

University of Michigan

**Faculty Survey:
Information Technology
Uses, Resources and Support**




sponsored by:

**Senate Advisory Committee
on University Affairs**

and

the Chief Information Officer

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Highlights

Encouraging

- Most report some expertise in tech use
- Over 96% use tools every day!

“Let’s make UM the showcase for using IT to teach!”

Discouraging

- Lack of time and support to use tech
- Telephone, workshop & on-line resources consistently received the lowest ratings

“Time and convenient instruction to learn more about information technology is my greatest need.”

Surprises

- Largest responding group in Medicine
- Want to learn from colleagues and friends
- While few may use a particular tool, they use it often

“I strongly feel that technology is exceeding our current limits, so any information to make it simpler will be priceless.”

Concerns (Top Three)

- The time it takes to learn & use technology
- Reliability of technology
- Lack of necessary support

“Acquiring the skills takes time needed to maintain subject-matter expertise.”

Bottom Line

- Faculty want to use many more tools
- Even though it looks like few, small numbers can represent a solid number of faculty

Background

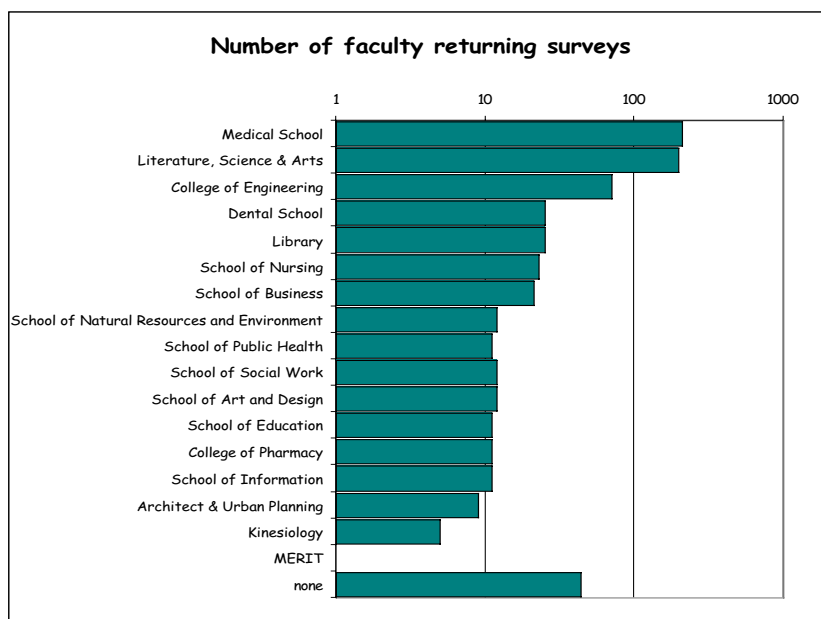
To better understand the role and use of information technology at the University of Michigan (UM), the Senate Advisory Committee on University Affairs (SACUA) and the Office of the Chief Information Officer (CIO), with the help of the Institute for Social Research (ISR), developed a survey which was administered in Spring 1999 to a random, representative sample of University faculty members on the Ann Arbor campus. The results of this research will be used to evaluate information technology resources on campus and design plans for improving the effectiveness of these resources for University faculty.

Given the increasing use of technology by students, faculty and staff, this first faculty survey provided answers to many questions: the level of faculty expertise, the use of technology for instruction, the differences in the various tool use and reasons for lack of use of technology in instruction.

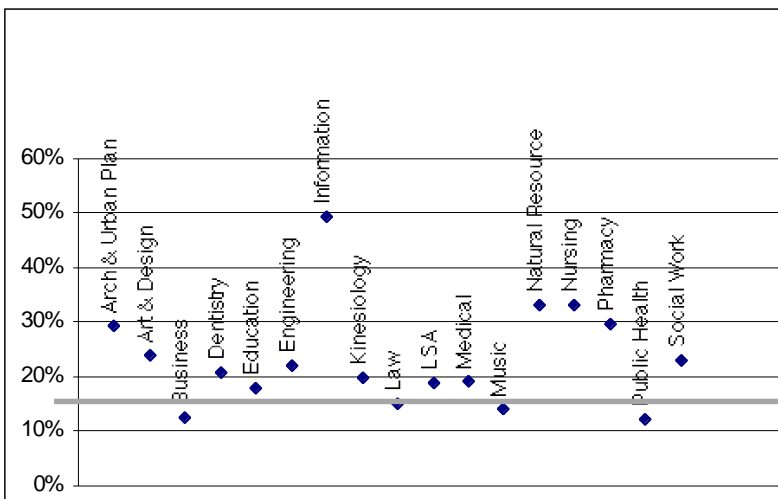
Sample

Fifteen hundred faculty members on the Ann Arbor campus were surveyed with 743 providing final responses. Not all responded to all questions so the sums of percents may not add to 100%. Several questions had multiple answers so the sums of those percents may add up to more than 100%. Of the 743, 35% were female and 63% were male. Thirty-nine percent were tenured and 58% were nontenured. Eighty-one percent have regular appointments, 9% were adjunct and 7% reported having a temporary position. Faculty members taught from 220 students to 2 students and varied from 120 responses from the Medical School to 0 responses from MERIT.

Respondents indicated preferences quantitatively and also provided ample comments. Selections of these quotes appear throughout the document to clarify and highlight the statistical findings.



Unit representation



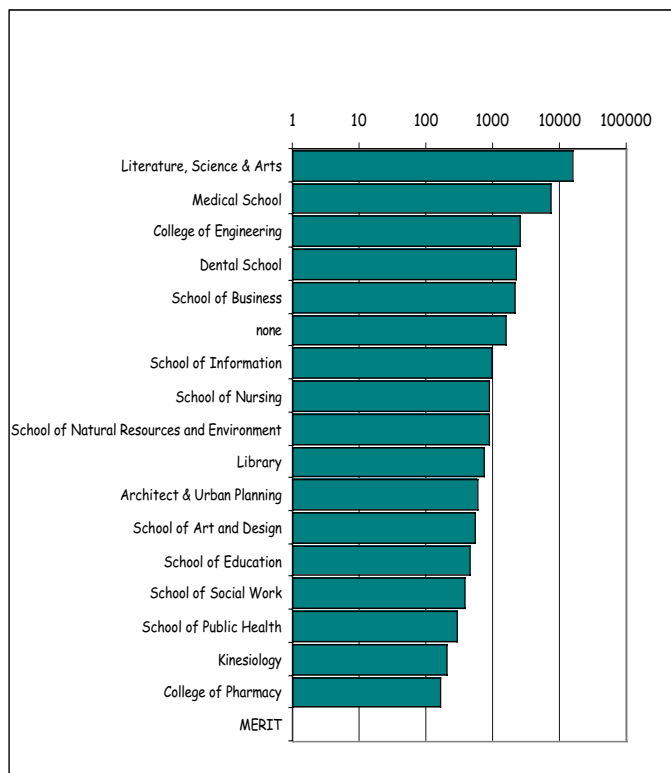
Faculty members responded in proportion to their base unit.

The proportion or representation varied from 12% in the School of Public Health to 50% in the School of Information with an average of 23% overall.

