

Making Technology Accessible for the Technophobe—Moving Social Workers Into the 21st Century

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ABSTRACT

By nature, the faculty of the University of Southern California School of Social Work are not users of technology for teaching. Most (not all!) use email, but many have difficulty sending or receiving attachments. When I came to the School, I was handed the task of helping a faculty, who are essentially people oriented, begin to use and embrace technology for the delivery of instruction.

This paper will explore how the use of technology for teaching has been increasing as the result of

- the tactical upgrading of equipment in classrooms to make it easier to access technology when teaching.
- the strategic upgrading of the equipment in faculty offices to make it easier for them to use technology.
- attention to and the strategic support of faculty leaders who are willing to try something new.
- the acquisition of technology “toys” for specific people or purposes.
- ensuring the availability of training in the use of the University-supported course management system.
- enabling computing technology to make it easier for the technology-challenged to accomplish tasks they never thought possible—from accessing networked file storage space from their homes to quickly and easily making documents available on the web for class.

Categories and Subject Descriptors

K.3.1 [Computer Uses in Education]: Computer-managed instruction

General Terms: Human Factors.

Keywords

Faculty Development, WebDAV, digital media, faculty buy-in.

1. INTRODUCTION

Social Workers are, by definition, people who work with people. Anything that happens with their office technology that is out of the norm will usually be alarming. Technology at any level isn't their focus. They fit the stereotype of the people who don't know what to do about the blinking 12:00 on their VCR—not all of them, but many of them. Technology frequently appears to the Social Worker as a series of “code” words—RAM, CPU, Megabyte and so on all have a secret meaning known only to the IT staff. Not that they don't have their own codes. Copies of the DSM-IV¹ abound. Faculty meetings are filled with comments using terms such as CSWE², COPA³, HBSE⁴ and DCFS⁵.

The past 18 months have been filled with reaching common understanding between the faculty and the IT group, controlling the expectations of the faculty and staff, improving the overall technology environment in the School and generating trust in the IT group. Consequently, Social Work faculty members are becoming more willing to experiment with using technology in their classes. This paper describes how the USC School of Social Work faculty have begun to accept technology and bring it into the classroom, transforming themselves from technophobe to technology user.

2. BACKGROUND

2.1 The University of Southern California

The University of Southern California, a private university established in 1880, is located three miles south of downtown Los Angeles, adjacent to Exposition Park, County museums and the Los Angeles Coliseum. The University Park Campus (UPC, the “main” campus), home to the College of Letters, Arts and Sciences, the Graduate School and 14 professional schools, is 235 acres in size with a population of 16,000 undergraduate students, 15,000 graduate and professional students, 4,300 faculty, 7,800 staff and 6,200 student employees engaged in areas other than teaching or research assistantships.

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¹ Diagnostic and Statistical Manual of Mental Disorders

² The Council on Social Work Education

³ Community Organization/Planning/Administration

⁴ Human Behavior and the Social Environment

⁵ Department of Child and Family Services

The University's Health Sciences Campus (HSC) is located seven miles away on the northeast side of downtown Los Angeles adjacent to the Los Angeles County General Hospital. The Health Sciences Campus hosts the School of Medicine, the School of Pharmacy and programs in Occupational Therapy and Physical Therapy. (The University closed its School of Nursing at the end of the 2003-2004 academic year. The School of Social Work has taken in three of the nursing faculty and is starting a Nursing Social Work program.)

USC's central computing organization, Information Services Division (ISD—which is comprised of computing and the library system), supports University wide needs—email, high performance computing, research computing, the university wide course management system (Blackboard), administrative applications, etc.—and the University infrastructure—student labs and classrooms, some multimedia support in selected classrooms, the campus-wide backbone and network, a Novell network that provides file storage and software distribution, wiring to the wall plate, and other hardware oriented services.

The University's email system—SunOne Messenger, formerly known as iPlanet—is a web-based mail system that also supports POP and IMAP clients. ISD's Customer Support Center does a credible job of supporting the mail system for students, and much of the system is automated, such as account activation, password changes, and the automatic deletion of email over six months old.

