CSU Technology Metrics Student 2005 Survey Report

Conducted for:

The California State University Chancellor's Office

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INTRODUCTION

The Social and Behavioral Research Institute at California State University San Marcos has produced the CSU Technology Metrics Student 2005 report for the California State University Chancellor's Office. The report summarizes the responses of students throughout the California State University (CSU) system concerning access to, use of, and satisfaction with computing and network technology. This report also addresses CSU students' attitudes regarding computing and network resources at their campus.

The report contains a description of the data, an account of the results, and a summary of the key findings. Appendix A contains the questionnaire items.

DATA

The data came from telephone interviews with 3,204 CSU system students in 2001, 3,156 students in 2003, and 3,188 students in 2005. The interviews were conducted with students at 21 campuses in the CSU system. Interviews were completed with students at each of the campuses except the Maritime Academy and Channel Islands campuses, which were excluded because they do not have student populations adequate for sampling. For each administration of the survey, interviews were conducted with approximately 150 students at each campus. The number of interviews conducted at each campus was stratified on discipline and class level.

The interview questions addressed attitudes about, access to, use of, and satisfaction with computing and network technology. Additionally, data regarding respondent characteristics were obtained from interview questions and institution databases.

Measures

A number of attitudes regarding technology were assessed using 11-point scales. For example, students were asked about the importance of computing and network resources for completion of their school work. They were asked to respond "using a scale of zero to ten, where zero equals not at all important and ten equals extremely important." Similarly, satisfaction items used an 11-point scale "where zero equals not at all satisfied and ten equals extremely satisfied." (See Appendix A for the full

text of the questions.) For each of the 11-point scales, higher numbers indicate higher levels of the quantity being measured. Most of the items regarding access to and use of technology were yes-or-no type questions. Additionally, some demographic information was provided in campus databases.

RESULTS

Respondent Characteristics

More than half (60.4%) of the respondents in 2005 were female, and 39.6 percent were male. This very closely matches the gender distribution of the survey in previous years, as shown in Table 1. The respondents in 2005 averaged 27.32 years of age, compared to 26.81 years in 2003 and 28.05 years in 2001.

Respondents' race/ethnicity is displayed in Table 2. Over half (62.0%) of the respondents in 2005 were white, and Hispanics constituted under a quarter (23.1%) of the sample. There was a notable decrease in the number of Asians in the sample in 2005 compared to previous administrations.

The class level of the students in 2005 reflects the student population of the system, as was the case in 2001 and 2003. Table 3 also shows that half (51.2%) of the respondents in 2005 were upper division students, 28.7 percent of the respondents were lower division, and 20.1 percent were post baccalaureate.

The breakdown of students by discipline is displayed in Table 4. In 2005, the behavioral and social sciences students constituted the largest category, with 22.2 percent of the respondents. Business students, the second largest category were 13.2 percent of the sample.

The enrollment status of the respondents is displayed in Table 5. More than half (57.4%) of the respondents were continuing undergraduate students, and 20.1 percent were continuing graduate

students. Also, 10.8 percent of the students were undergraduate transfers and 10.3 percent were first-time freshmen.

The employment status of the students was of interest. As in 2001 and 2003, over two-thirds (67.3%) of the students in 2005 reported that they were employed. This is shown in Table 6. Those who were employed were asked how many hours per week they worked. Working students put in an average of 26.95 hours per week, compared to 27.61 hours per week in 2003, and 28.16 in 2001.

Technology Attitudes

General Attitudes Regarding Technology

Students' impressions and beliefs about computing and network technology were examined. Students believed computing and network resources were very important in completing their school work. Where zero indicates *not at all important* and ten indicates *extremely important*, the students in 2005, on average, rated the importance of computing and network resources at 8.68.

As Table 7a shows, year of administration was related to a student's perception of the importance of computing and network resources in completing their school work. Students in 2005 ($p<.05$) and 2003 ($p<.05$) rated the importance of computing and network resources slightly higher than did students in 2001.

The perceived importance of computing and network resources in completing their school work varied by class level, as illustrated in Table 7b. Lower-division students viewed computing and network resources as less important in completing their school work than did upper-division students ($p<.001$) and post-baccalaureate students ($p<.01$).

The extent to which students perceived computing and network resources to be important in completing school work did not vary by discipline. Table 7c shows consistently high ratings of the importance of computing and network resources across disciplines in 2005 .

Students rated their satisfaction with the computing and technology resources available to them. Satisfaction was evaluated on a scale rating ranging from zero, indicating the respondent was *not at all*

satisfied, to ten, indicating the respondent was *extremely satisfied*. This zero-to-ten satisfaction rating scale was utilized throughout the interview. The students were fairly satisfied with the available computing and technology resources, as indicated by the average rating of 7.71.

Year of administration was related to satisfaction with the available computing and technology resources. Table 8a shows that satisfaction in 2001 was slightly lower than in 2003 ($p<.05$), and significantly lower than in 2005 ($p<.001$).

Table 8b shows the average satisfaction level with the available computing and technology resources for lower-division, upper-division, and post-baccalaureate students. The more advanced the student, the lower the satisfaction. Lower-division students were more satisfied than upper-division students ($p<.05$), who, in turn, were more satisfied than post-baccalaureate students ($p<.01$).

The level of satisfaction with the available computing and technology resources did not differ for students in different disciplines. Table 8c shows the average satisfaction ratings by discipline.

General Computer Use

Academic Computer Use

The percentage of the students' computer use that was class or academically related was of interest. Over half (57.82%) of the time students in 2005 spent on computers was academically related. As Table 9a shows, this is an increase from the 55.61 percent of computer time that was academically related for students in 2001 ($p<.05$) and the 53.91 percent of computer time that was academically related for students in 2003 ($p<.05$).

The percentage of total computer usage that was academically related for students at different class levels is displayed in Table 9b. The percentage of the time that students spent on computers that was academically related was lower for lower-division students than it was for upper division ($p<.001$) or post-baccalaureate ($p<.05$) students.

Table 9c contains the percentage of total computer usage that was academically related for students in different disciplines. The table shows that there were some differences by discipline in the percentage of students' computer time that was academically related. Most notably, interdisciplinary studies students as well as professional/technical students spent a higher percentage of their time on a computer engaged in academically related activity than did most other students, and engineering and computer science students had a lower proportion of their computer time academically related.

Beliefs about Computer Skills

Students were asked to rate the importance of computer literacy for their employment goals. Students believed computer literacy to be of extreme importance to their employment goals, as indicated by their average importance rating of 9.18 on the zero-to-ten importance scale in 2005. This importance rating, shown in Table 10a, is slightly higher than the rating students gave in 2003 ($p<.05$).

Table 10b shows how students at different class levels rated the importance of computer literacy to their employment goals. The importance rating students gave depended on their class level. Lower-division students regarded computer literacy as less important to their employment goals than did upper-division students ($p<.001$) or post-baccalaureate students ($p<.001$).

The importance students attach to computer literacy for their employment goals was examined for students in different academic disciplines. These importance ratings varied by discipline, as Table 10c illustrates. Engineering and computer science students and business students rated computer literacy as more important than did students in all other disciplines.

