and Distance Education, the University of Pittsburgh, and Ross Donehue is an Instructional Technologist with the Community College of Allegheny County.

dents; instructors do. The challenge, therefore, is for faculty to develop the skills set to move from traditional classrooms to cyberspace classrooms. Faculty with the ability to teach both online and face-to-face are a valuable asset for their college.

The purpose of this article is to describe the results of the needs assessment used at the Community College of Allegheny County to determine the training and development programs required by faculty to develop online courses. Through a faculty computer technology skills survey, the Instructional Technology Department was able to assess faculty's current skill level. Based on the results of the survey, recommendations are made for faculty development initiatives.

## Review of the Literature

Worldwide Internet access continues to grow at an astonishing rate. Wallace and Rennie (2000) report that more than half of all Americans have Internet access from home, work, or school. In fact, over 179 million people currently access the Web. Furthermore, of the 45 million people surfing the Web each week, 81% are between the ages of 18 and 49. This group provides a growing market of learners for community colleges. By offering courses online, instructors now have the ability to reach this previously inaccessible pool of learners.

Also growing is the number of courses being offered on the Internet. In a survey of higher education members providing both traditional and distance learning, the National Education Association (2000) notes:

> Faculty teaching distance learning courses and faculty teaching traditional courses hold positive opinions about distance learning, primarily because distance learning courses offer educational opportunities to students who would not otherwise enroll in courses. While faculty believe they will be hurt financially by distance learning, and financial considerations are very important to them, at the current time, their enthusiasm for offering an education to more students outweighs these concerns. (p. 4)

The challenge to instructors is developing skills in computer technology and knowledge in the andragogy/pedagogy of online instructional design. Taber (1998) surveyed 550 community colleges and noted that one primary reason why more institutions have not integrated technology

into their classrooms "has to do with a lack of trained faculty to use discipline-specific technologies in the classroom or for distance education" (p. 159). In fact, the majority of faculty members did not receive formal instructional technology training in their teacher education programs. Therefore, it is the institution's responsibility to support faculty in acquiring the necessary competencies.

In a review of literature regarding technology integration in community colleges, Leider (1998) emphasizes the high costs of incorporating technology into classrooms. It can be challenging because both the academic and administrative domains have rapidly changing technology needs. He suggests concentrating technology dollars in the top 10 to 25 courses with the highest enrollment (usually English, mathematics, psychology, accounting, biology, and speech) because new learning technology in these courses would then benefit the greatest number of learners.

Despite the costs of implementing instructional technology at community colleges, McKinney (1996) notes that the benefits include increased instructor flexibility, increased student interest and learning, and greater flexibility of instructional delivery. Furthermore, she observes faculty implementing technology into their face-to-face classrooms in two ways: first, as a hybrid or add-on feature to enhance traditional teaching methods and, second, as self-paced, computer-based, multi-media course content.

Following the literature review, transition to online teaching was viewed as a process. The literature reinforced the need for a survey to plan the process systemically. Horgan (1998) notes the importance of ensuring that technology support instruction, not vice versa, in this faculty development planning process. Faculty members are the subject matter, as well as the teaching and learning specialists, who can provide valuable information for technology integration.

## Setting

The setting for this project is the Community College of Allegheny County (CCAC) in Western Pennsylvania. CCAC is the largest community college in Pennsylvania and consists of four campuses and eight neighborhood centers throughout the county. Founded in 1963, CCAC serves over 16,000 students with 490 full-time and 1000 part-time faculty members. The Instructional Technology Department (ITD) consists of a Dean of Instructional Technology and two full-time staff members. The efforts

of the ITD are supported by the Professional Development Coordinator and the Computer Technology Department. In 1999 a major initiative focusing on professional development was fostered by the new CCAC President. As a result, the Professional Development Committee and the Faculty Subcommittee were formed.

At the time this project began, CCAC offered over 33 online courses in mathematics, health professions, science, business, and computer and information technology. In order to serve the student population more effectively, the 1999-2001 College Plan focused on initiatives that expanded the college's distance education program and integrated technology into the classroom.