The Center for Scholarly Technology (CST), which is part of the library system at USC and hence part of ISD, offers introductory training classes for faculty in the use of Blackboard and introductory training in the creation of digital video. On occasion, CST will offer teaching strategies workshops and similar seminars for the faculty. These workshops are open to all faculty at the University.

Desktop support—starting with the Ethernet patch cord—and most instructional support happens at the departmental or school level. Several Social Work faculty members have attended CST Blackboard training, but they then make use of student employees to prepare and post materials into the system.

2.2 The School of Social Work

The School of Social Work at the University of Southern California currently occupies two buildings on the University Park Campus (main campus)—one that they have occupied since the late 1970's and an adjacent building that opened in the Fall of 2003. In addition, Social Work supports several off-site programs and activities. They are:

1. The Center for Child Welfare (CCW) located approximately two miles north of campus,
2. The Staff/Faculty Counseling and Consultation Center (SFCCC—the University's Employee Assistance Program) main office located in a shopping center off the northern side of the main campus
3. SFCCC also has offices and staff requiring support who are located on the Health Sciences Campus,
4. full and part-time MSW (Masters of Social Work) programs at the Skirball Cultural Center in West LA (an hour drive in normal traffic) and

5. full and part-time MSW programs at the USC Orange County Center (slightly over an hour drive, again in normal traffic).

3. FALL 2002

3.1 Social Work environment

I arrived in the School of Social Work in December, 2002, and was asked to increase the use of technology in classroom instruction and to improve the quality of desktop support in the School.

At the time the School had approximately 130 full and part-time faculty and staff working in the various sites, with the majority being located on the University's main campus. There were a combined 150 desktop computers spread out over the six School locations—the main campus building and the five off-site locations. The School's second building on the main campus was under construction at the time, scheduled to open in August 2003.

The IT organization within the School consisted of one full-time staff member and two student workers who put in a combined 25 hours per week. (My arrival doubled the size of the full-time staff to two!) The overburdened staff was responsible for desktop support and for managing the movement of equipment to meet the audio/visual needs of the School. A large part of the student time was devoted to scheduling and delivering video tape playback equipment (TV and VCR on a cart) to classes and meetings. The students also responded to minor hardware repair and support calls.

3.2 Support

Desktop support activities then, and now, covered a broad range of activities. IT was called for every paper jam in a laser printer or to replace inkjet cartridges or laser toner cartridges. Forgotten passwords were frequent issues. Anti-virus signatures were rarely current and few Windows machines at that time had critical security patches applied.

3.3 The computing environment

Desktop computers ranged from 233MHz Pentium II computers with 64MB of RAM running Windows 98 to a few 1.5GHz Pentium IV class computers—mostly in administrative offices. The majority of the computers in faculty offices were either Pentium II or Pentium III class computers. Faculty office computers were rarely turned off because it would take the machines five minutes to boot and another five for the user to log into the campus Novell network. Loading Word or PowerPoint could take three minutes or more. For a high portion of the teaching faculty, using their computer was a painful experience.

Many of the problems faculty encountered using their office computer cried out for the solution that fixes so many problems—a reboot. But because the time it took to restart and re-login to the computer was so great, it was an option that the support staff avoided if they could. Consequently, many issues would re-appear on a regular basis and the single full-time staff member had lost almost all the trust of the faculty and staff. He appeared to be unable to resolve problems or to keep them from re-occurring. The Dean of the School felt he should be fired. His problems were, unfortunately, that there was simply too much for one person to do. He specialized in quick fixes, but didn't have the time to follow-up to make sure that what he did actually worked.

Sometimes it did, but not always. People were tired of constantly calling him back for the same issue.

To exacerbate the problem, like all of us in IT support, the staff member would be asked questions or told about problems when walking through the halls on his way to a service call. He would make a promise to show up to resolve an issue, but frequently forget about it. In short, the IT staff was viewed as poor quality having no follow-up and rarely getting it right the first time.

With this workload, the IT staff had no opportunity to think about, let alone implement, any changes in how technology was used in the classroom. Staff time was focused on making hardware repairs, changing toner/ink cartridges, pulling a sheet of mis-fed paper out of a printer, and restoring network connections. Because some of the hardware was so old, the full time staff member spent a good deal of his time recovering data and swapping parts to keep machines running.