Students in 2003 and 2005 were asked about how well they thought their university had prepared them for the technology skills they would need at graduation. On a zero-to-ten scale with higher numbers indicating better preparation, students offered an average rating of 6.96 in 2005, a significant increase over the 6.60 rating in 2003. This is seen in Table 11a.

Students' ratings of how well they thought their university had prepared them with the technology skills they would need at graduation also varied by class level. Table 11b shows that post-baccalaureate students believed they were less well prepared by their university with the technology

skills needed at graduation than did lower-division students ($p<.001$) or upper-division students ($p<.001$).

Students in different academic disciplines provided different ratings of how well their university prepared them with the technology skills needed at graduation. Table 11c shows that engineering and computer science students thought their university had better prepared them for the technology skills they would need than did humanities ($p<.001$), education ($p<.01$), behavioral and social sciences students ($p<.01$), and undeclared students ($p<.01$). Further, business students rated the preparation they received as more adequate than did humanities ($p<.01$), education ($p<.01$), behavioral and social sciences students ($p<.01$), and undeclared students ($p<.01$).

Workstations, Software, and Help

Hardware

Respondents were asked about access to the computer workstations, software, and maintenance. Almost all (92.6%) of the students in 2005 reported having access to a university-provided computer workstation to complete their school work. There was slight variation in access to a university-provided computer workstation across administrations. This is illustrated in Table 12a.

Class level was linked to the likelihood that students reported having access to a university-provided computer workstation to complete their work ($p<.001$). This is seen in Table 12b. Post-

baccalaureate students were much less likely than other students to indicate that they had access to the computer workstations they needed to complete their work.

There was also a small effect of discipline on reporting having access to a university-provided computer workstation ($p<.05$). Table 12c shows that education students were less likely to indicate that they had access to university-provided computer workstations to complete their work, while science and math students were more likely to report having access.

Students indicating that they had access to a university-provided computer workstation were asked how satisfied they were with the workstations available. Overall, the students were fairly satisfied with the workstations to which they had access, giving an average satisfaction rating of 7.92 in 2005.

Students' satisfaction with the university-provided computer workstations available to them is shown in Table 13a. The table shows that satisfaction with available workstations was greater in 2003 than it had been in 2001 ($p<.01$), and greater in 2005 than it had been in 2003 ($p<.01$).

The level of satisfaction with computer workstations decreased as class level rose. This is seen in Table 13b. Lower-division students were more satisfied with the workstations provided for them than were upper-division ($p<.001$) and post-baccalaureate students ($p<.001$), and upper-division students were more satisfied than were post-baccalaureate students ($p<.05$).

The level of satisfaction with computer workstations was the same for students in different academic disciplines. Table 13c shows the average satisfaction levels for all disciplines.

Software

The availability of software was also addressed in the questionnaire. Students were asked if they had access to university-provided software they needed to complete their work. Three quarters (75.9%) of the students in 2005 indicated that they had access to the software they needed to complete their school work. As Table 14a shows, the percentage of students reporting access to necessary software was lower than it had been in 2001 and 2003 ($p<.001$).

The likelihood that a student had access to university-provided software needed to complete school work is shown in Table 14b by class level. As the table shows, access to needed software was not constant across class level ($p<.001$). Specifically, post-baccalaureate students were less likely than other students to report having access to the software they needed to complete their work.

The availability of computer software necessary to complete schoolwork also varied by discipline, as can be seen in Table 14c. Students in education were much less likely to have access to university-provided computer software necessary to complete their work than were students in other disciplines, and business and science and math students were more likely to report having the software they needed.

Those stating that they had access to university-provided computer software necessary for their work reported on their satisfaction with that software. Those students in 2005 with access to software were generally satisfied with the software available, as indicated by an average satisfaction rating of 8.23. Table 15a shows that this represents an increase from the average satisfaction rating of 8.02 in 2001.

The student's class level had no bearing on the level of satisfaction expressed by the student with the university-provided software. This is seen in Table 15b.

The students' level of satisfaction with the university-provided software is broken down by discipline in Table 15c. There were no differences in satisfaction with the software provided to them by the university among students in different disciplines.

Connectivity

Campus E-mail Accounts

Students in 2003 and 2005 were asked about the use of their campus-provided e-mail accounts. Two thirds (66.7%) of the students in 2005 used their campus-provided e-mail accounts. Table 16a shows that this is a significant increase from the 52.6 percent of the students in 2003 that said that they used their campus-provided e-mail accounts ($p<.001$).

The likelihood of students using their campus e-mail varied by class level ($p<.001$), as Table 16b indicates. Post-baccalaureate students were considerably less likely than undergraduates to use their campus e-mail accounts.

Use of their campus-provided e-mail account also differed for students in different disciplines ($p<.001$). Table 16c shows that engineering and computer science students, humanities students, and interdisciplinary students were more likely to use their campus e-mail accounts than were other

students. Further, education students and art students were less likely than other students to use their campus-provided e-mail.

Those making use of their campus-provided e-mail accounts rated their satisfaction with their access to campus e-mail services. Overall, students in 2005 were quite satisfied with their access to campus e-mail services, as indicated by an average satisfaction rating of 7.95. Table 17a shows that satisfaction was lower in 2001 than it was in 2003 ($p<.001$) and 2005 ($p<.01$).

Satisfaction with e-mail accounts varied by class level, as is illustrated in Table 17b. The higher the class level, the lower the satisfaction. Post-baccalaureate students were less satisfied with campus e-mail services than were lower-division ($p<.001$) and upper-division students ($p<.01$), and upper-division students were less satisfied than were lower-division students ($p<.05$).

Table 17c shows the average satisfaction ratings for students in different disciplines. Interdisciplinary students were more satisfied with campus e-mail services than were education ($p<.01$), engineering and computer science ($p<.01$), and science and math students ($p<.05$).

Starting in 2003, students were asked if they used their campus network from off campus using a modem, cable, DSL, or ISDN. In 2005, 87.1 percent of the students had accessed their campus network from off campus using one of these means. Table 18a shows that more students have been accessing their campus network in 2005 than had in 2003 ($p<.001$).

Table 18b shows that there was a difference in the tendency for students to use their campus network from off campus by class levels ($p<.05$). There was a slight trend for students to be more likely to access their campus network from off campus the more advanced the student was.

The students in different disciplines reported similar likelihoods of using their campus network from off campus. This is illustrated in Table 18c.

The students who had accessed their campus network from off campus were asked if they had cable or DSL access at home. Four out of five (80.1%) of these students reported having a high-speed Internet access. Table 19a shows by class level the likelihood of students connecting to their campus network using a high-speed connection. The likelihood of having high-speed access was consistent across student level.

Table 19b displays the percentages of students in different disciplines that accessed their campus network using a high-speed connection. The table shows there was some variation among students in different disciplines in this regard ($p<.05$).

Students who had accessed their campus network from off campus using a high-speed connection were asked how satisfied they were connecting to the network from off campus. For the most part, students using a high-speed connection to connect to the campus network were quite satisfied, as evidenced by an average satisfaction rating of 8.47. Satisfaction did not vary by class level, as can be seen in Table 20a.