## Methodology

Recognizing the need for updated skills in new Web and computer technologies, the Faculty Subcommittee for Professional Development requested additional learning opportunities for faculty members. To study the skills gap of where CCAC faculty members were and where they wanted to be, data were collected through a faculty survey. The Faculty Technology Skills Survey was designed by the Instructional Technology Department to determine faculty members' current level of technology skills. The paper and pencil survey was distributed to 490 full-time faculty members in their campus mailboxes; it was unclear how many of the 490 actually received the survey. The response rate was 101 completed surveys (21%).

The survey instrument consisted of 50 items measuring faculty members' technology skills in preparing, teaching, and managing instruction. In addition, it explored how instructors used computer technology in their research, communication, and professional development. The survey aimed to discover the software programs used most frequently by faculty members and their level of comfort or skill in using those programs. Items were designed to measure faculty members' varying degrees of skill or comfort, with the number of possible responses ranging from one to three, four, or five. The survey is available at <http://www.ccac.edu/itech/facsurvey.htm>.

Faculty members responded anonymously to the survey items on computerized, scannable answer sheets. Data analysis consisted of calculating descriptive statistics to identify trends and relationships.

This study had several limitations. Faculty members who completed the Technology Skills Survey volunteered to do so. Their self-selection

may have skewed results. Faculty respondents may have had higher than average computer skills and confidence and, therefore, were more willing to share their responses. Additional demographic information would have been helpful in correlating faculty technology skills to gender, race, age, and teaching experience. Furthermore, the eight-page survey may have been too long for time-challenged faculty members to read and complete.

## Findings

The findings from the survey are reported in several sections. First, the demographic characteristics of the respondents are described. Second, the frequency with which faculty members use computers and software are reported. Third, the comfort level of faculty in using computers is described. Fourth, barriers to using computers are presented. Fifth, self-rated skill and knowledge in using computers is discussed. Finally, findings related to the use of the Internet are presented.

### *Demographic Findings*

Of the 101 faculty members returning surveys, 100 responded to the item asking for their location: 39.00% ($n$ = 39) were at the Allegheny campus, 14.00% ($n$ = 14) were at the Boyce campus, 17.00% ($n$ = 17) were located at the North campus, and 30.00% ($n$ = 30) were at the South campus. Ninety-six faculty members responded to the item regarding subject matter taught: 9.36% ($n$ = 9) taught social sciences, 25.00% ($n$ = 24) taught humanities, 26.04% ($n$ = 25) taught physical sciences and engineering, 13.54% ($n$ = 13) taught computer information technology/administrative office professional, 16.67% ($n$ = 16) taught in the health professions, and 9.38% ($n$ = 9) taught in other areas. Of the 101 respondents, 88.12% ($n$ = 89) were full-time faculty members, 1.98% ($n$ = 2) were adjunct faculty members, and 9.90% ($n$ = 10) were non-teaching faculty members.

### *Frequency of Computer Usage*

Frequency of computer usage was addressed by nine items on the survey, each answered by a choice of daily, weekly, monthly, twice a year, or never. The data from these items are presented in Table 1. It should be noted that 62.00% ($n$ = 62) of the faculty members use computers on a daily basis and 66.67% ($n$ = 66) use computers for Internet activities on a daily basis. Word processing software is used daily by 45.45% ($n$ = 45) of the faculty members. Other applications, spreadsheets, databases, graph-

