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ABSTRACT

This report shows the findings of a 1997 technology survey used to assess degrees of faculty computer expertise and the use of instructional technology. Part 1 reviews general findings of the fall 1997 technology survey: (1) the level of computer expertise among faculty, staff and administrators appears to be increasing; (2) in comparison with the results of the 1994 survey, the 1997 survey shows a strong trend toward the adoption of computer technology by the CCSF workforce; (3) use of e-mail and the Internet has increased, though the majority of respondents indicated a low to moderate self-rating of skills and experience using the Internet; (4) most survey respondents use a computer at least once a day, and the majority of their Internet use was to access materials. Part 2 of this report focuses specifically on instructional faculty, who have both the highest and lowest levels of computer expertise at CCSF. It was found that instructional faculty are less likely than other college employees to rate department colleagues as important sources of computer and technology information, which may be related to the frequency with which faculty use technology off-campus. Part 3 focuses again on instructional faculty, revealing that enjoyment of teaching, access to new resources, and creativity are perceived as the major benefits of instructional technology. (JJL)

TECHNOLOGY SURVEY

Faculty Computer Expertise and Use of Instructional Technology

City College of San Francisco
Office of Research, Planning and Grants

March 1998

Technology Survey

Part 1, All Responses, by Robert Gabriner, Director of Research, Planning, Grants & Title III
Parts 2 & 3, Instructional Faculty, by Pamela Mery, Researcher

Part 1

The level of computer expertise among faculty, staff and administrators appears to be increasing according to the findings of the Fall 1997 technology survey. Most CCSF employees rate their computer expertise as Intermediate (55%) while only 5% state they are not computer users. A total of 17% of the respondents rate their skills as Advanced and 23% said they were Beginners.

Comparing the results of the CCSF Fall 1997 survey with the one conducted in Spring 1994 shows a strong trend toward the adoption of computer technology by the CCSF workforce.

Level of Computer Expertise	Fall 1997 Survey*	Spring 1994 Survey**
Advanced	17%	13%
Intermediate	55%	45%
Beginner	23%	29%
Non-User	5%	13%

*Fall 1997 Survey based upon 1077 respondents
**Spring 1994 Survey based upon 952 respondents

E-Mail and Internet
The Fall 1997 survey found more than 75% of the respondents had an e-mail account either at the college or at home or in both places, and that most of those faculty and staff who did not have an e-mail account wanted one. Respondents' use of e-mail varied from once a week or less (18%) to a few times a week (23%) to daily (33%).

Most respondents rated their skills and experience using the Internet as Low (29%) to Moderate (34%) with 13% assessing high skills and 25% checking No Experience.

Computer Use
Most survey respondents use a computer at least once a day (59%) and others use computers a few times a week (21%). (A far smaller number—11%--report computer use once a week or less; 9% never use a computer for work.) Almost three-quarters of the respondents use computers off-campus or at home (73%) and over half in campus offices (54%). A smaller percent (21%) use labs or other public facilities. (Note that some respondents use computers in all these venues.) Very few respondents use portable computers.
The survey found that during the past year;

- 64% used the Internet to access materials
- 52% sent e-mail to a colleague at CCSF
- 50% discussed department technology resources with colleagues

- 46% discussed uses of technology for instruction with department colleagues

Despite increased use of technology, only 22% of CCSF employees feel their computer expertise "completely" matches their job requirements. Two-thirds indicate their skills "generally" or "somewhat" match their job needs or requirements.

Respondents identified a number of key difficulties and problems in using computers. Lack of sufficient funding for purchase and upgrades of hardware and software received the highest number of responses; another cluster of problems identified by the respondents are;

- equipment set-up/connection
- network access/connection
- lack of technical assistance and user support
- adequate training

An overwhelming number of respondents said they like CCSF to have more information technology tools available to them (93%) and would support a set aside from the General Fund for information technology (82%).