3.4 Email Environment

Because the web interface to the ISD supported mail system was (and still is) fairly clunky, faculty had adopted a variety of email clients. The Social Work staff supports Eudora, Outlook Express, Outlook and Netscape Mail all in both POP and IMAP mode. Counting the web mail interface, the staff supports nine different ways for the School's faculty and staff to read email. Just to make things interesting, there is at least one faculty member who uses Pine. Depending on the email client of choice, some faculty had difficulty sending or receiving attachments, which made it difficult not only to exchange documents with colleagues, but with students.

3.5 Instructional Environment

The classrooms in the building were not in much better shape than the faculty offices. Three rooms had consoles with Pentium III computers—each configured differently—and VCRs. These both use 36" wall-mounted televisions to display to the class. The computer video was routed through a scan converter and then through the VCR and on to the TV. The service calls from these classrooms asking "how do I get the computer on the TV?" or the following period, "how do I show my video tape on the TV?", came with great regularity. The remaining three classrooms and two seminar/conference rooms in the building had no built-in technology.

The majority of the instructional technology in use by the faculty was video tape, either a complete commercial/pre-recorded tape or clips or one were shown in class. The majority of the information technology used in class was student presentations using PowerPoint. Three of the teaching faculty used PowerPoint on occasion in their classes. Several faculty had requested Blackboard sections be created for their classes, but a later check with ISD showed that only one was actually used—no log-ons into the courses were recorded by the system for the other faculty members.

4. FACULTY OFFICES

My first tactic was to improve the situation in the faculty offices. I reasoned that regardless of the quality or availability of hardware in a classroom, the faculty would be using their office computer to create materials for use in class or to interact with their Blackboard class site. Unfortunately, I was in the middle of a

budget cycle with no new funds for hardware purchases expected until July, 2003.

In submitting my budget for the 03/04 fiscal year, I initially proposed to the Dean the replacement of a third of the School's computers. This would have allowed me to remove all the Pentium II class computers and some of the more clunky Pentium III machines. The proposal, alas, was turned down. The Dean would only fund replacement of about a quarter of the inventory. I was able to budget for 33 new computers. This turned out to be worse than it sounds, as I was also told that 12 of the new computers had to be set aside for new faculty (10) and staff (2). In effect, I would be able to replace only 21 of the nearly 50 computers I initially had wanted to remove. What ensued, as a result, was a careful inventory of the computers in the School and a detailed plan for who should have their computer replaced and who would inherit a slightly better than they currently had, trickled down computer.

To do this I started by defining classes of technology users. I then spent the next three months classifying the faculty into these groups:

1. those who would clearly make use of new hardware and new technology,
2. those who were looked upon as leaders and who, if I could get them to use technology, would bring others into the fold,
3. those who would take more effort to bring into the technology fold that I had time to give, and
4. those who, regardless of their propensity for or against the use of technology, for political reasons had to get a new computer.

As the fiscal year drew to an end, the School's Associate Dean who managed the budgets approached me with some good news. Several departments within Social Work had not spent out their budgets. She had gathered up some of these funds and allocated them for me to acquire computers in the current fiscal year. The maneuvering let me purchase six computers with year-end funds.

With the start of the new fiscal year more favorable things happened. The School's new building was nearing completion and the PhD program negotiated an increase in the number of computers in their dedicated classroom/lab from five to nine. The building construction fund had extra monies, so it paid for nine computers so that the room would have identical machines. This gave me five acceptable Pentium III machines to redeploy.

At the same time, the cost of the standard computer I had configured three months earlier dropped and the University's purchasing department negotiated an additional discount on my purchase. The dollars I had budgeted for 33 computers let me acquire 37!

At the end of the summer I had met my goal. All of the faculty who had demonstrated that they would take advantage of computing power on their desktop had new computers. All those identified by the Dean as potential technology leaders had new computers. All the faculty who had political influence regardless of their leanings had new computers. I had replaced all the Pentium II computers sitting on faculty desktops, leaving nine in offices for student workers that, by the time you read this, will have been replaced in my second round of upgrades.