Table 20b shows the average satisfaction ratings with connecting to the campus network using a high-speed connection for students in each discipline. These ratings were consistent across academic disciplines.

Online Resources

Students were asked about their use of and satisfaction with online resources. Specifically, they were asked if they used electronic information resources such as online interlibrary loan, online database searches, or online catalogs. Year of administration was related to the likelihood of using online information resources ($p<.05$). This is seen in Table 21a. While 81.8 percent of students in 2001 used online information resources, this rose to 84.4 percent in 2003 and 83.7 percent in 2005.

The likelihood that students reported using online information resources varied by class level ($p<.05$). Table 21b shows slight variations in the likelihood of students using electronic information resources at different class levels.

The likelihood of using online information resources also depended on discipline ($p<.001$), as is illustrated in Table 21c. Humanities and social and behavioral science students were more likely to use online information resources than were other students.

Students who said that they had used online information resources were asked about their satisfaction with the *quality* of the online information resources. On the zero-to-ten satisfaction scale, the average rating was higher in 2003 ($p<.05$) and 2005 ($p<.001$) than it was in 2001. This is seen in Table 22a.

Students' ratings of satisfaction with the quality of the online information resources were very consistent across class level. This is seen in Table 22b.

Similarly, the quality of the online information resources was rated consistently by students across academic disciplines. Table 22c illustrates this point.

Those who used online information resources were also asked about their satisfaction with the *ease of use* of the online information resources available through their campus library. Students expressed satisfaction, as indicated in Table 23a. The average satisfaction rating with the ease of use of information in 2005 was 7.84. The satisfaction ratings in 2003 ($p<.01$) and 2005 ($p<.001$) were higher than they had been in 2001.

The students' level of satisfaction with the ease of use of the online information resources did not vary by class level in 2005. The students' average level of satisfaction by class level is shown in Table 23b.

Academic discipline was also unrelated to students' satisfaction with the ease of use of the online information resources. Table 23c shows that satisfaction was high for students in all disciplines.

Administrative Information Systems

Students were asked about the use of and satisfaction with administrative online information systems for accessing information about registration, grades, financial aid, billing, and progress toward their degrees. Because the context for these questions has changed, the data gathered in 2005 are not directly comparable to prior administrations. Therefore, this section will address only the data collected in 2005.

Registration Information

Students in 2005 were asked if they used their campus online information system to get information about registration. Most (93.6%) of the students reported using their campus online information system to access information about registration. The likelihood that students accessed information about registration online is displayed by class level in Table 24a. This table shows that more advanced students were slightly more likely to get registration information using their campus online information system than were less advanced students ($p<.05$).

The likelihood that students accessed registration information online is displayed in Table 24b by academic discipline. The table shows accessing registration information online did not vary by discipline.

Respondents in 2005 reporting use of their campus online information system were asked how satisfied they were with their online access to information about registration. Students were quite satisfied, giving an average satisfaction rating of 8.16. The level of satisfaction with online access to information about registration was qualified by class level. Table 25a shows that upper-division students were slightly more satisfied than were post baccalaureate students ($p<.05$).

Table 25b reveals some variation in the average satisfaction levels with online access to information about registration by academic discipline. The table shows that interdisciplinary studies students were more satisfied with access to online registration information than were education ($p<.05$), engineering and computer science ($p<.01$), and undeclared ($p<.01$) students.

Grades Information

Students were also asked about use of their campus online information system to get information about grades. In 2005, almost all (95.4%) of the students used their campus online information system to get information about grades. The likelihood that students used their campus online information system to get information about grades was consistent across class level, as Table 26a demonstrates.

Table 26b shows the percentage of students in different disciplines that reported accessing grade information using their campus online information system. The table shows slight variation in the likelihood of accessing grade information varied by discipline.

Students in 2005 accessing grade information on their campus online information system were asked about how satisfied they were with online access to this information. The overall satisfaction rating was 8.75, indicating a high level of satisfaction with online access to grade information. Table 27a shows that satisfaction with online access to grade information does not differ significantly by class level.

Students' average levels of satisfaction with online access to grade information by discipline in 2005 are displayed in Table 27b. This table shows that engineering and computer science students tended to be less satisfied than students in some other academic disciplines. Specifically, engineering and computer science students were less satisfied than were behavioral and social science, professional and technical, and interdisciplinary studies students.

Financial Aid

In 2005, students were asked about using campus online information systems to get information regarding financial aid. Table 28a shows that 52.6 percent of the students said they had used their online information system to get student aid information. The table shows the likelihood that a student obtained financial aid information from their campus online information system depended on their class level ($p<.001$). Lower-division students were more likely than upper-division students to obtain financial aid information from their campus online information system, and both were much more likely than post-baccalaureate students to do so.

The percentage of students in 2005 that used their campus online information system to gain information regarding financial aid is displayed in Table 28b by discipline. Online access of financial aid information did not vary by discipline.

The students who had accessed financial aid information from their campus online information system gave ratings of how satisfied they were with their access to this information. In 2005, the average satisfaction rating was 8.01, indicating a high level of satisfaction. Table 29a that satisfaction with their campus online access to information about financial aid was lower for post baccalaureate students than it was for lower-division ($p<.001$) or upper-division students ($p<.05$) in 2005.

Satisfaction with their campus online access to information about financial aid was consistent across academic discipline. The average satisfaction ratings by discipline are shown in Table 29b.

Information about Billing

Use of campus online information systems to obtain information about billing was also assessed. In 2005, 60.4 percent of the students said they had accessed billing information on their campus online information system. Use of campus online information systems to get information about billing is displayed in Table 30a by class level. As the table shows, gaining billing information from campus online information systems was unrelated to class level.

Obtaining information about billing from the campus online information systems was dependent on academic discipline ($p<.001$). Table 30b shows the likelihood of getting billing information online was higher for engineering and computer sciences and humanities students than it was for most other students.

Students stating that they used their campus online information system to obtain billing information also indicated that they were quite satisfied with the online access to information about billing, giving an average satisfaction rating of 8.06 in 2005. Table 31a displays the satisfaction levels with online access to billing information through the campus online information system by class level. As can be seen in this table, post-baccalaureate students were less satisfied with online access to billing information through the campus online information system than were lower division ($p<.01$) or upper division students ($p<.01$).

Satisfaction levels with online access to billing information through the campus online information system are displayed in Table 31b by academic discipline. Satisfaction with online access to billing information was not related to discipline.

Progress toward Degree

The likelihood of using the campus online information system to get information about progress toward their degree is displayed in Table 32a by class level. The table reveals differences by class level in the likelihood of accessing progress toward degree information from the campus online information system ($p<.001$). Upper-division students were more likely to access progress toward degree information, and post-baccalaureate students were considerably less likely to use the campus online information system to get information about progress toward their degree.

Using the campus online information system to get information about progress toward their degree was also associated with academic discipline ($p<.001$). Engineering and computer science students as well as humanities students, were more likely to get information about their progress to their degree online than were other students, while education and undeclared students were less likely to get information about progress to degree online. This is seen in Table 32b.

Students' average level of satisfaction with online access to information about progress to degree was 7.62 in 2005. Satisfaction levels with online access to information about their progress to their degree was dependent on the student's class level. Table 33a shows that lower-division students were more satisfied than upper-division students with the access to information on their progress toward their degree ($p<.001$).