In addition to support for additional resources for information technology, the respondents rated other sources of information and support for computing that they are relying upon. They include (in order of importance);

- colleagues in my department
- staff development workshops
- print material (books, manuals)
- e-mail and Internet resources
- ITS support staff
- friends and family

The second article in this series will focus on a comparison of responses among faculty, staff and administrators to the survey questions.

Part 2

Part 1 reviewed general findings of the Fall 1997 technology survey. Part 2 focuses specifically on instructional faculty. Instructional faculty have both the highest and the lowest levels of computer expertise at CCSF.

Level of Computer Expertise	Instructional Faculty	Other CCSF Employees
Advanced	19%	14%
Intermediate	52%	60%
Beginner	23%	23%
Non-User	7%	3%
Number of Respondents	645	432

Who are the non-users and the advanced users? 44% of instructional faculty have been at CCSF for 15 years or more. These faculty make up the largest portion of non-computer users, but also make up a significant portion of advanced users. Nearly 70% of non-computer users have worked at CCSF for 15 or more years; of advanced users nearly 34% have been at CCSF 15 years or more. 33% of advanced users have been here for 3 years or less. (20% of instructional faculty have worked as CCSF for 3 years or less.) Part-time and full-time instructional faculty do not consistently differ in their computer expertise.

E-Mail and Internet Use

Most (72%) instructional faculty have e-mail accounts; however, 28% do not have accounts. 11% of instructional faculty have no interest in obtaining an e-mail account. Not surprisingly, instructional faculty are the most likely of all CCSF employees to use e-mail at home and the least likely to use e-mail daily. Instructional faculty are least likely of all respondents to have accounts through CCSF – only 46% have accounts through CCSF. (Note: of faculty who have e-mail accounts but never use them, almost all have only CCSF accounts.) Instructional faculty are also the least likely of all CCSF employees to have sent e-mail to a CCSF colleague within the past year. (45.58% said they had—only 23% had sent e-mail to a CCSF student in the past year.)

Computer Use

Statistics for instructional faculty's computer use in general show similar differences from overall CCSF trends in terms of frequency and location of use. Most instructional faculty use computers regularly, but less frequently than other CCSF employees; and they are more likely to use computers off-campus.

Only 21% of instructional faculty feel their computer expertise "completely" matches their job requirements. Two-thirds indicate their skills "generally" or "somewhat" match their job needs or requirements. Of other CCSF employees, 14% of administration, 12% of department chairs, and 7% of student service faculty believe their computer expertise "completely" matches their job requirements. Unlike administration and student service faculty, department chairs rating themselves more in the "somewhat" matching category than in the "generally" matching category. 30% of classified staff feel their expertise matches requirements.

Staff Development

Where do instructional faculty learn computer skills? Instructional faculty are less likely than other college employees to rate department colleagues as important sources of computer and technology information. This finding may be related to the frequency with which faculty use technology off-campus. Instructional faculty are as likely as other employees to rate Staff Development and external friends and family as important sources of information.

Part 3

Part 3 focuses again on the 645 full-time and part-time instructional faculty respondents to the Fall 1997 technology survey. Comparing to an earlier survey in Spring 1994 reveals both a growing interest in and use of instructional technology.

Table 1.

Instructional Resources	Already Use		Want to Use	
	1997	1994	1997	1994
Computer lab assignments	24.8	15.0	29.5	15.2
Internet	24.0	1.3	19.4	13.4
Computer classroom	20.2	13.9	33.5	17.6
E-mail students	17.8	1.1	22.9	11.0
Presentation software	14.0	6.1	34.9	15.5
CD-ROMs	12.9	2.2	32.1	17.1
Self-paced software	12.6	7.8	37.4	19.0
Computer simulations	9.0	6.7	30.9	15.0
Teleconference	0.6	0.3	25.9	9.1

Note: The actual increases from 1994 to 1997 are probably even more dramatic than what is represented here, since we are comparing the responses relatively technology-experienced faculty in 1994 to a more generally representative sample of faculty in 1997.