Table 1
Frequency of Computer Usage

| Item | *n* | Daily *n* (%) | Weekly *n* (%) | Monthly *n* (%) | Twice/Year *n* (%) | Never *n* (%) |
|---|---|---|---|---|---|---|
| 4. Computers in general | 100 | 62 (62.00%) | 19 (19.00%) | 5 (5.00%) | 7 (7.00%) | 7 (7.00%) |
| 5. Word processing | 99 | 45 (45.45%) | 27 (27.27%) | 8 (8.08%) | 5 (5.05%) | 14 (14.14%) |
| 6. Spreadsheets | 97 | 6 (6.19%) | 14 (14.43%) | 15 (15.46%) | 9 (9.28%) | 53 (54.64%) |
| 7. Databases | 98 | 4 (4.08%) | 12 (12.24%) | 11 (11.22%) | 16 (16.33%) | 55 (56.12%) |
| 8. Graphics software | 98 | 2 (2.04%) | 13 (13.27%) | 16 (16.33%) | 16 (16.33%) | 51 (52.04%) |
| 9. Presentation software | 98 | 6 (6.12%) | 12 (12.24%) | 11 (11.22%) | 15 (15.31%) | 54 (55.10%) |
| 10. Desktop publishing | 97 | 0 (0.0%) | 5 (5.15%) | 8 (8.25%) | 7 (7.22%) | 77 (79.38%) |
| 11. Internet activity | 99 | 66 (66.67%) | 16 (16.16%) | 4 (4.04%) | 6 (6.06%) | 7 (7.07%) |
| 12. Search engines | 98 | 35 (35.71%) | 30 (30.61%) | 14 (14.29%) | 7 (7.14%) | 12 (12.24%) |

ics software, presentations software, and desktop publishing are used much less frequently by faculty members.

***Level of Comfort in Using Computers and Software***

Self-reported level of comfort in using computers and various software applications was addressed by items 14 through 22. Faculty members responded to these items on a scale with 1 = very comfortable, 2 = moderately comfortable, 3 = would need some help to feel comfortable, and 4 = would need a lot of help to feel comfortable. These data are displayed in Table 2. The findings indicate that most faculty members are between very comfortable and moderately comfortable in using computers (mean = 1.71), word processing (mean = 1.76), and Internet search engines (mean = 1.74). Faculty members also indicated that they were between moderately comfortable and would need some help to feel comfortable with spreadsheets (mean = 2.79), databases (mean = 2.98), and presentation software (mean = 2.70). Faculty members expressed that they would need some help to feel comfortable in using graphics software (mean = 3.01) and desktop publishing (mean = 3.13).

Table 2
Level of Comfort in Using Computers and Software

| Item | *n* | Mean | *SD* |
|---|---|---|---|
| 14. Computers in general | 101 | 1.71 | 0.22 |
| 15. Word processing | 101 | 1.76 | 0.21 |
| 16. Spreadsheets | 101 | 2.79 | 0.13 |
| 17. Databases | 99 | 2.98 | 0.14 |
| 18. Graphics software | 98 | 3.01 | 0.15 |
| 19. Presentation software | 100 | 2.70 | 0.11 |
| 20. Desktop publishing | 98 | 3.13 | 0.18 |
| 21. Internet software | 100 | 1.79 | 0.20 |
| 22. Search engines | 99 | 1.74 | 0.21 |

***Barriers to Using Computers and Software***

Barriers to using computers and various software applications were assessed by items 23 to 31 on the survey. Faculty members responded to these items on a scale in which 1 = not a barrier, 2 = minor barrier, and 3

= major barrier. These data are displayed in Table 3. The highest rated barriers faced by faculty members in using computers and software are lack of time (mean = 2.31) and lack of student access to technology (mean = 2.23). Lack of training (mean = 2.04) and lack of technical support (mean = 1.97) were also rated as minor barriers. Limited access to computer hardware, not enough software, problems with software not being installed, technology not integrated into textbooks, and lack of knowledge of computer technology were cited as minor barriers by faculty members.