Table 33b shows the satisfaction levels with online access to information about their progress to their degree by academic discipline. Satisfaction with access to this information was higher for science

and math students than it was for engineering and computer science ($p<.05$) as well as humanities students ($p<.05$).

Help and Technical Support

Students were asked about their use of different modes of help with computer hardware and software. They were asked if they had used (1) a telephone call center or online help desk, (2) a campus walk-in help desk, (3) computer lab staff, or (4) other students. For each of these modes of help that the students used, the student's satisfaction with the help received was assessed.

Telephone Call Center or Online Help Desk

Table 34a shows that 31.4 percent of the students in 2005 had used their campus' telephone call center or online help desk. Use of the telephone call center or online help desk was higher in 2003 and 2005 than it had been in 2001 ($p<.001$).

Use of the campus telephone call centers or online help desks also varied by class level in 2005 ($p<.01$). Lower-division students were more likely to make use of the telephone call center or online help desk than were other students. This is seen in Table 34b.

There was also some variation in 2003 in the use of the telephone call center or online help desk by academic discipline ($p<.01$), as indicated in Table 34c. Specifically, humanities students were more

likely than others to get help from their campus telephone call center or online help desk, and art and science and math students were less likely to do so.

Those making use of the telephone call center or online help desk were asked about their satisfaction with the services from their telephone call center or online help desk. Table 35a shows that students were fairly satisfied with the telephone call center or online help desk services, and that there was no difference in satisfaction levels among the different administrations of the survey.

Satisfaction with the telephone call center or online help desk services is displayed in Table 35b by class level. This table shows that satisfaction with the telephone call center or online help desk services did not vary by class level.

Satisfaction with the telephone call center or online help desk services were generally consistent across academic discipline, though interdisciplinary studies students were more satisfied than were engineering and computer science students ($p<.05$). This is illustrated in Table 35c.

Walk-in Help Desk

In 2005, 29.3 percent of the students indicated that they had made use of their campus walk-in help desk. Table 36a shows significant variation in the percentage of students using a walk-in help desk by administration ($p<.001$). Use of a walk-in help desk was greatest (32.7%) in 2003.

The percentage of students in 2005 that used a walk-in help desk is shown in Table 36b by class level. Class level was associated with the likelihood of getting help from a walk-in help desk ($p<.001$).

Specifically, post-baccalaureate students were less likely than other students to seek help from a campus walk-in help desk.

The likelihood of using a campus walk-in help desk is shown in Table 36c. The likelihood of using a campus walk-in help desk was unrelated to the students' academic discipline.

Those students who had used a campus walk-in help desk were asked to indicate their level of satisfaction with the walk-in help desk services. Generally, students in 2005 were quite satisfied with the walk-in help desks. This is evidenced by the 8.24 satisfaction rating displayed in Table 37a. This was a slight increase over the 2003 satisfaction rating ($p<.05$).

The average satisfaction ratings students gave to the campus walk-in help desk services are displayed in Table 37b by class level. Students' satisfaction with walk-in help desk services did not vary by class level.

Table 37c provides the average satisfaction ratings students gave to the campus walk-in help desk services by academic discipline. Students' satisfaction ratings with their campus walk-in help desk services were unrelated to discipline.

Computer Lab Staff

The most popular mode of help among students was the campus computer lab staff. In 2005, 46.9 percent of the students sought help from computer lab staff. As Table 38a shows, there was substantial variation in the percent of students seeking help from their campus computer lab staff by administration ($p<.001$), with the highest frequency of use (61.1%) in 2003.

Use of the campus computer lab staff is broken down by class level in Table 38b for the 2005 data. The table shows that use of computer lab staff was dependent on class level ($p<.001$). Upper-division students and post baccalaureate students were more likely than lower-division to make use of their campus computer lab staff.

Table 38c displays the percentage of students in 2005 within each academic discipline that made use of their campus computer lab staff. Use of the computer lab staff was related to academic discipline. Specifically, business and professional and technical students were more likely than others to make use of the computer lab staff. Education, humanities, and undeclared students were less likely to use computer lab staff for help.

Students who had sought help from their campus computer lab staff were asked how satisfied they were with the services they received from the computer lab staff. Generally, satisfaction was high, as shown in Table 39a. The average satisfaction rating was 7.93 in 2003, and increased to 8.21 in 2005.

Satisfaction with computer lab staff services was also compared by class level in 2005. Students' satisfaction with the help services provided by the computer lab staff was higher for lower division students than it was for upper-division ($p<.05$) and post-baccalaureate students ($p<.05$). This is shown in Table 39b.

Table 39c shows the students' ratings of satisfaction with their campus computer lab staff's services broken down by academic discipline in 2005. Satisfaction with the computer lab staff help services was consistent across disciplines.

Other Students

Starting in 2003, students were asked if they had received help with computer hardware or software from other students. In 2005, 39.2 percent of the students indicated that they had received help from other students. As illustrated in Table 40a, this is a drop-off from the 46.4 percent receiving help from other students in 2003.

Table 40b shows that class level was associated with the likelihood that a student would get help from other students ($p<.001$). The more advanced the student, the less likely the student was to receive help from other students.

The percentage of students receiving help from other students was examined by academic discipline. Table 40c shows that the percentages of students getting help from other students did not vary by academic discipline in 2005.

The students that reported receiving help from other students were asked about their satisfaction with that means of obtaining help. Students were generally satisfied, as indicated by the average satisfaction rating of 7.87 in 2005. Table 41a shows that satisfaction with help from other students was higher in 2005 than it had been in 2003 ($p<.05$).

Satisfaction by class level is presented in Table 41b. The table reveals that satisfaction was lower for post-baccalaureate students than it was for lower-division ($p<.01$) and upper-division students ($p<.05$).

Table 41c shows the average satisfaction level of students with receiving help from other students broken down by academic discipline. Students satisfaction with receiving computer help from other students was consistent across academic disciplines.

Training

Participation in Training

Students were asked a number of questions regarding participation in and satisfaction with computer training programs aimed at improving basic computer skills. They were asked how important they believed these programs are. Overall, students rated such training programs to be very important. However, Table 42a shows that the importance ratings have declined from administration to administration. The importance students gave to training programs for improving basic computer skills in 2001 was 8.61. This dropped to 8.48 in 2003 ($p<.05$), and 8.29 in 2005 ($p<.01$).

Table 42b presents the average importance ratings students in 2005 gave to basic computer skills training programs separately for students at different class levels. The table reveals no differences in importance ratings for students at different class levels.

Engineering and computer science students viewed the importance of computer training programs aimed at improving basic computer skills a little differently than students in other disciplines. Table 42c shows that students in engineering and computer science considered computer training programs aimed at improving basic computer skills as less important than did business ($p<.001$),

education ($p<.001$), behavioral and social sciences ($p<.001$), undeclared ($p<.01$), and interdisciplinary studies ($p<.001$) students.

While students regarded basic computer skills training programs as important, only one out of eight (12.5%) of the students in 2005 participated in these training programs. As Table 43a illustrates, there was a very slight decline across administrations in the participation rate of students in basic computer skills training programs ($p<.05$).

