

# Oh No! They Want Me To Support Students' Computers . . . ?

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## ABSTRACT

At the start of the academic year in 2003, students with virus-ridden computers inundated the Simmons College Help Desk. They dropped off their machines, making it difficult for the Help Desk team to determine priorities. Technicians were virtually unable to serve faculty and staff, despite an unwritten policy that students were only provided phone support. In addition, students whose residence hall room network ports had been turned off, whether for compromising the network or for a file sharing violation, became confused, frustrated, and often irritated about what had happened and what to do. In the absence of written policies, student expectations were that the Help Desk was there exclusively to serve their needs. The solution: Self-Help Clinics, and written guidelines establishing what support is available to students.

This paper describes the issues and events that led Technology at Simmons College to devise the clinics, and how the clinics have grown and changed since their inception in January 2004. It also describes the process of establishing written guidelines for support, and the ongoing challenges we face in providing limited support to students.

## Categories and Subject Descriptors

H.1.2 User/Machine Systems: Human factors.

## General Terms

Management.

## Keywords

Help desk, student support, self-help.

## 1. INTRODUCTION

Susan Lees recalls:

One bleak September afternoon in 2003, I stepped out of my

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office, on my way to yet another meeting. I was completely taken aback by the sheer number of people filling the hall. My office is situated between the suite entrance and the Help Desk. The Help Desk is a semi-circular space designed for technicians to take phone calls. Their backs are to each other, but proximity encourages them to seek assistance from each other by simply turning and asking. On this particular day we were near or at capacity with seven or eight technicians working, each one tending to one or two, and in some cases three visitors. The din of conversation was accompanied by the constant ringing of the phone. Looking to my right I could see that the line extended the length of the hall and continued around the corner.

Excusing myself I managed to squeeze my way around the queue, certain that its already frustrated members were further annoyed just by the idea of my apparently cutting the line. The glares I got spoke volumes. When I finally reached the closest staff member, I asked, "What's going on?"

"Viruses," came the reply.

Stunned, I inquired further, "All of them?"

"Yup."

## 2. SIMMONS COLLEGE

Simmons College is a small university located near Fenway Park in Boston, Massachusetts. Since its inception in 1899, Simmons has been an undergraduate women's college. Businessman John Simmons founded Simmons to provide women with an education that would prepare them for careers. Over the years, Simmons added graduate schools and slightly shifted its mission to be "an authority on women, education for the professions, leadership and diversity."

The school is now comprised of:

- College of Arts and Sciences, which includes graduate programs,
- School for Health Studies
- Graduate School of Library and Information Science
- School of Social Work
- School of Management

Simmons remains an undergraduate women's college, with a comprehensive liberal arts and professional curriculum. The School of Management includes an MBA program designed specifically for women. The rest of the graduate schools are, as

our president says, “for women, and a few good men.” Of the over 1,800 undergraduates and 2,500 graduate students, about 1,300 live on campus.

Over the past 5 years, the College has undergone a transformation. On our small campus: several residence halls have been renovated; the building that houses our department is just 3 years old; a new library building is under construction; and another classroom/office building is in the planning phase. Concurrent with these physical changes has been a steep increase in the number of students, and a smaller increase in the number of faculty.

All the while there has been a strong commitment to technology on campus. Faculty have been encouraged to use technology to enhance learning. All of the classrooms and several event spaces on campus have built-in video-data projectors. Three quarters of the 50 classrooms on the main campus have built-in video-data projectors, as well as podiums with computers, VCR/DVD players, and connections for laptops, document cameras, and various other technologies. Seventy three percent of Simmons courses have at least a syllabus posted in the learning management system; 60% of courses actively use the system.

In December 2005, we surveyed students about what technology they own and use. Although this will come as little surprise to those in technology in Higher Education, we discovered that 99% of undergraduates and 96% of graduate students own their own computers. In fact, 34% of student computer owners actually own more than one computer. That amounts to quite a few students who might need help with their computers. Most students owned computers that fall within what Simmons considers a computer’s life cycle (three years); only 16% told us that their newest machine was four years old or older.

Before we return to our story, a little more history. In 1998, Simmons outsourced most of its administrative technology (Administrative Systems, Help Desk, and Networks and Servers), including the director of that unit. In July 2003, at the end of the contract, Simmons chose not to renew, instead integrating all of Administrative and Academic Technology and AT under one executive director in a new unit simply called “Technology.” The transition was a reasonably smooth one, but the changes then (and still) underway provide context for the gap between stated policies and actual practice.