Table 3
Barriers to Using Computers and Software

| Item | *n* | Mean | *SD* |
|---|---|---|---|
| 23. Limited access to computer hardware | 99 | 1.61 | 0.25 |
| 24. Not enough computer software | 99 | 1.60 | 0.23 |
| 25. Purchased software not installed | 93 | 1.39 | 0.31 |
| 26. Lack of time | 95 | 2.31 | 0.21 |
| 27. Technology not integrated into textbooks | 95 | 1.75 | 0.20 |
| 28. Lack of technical support | 97 | 1.97 | 0.18 |
| 29. Lack of training | 99 | 2.04 | 0.18 |
| 30. Lack of knowledge on how to integrate technology | 99 | 1.77 | 0.20 |
| 31. Lack of student access to technology | 96 | 2.23 | 0.21 |

***Skill and Knowledge in Using Computers and Software***

To assess faculty skill and knowledge in using computers, a series of questions (items 32 to 41) were asked. Item 32 addressed basic computer operations. Of 99 responses, 4.04% ($n$ = 4) indicated that they did not use a computer, 33.33% ($n$ = 33) indicated that they can use the computer to run a few specific preloaded programs, 20.20% ($n$ = 20) reported that they can set-up a computer and its peripheral devices, and 42.42% ($n$ = 42) responded that they can run two or more programs simultaneously.

File management was addressed in item 33, to which 99 faculty members responded. To this item 14.14% ($n$ = 14) of faculty members reported that they do not save any computer documents they create, 9.09% ($n$ = 9) stated that they save documents created but cannot locate them, 56.57% ($n$ = 56) reported that they have a filing system to organize their computer files, and 19.19% ($n$ = 19) indicated that they regularly run a disk optimizer on their hard drive.

Word processing skills were assessed by item 34 (completed by 98 faculty members) in which 7.14% ($n$ = 7) of faculty members indicated that they do not use a word processor, 11.22% ($n$ = 11) indicated that they occasionally use a word processor, 53.06% ($n$ = 52) responded that they use a word processor for nearly all their written work, and 28.57% ($n$ = 28) of faculty members indicated that they use a word processor with students to help them improve their communications skills. Regarding spreadsheets (item 35, $n$ = 99) 46.46% ($n$ = 46) of faculty members reported that they do not use spreadsheets but can identify features of spreadsheets from which they could benefit; 11.11% ($n$ = 11) reported that they understand how to use a spreadsheet and can create simple spreadsheets; 17.17% ($n$ = 17) responded that they can change the format of a spreadsheet and can create a simple graph or chart; 28.57% ($n$ = 28) reported that they can use a spreadsheet for several applications, including labels, forms, and cell references; and 8.08% ($n$ = 8) reported that they not only use spreadsheets for their own work but have used them to help students improve their data analysis skills.

Database usage was assessed by item 36, to which 99 faculty members responded. Responses to this item indicated that 46.46% ($n$ = 46) of faculty do not know how to use a database but can identify features that might have uses for them, 25.25% ($n$ = 25) indicated that they can work with pre-made databases to find information or add or delete entries, 15.15% ($n$ = 15) indicated that they can create an original database, and 5.05% ($n$ = 5) indicated that they have used data bases to help students learn. Regarding the use of software to create graphics (item 37, $n$ = 99), 39.39% ($n$ = 39) of faculty members indicated that they did not use graphics; 11.11% ($n$ = 11) indicated that can use drawing programs to open or create simple pictures; 18.18% ($n$ = 18) indicated that they can use both pre-made clip art and simple original graphics in word processed documents and can edit clip art images; 23.23% ($n$ = 23) indicated that they can use most of the drawings tools, can group and ungroup objects, and can move images from one application to another via the clipboard; and,

finally, 8.08% ($n$ = 8) reported that they have used graphics to help students enhance their skills and knowledge.

The use of computers to assess student achievement was addressed by item 38 and was completed by 97 faculty members. Of those who responded to this item, 61.22% ($n$ = 60) reported that they do not use the computer for student assessment, 13.26% ($n$ = 13) indicated that they keep some student-produced materials on the computer and write assessments of students using word processing, 19.38% ($n$ = 19) use an electronic grade book and/or keep student portfolios on computer, and 5.10% ($n$ = 5) indicated that they rely on the computer to keep track of student outcomes and that they use that information to determine grades.