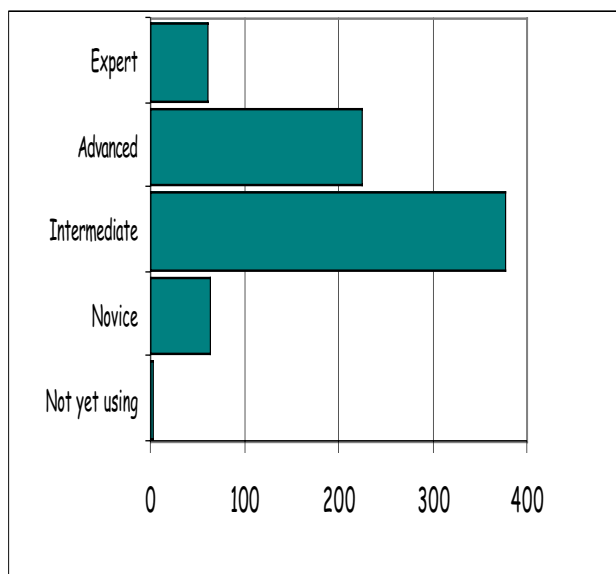
Students taught (Q32)

Faculty respondents report teaching on average each semester a total of 38,700 students.

From about 15,000 to 0, there is a wide range of the average number of students taught each semester within each unit as reported by respondents.



Experience



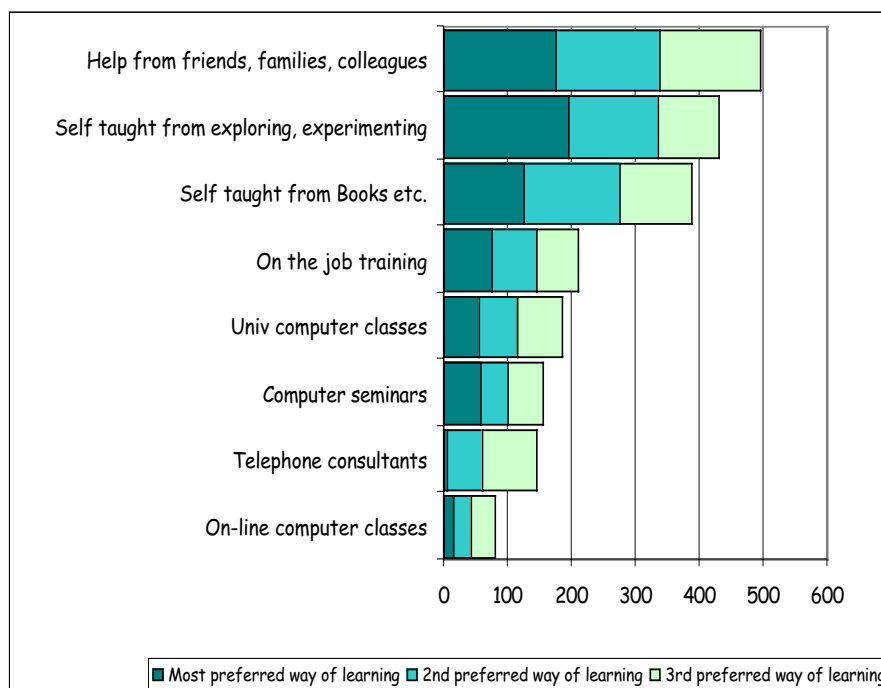
Perception of expertise (Q1)

Faculty members report a significant expertise in the use of computers with less than 10% of total respondents reporting novice or non-user status.

"I have learned to be self-reliant."

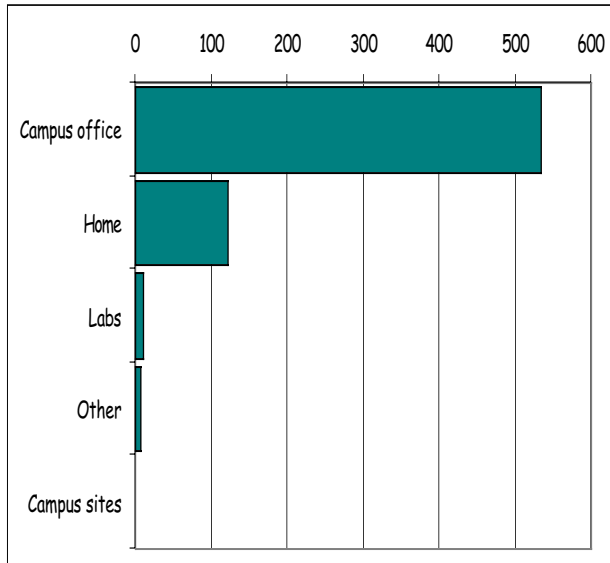
How faculty like to learn (Q2)

Faculty prefer to be self-taught or get help from other people. They do not prefer classes or telephone consultants, or even worse, on-line computer classes. Choices shown are first, second and third.



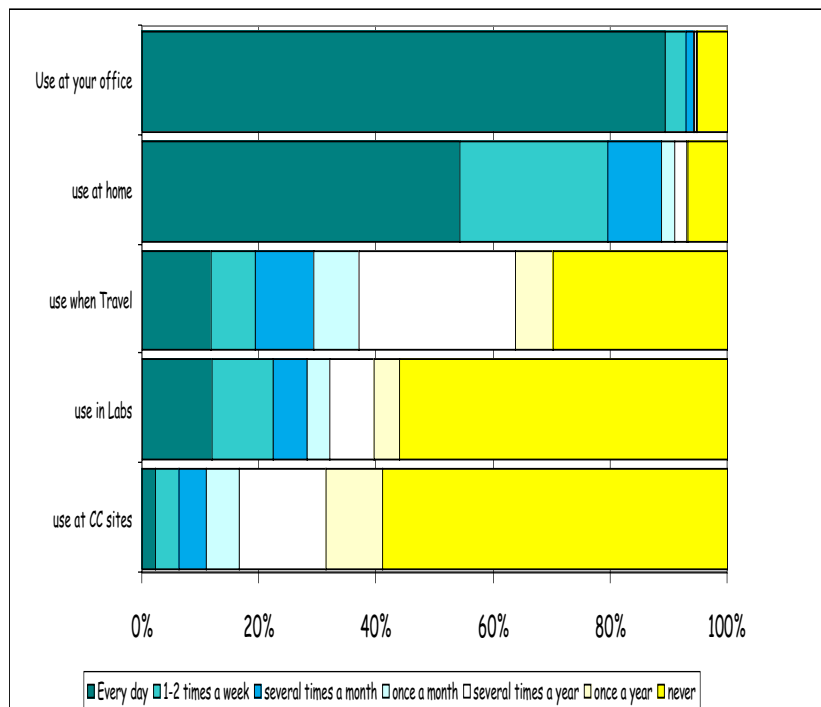
"My experience is mostly that I can never figure out how any of this technology works unless an actual human being shows me."

Experience



About 88% of respondents prefer to use computers in their office or home, but they don't use the public sites.

Normal use is almost every day in campus offices and, reasonably, several times a year while traveling.