Participation in basic computer skills training by students at different class levels is presented in Table 43b. Students at all class levels were about equally likely to participate in training programs to improve their basic computer skills.

The likelihood that students participated in training to improve their basic computer skills was also examined by academic discipline. Participation in computer skills training did not differ by academic discipline as Table 43c demonstrates.

Types of Training

The different types of programs that students participated in were of interest. Students who had participated in some form of basic computer skills training were asked about the types of training programs they participated in, and how satisfied they were with the training programs in general.

Computer-based Training. Table 44a reveals a marked decline in the percentage of students reporting participation in a computer-based training ($p<.001$). In 2005, 37.4 percent said they had participated in a computer skills training. This is lower than the figures in 2001 and 2003.

The likelihood of participating in a computer-based training is displayed in Table 44b by class level. The percentage of the students who had participated in computer skills trainings that did a computer-based training did not vary by class level.

The likelihood of participating in a computer-based training was constant across academic discipline. This is seen in Table 44c, which shows that the percentage of students within disciplines participating in a computer-based training.

Workshop Training. Participation in a workshop to enhance basic computer skills was more common than was computer-based training. Table 45a shows that over half of the students who had received some basic computer skills training had attended a workshop to get this training. The table also shows that workshops were more common in 2003 than they were in 2001 or 2005 ($p<.05$).

Participation in basic computer-skills training in workshops was examined by class level. Table 45b illustrates that there were no differences in participation in basic computer skills workshops by class level.

Participation in basic computer skills training in workshops was consistent across academic disciplines. For those who had participated in some basic computer skills training, Table 45c shows the percentage of students in each discipline who had training in a workshop. Though the percentages of students participating appear to vary in the table, the number of cases in each category are too low to provide statistically significant differences unless those differences are extreme.

Satisfaction with Training

Those respondents who reported having participated in any basic computer skills training were asked about their satisfaction with the training in which they participated. The students in 2005 were very satisfied with the training programs as evidenced by an average satisfaction rating of 8.20 on the zero-to-ten satisfaction scale. Table 46a shows that satisfaction with training programs did not differ by administration.

Satisfaction with basic computer skills training programs was also examined for students at different class levels. The results are summarized in Table 46b. The table provides evidence that satisfaction with the training programs were consistent across class levels.

Table 46c recounts the satisfaction students from different academic disciplines conveyed with the training programs in which they participated. Academic discipline did not bear on the satisfaction students reported with the basic computer skills training in which they participated.

Use of Technology in the Classroom

Class Technology Use and Satisfaction

Internet. Students were asked about the types of technologies they were required to use for their classes. The were asked how many classes they had taken over the last two years that required them to use the Internet. Almost all (95.8%) of the students in 2005 were required to use the Internet in at least one of their classes. Table 47a shows the proportion of their classes that required Internet use

by administration. The proportion of the students' classes that required use of the Internet rose from 0.44 in 2001 to 0.52 in 2003 ($p<.001$), and rose again in 2005 to 0.62 ($p<.001$).

The proportion of students' classes that required use of the Internet is shown for different class levels in Table 47b. The table shows that class standing was related to the proportion of one's classes that required Internet use. Post-baccalaureate students were required to use the Internet in a higher proportion of their classes than were upper division students ($p<.001$), who, in turn, had a higher percentage of their classes requiring Internet use than did lower-division students ($p<.01$).

The proportion of classes that required the use of the Internet was also examined by academic discipline. Table 47c shows that art students had a lower proportion of their classes requiring Internet use than did students in most other disciplines.

Beginning in 2003, students were asked about how satisfied they were with how Internet requirements contributed to their learning. Students were somewhat satisfied, offering an average satisfaction rating of 7.64 in 2003, which increased to 7.87 in 2005 ($p<.001$). This is seen in Table 48a.

The satisfaction with how Internet requirements contributed to their learning is displayed by class levels in Table 48b. Upper-division students were more satisfied than were lower-division students ($p<.05$).

The satisfaction with how Internet requirements contributed to learning was analyzed by academic discipline. Table 48c reveals only one significant difference in satisfaction with Internet requirements among discipline. That is, behavioral and social sciences students were more satisfied than were humanities students.

E-Mail. The proportion of classes that students took that required use of e-mail was lower than the proportion of classes requiring Internet use. In 2005, 88.7 percent of students were required to use e-mail for at least one class. Table 49a shows the proportion of classes students took that required use of e-mail by administration. This table shows a large increase in the proportion of classes requiring e-mail use from 2001 to 2003 ($p<.001$), and again a large increase from 2003 to 2005 ($p<.001$), with the percentage topping 50 percent in 2005.

The proportion of classes requiring e-mail use also varied with class level. As Table 49b shows, post-baccalaureate students had a greater the proportion of their classes requiring e-mail use than upper-division students ($p<.001$) and lower-division students ($p<.001$). Additionally, upper-division students had a greater the proportion of their classes requiring e-mail use than did lower-division students ($p<.01$).

The proportion of classes requiring use of e-mail for students in different disciplines is displayed in Table 49c. The table shows variation in the proportion of students' classes that required e-mail use by academic discipline. Art students had a lower proportion of classes requiring e-mail use than did students in business ($p<.001$), education ($p<.01$), and professional and technical ($p<.001$) disciplines. Additionally, engineering and computer science students had a lower proportion of classes requiring e-mail use than did business ($p<.01$) and professional and technical ($p<.01$) students. Science and math students were also required to use e-mail less commonly than were business ($p<.01$) and professional and technical ($p<.01$) students.

Starting in 2003, students indicated their level of satisfaction with how requirements in their class to use e-mail contributed to learning. The average satisfaction rating of 8.08 in 2005 suggests that students were fairly satisfied. Table 50a shows that this represents an increase in satisfaction from the 7.97 average rating in 2003.

Table 50b shows students' satisfaction with these requirements by class level. Satisfaction with how requirements to use e-mail contributed to learning did not vary by class level.

Table 50c contains the average ratings of satisfaction with how requirements to use e-mail contributed to learning by students in different disciplines. The table shows there were no differences in satisfaction by academic discipline.

Computer Labs. Most (71.9%) of the students reported taking classes over the last two years in which some instruction was given in a computer classroom or lab. The proportion of classes taken that were at least in part taught in a computer classroom or lab is illustrated in Table 51a. The proportion of classes taken using a computer lab was the same in 2003 as it had been in 2001, but was slightly higher in 2005 than it had been in 2001 ($p<.05$).

Table 51b shows the proportion of classes that students took that were taught at least in part in a computer lab for students at different class levels in 2005. The proportion of computer lab classes students took was related to their class level. Lower-division students took classes that were proportionately less likely to involve a computer lab than the classes upper-division students ($p<.001$) or post-baccalaureate students ($p<.05$) had taken.

The proportion of classes taken by students that were taught at least in part in a computer classroom or lab is broken down by academic discipline in Table 51c. The proportion of classes taken that were at least in part conducted in a computer classroom or lab was different for students in different disciplines. Not surprisingly, the engineering and computer science students had a higher proportion of their classes involve a computer classroom or lab than students in all other disciplines.