Knowledge of ethics related to computers was assessed by item 39, to which 98 faculty members responded. Three percent ($n$ = 3) stated that they were not aware of ethical issues regarding the use of computers; 26.00% ($n$ = 26) indicated that they are aware that some copyright restrictions apply to software; 24.00% ($n$ = 24) indicated that they understand the differences among freeware, shareware, and commercial software; and 45.00% ($n$ = 45) indicated that they are aware of other controversial aspects of technology such as data privacy, equitable access, and free speech issues.

The use of instructional software was assessed by item 40, to which 94 faculty members responded. To this item 32.98% ($n$ = 31) of faculty members reported that they do not use instructional software; 25.53% ($n$ = 24) reported that they use a few computer programs as instructional supplements, rewards, or with students with special needs; 25.53% ($n$ = 24) indicated that they use several programs for teaching and that they use technology with students who do not respond to traditional teaching methods; and 15.96% ($n$ = 15) indicated that they actively seek out new programs for use in teaching.

Item 41 measured information literacy. To this item 23.95% ($n$ = 23) of faculty members indicated that they are not familiar with the term information literacy, 26.04% ($n$ = 25) stated that they are familiar with information literacy skills as they apply to their discipline and that they occasionally incorporate them into their teaching, 27.08% ($n$ = 26) reported that they are aware of library electronic resources available to students and incorporate library research into their teaching assignments, and 22.92% ($n$ = 22) include multiple projects that have an information literacy component and include Internet and video conferencing into their teaching.

*Use of Internet*

The remaining items, 42 to 50, related to how faculty members use the Internet. These data are displayed in Table 4. Responses to these items were on a scale from low skills (1) to high skills (5). Item 42 addressed professional growth and communication. Of the 99 responses 10.10% ($n$ = 10) indicated that they did not use electronic resources; 24.24% ($n$ = 24) indicated that they could find some research in on-line databases; 51.52% ($n$ = 51) indicated that they use the Internet to obtain research findings, teaching materials, and information related to course content; 6.06% ($n$ = 6) indicated that they use a computer presentation program when giving workshops; and 8.08% ($n$ = 8) indicated that they organize professional growth opportunities for other faculty members.

Table 4
Use of the Internet

| Item | $n$ | Mean | $SD$ |
|---|---|---|---|
| 42. Professional growth | 99 | 2.78 | 0.11 |
| 43. Network basics | 99 | 2.47 | 0.19 |
| 44. Email and electronic lists | 100 | 3.18 | 0.18 |
| 45. World Wide Web | 101 | 2.80 | 0.24 |
| 46. Search tools | 101 | 2.85 | 0.17 |
| 47. Obtaining & decompressing files | 100 | 2.07 | 0.20 |
| 48. Web page construction | 98 | 1.65 | 0.16 |
| 49. Internet learning opportunities | 93 | 2.51 | 0.28 |
| 50. Netiquette & on-line ethics | 95 | 2.31 | 0.17 |

Faculty understanding of network basics was addressed in item 43. Of 99 responses 10.10% ($n$ = 10) responded that they did not understand how networks function, 48.48% ($n$ = 48) can identify some uses for networks, 25.25% ($n$ = 25) can describe what a network does and how it can be used, and 16.16% ($n$ = 16) use networks on a daily basis to access and communicate information.

Item 44 ($n$ = 100) assessed faculty members' use of email and electronic mailing lists. Two percent ($n$ = 2) of responses stated they did not use email, 10% ($n$ = 10) reported that they understand the concepts of email and uses for it, 57% ($n$ = 57) use email regularly, and 30% ($n$ = 30)

can send group mailings and administer an electronic mailing list.

Faculty use of the World Wide Web (WWW) was assessed in item 45 ($n$ = 101). Faculty members' responses to this item indicated that 6.93% ($n$ = 7) do not use the WWW, 28.71% ($n$ = 29) are aware that the WWW is a means of sharing information, 41.58% ($n$ = 42) can use a Web browser to find information on the WWW, and 22.77% ($n$ = 23) can configure their Web browsers.