5. CLASSROOM CHANGES

My proposed budget for 2003-2004 had included upgrading the existing equipment in three seminar rooms and installing computers, VCRs and data projectors in two others in the School's main building. These upgraded rooms would then match the equipment I had squeezed out of the new building construction budget for the two seminar rooms and one classroom located there. Additionally, I had proposed hanging data projectors in three other rooms used as either classrooms or seminar rooms. Unfortunately, my budget and the School's didn't agree. I had to take another approach.

With the major technology used by faculty being video tape, I sought to relieve my student workers of the need to constantly move TVs and VCRs into some of our teaching spaces. That would have been the result if I had been able to install data projectors, as proposed. While I didn't get everything I wanted in last fiscal year's budget, I did manage a partnership that took care of two of the heaviest use rooms—ones which University Classroom Scheduling control after Social Work assigns all of its classes into them, as desired.

The Multimedia Division of ISD contacted my Dean to offer its support in the two University-scheduled classrooms in the Social Work building. The ISD model, however, had been to store the equipment in a closet in the building where faculty would pick up their reserved equipment, roll it to their classroom, and return it after class. Social Work faculty, however, had, for years, had equipment delivered to their class. No one in the Social Work administration felt that faculty should have to move equipment themselves in our own building, although we could train them to use the "will call" system in other campus facilities. After four months of negotiation, ISD Multimedia agreed to permanently install a TV and VCR/DVD combo player in the two Social Work classrooms, and to deliver a computer and LCD projector to the rooms when scheduled by the faculty member. In exchange, I gave up a small office to become the ISD Multimedia office, and I agreed that Social Work would be financially responsible for replacing the TV/VCR/DVD carts if they were stolen.

Computer upgrades in the three seminar rooms will happen during the summer of 2004. In addition, the two of the remaining classroom/seminar spaces in the School's older building will have computers, VCRs and data projectors installed before the opening of class in the Fall of 2004. These additions and upgrades will make it easier for faculty to walk into a classroom and use technology, both planned and on the spur of the moment.

6. TRAINING

6.1 Improved perceptions

The most dramatic increase in faculty use of technology resulted from training. It is one thing to have technology on your desktop, it is another to know how to use it.

With the improvement in the School's infrastructure as old computers were removed and new brought in, other aspects of IT support improved. We added a third full-time person to the support staff and implemented controls on how support requests were made. All support requests "in the hallway" were re-directed to the Social Work IT email address. IT staff also started giving realistic estimates of the time it would take to complete tasks.

School faculty and staff bought into these changes because there was an immediate impact on the quality of service.

- Support requests no longer fell through the cracks as we had an email record and could track requests and completion of tasks.
- Faculty were told when to expect problems would be addressed. The response was no longer "I'll be there in 10 minutes" only to have the request forgotten. Faculty were given a date and hour to expect support staff to arrive.
- Staff had the time to do a complete job the first time which reduced the amount of time spent on return trips.
- "Emergencies" became less frequent as we were able to do routine maintenance. We were able to set anti-virus software to automatically update signatures. Student workers became involved in patching (although this was still not perfect). Old machines were retired which saved more time than most anything else.
- User expectations of when any specific support request would be completed adjusted to the realities of what was still a small and over loaded staff. People no longer expected IT to drop everything and come to their aid as we indicated in our email response to their request when their request would be addressed.

More subtle results were that the original single staff member had regained the trust of the faculty and the Dean now looked at him as a valued member of the School.

This all combined to give everyone in IT time to sit with faculty and do training. Staff now scheduled time to train faculty one-on-one in Blackboard. Faculty were still bringing students along to these sessions, but more faculty were seeking our help. As we spent time with them they began to realize that there are aspects of using a course management system that their students couldn't perform for them, which led to increased training needs.

6.2 Additional equipment

During the summer of 2003 I had built a media lab—digital video editing, scanners, digital still and video cameras were all made available to faculty and students. Students were the primary users of the lab and equipment in the fall of 2003.

Some faculty who had taken advantage of the training opportunities were now beginning to experiment with using PowerPoint presentations to support their lectures. The permanently installed computers/data projectors in the seminar rooms and classroom of the new building made it easy for these faculty to show up in class with their materials on a Zip disk or USB Key and not worry about getting equipment delivered. This also proved to be a slight relief to our student workers who were now able to spend time on IT-related tasks rather than moving A/V equipment around.