Both of us arrived at Simmons in the midst of this transition. Before the contract ended, Susan had been hired to document policies and procedures so that Simmons would not lose essential information after the outsourced staff departed. After the changeover, she quickly stepped into the vacuum to manage the Help Desk. In his reorganization, Executive Director of Technology Robert Kuhn restructured the department, moving the Help Desk, Labs, and Media Services into a new unit called User Services, and hiring Kimberly as its director in fall 2003. At that time the Help Desk was comprised of 6 full time regular staff members, 2 full-time co-op students from nearby Wentworth College, and 3 part-time Simmons and Wentworth students.

It was into this sea of changes we jumped together, each seeking clarity about the history of how things were done, and instead finding confusion among both Technology staff and their “clients” (students, faculty, and administrative staff).

### 3. STUDENT SUPPORT: OUR HUNGRY BLACK HOLE

Susan’s story continues:

As I walked through the long line of students surrounding my staff, the meaning of the existence of that line sent me into a momentary panic. Tending to so many students’ computers had serious consequences and raised a number of important issues.

First and foremost, there was a problem with priorities. According to unofficial policy, Simmons provided no in-person support for student-owned computers. The primary business of the Help Desk was to support faculty and staff using Simmons-owned computers. Because this policy was unwritten, and because Help Desk staff are by nature empathetic problem solvers, team members focused on helping the students. As there is only so much time in a day, though, doing this kept us from working on faculty and staff machines. Yet untreated, virus-infected student machines were bogging down our entire, at-that-time unsegmented, network, so we could not put off The Student Problem.

Another issue was that, by working on student computers, we were potentially incurring liability. Students were dropping off their computers, often just leaving them on a counter with a casual “I’ll be back later to pick it up.” Overwhelmed and lacking policy and process for this set of circumstances, Help Desk staff were not keeping good track of which computer belonged to which student, and worked without deadlines for fixing them. In addition, we were not maintaining physical security for our own work area and the personally-owned laptops now filling it.

A consequence of the way we were supporting students was that, by failing to limit expectations except through our actions, we led students to believe that they *should* bring their computers to us, even leaving them behind, and we would fix them. When students came to the Help Desk with an ailing computer (and sometimes with tears, which were certainly to the student’s advantage), technicians dropped what they were doing to assist. After all, we’re the Help Desk!

Feeding into this was that the change in leadership in our department, combined with the explosion of virus-infected machines, left staff feeling they could not turn anyone away. They would troubleshoot and repair, regardless of who owned the computer and the extent of the problem. When we began to talk about setting limits, staff were resistant for two reasons: 1) viruses are so difficult to clean, students would be in terrible trouble without our direct involvement, and 2) while managers set limits through policy, it is the staff who have to say “no,” to a frustrated, upset student whose machine is dead in the water.

Occasional panic attacks aside, we muddled through that challenging autumn knowing that we had to do something different for the spring 2004 semester. In thinking about how things needed to change, we asked ourselves three questions: What needs are common among all computers coming to the Help Desk? How do we set reasonable expectations and policies for our business? And how can we keep the Help Desk operational for all constituencies—not just students? Although we would like to be able to say we set expectations and policies first, we will continue on our narrative path and discuss our answers to each of these questions in order.

#### 4. FREE ANTIVIRUS SOFTWARE

What needs were common to all student-owned computers coming to the Help Desk? They almost all were infected with viruses, and very few had antivirus software installed. We assumed that students would be more apt to follow our advice about the importance of antivirus software if we gave it to them for free. Fortunately, the Technology budget had sufficient leeway for us to purchase Symantec Antivirus software licenses not only for Simmons faculty and staff, but for students as well.

On the Simmons web site, we posted Symantec Antivirus installers for Macintosh and Windows computers. Before downloading, users must click through a terms-of-use agreement that states they are entitled to use the software on one computer for up to a year after leaving Simmons, and they have to authenticate through our LDAP. We began by promoting the free software through email and our conversations with students. We have continued to advertise antivirus software and to advise students to download and install all operating system updates through flyers and our web site.