In item 46 ($n$ = 101) faculty members responded with regard to their use of search tools. Faculty members reported that 4.95% ($n$ = 5) cannot locate information on the Internet, 24.75% ($n$ = 25) reported that they occasionally locate useful information, 50.50 ($n$ = 51) indicated that they can conduct an efficient search of Internet resources, and 19.80 ($n$ = 20) indicated that they can identify some specialized search tools for finding software and email addresses.

With regard to obtaining, decompressing, and using files (item 47), the responses of the faculty members ($n$ = 100) indicated that 44% ($n$ = 44) cannot retrieve files from remote computers, 19% ($n$ = 19) can transfer files and programs from remote locations, 23% ($n$ = 23) can extract compressed files, and 14% ($n$ = 14) use retrieved information with students.

Item 48 assessed the faculty members' ability to understand and create Web pages. Of 98 faculty members who responded to this item, 67.35% ($n$ = 66) indicated that they cannot create a Web page, 6.12% (n=6) can save text as an html files and 20.41% ($n$ = 20) use html or a Web page authoring tool, and 6.12% ($n$ = 6) can use the Web as an interface to databases.

Item 49 assessed responses of faculty members regarding learning opportunities using the Internet. Of 93 responses 15.05% ($n$ = 14) indicated that they were not aware of any ways to use the Internet, 31.18% ($n$ = 29) indicated that they occasionally allow students to use the Internet to find information, 41.94% ($n$ = 39) know a variety of activities that effectively use the Internet, and 11.83% ($n$ = 11) can design and implement an Internet project.

Netiquette and ethics were assessed by item 50 (completed by 95 faculty members), in which 12.63% ($n$ = 12) were not aware of any ethics issues regarding the Internet, 56.84% ($n$ = 54) understand a few rules about using the Internet, 17.89% ($n$ = 17) have read guidelines for Internet use, and 12.63% ($n$ = 12) can use their Internet knowledge to help write college student usage policies.

## Discussion

The faculty technology survey was developed as a needs assessment tool to determine the training and development programs required by faculty members. The ultimate goal of putting courses online was viewed as a process that required the Instructional Technology Department to make sound recommendations and decisions based on concrete data. Therefore, the survey approached faculty members' use of technology from several perspectives. Faculty members were asked to report on their frequency of use, their comfort level, their self-rated skill/knowledge, and their barriers to computer use.

Overall, a review of CCAC faculty showed that the average age was 53 years and that 49% were female. They possess a wide variety of skills in using the computer technology available to them. Those who responded to the survey tended to be typical adult learners. They balance multiple professional responsibilities and are challenged by a limited number of hours in each day. They proved to be self-directed and motivated in developing the skills they consider relevant to their jobs. The computer tasks they perform most frequently are logically those they have the most skill and confidence in using. The highest faculty usage was reported in word processing software, with 45% reporting daily usage, and email, with 57% reporting regular use.

The highest priorities in planning training initiatives would be the foundation programs or technologies in which faculty members have high need but low skills, comfort, and/or frequency of use. In the case of presentation software such as PowerPoint (item 9), the majority of faculty members (55%) reported that they never use it. To item 19, 31% of faculty members reported that they would need a lot of help to feel comfortable in using presentation software. As a result, training sessions in using PowerPoint may be identified as a priority by the technology staff.

In addition, awareness of the barriers that faculty members face, such as lack of time, training, and support, help the technology staff to implement their training plan more effectively. Forty-six percent of faculty members identified lack of time, 33% identified lack of training opportunities, and 33% identified inadequate technical support as major barriers to using computer technology. Interestingly, an important barrier that was outside the faculty members' control is student access; 36% of faculty members noted this as a major barrier, and 43% noted it as a minor barrier. These barriers were recognized in the recommendations developed from the survey results.