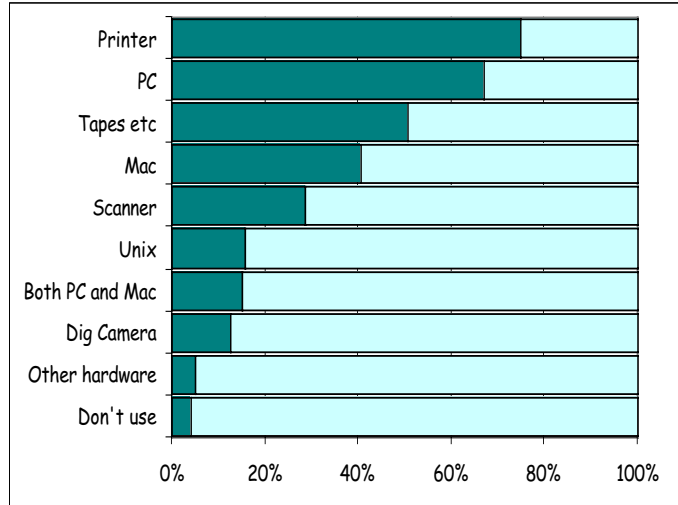


Hardware

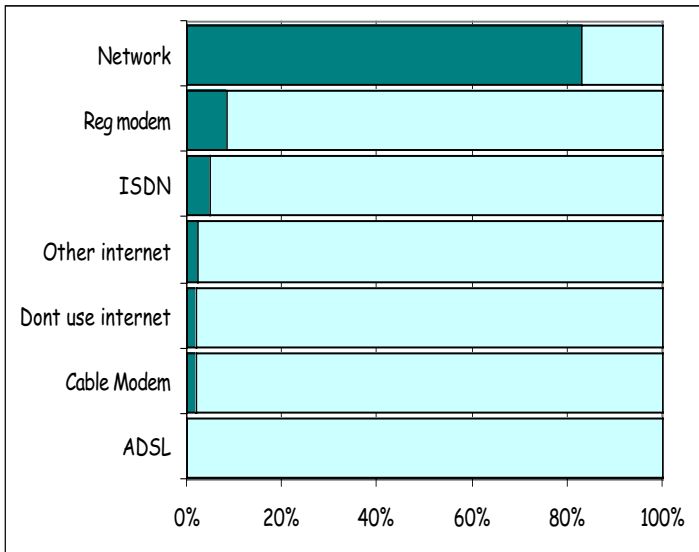
Computer hardware - office or lab (Q5)

Office computing

"IR connections so laptops can roam and still be on the network is particularly important to me."



Internet connection - office or lab (Q6)



Eighty-one percent report using a network in office or lab. Very few use other kinds of connections at the university.

"...technology cannot be fully integrated into teaching until it is fully integrated into the physical environment..."

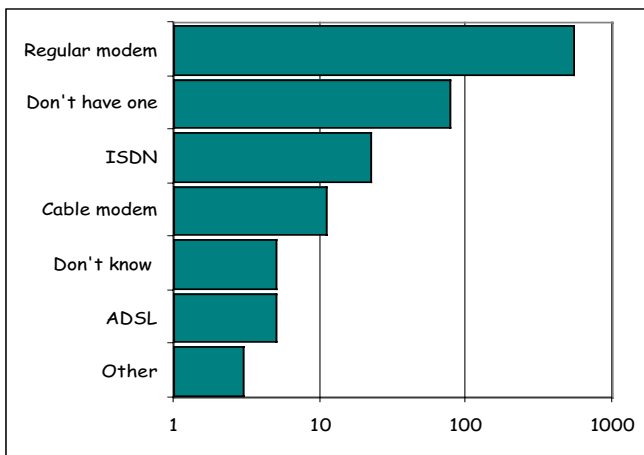
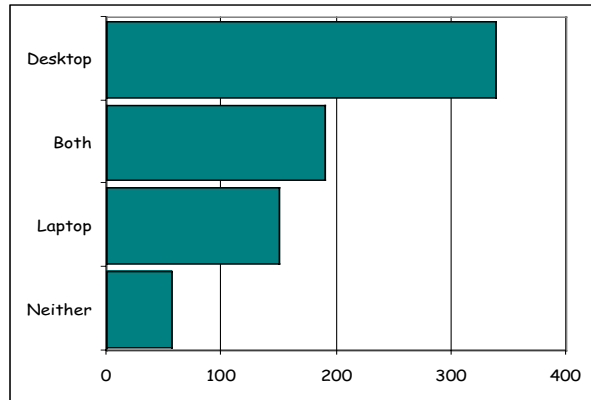
"Next semester I intend to work with students at the Warsaw University of Technology. We hope that affordable high speed IT connectivity will be there!"

Hardware

Home computing

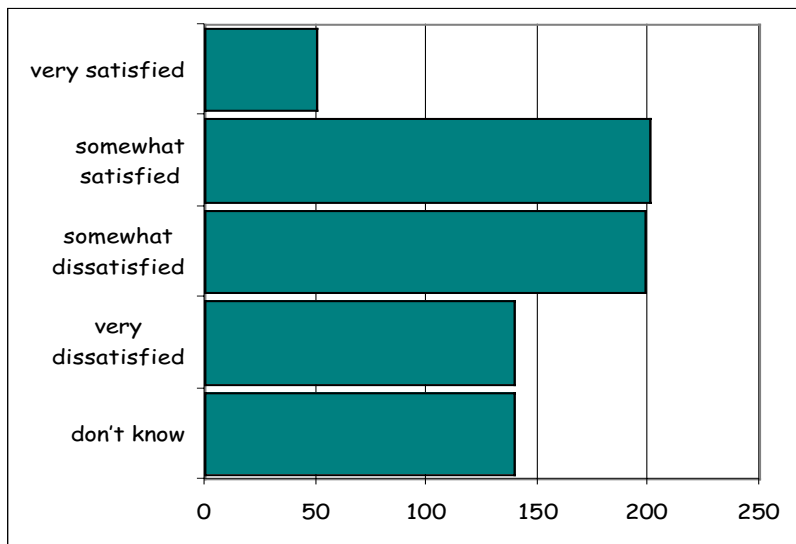
Ninety-two percent of the respondents report using a computer at home with a quarter using both a desktop and laptop machine.

Laptop, desktop or both (Q7)



As expected, the vast majority are connected at home through a regular modem. Over 50% report being dissatisfied with the speed of their home connection.

Satisfaction with the speed of home connection (Q9)



“Home access to College of Engineering/university keyserver applications is important to me.”

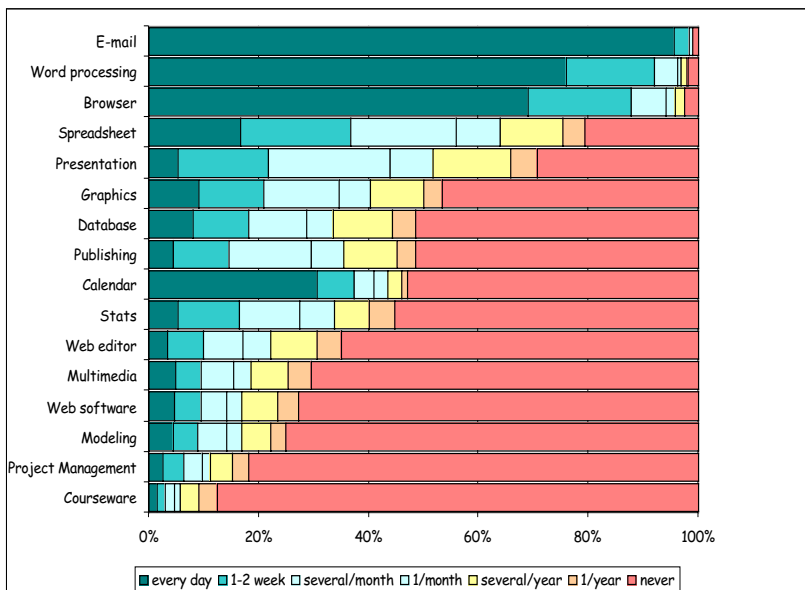
Applications

Use of applications (Q10)