Instructional Use Just Beginning

The numbers for instructional use of information technology, arguably, are still small. For instance, less that 18% of instructional faculty use e-mail to communicate with students. (See Table 1.) Similarly, only one-fifth of faculty list their e-mail address on their syllabi. However, these small numbers are sizable increases compared to Spring 1994. In 1994, only 2% of faculty had sent e-mail to a student once within the prior year; only 11% expressed interest in using e-mail to communicate with students—for a combined total of 13%. Currently, 18% of faculty use e-mail to communicate with students plus an additional 23% would like to use e-mail in this way. If CCSF could give that 23% of interested faculty the needed training and/or facilities, then over 50% of faculty will be communicating with students via e-mail.

Computer Expertise and Use of Instructional Resources

Overall, instructional faculty rate themselves higher on general computer use than on specific instructional applications. (See Table 2.) Only 16% term their skill level "high" and 21% say they have no experience in instructional software.

Table 2.

	General Level of Computer Expertise Skills	Experience Using Instructional Software
Advanced/High	19%	16%
Intermediate/Moderate	52%	34%
Beginner/Low	23%	29%
Non-User/No Experience	7%	21%

Use of instructional resources varies considerably according to computer expertise even for non-computer applications. The only exception is the use of textbooks, which is high among all faculty regardless of computer expertise. In general, advanced users are more likely to use, or want to use, all kinds of instructional resources. For instance, advanced-level instructional faculty are not only more likely to use computer classrooms-- they are also more likely to use overhead projectors. Use of

overhead projectors is as follows: 60% of advanced users, 52% of intermediate users, 45% of beginners, and 21% of non-computer users. Note, not only is use low among non-computer users—interest is as well; only 12% of non-computer users would like to use overheads. In another example, advanced users and nonusers both are less likely to use video and/or audio presentations than intermediate or beginning-level users. However, advanced users are more likely than non-computer users to say they want to use video.

These trends hint at some differences between advanced users and nonusers. Advanced users seem open to using all instructional aids, whether computer-based or not. Nonusers use, and are interested in, few instructional aids beyond textbooks. Non-computer users may not see the need for instructional aids and/or may not feel capable of using instructional aids effectively. Note, at present we do not know how instructional aids benefit student learning in the courses taught be either category of instructional faculty.

Perceived Benefits

The kinds of benefits that faculty derive from using instructional technology have remained largely the same in the last few years. (See Table 3.) The percentage of faculty enjoying these benefits has increased marginally. Enjoyment of teaching, access to new resources, and creativity are all rated very high. In 1997, 32% rate enjoyment as very high (5) and an additional 22% rate it as high (4). These figures are even higher for advanced users indicating that the more adept faculty are at using instructional technology, the more benefits they receive from using it.

Table 3.

Rated as "major benefit"*	**1997**	**1994**
Enjoyment of teaching	31.9	27.2
New resources	28.9	24.7
Creativity	27.8	23.7
Overall quality of teaching	25.9	20.3
Student response	20.8	21.1
Help students w/ problems	15.3	12.6
Work w/ disabled students	9.3	9.4

**Rated as "5" on a scale of 1-5.*

Note: These figures are for all instructional faculty who responded to the question, not just faculty who are currently using instructional technology. This allows for the inclusion of faculty who may have used instructional technology in the past but did not find it to be beneficial.

More Questions

It may be useful to look at these results even more closely—the survey responses provide much more information than has been presented here. What factors other than computer expertise related to the use of instructional technology? Differences between full-time and part-time instructional faculty were not discussed in this article because full-time and part-time faculty revealed similar computer skills. However, it might be useful to see if part-time faculty have different levels of use of (and perhaps access to) instructional technology. Also, this article has in some ways assumed that all areas of instruction benefit equally from the application of instructional technology; however, further investigation of this data may reveal discipline-specific trends.

For further information about the Fall 1996 technology survey, please contact Pamela Mery at

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