The new level of confidence in the abilities of IT to meet a broader set of needs let me speak at faculty meetings about what IT was in a position to do to assist faculty in their classroom teaching. Between the Fall 2003 and Spring 2004 semesters the requests for Blackboard sections increased from six to 15. At the same time the Dean decided that the spring semester faculty retreat should be focused on teaching with technology.

The retreat was an opportunity for me to talk about capabilities and what is available to the School faculty and to offer mass training. I did not, however, spend the whole time available to me talking. I asked four faculty leaders to talk about what they are doing and to give brief demonstrations. These faculty demonstrations and discussions proved to be more valuable than my demonstrations. I could show people what can be done, but I am a technology user. The faculty expect me to be able to perform wizardry. The faculty speakers convinced other faculty that technology is accessible to them as well.

After the faculty retreat there was again a surge in requests for Blackboard sections. Several other faculty ventured into using PowerPoint and two faculty started using the video cameras to tape classroom activities for later review.

7. TARGETED “TOYS”

Many technologies were demonstrated and talked about at the spring faculty retreat. One of the more “popular” ones demonstrated was how to digitize video and video on demand. While one of my “star” faculty members was talking, I video taped him. By the time he was done talking I had downloaded about 5 minutes worth from the camera and uploaded it to our School’s web server. Faculty immediately took to the concept of making video available on demand via the web. Two faculty are now regularly taping classroom activities. The video is then made available to the students in the class via the web.

In addition to taping classroom activities, at the retreat we discussed ways to make the use of segments of pre-recorded video tapes more efficient in the class. A frequent problem my faculty encounter is the time lost in shuttling a tape in class. They will watch a few minutes from early in the tape. This segment needs to be followed by a few minutes from the end of the tape. A significant amount of class time is wasted fast forwarding the tape and finding the second segment. As a result of the retreat discussions a couple of faculty are now trying the concept of digitizing these clips and playing them back in class digitally. (It is worth noting that there was a great deal of discussion of copyright issues surrounding this use of pre-recorded materials. You are advised to consult your institution’s legal counsel for their interpretation of Fair Use.)

The increase in the use of digital media as a result of the demonstrations at the spring faculty retreat led me to budget for additional video cameras and digital editing software. One camera will be reserved for use by two specific faculty members—a “reward” to them for experimenting with the technology. Another faculty member, who has his class develop Public Service Announcements (PSAs) has received a new computer and a complete suite of video editing software. I found that this kind of preferential treatment encouraged people to participate and motivated them to stick with it, as quitting meant I would take back the perks.

8. SIMPLIFYING HOW FACULTY WORK

8.1 Available Technology

One of my guiding principles in all this was to find ways to make the use of technology easier, not just for teaching, but in general. One of the frequent requests I’ve had since coming to the School of Social Work has been for assistance building a web site.

Administrators want to easily post information for students and staff. Faculty want a way to easily share and distribute materials to other faculty and their students. In many instances, Blackboard would be the answer, but the University currently allows only courses that appear on the schedule of classes to have Blackboard sections. A faculty group that wants to share information needs to find another way to do it. At the same time the faculty member who wanted to distribute one or two documents electronically in a semester typically found the learning curve for Blackboard too steep. I had observed that the faculty who had the most success using Blackboard also had a student assistant who worked extensively with the faculty member after initial training, providing a level of reinforcement and assurance that the IT staff could not do, simply because the student worker was with the faculty member more hours a week than IT staff.

After talking with many faculty members, I proposed to them that what they wanted was easy web publishing. A way to put a word document or a PDF someplace on the campus network that students could access via a web browser. They all thought that this would, in fact, meet many of their needs.

ISD, in providing a faculty member with an email account, simultaneously provided them with access to a central UNIX computer. If one worked at it enough, it was possible to find ISD documentation describing how to serve a web page from one’s UNIX directory. The user must create a directory called “public_html” and set appropriate access rights with the UNIX chmod command. Then the user has to understand how to use some form of FTP to move files, images or whatever to the directory. It was no great surprise to me that virtually no Social Work faculty were aware that this option existed, and that none had taken advantage of it. There is, in fact, only one faculty member in Social Work who knows how to use FTP! I needed an easier way for faculty to publish a document to the web.