| What | Use | Don't Use | Total Reporting |
|-----------------|-----|-----------|-----------------|
| E-mail | 728 | 7 | 735 |
| Word processing | 723 | 14 | 737 |
| Browser | 708 | 18 | 726 |
| Spreadsheet | 558 | 145 | 703 |
| Presentation | 494 | 205 | 699 |
| Graphics | 363 | 319 | 682 |
| Publishing | 329 | 349 | 678 |
| Database | 327 | 349 | 676 |
| Calendar | 321 | 362 | 683 |
| Stats | 306 | 377 | 683 |
| Web editor | 234 | 434 | 668 |
| Multimedia | 190 | 453 | 643 |
| Web software | 180 | 480 | 660 |
| Modeling | 167 | 505 | 672 |
| Project Mgm't | 119 | 540 | 659 |
| Courseware | 78 | 549 | 627 |

Use of applications varied from almost 100% (E-mail) to about 10% (Courseware). The majority of use occurs with e-mail, word processing and browsing.

How often used (Q10)



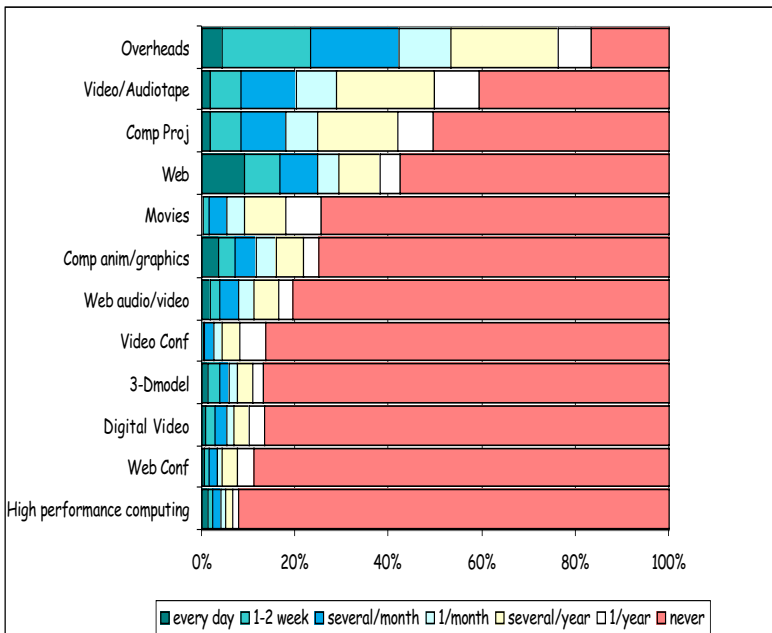
While there were wide ranges of use (error bars indicate 1 standard deviation) all who use applications reported that use was from 1/day to more than 1/month

Applications

Use of media (Q11)

A much lower portion of respondents use media in their work. The most used media, overhead projection and video and audio tape have been used long before computer and web graphics.

| Media | Use | Don't Use | Total Reporting |
|----------------------------|-----|-----------|-----------------|
| Overhead projection | 600 | 120 | 720 |
| Video/audio tape | 424 | 289 | 713 |
| Computer projection | 354 | 360 | 714 |
| Web text/graphics | 296 | 401 | 697 |
| Movies/filmstrips | 176 | 517 | 693 |
| Comp anim/graphics | 175 | 524 | 699 |
| Web audio/video | 135 | 558 | 693 |
| Digital video | 94 | 602 | 696 |
| Video conferencing | 94 | 601 | 695 |
| 3-D modeling | 91 | 602 | 693 |
| Web conferencing | 78 | 618 | 696 |
| High performance computing | 54 | 636 | 690 |



How often is media used? (Q11)

While less frequently used than applications, faculty members report that they use media from once a month to about once a year.

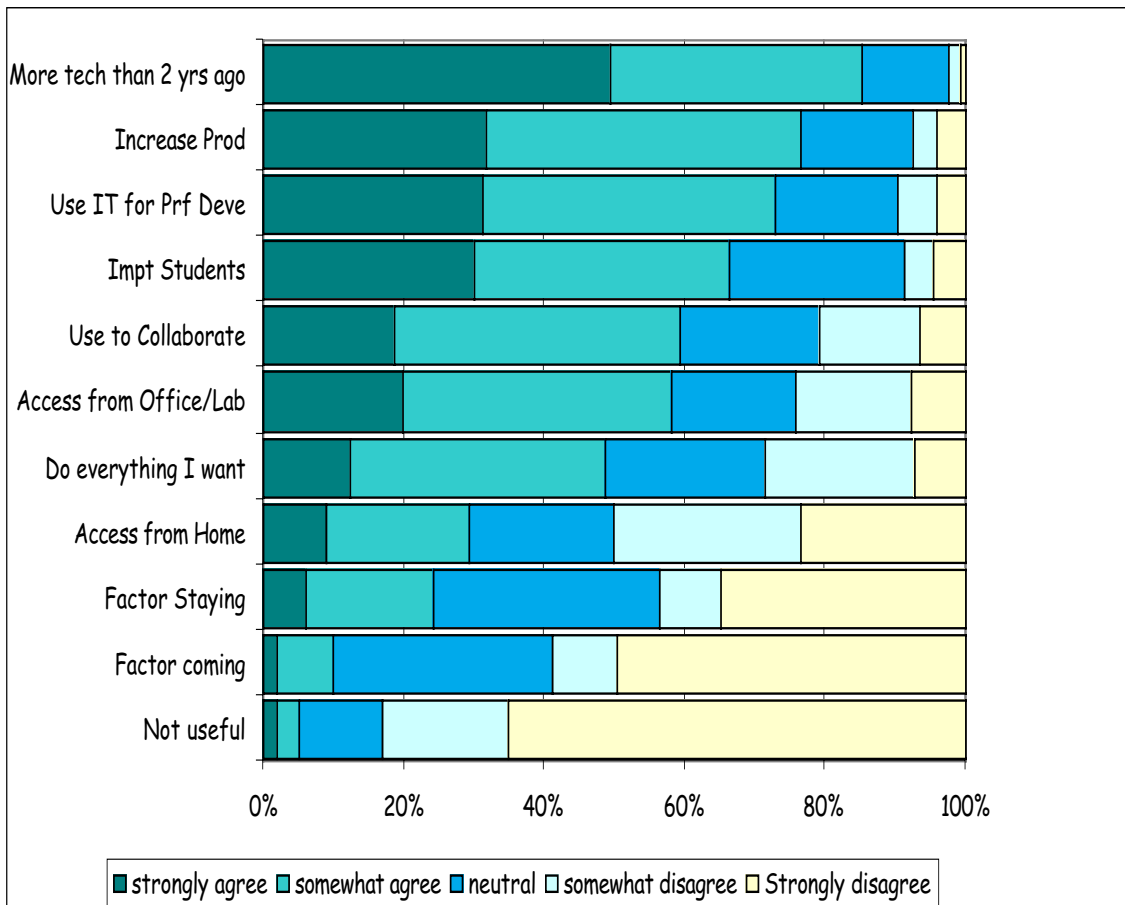
Use of Technology

Factors... (Q13, 14)

Eight-four percent of respondents report they agree that they use technology more today than two years ago. Seventy percent indicate they use information technology to contribute to their professional development. They are less sanguine about the access to resources at home.