The responses of students in 2005 indicated that they were somewhat satisfied with how having some instruction in a computer classroom or lab contributed to their learning. Students gave an average satisfaction rating of 7.52. As Table 52a shows, this satisfaction level was higher than it had been in 2003 ($p<.001$).

Table 52b shows the average satisfaction levels with how having some instruction in a computer classroom or lab contributed to their learning at different class levels. Class level had no bearing on students' satisfaction with how receiving some instruction in a computer classroom or lab affected learning.

Table 52c shows the satisfaction level of students in different academic disciplines with having at least some instruction in a computer classroom or lab. Humanities students were less satisfied with the impact of having instruction in a computer lab than were students in education ($p<.01$), engineering and computer science ($p<.05$), science and math ($p<.05$), behavioral and social sciences ($p<.01$), and interdisciplinary studies ($p<.001$). Interdisciplinary studies students were also more satisfied than were business ($p<.05$) and undeclared ($p<.01$) students.

Distance Learning

Classes Completely Online. Students responded to questions regarding their participation in, and attitudes toward, distance learning. Proportionally, very few classes were taken that used distance learning, though 16.1 percent of students in 2003 and 20.1 percent in 2005 reported taking at least one class that was completely online. The proportion of classes taken that were completely done in distance-learning mode was only 0.03. Table 53a shows that this is slightly higher than in 2003 ($p<.05$).

The proportion of classes taken completely online was dependent on class level, as Table 53b illustrates. Lower-division students took a lower proportion of classes that were completely online than did upper-division students ($p<.01$) or post-baccalaureate students ($p<.001$).

Table 53c reveals some differences among disciplines in the proportion of classes they took that were completely online. That is, the professional/technical students took a dramatically higher proportion of their classes online than did students in all other disciplines. Additionally, science and math students took a lower proportion of their classes completely online compared to education ($p<.05$) and interdisciplinary studies students ($p<.05$).

Classes Partially Online. Classes that were only partially online were proportionately more frequent than were classes completely online. A total of 44.4 percent of the students in 2003, and 48.1 percent in 2005, had taken a class that was taught partially online. The proportion of classes that students took that were partially online was 0.10 in 2005. Table 54a shows that this is an increase from 2003 ($p<.001$).

There was some deviation in the proportion of partially online classes that students of different class levels took, illustrated in Table 54b. As with completely online classes, lower-division students took a lower proportion of classes that were completely online than did upper-division students ($p<.05$) or post-baccalaureate students ($p<.05$).

Table 54c shows the proportion of classes taken by students in different disciplines that were taught partially online. There was only one difference among disciplines in the proportion of classes that students took that were partially online. That is, business students took a higher proportion of partially online classes compared to art students.

Satisfaction with Online Classes. Students that took at least one class completely or partially online were asked about satisfaction with online classes. Specifically, students were asked how satisfied they were with online courses compared to regular classroom instruction. Overall, students rated their satisfaction with online courses at 6.31 in 2005, indicating that they were only somewhat satisfied. Table 55a shows that this rating is not different from the average rating in 2003.

The average satisfaction with online classes is displayed by class level in Table 55b. Satisfaction with online courses was higher for upper-division students than it was for lower-division students ($p<.05$).

Satisfaction with online classes was also assessed by academic discipline. Table 55c reveals no differences in satisfaction with online classes by discipline.

Importance of Distance Learning. There was substantial endorsement of distance learning by students. In 2005, students rated the importance of access to distance learning opportunities at 8.39, as

shown in Table 56a.. In 2003, students rated the importance of providing electronic access to course instruction for students at any time and place lower in 2003 than in 2001 ($p<.001$) or 2005 ($p<.001$) .

The importance that students placed on electronic access to course instruction for students at any time and place varied by class level, as illustrated in Table 56b. Post-baccalaureate students saw providing distance learning opportunities as less important than did both lower-division ($p<.001$) and upper-division students ($p<.001$).

Perceived importance of distance learning was also assessed by academic discipline. Table 56c contains the average ratings of the importance of distance learning by discipline. There were no differences in the ratings of importance of electronic access to course instruction any time and place were detected by discipline.

Computing Needs and Student Fees

In 2005 students were asked a number of questions regarding their computing needs and interests. Students were also asked about their willingness to pay a student fee for some of the services in which they were interested.

Computing Needs

24-hour Help Desk Services. Students expressed a good deal of interest in having access to 24-hour help desk services. Table 57a shows that overall, 83.0 percent of students were somewhat or

very interested in access to 24-hour help desk services. The table also shows that students' level of interest was dependent on class level ($p<.001$). Lower-division students were the most interested in having this service.

Interest in having access to 24-hour help desk services also varied by discipline. Not surprisingly, engineering and computer science students were less interested in 24-hour help desk services than were other students ($p<.001$). This is seen in Table 57b.

CSU Standard Set of Software. Interest in getting a CSU standard set of software from their campus was also assessed. Students expressed considerable interest in this possibility as well. Table 58a shows variation among students of different class levels in their interest in a CSU standard set of software ($p<.001$).

Table 58b shows interest in getting a CSU standard set of software broken down by discipline. As the table shows, interest in getting a CSU standard set of software was not affected by discipline.

Major-specific Software Applications. Students were extremely interested in getting access to software applications specific to their major from their campus. In general, 93.7 percent of the students showed interest in being able to get such software from their campus ($p<.01$). Table 59a shows that this interest varied by class level. Lower-division students were a little less interested than others.

There was also variation in interest in getting access to software applications specific to their major from their campus by discipline ($p<.01$). This is seen in Table 59b.

Basic Computer-skills Training. Students were asked about their interest in getting access to basic computer-skills training from their campus. Overall, over a quarter (28.7%) of the students

indicated that they were very interested, and over half (63.1%) of the students stated that they were at least somewhat interested. Only 18.3 percent said they were not at all interested. Table 60a shows that interest in getting access to basic computer-skills training from their campus varied by class level ($p<.001$). Post-baccalaureate students were most likely to say they were not at all interested.

Table 60b displays the level of interest in getting access to basic computer-skills training from their campus by discipline. The table shows considerable variation in the interest level in computer-skills training.

Those expressing at least a little bit of interest in basic computer-skills training were asked about their preferred format for the training. As Table 61a shows, most students preferred that the training be available both in instructor-led format and on demand web-based format. Class level impacted format preference ($p<.01$). The lower the class level, the more likely the student was to say that he or she wanted access to both instructor-led and web-based training.

Table 61b shows the student preferences for computer-skills training format by discipline. There was no variation in format preference among students of different disciplines.

Wireless Access to the Campus Network and Internet. Students expressed very strong interest in having wireless access to their campus network and the Internet. Table 62a shows that 87.0 percent of students were somewhat or very interested in wireless access, and only 5.3 percent expressed no interest at all. Interest in wireless access to their campus network and the Internet varied by class level ($p<.01$). Undergraduates showed greater interest than did post-baccalaureate students.

Table 62b displays the level of interest in wireless access to the campus network and Internet by discipline. The table reveals some slight variation by discipline ($p<.05$).