Simmons is a member of a six-college consortium: Colleges of the Fenway (COF). In the summer of 2004, we took advantage of Wentworth College's creation of a COF antivirus CD that included Symantec antivirus and several ancillary cleaning tools. We provided one of these CDs to every residence hall room, distributing them as well to non-resident students through our Technology Desk in the Library Information Commons and at the Help Desk. Unfortunately, the instructions on the CD were not as straightforward as our students needed them to be, so we produced paper instructions, which we later found were also not sufficiently detailed. Whether or due to our efforts or not, we found that in spring 2005 only 7% of students did *not* have antivirus software, as compared to 15% in spring 2004.

Unfortunately, as we all know, antivirus software and operating system updates are by no means sufficient for stemming the tide of malicious software infections, especially if a computer has already succumbed.

#### 5. HELP THEM HELP THEMSELVES: THE CLINIC

We needed to make sure Help Desk technicians could resolve technology issues for staff and faculty and keep our network safe, while still ensuring our students could do the work they needed to do to succeed at Simmons. Some colleges solved this problem by providing students with laptops and by controlling malware the same way they do for staff and faculty. That is, if it's infected, re-image it. Other colleges implemented network tools to assist in controlling the effect infections have on the community as a whole. In this case, a computer is not allowed access unless it passes predetermined tests. Although we considered both of these solutions, and will deploy a network tool in Fall 2005, both solutions were fiscally prohibitive at that time. However, more to the point, we knew we would not be able to implement either one fast enough. From all of this emerged something we initially called "Student Clinics."

In Spring 2004, we started funneling students to scheduled, measured sessions. We conducted Student Clinics twice weekly (3-5pm Mondays and Thursdays), and held them in locations other than the middle of the Help Desk area. This small but important development enabled technicians to focus on the Simmons business we needed to do most of the time, while

addressing the students' in-person needs at scheduled times. We continued to respond to student telephone calls and email messages, but redirected "drop-ins" to the clinics. We eliminated the constant interruptions without denying service.

We tried our best to make the clinics educational: "We will provide expert advice and guidance, but you do the work." This self-help philosophy had several drivers. First and foremost, we work at an educational institution and believe we should conduct ourselves in keeping with that mission. This fits into efforts at Simmons to establish "technology fluencies,"<sup>1</sup> which include learning to care for your computer, knowing who to call for help, and how to describe the issues you are facing. Second, and not inconsequentially, we could not possibly meet the demand that would have been created by 4,500 students believing that the Help Desk was running a repair shop. The clearer we could make it that students had to do it themselves, the fewer were likely to come! Third, the more students who kept their computers running well, the healthier our network would be, and the more we could concentrate on providing higher-level software support.

The clinics gave us an opportunity to breathe long enough to analyze *why* students came to us. In general, we found, students were desperate enough to lug tower computers in suitcases across 3 city blocks—the distance between the residence campus and main campus—to get to us for any of three reasons: 1) their computers were so infected that they were almost unusable, Technology had shut off the port in their dorm rooms, 2) because the computer had been attacking the network or consuming large amounts of bandwidth, or 3) Technology had turned off their port because Simmons had received a copyright infringement notice from the RIAA or MPAA. In almost all cases, remediation involved the same process: scan and clean, update the operating system, and verify that antivirus software and updates were current. Students with blocked ports must prove to the Help Desk that the machine is clean before the port is turned back on. Many of our students who have received RIAA complaints are truly mystified by the appearance of file sharing software on their computers. Before they are allowed back on the network, they must prove to the Help Desk that the computer is no longer sharing files. We recommend they remove all file sharing software completely, but that is not a requirement.

Although the clinics have been essential to our ability to maintain a semblance of order and focus on the mission at the Help Desk, to the casual observer, a clinic does not look like much. Two technicians are scheduled to help the attendees. On the residence campus, the clinics are held in one of the labs, a room that holds three computers, and about six people at once. On the main campus, we have a small room that holds no more than six people, and an eight foot bench. Initially, the technician works with one student at a time to assess the problem. If there is a hardware issue, the technician directs the student to the manufacturer. Usually malicious software is at fault, in which case the technician has the user start a scanning tool, before moving to the next person. Particularly in the early days, a manager might walk

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<sup>1</sup> See, for example, the Faculty Showcase '05 flyer, "Fluency with Information Technology: What Do Our Students Need to Know?": [http://my.simmons.edu/services/technology/ptrc/pdf/showcase05\\_tis.pdf](http://my.simmons.edu/services/technology/ptrc/pdf/showcase05_tis.pdf).

by and give the technician a nudge to stop “driving” the user’s machine.