Sixty-two percent report that information technology is important to their students' success and 74% report that it helps to increase their productivity. Twenty-three percent agreed that information technology was a factor in remaining at the University but only 10% agreed that it was a factor in their coming to the University.

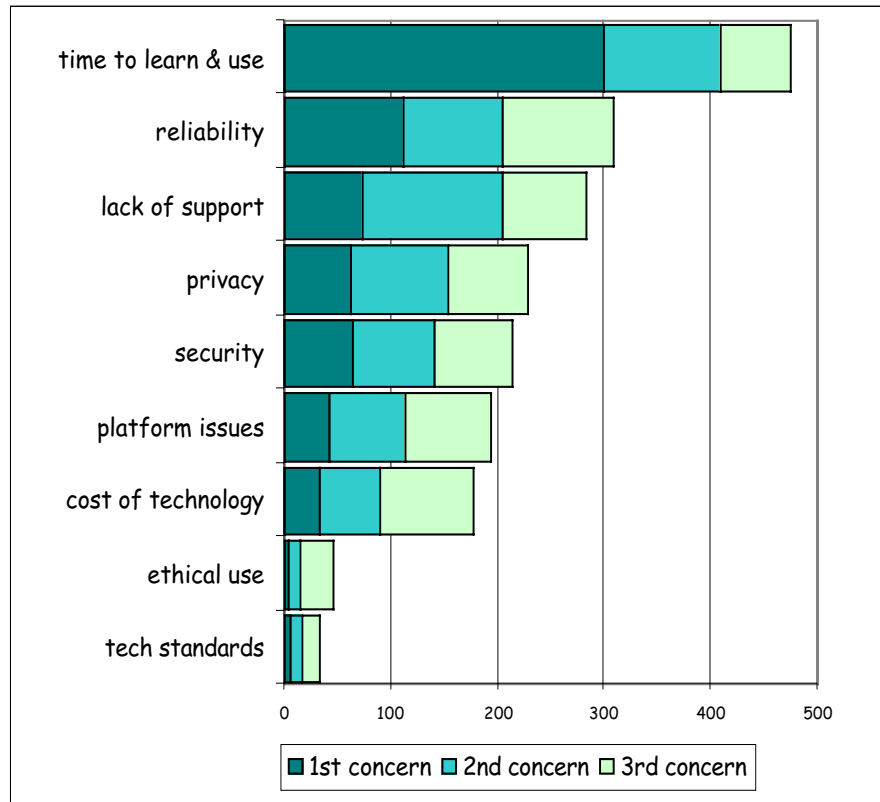
"My courses rely on use of the web for activities as well as information."



Use of Technology

Issues that concern faculty (Q15)

The time it takes to learn and use technology is the highest concern, but few are interested in standards or ethical use. Issues that concern faculty are listed as first, second and third.



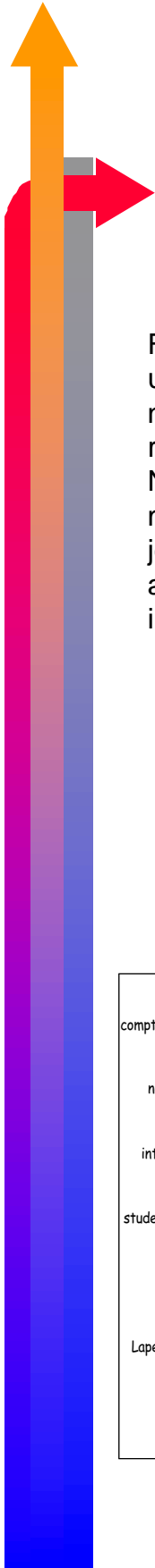
"...if the U wishes IT to be used in teaching and research, it really should provide solid support and encouragement, visible to all, and it should do it for all units."

"Acquiring the knowledge to use IT productively takes tremendous time and effort - using that knowledge takes even more."

"Our students are bombarded with high-quality audio, video, and multimedia presentations. They are at risk of believing that the material contained in second-rate presentations produced by amateurs in their spare time with their left hands is itself second-rate."

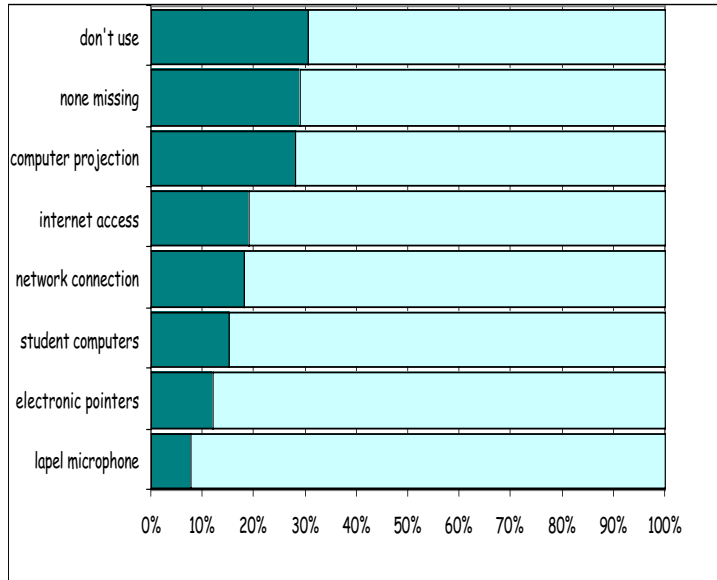
"I waste huge amounts of time now just keeping my computers running."

Resources



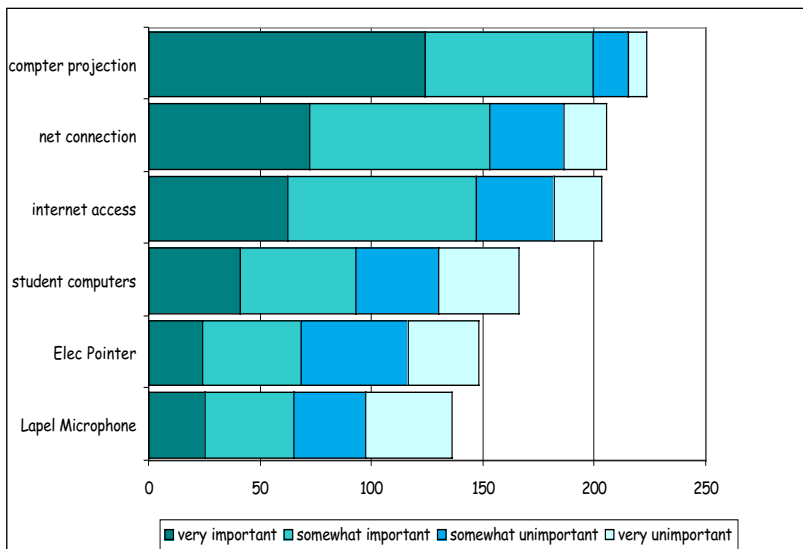
Faculty are just starting to use technical facilities for network or media so few report missing elements. Nevertheless, faculty members report that projection, network access and student computers are important.