## Recommendations

Instructional technology decision makers benefit from the input of faculty, administrators, staff, and students. Based on the results of the faculty survey, the authors identified the following recommendations:

1. Because lack of faculty training opportunities was identified as a barrier by one-third of faculty members responding to the survey, CCAC should continue to provide computer training to faculty at both the beginner and advanced levels. Training schedules should be varied in days, times, and locations to accommodate full-time and part-time teaching faculty. Faculty members should be encouraged to integrate the Internet and other forms of technology into their classes as a supplement to the current content and format. For example, the Instructional Technologist at CCAC facilitates an online faculty development course, Introduction to Web-Based Teaching and Training. However, before instructors can benefit from this opportunity, they need a minimum level of computer competence.
2. Faculty training sessions are already taking place at CCAC, but some faculty members are unaware of the opportunities. For this reason, there is a need to improve communication. Faculty members should be informed through Web sites, newsletters, email, brown bag lunches, and department chairpersons of the opportunities to integrate instructional technology into their courses. CCAC has established a peer faculty mentoring program. Faculty members with advanced technology skills are coaching their colleagues to use instructional technologies. Both mentors and proteges volunteer to participate in the program, but some faculty members are unaware of this initiative.
3. CCAC should offer incentives for faculty to integrate technology into their programs. Remuneration in the form of released time, paid sabbaticals, or stipends may be the most helpful inducements. Compared to standard courses, development of online courses requires more faculty time and a higher level of computer skills. Therefore, to expedite such an initiative, grant funding would benefit the College. In an attempt to explore one possibility, CCAC conducted Summer Technology Institute 2000. For one month ten instructors received full pay for participating

in daily workshops to develop their classroom courses into online courses or to integrate technology into their current face-to-face courses. Instructional technology designers with expertise in online pedagogy and technology facilitated the Institute. More programs of this type are needed throughout the year.

4. The College needs to develop a policy for managing the development of online courses. The policy should address the following: Will faculty be paid for time involved in developing an online course? Who will teach the course? What will be the instructor/student ratio? What will be the instructor's remuneration? Time is a major concern for faculty.
5. The need continues for administration's commitment and support for integrating technology into the learning environment. Vision provided by college administrators will help to guide the planning process. The commitment to offer online courses requires a large investment in resources. Therefore, administrative assistance is crucial for funding, technical support, and training personnel, as well as for acquiring software and state-of-the-art equipment.
6. There is a need for both faculty and the Instructional Technology Department to evaluate off-the-shelf or third party course facilitation software products as an alternative to faculty members developing online courses from scratch. Currently, CCAC uses BlackBoard's CourseInfo (see www.blackboard.com) to develop online courses. The software incorporates options for chat and threaded discussion that are managed easily by course instructors. Textbook publishers also offer technology that can be integrated into courses.

## Conclusion

Instructional technology offers a new paradigm to the community college that requires additional knowledge and skills for traditional classroom instructors. Successful development of online courses involves more than putting classroom lecture notes onto the Web. It requires sophisticated computer skills and new strategies for teaching, assessment, and interaction. Many community college students have grown up with technology and expect technology to be a significant part of their learning experience. Employers expect to hire graduates with at least basic levels of computer literacy.

As CCAC continues to integrate instructional technology and distance education into its learning community, a systematic plan with a clear vision brings order to the process. Faculty members need knowledge, skills, and support to implement the College Plan for the future. The current culture, which values high-quality, face-to-face interaction in a learner-focused environment, wishes to transfer these principles to online classrooms. The opportunities for community college faculty are immense and compelling.

## References

Horgan, B. (1998, August). Faculty, instruction, and information technology. *The Technology Source.* Retrieved September 17, 2002, from http://ts.mivu.org/default.asp?show=article&id=75

Leider, S. (1998). *Successfully integrating technology.* Los Angles, CA: ERIC Clearinghouse for Community Colleges. (ERIC Document Reproduction Service No. ED422989)

McKinney, K. (1996). *Technology in community colleges.* Los Angeles, CA: ERIC Clearinghouse for Community Colleges. (ERIC Document Reproduction Service No. ED399992)

National Education Association. (2000). *A survey of traditional and distance learning higher education members.* Washington, DC: Author.

Taber, L. S. (1998). Faculty development for instructional technology: A priority for the new millennium. *The Journal of Staff, Program, and Organization Development, 15*, 159-174.