ISD to the rescue, in a round-about way. At USC, all services are fee based because ISD is looked upon by the administration as a self-supporting/revenue center, not a cost center. Only part of ISD’s operating funds comes from the administration. They charge faculty, staff and departments for most services (students are already paying tuition so receive most ISD services free). Other than the basic email account and UNIX account, everything else supplied by ISD has a cost associated with it. That includes everyone’s campus Novell account. In the Spring of 2003 ISD announced a price increase for the basic faculty/staff Novell account, and an associated price increase for access to concurrent use software. These increases would be put into effect with the new fiscal year, starting July 1. I found that for the anticipated cost of keeping my faculty and staff using the ISD supported Novell network (mostly file storage and access to software) for one year, I could purchase four robust servers and license most of the software used by the department.

The Dean agreed and funded my request.

8.2 New Technology

Over the Summer of 2003 we installed the four servers and built the Social Work Active Directory domain. Between January 2004 and June 2004 the IT staff moved people off the ISD supported Novell servers and onto our servers. In July of 2004 we stopped accessing the Novell servers.

In configuring our servers we did several things to make life for the faculty and staff easier. First, we created a DNS entry that made sense for a faculty member's web site. The ISD supported UNIX system everyone can still use because they have email and UNIX accounts uses "www-rcf.usc.edu/~username" as the URL for the user "username." At the School of Social Work, the faculty can now use "socialwork.usc.edu/~username"—a URL that I was not surprised to find Social Work faculty can remember.

We then configured the server to look for a "WWW" directory in people's network disk space. All a faculty member has to do to make a document web accessible is drag it into their WWW directory. The Social Work faculty generally don't understand how to use FTP, but they do know how to double-click on "My Computer," double-click on the "U:" drive (where we map their network space), and drag documents into the WWW directory found there. Since making this available to the School's faculty a couple have acquired Macromedia Dreamweaver and are building more complex web sites.

The most popular feature of the School's configuration has been WebDAV. Through its use, faculty can use a web browser to access their network disk space from any internet connected computer. WebDAV lets them move files from a local disk drive to their network space, or from their network space to a local disk drive. Faculty now put folders containing current work into their network space to access from home rather than sending a single document to themselves in email. The email solution frequently meant that they didn't have everything they needed when they reached home. Worse, they would get confused trying to figure out which mail message sent to themselves had the most current document. These issues are disappearing. They now put their current work into their network disk space. When at home it is a simple task to drag a document from the network to their home computer to work on it. When done they drag it back to the network. The only thing that they have to remember is that their network space always has the most current version of their work. As a side benefit of all this, their work gets backed up.

What started out as a long term budget necessity for me has turned into a way for faculty to easily move files and do work, and easily publish to the web.

9. WHAT NEXT?

In the coming months the Social Work IT staff is gearing up to do more one-on-one training. As our equipment has become more

reliable and we have more permanently installed A/V equipment in classrooms, we are able to use the time of full-time and student staff members in more efficient ways. Our student workers are able to take on more of the routine maintenance. The anti-virus signature update process is now automated, and we expect to have the Windows OS patching process automated by the time you read this, freeing up more time.

Faculty are feeling pressures from many directions to increase their use of technology in teaching—from the Dean and School administration, from their colleagues and from their students. The faculty want to make more use of the web, video technologies, and the University managed Blackboard system. Thus, there is an ever increasing demand for more training and less hand-holding.

10. SUMMARY

- Work with the people who control budget to get access to year end funds. By making some minor concessions I was able to get new computers at the end of the fiscal year, which helped my replacement plans, and didn't impact my next year's budget. Use the funds to purchase items that will have a strategic impact. A USB key can have as great an impact if given to the right person as a new computer.
- Look for partnerships with other organizations within your college/university to help meet your faculty development goals and to make technology available.
- Look for faculty who are using technology who will be willing to mentor other faculty members, and to "prove" that yes, they too can do it!
- Acquire neat "toys" that will inspire more use, but are easy for the average person to use.
- Targeted one-on-one training, with a TA to follow-up, will work.
- Find technology that will make a faculty member's work life easier, not just their teaching life. I have seen more of my faculty able to generalize new skills learned to accomplish their research tasks into teaching, than vice-versa.