Which technical facilities are



missing from classrooms? (Q16)

How important are these missing facilities? (Q17)



Computer connection and net connection are important but lapel mics are less important.



Resources

Multimedia classrooms

(Q18, 19, 20)

About a quarter (180) of the respondents have attempted to reserve a multimedia classroom and a few report problems making reservations. Few use the multimedia classrooms and there is a relatively low proportion reporting problems with the equipment, the physical environment, or on-site technical support. One hundred report problems with equipment, 57 with physical environment and 70 faculty members report on-site technical support problems.

“My only major frustration is trying to get technical support for classes I teach in LS&A. There exists a policy limiting support for non-LS&A faculty teaching in LS&A classrooms.”

“I taught a class a few terms back with an expensive computer projection system that was supposed to play a big role in lectures, but it was only useable half the time...”

“...one chief interest for me - using the web in class for student presentations - is not a simple scheme to enact, given that not all rooms have ethernet connections and still fewer have web projection.”

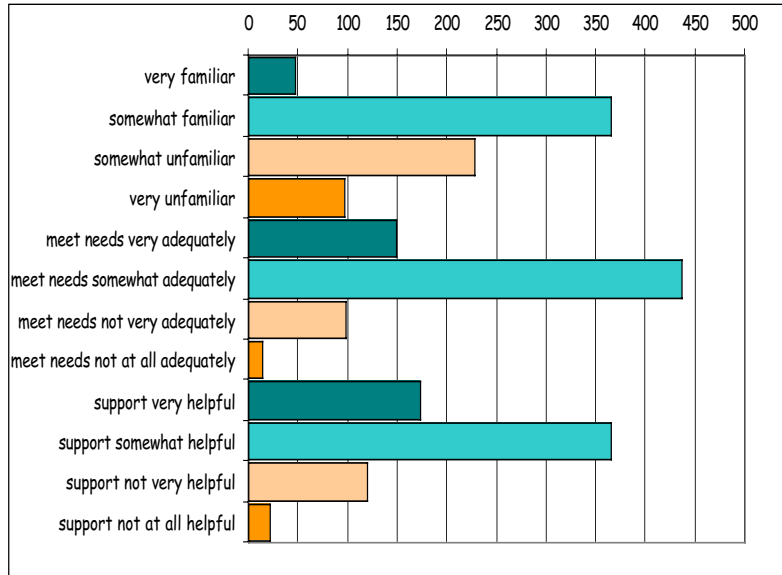
“Reliability and technical support are always problems.”

Resources

Experience with IT Resources

(Q21, 22 & 23)

Over 50% of the respondents believe they are familiar with resources at the University and report that those resources adequately meet their needs. However this is tempered by a number of disparaging comments.



"...I don't understand why it was so difficult to find someone who could help with this!"

"...have available a service where faculty could consult one-on-one in their office with a knowledgeable person about the various options available."

"It boggles my mind that the University postures about collaboration, interdisciplinary projects, distance learning, creativity, etc. - and is willing to throw millions into the hardware - and yet so profoundly neglects the human aspect."

"I don't know where to turn with a developing but incomplete idea..."

"I...have not found it easy to keep up with the frequent and often confusing changes in computing architecture at UM."

"I feel that there is a lot out there to be utilized, however unless you go looking for it - one doesn't know the options. More publicity about services would be nice."

Resources

Use of support resources (Q24)

When asked which resources are used respondents reported the most use for electronic library resources and the Center for Research on Learning and Teaching (CRLT). The least use was in policy development and adaptive technology.

| Unit | Currently Using | Previously Used | Never Used | Don't Know |
|--|-----------------|-----------------|------------|------------|
| Electronic Library Resources | 297 | 159 | 113 | 136 |
| Center for Research on Learning & Teaching | 49 | 252 | 290 | 118 |
| Media Union | 63 | 160 | 296 | 189 |
| Office of Instructional Technology | 8 | 80 | 289 | 314 |
| Language Resource Center | 27 | 55 | 278 | 331 |
| Instructional Technology Lab | 8 | 72 | 269 | 343 |
| Knowledge Navigation Center | 17 | 48 | 198 | 426 |
| New Media Center | 1 | 37 | 257 | 391 |
| Science Learning Center | 11 | 23 | 242 | 413 |
| Linda's Place | 5 | 26 | 185 | 474 |
| Teaching & Technology Collaborative | 2 | 13 | 215 | 459 |
| Office of Policy Development & Education | 0 | 12 | 222 | 457 |
| Adaptive Technology Lab | 0 | 4 | 213 | 463 |

"I would like to add that Linda and her staff at Linda's place have been super wonderful."

"The [ITL] staff are skilled and helpful, but basically we need to know what we want and need when we go there."

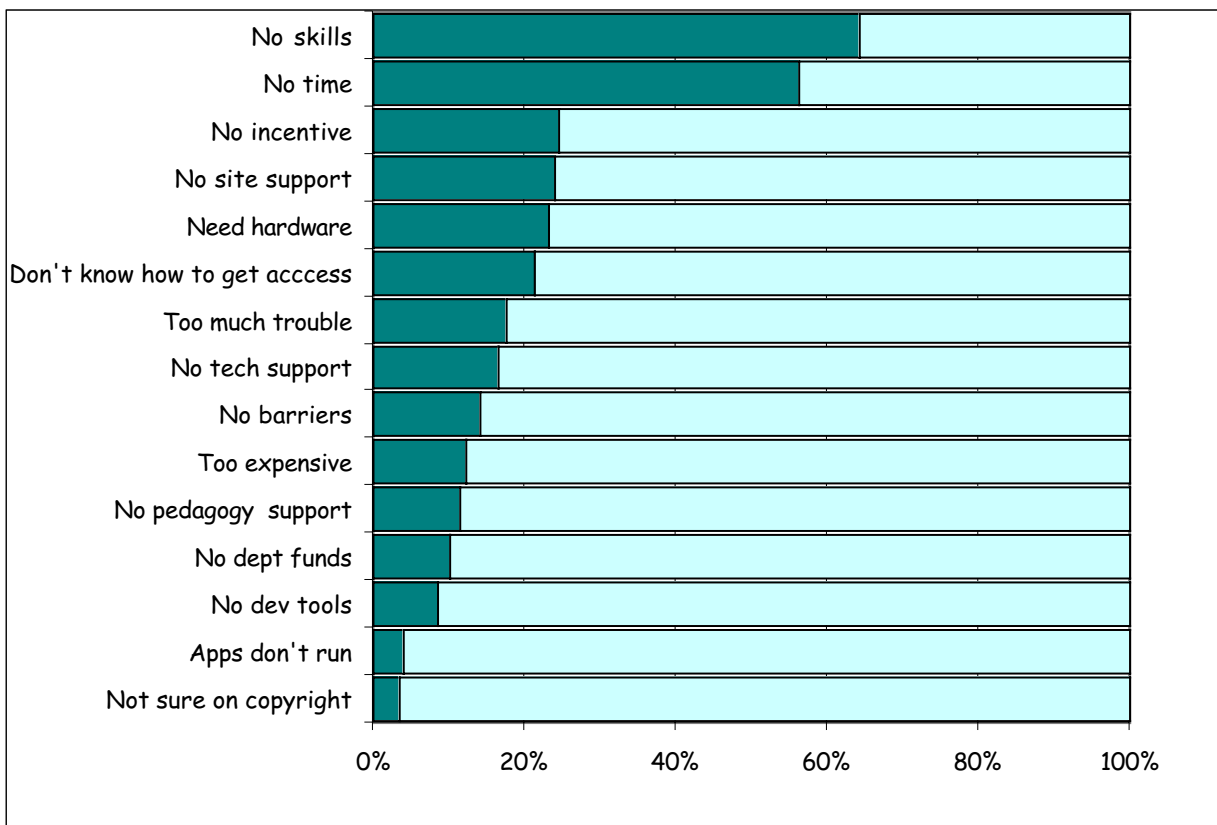
"I'm pleased and impressed by the technology resources here."