Printing and Copying. Students were asked about their interest in having greater access to printing and copying from their campus. There was a great deal of interest by students in having this access, as is illustrated in Table 63a. Overall, 59.0 percent of the students said they were very interested, and 78.9 percent were somewhat or very interested. Interest in having greater access to printing and copying from their campus was associated with class level ($p<.001$). Post-baccalaureate students, while very interested, were less interested in greater access to printing and copying than were other students.

Academic discipline also had an impact on the interest level of the students on having greater access to printing and copying from their campus ($p<.001$). Table 63b shows humanities students to be the most interested, while education students were the least interested.

PDA Discount Purchase Plan. A large proportion of the students would be interested in a university-sponsored discount purchase plan for PDAs (personal digital assistants). Table 64a shows that over three quarters (78.4%) of the respondents said they would be somewhat or very interested in a discount PDA purchase plan. The table also reveals that interest in such a plan was different at different class levels ($p<.001$). Post-baccalaureate students were least interested, while upper-division students were most interested.

Interest in a university-sponsored discount purchase plan for PDAs also varied by discipline ($p<.05$). These variations are seen in Table 64b.

Student Fees

After student interest was assessed in the various computing resources and services noted above, students were asked how much they would be willing to pay for a bundle of several of these resources. They were asked how much they would be willing to pay per month for a package of the resources and services. Student responses are found in Table 65a. Most (62.7%) of the students were willing to pay $10 per month or more.

Table 65b shows the amount students at different class levels were willing to pay for a bundle of some of the resources and services described above. Class level was associated with the amount students were willing to pay ($p<.001$). Specifically, post-baccalaureate students were willing to pay less per month than were other students.

The amount students were willing to pay for a bundle of some of the resources and services is displayed by discipline in Table 65c. The table reveals no differences among students in different disciplines in terms of the amount they were willing to pay for the computing resources package.

The were a couple financial status factors that were of interest in terms of how they related to the amount students were willing to pay for a bundle of some of the resources and services described above. However, the amount students were willing to pay did not vary by income or by financial aid status. Additionally, there were no stable differences by campus or by race and ethnicity.

Modes of Instruction

Students were asked about the value they placed on, and their use of, a variety of different types of academic technologies. Figure 1 summarizes the value to the learning process students placed on the various academic technologies. As the figure demonstrates, the greatest value was placed on using electronic reserves from the library.

Taking General Education Courses Completely Online. The value to the learning process that students placed on taking general education courses completely online was rated 5.34 overall on a zero-to-ten scale. Table 66a shows the value students placed on taking general education courses completely online by class level. Upper-division students placed greater value on taking general education courses completely online than did post-baccalaureate students ($p<.01$).

The value to the learning process that students placed on taking general education courses completely online is displayed in Table 66b by discipline. There was one slight difference by academic discipline in the value students placed on taking general education courses completely online. That is, interdisciplinary studies students valued taking general education courses completely online more so than did science and math students ($p<.05$).

Table 67a shows that 11.9 percent of the respondents reported taking a general education course in the past two years that was taught completely online. The likelihood of taking a general education course taught completely online depended on class level ($p<.001$). Post-baccalaureate students were much less likely to take general education courses completely online. However, this

finding should be considered in light of the likelihood of post-baccalaureate students taking general education courses regardless of the mode of instruction.

The likelihood of taking a general education course taught completely online is displayed by discipline in Table 67b. The table reveals no differences in taking a general education courses online by discipline.

Use of Online Chat Rooms or Bulletin Boards. Students indicated how valuable to the learning process they thought the use of online chat rooms or bulletin boards. Generally, they thought it was somewhat useful, giving an average rating of 5.81. Table 68a shows that the rating was consistent across class level.

Table 68b shows the ratings of value to the learning process students in different disciplines gave to the use of online chat rooms or bulletin boards. Business students regarded the use of online chat rooms or bulletin boards as more valuable than did engineering and computer science students ($p<.01$) and science and math students ($p<.05$).

More than half (55.9%) of the students had taken a class in the past two years that required the use of online chat rooms or bulletin boards. Required use of chat rooms or bulletin boards varied by class level ($p<.001$). Table 69a shows that lower-division students were less likely than others to use online chat rooms or bulletin boards.

Required use of chat rooms or bulletin boards also varied by discipline ($p<.001$). Table 69b shows substantial variation by academic discipline. Most notably, two thirds (68.3%) of undeclared students reported being required to use online chat rooms or bulletin boards.

Library Electronic Reserves. Students were asked about the value to the learning process provided by the use of electronic reserves from the library. Overall, students rated the value at 7.44 on the zero-to-ten scale. As Table 70a illustrates, lower-division students gave lower ratings than did upper-division ($p<.001$) or post-baccalaureate students ($p<.01$).

Table 70b shows the value students in different disciplines placed on library electronic reserves. There was substantial variation among disciplines in terms of the value they placed on electronic reserves from the library. Most notable, engineering and computer science students saw less value to the learning process in electronic reserves from the library than did business ($p<.05$), behavioral and social science ($p<.001$), professional and technical ($p<.05$), and interdisciplinary studies students ($p<.05$).

Two thirds (65.2%) of the students reported having taken a class in the past two years that required the use of electronic reserves from the library. Table 71a shows that this varied by class level ($p<.001$). Post-baccalaureate students were less likely than others to have taken a class that required the use of electronic reserves from the library.

The likelihood of students taking a class in the past two years that required the use of electronic reserves from the library is displayed in Table 71b by discipline. Academic discipline had a significant effect on the likelihood of being required to use electronic reserves from the library ($p<.001$). Humanities and behavioral and social science students were more likely to use electronic reserves, while engineering and computer science students and undeclared students were less likely to do so.

Online Tutorials. Students were asked how valuable they thought online tutorials were to the learning process. They were regarded as somewhat valuable, as indicated by the 5.80 average rating. Table 72a shows that the value students saw in online tutorials was constant across class levels.

Table 72b displays the online tutorial value ratings by discipline. The value to the learning process that students perceived in taking online tutorials did not vary by discipline.

Over a quarter (27.7%) of the students had taken classes that required them to complete online tutorials. Table 73a shows this percentage is consistent across class levels.

There was some variation in the likelihood of being required to take online tutorials by discipline ($p<.05$). That is, humanities students were less likely than others to be required to take an online tutorial. This is illustrated in Table 73b.

Online Group Projects. The value to the learning process that students saw in doing online group projects was assessed. Generally, students saw only moderate value in online group projects, as evidenced by the 5.07 average rating on the zero-to-ten scale. Table 74a shows no variation by class level.

Differences in perceived value of online group projects are displayed in Table 74b. Business students saw online group projects as more valuable than did art ($p<.001$), humanities ($p<.001$), science and math ($p<.01$), and behavioral and social sciences students ($p<.001$). Humanities students also valued online group projects lower than did professional and technical ($p<.05$), as well as interdisciplinary studies students ($p<.05$).

Overall, 29.4 percent of students had taken classes in which they had been required in the past two years to complete online group projects. The likelihood of taking such a class varied by class level ($p<.001$). Table 75a shows that lower-division students were less likely to have taken a class requiring them to do an online group project that were other students.

Table 75b displays, by discipline, the likelihood of having taken a class in the past two years that required completion of an online group project. Academic discipline was associated with the likelihood of doing online group projects ($p<.001$). Business and undeclared students were more likely than others to do online group projects.