"The Faculty Exploratory is a wonderful resource."

Resources

Barriers To Use (Q12)

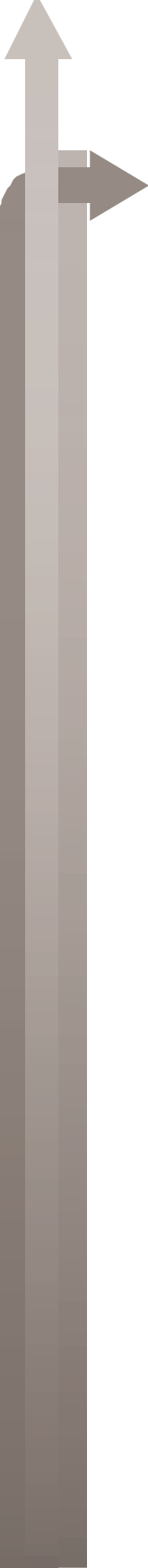
Major concerns for faculty members included time to learn and use, lack of support and reliability of the technology. A small but significant proportion of faculty members indicated that computer projection, network connection and internet access was missing but was important for inclusion in classrooms.



“As an adjunct faculty, I have no office or lab and am thus limited to the public computing sites, which are dirty, crowded, and noisy and which have often unreliable or out-of-order equipment.”

“It’s getting to the point where for everyone to do their best teaching job, they need ready access to computer resources. You would not ask a person to deliver most goods without providing him/her with a vehicle to do so!”

Barriers to use (con't)



“For me, I either play with the new [IT] gimmicks or I do my research. I have opted for the latter!”

“In many quarters there is a resistance to new technologies and the resulting changes that require extreme sensitivity.”

“My office computer seems to be down more often than it’s running, but no one seems to ever respond to my pleas for help!”

“Learning to use technology effectively in education - and learning what can be done - is a long process of imagining, talking, creating a community in which ideas can come about and be shared. The only place in the social vacuum that is North Campus where the nucleus of such a community exists is Linda’s Place.”

“We in the College of Engineering gave up on ITD long ago and created CAEN. This isn’t too good, either, but it has provided a far better environment than ITD. What does ITD do?”

“4-HELP phone # is always busy and almost useless.”

“Until recently computer support here was exemplary... Shortly after my return, however, I watched as decisions were made by someone to reduce the quality of the operation here to the lowest common denominator. It was sad. You almost hear the telephone consultants say ‘I wish I could help you more’.”

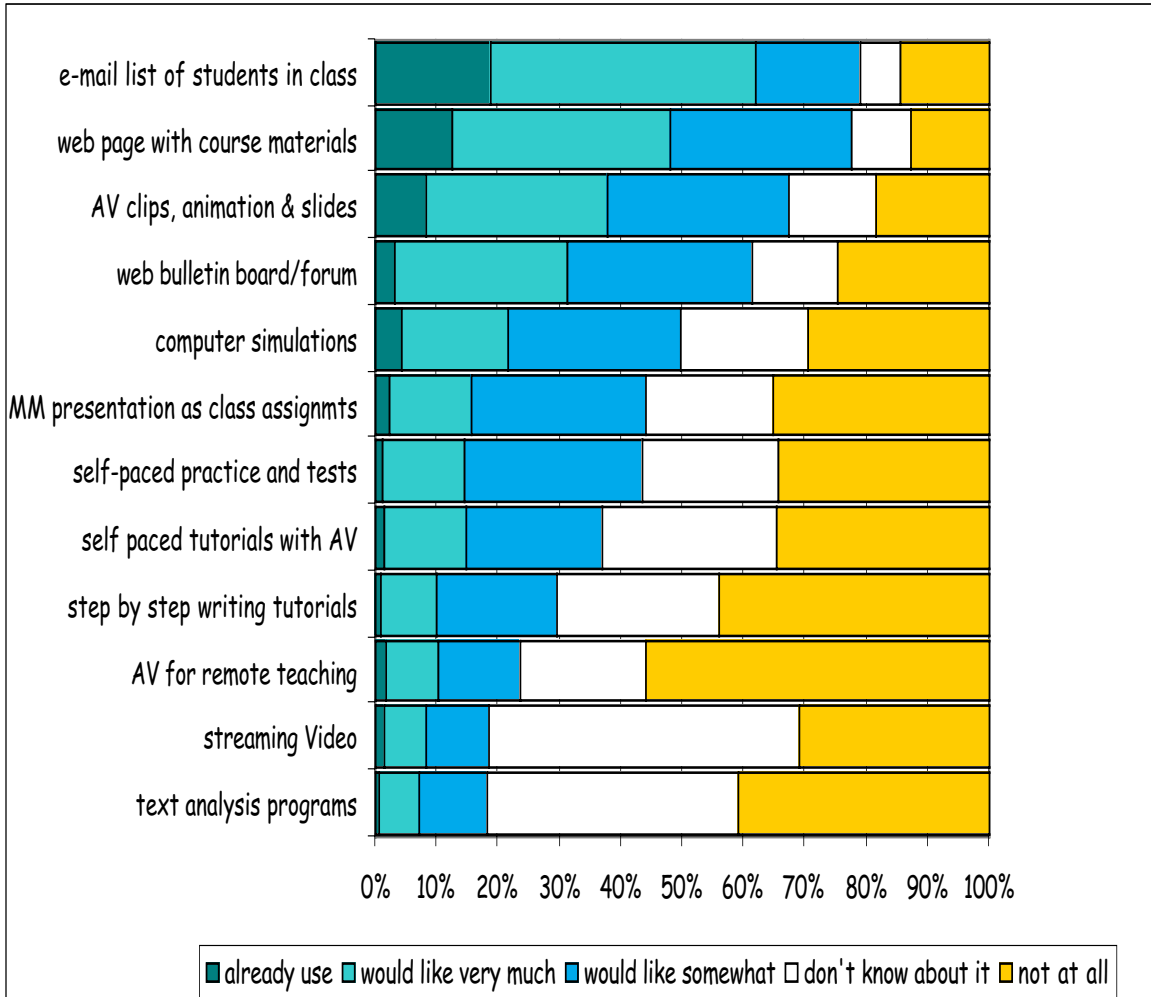
“The university should not turn technology into a fetish.”

Technical Support

Faculty use and desire to use resources (Q24, 26)

Faculty already use some tools, but...

“There’s a lot of talent here and projects where we could really shine, but it’s not happening.”

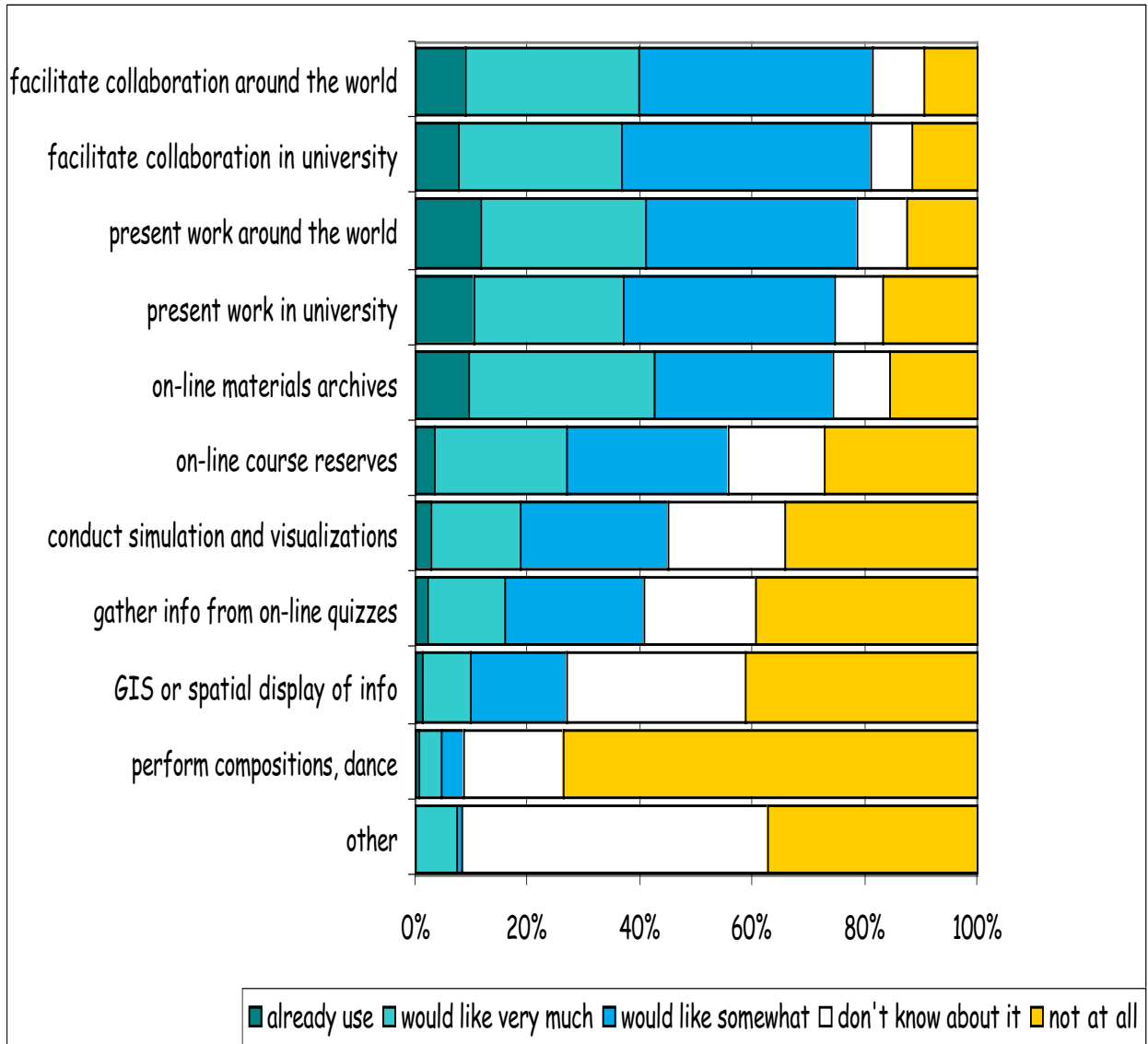


they would very much like to use more!

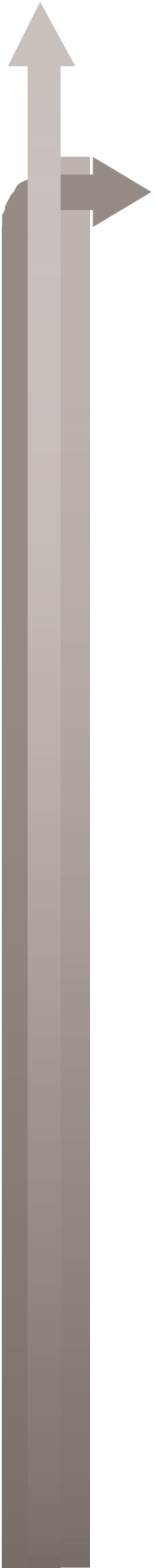
Faculty members report they would most like to have an e-mail list of students in class, a class electronic bulletin board/forum on the web and multimedia presentations as class assignments.

Faculty use and desire to use the web to do... (Q27)

Faculty already use the web with some special tools, but again...



They would very much like to use more!



Appendix



Credits

- Question Development
 - Carl Berger
 - Steve Burdick
 - Gary Gatien
 - José-Marie Griffiths
 - Eric Rabkin
- Data Analysis
 - Carl Berger
 - Karen Kost
- Survey Design
 - Carl Berger
 - Gary Gatien
 - Nicole Kirgis
- Presentation
 - Carl Berger
 - Karen Kost

*Special Thanks to the Office of the CIO
and the Senate Advisory Committee on
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Analysis techniques and presentation

Data were entered and checked by the Survey Research Center. Missing data was coded differently than no response on branching questions.

Analysis was carried out using the number of faculty responding and graphs and tables most often use the number of faculty responding as the major axis.

In instances where variation was important, standard deviations around the mean are shown.

For those interested, a combination of StatView and Excel were used for the major graphs and charts.

Faculty FTE's by school

| School Name | Tenured | Tenure Track | Other (EXC GSTA) | Total |
|--------------------|-----------------|---------------------|-------------------------|-----------------|
| Arch & Urban Plan | 19.00 | 8.85 | 12.86 | 40.71 |
| Art & Design | 13.75 | 9.00 | 14.60 | 37.35 |
| Business | 66.44 | 43.31 | 54.97 | 164.72 |
| Dentistry | 50.67 | 14.69 | 53.07 | 118.43 |
| Education | 35.74 | 14.55 | 10.26 | 60.55 |
| Engineering | 219.95 | 57.93 | 38.90 | 316.78 |
| Law | 33.43 | 7.00 | 31.49 | 71.92 |
| Information | 9.90 | 5.77 | 6.55 | 22.22 |
| ISR | 0.25 | 0.00 | 0.00 | 0.25 |
| Kinesiology | 10.34 | 5.10 | 9.52 | 24.96 |
| LS&A | 500.73 | 189.64 | 340.67 | 1,031.04 |
| Medical | 425.94 | 188.59 | 465.67 | 1,080.20 |
| Music | 72.40 | 32.30 | 21.59 | 126.29 |
| Natural Resources | 26.00 | 7.15 | 3.01 | 36.16 |
| Nursing | 24.84 | 15.02 | 29.05 | 68.91 |
| Pharmacy | 24.96 | 4.50 | 7.33 | 36.79 |
| Public Health | 69.01 | 19.99 | 7.82 | 96.82 |
| Public Policy | 1.00 | 6.50 | 2.00 | 9.50 |
| Social Work | 30.25 | 8.10 | 13.77 | 52.12 |
| Total | 1,634.60 | 637.99 | 1,123.13 | 3,395.72 |