Interactive Virtual Labs. Overall, students saw some value in interactive virtual labs, offering an average rating of 6.03. Table 76a shows that this rating was consistent across class level.

Table 76b shows that the value to the learning process that students saw in interactive virtual labs varied by discipline. Notably, humanities students saw less value in interactive virtual labs than did business ($p<.01$), education ($p<.05$), undeclared ($p<.01$), and interdisciplinary studies students ($p<.01$). Additionally, business students saw greater value in interactive virtual labs than did science and math students ($p<.05$).

One out of five (21.8%) students reported taking a class in the past two years that required them to participate in an interactive virtual labs. Table 77a shows that the likelihood of participating in an interactive virtual lab did not vary by class level.

As with class level, academic discipline had no impact on the likelihood of taking a class that required students to participate in an interactive virtual lab. This is seen in Table 77b.

SUMMARY

The SBRI at California State University San Marcos conducted a telephone survey with 3,204 students from California State University campuses throughout the system in 2005. This data was combined with similar data collected in 2001 and 2003. The survey was conducted in order to provide information about CSU students' access to, use of, and satisfaction with computing and network resources and services considered to be within the scope of the technology infrastructure as defined in the CSU Integrated Technology Strategy.

The results of this survey provide an indication of differences from administration to administration in the way CSU students use and think about information technology. Changes in use, attitudes, and satisfaction will be tracked by comparing the results of these biennial student surveys planned through 2006.

In the three administrations of the survey, a total of 9,548 students from CSU campuses have been interviewed. This comprises at least 150 students from each of 21 campuses for both administrations. The California Maritime Academy and CSU Channel Islands were excluded because the number of students on these campuses are too small to provide a sufficient sample.

This summary gives focus to general findings and differences among the administrations of the survey. Overall patterns of technology use and satisfaction across class level and academic discipline are consistent with the previous studies. The differences among Administrations 1, 2, and 3 as well as the overall pattern of attitudes, use, and satisfaction are given attention in this report.

General Findings

The CSU Student Technology Survey covers three broad areas: attitudes regarding information technology, its availability and use, and satisfaction with resources and services. These areas were considered with respect to change over time, differences by class level, and differences by academic discipline.

The findings reveal a great deal of change over time. Generally, report more positive attitudes about technology on their campus, higher access to technology, greater use, and greater satisfaction with technology on their campus. The exception is with training. That is, students in 2005 regarded training as less important and were less likely to take advantage of it.

As far as general use of technology, there were many differences by class level, but without a consistent pattern. However, with respect to use of technology in the classroom, there was a tendency for upper-division students and especially post-baccalaureate students to report greater use.

There were consistent effects of class level on satisfaction. That is, undergraduates were often more satisfied than were post-baccalaureate students. Undergraduates were also more interested than post-baccalaureate students in the various resources and services considered as potential components of a bundle that could be made available to students. Key findings in the areas of attitudes, technology availability and use, and satisfaction with resources and services are noted below.

Attitudes

- CSU students believe computing and network resources to be very important for the completion of their school work and students in 2005 and 2003 rated the importance of computing and network resources slightly higher than did students in 2001. However, the more advanced the student, the lower the satisfaction.
- Students regarded computer literacy as very important to their employment goals, but believed their university prepared them only somewhat adequately for the technology skills they would need upon graduation. Students in 2005 felt better prepared by their university than had students in 2003.
- Students believed training programs to improve basic computer skills were quite important, though the average importance rating dropped from 8.61 in 2001 to 8.48 in 2003 and 8.29 in 2005.
- The provision of access to course instruction online any time and place was considered very important to students, though post-baccalaureate students saw this as less important than did other students.
- There was a high level of interest in 24-hour help desk services, a CSU standard set of software, major-specific software applications, wireless access to the campus network and the Internet, greater access to printing and copying, and a discount purchase plan for PDAs.
- They were asked how much they would be willing to pay per month Student responses are found in Table 65a. Most (62.7%) of the students were willing to pay $10 per month or more

for a package of the resources and services such as 24-hour help desk services, a CSU standard set of software, major-specific software applications. The amount post-baccalaureate students were willing to pay was lower than the amount other students would pay.

- Students placed only moderate value on certain academic technologies that were of interest. These included taking general education courses completely online, using online chat rooms or bulletin boards, online tutorials, online group projects, and interactive virtual labs. Using library electronic reserves was seen as more valuable than these other modes of instruction.

Access

- Almost all students in each administration said they had access to the computer hardware that they needed to complete their work. However, post-baccalaureate students were less likely than others to report having access to needed computer workstations.
- Three quarters of the students reported having access to needed software, which is a decrease from 2001 and 2003.
- Four out of five of the students who had accessed their campus network from off campus reported having a high-speed Internet access.

Use

Required Class Use

- Students reported that just over half (57.82%) of the time they spent on computers was academically related, which is an decrease from 2001 and 2003.
- Almost all students took at least one class that required student use of the Internet, and students' use of the Internet increased from 44 percent in 2001 to 52 percent of their classes in 2003, and 62 percent in 2005. The higher the class level of the student the higher the percentage of their classes required Internet use.
- The proportion of classes that required use of e-mail increased significantly from 31 percent in 2001 to 39 percent in 2003, then again to 51 percent in 2005.
- Students took courses in which 17.4 percent held at least some instruction in a computer classroom or lab.
- Three percent of the classes that students took were completely online, which is an increase from 2003. Additionally, 10 percent of the classes that students took were partially online.

Use of Technology and Related Resources

- Two thirds of the students reported using their campus e-mail accounts, though post-baccalaureate students were less likely than others to do so.
- In 2005, 87.1 percent of the students had accessed their campus network from off campus, which is an increase from 2003.
- The percentage of students using online information resources increased from 81.8 percent in 2001 to 84.4 percent in 2003 and 83.7 percent in 2005.

- In 2005, most students using their campus online information system to get information about registration (93.6%), grades (95.4%), financial aid (52.6%), billing (60.4), and half (49.5%) got information about progress toward their degree.
- In 2005, 46.9 percent of students received help from computer lab staff, 31.4 percent received help from telephone call centers, and 29.3 percent used walk-in help desks.
- Only 12.5 percent of students participated in basic computer-skills training programs.

Satisfaction

- Students were fairly satisfied with the computing and technology resources available to them, and their satisfaction increased slightly from 7.51 in 2001 to 7.62 in 2003 and 7.71 in 2005.
- Students were satisfied with the software available to them, and they were more satisfied in 2005 than they had been in 2001.
- Students were very satisfied with their campus access to campus e-mail services, though post-baccalaureate students were less satisfied than others.
- Students were highly satisfied with telephone call centers or online help desks, campus walk-in help desks, and computer lab staff in helping them with computer difficulties.
- Students who participated in basic computer skills training were quite satisfied with the training they received.

- Students expressed satisfaction with how required Internet and e-mail use as well as computer lab instruction contributed to their learning, which increased in 2005 relative to the 2003 satisfaction levels.
- Students who had taken a partially or completely online course offered a mediocre satisfaction rating of online courses compared to regular course instruction.