We have made a number of improvements to the clinics. The first semester we ran the clinics, and at the beginning of each semester, we often had more students lined-up wanting attention than we could possibly assist in two hours. Technicians often stayed well into the evening serving everyone. For fall 2004, we changed the name of the clinics to “Self-Help Clinics,” opening them to anyone in the community needing assistance with a personally owned computer. Although it is still students who mostly attend, we hope in the future to have a more scalable model that will allow us to encourage faculty and staff to come as well. We have added the clinics to the Technology training schedule and have directed students to pre-register. We guarantee that we will advise the first six people who enroll; other pre-registrants and drop-ins are wait-listed. We scheduled one of the two sessions each week for the residence campus to cut down on the number of trolleyed desktops. Naturally, many students were unable to attend during two of the publicized clinic times, which was especially frustrating to those having to prove their machines were clean before their ports could be turned back on. We added a third clinic at an unpublicized but scheduled time, so that we always had sufficient technicians on hand and could accommodate athletes and other students busy in the late afternoon. When a student expresses an urgent need, such as a blocked port near finals, a technician will often schedule a specific time for her to come in.

At the beginning of each semester, we schedule additional clinics on the residence campus and advertise them there. When too many students end up in a queue for a clinic, we hold a “Super Clinic.” We invite everyone on the list, hold a spot for each, and advertise the Super Clinic to the community. We hold the clinic in a large room with many technicians on hand. We try to get several students at once to begin the same series of scans.

Over time, the technicians found a rhythm to the clinics, a standard set of steps to follow. In preparation for fall 2004, we wrote instructions for students whose ports had been shut off. A scan from a trusted tool will show whether there is any malware infecting the computer. Once we see clean results, we reconnect the port. Each Super Clinic has been the impetus for writing more instructions so that technicians can assist more users simultaneously.

Although our philosophy from the beginning was to teach people to fix their own software problems, the issue of technicians directly fixing computers for the users was a continual problem. It was, and remains, difficult for some of our technicians, often also college students, to cajole someone who is crying, professing ignorance, or displaying extreme frustration into walking through a series of steps described orally. Many attendees balk even at following written instructions. At times, some have been insistent that if a scan is going to take a half hour, they are going to come back after it’s done. There have been a couple of instances when the student’s computer was so impacted that, in our effort to repair it, it became unusable; the student assumed we broke it.

To better manage student expectations, and to make technicians more comfortable with toeing the line, at the end of 2004 we created a release form of sorts. Not intended as a legal document, it describes the purpose of the Self-Help Clinic as a free educational service, makes clear that owners retain responsibility for the choices they make during the clinic, outlines Technology’s

role as advisors, and reminds users that they cannot leave their computers unattended. Technicians have greatly appreciated that students now sign an agreement. It reminds the staff that management will support the decisions they make during the clinics. Since the advent of the agreement form, we rarely notice technicians taking control of a user’s computer. When we see a technician at the keyboard, we know she has decided it’s necessary.

While Help Desk staff want people to care for their own computers, they find constraining the dictate “thou shalt not touch the user’s computer.” It often slows them down, forcing them to talk someone through what would take them just a few seconds to do. Technicians made a convincing argument that there are circumstances under which it is truly necessary for them to assume control of someone else’s computer. For example, if eradicating a virus requires editing the registry, it is safer for the technician, who has done it many times before, to make those changes. That caveat is in the description of the clinic. The agreement attendees actually sign says that they have read the document, understand the risks, and agree not to hold Technology responsible.

We do refer people to off-campus, fee-based, resources. If someone refuses to sign the agreement, the problem is too complex for us to reasonably address in 2-3 hours, or the client wants someone to “just fix it,” we refer her to a list of computer repair shops in the area. We do not recommend one over any other, but do tend to point people to one associated with another college close to our campus.

## 6. SOMETHING IN WRITING

We have described some of the tension between what we, as managers, have envisioned and how technicians have preferred to operate: Teach them / But it’s too slow. Don’t touch their computers / But if they do it themselves, they’ll break it. And we have discussed the agreement we now have students sign. Now we will describe the process of creating written policies and guidelines that set students’ expectations. This process was simultaneous with our first semester of clinics for good reason: we learned from the clinics a great deal about where we could reasonably draw the line between not providing any in-person support for student’s computers, and fixing any that appeared before us.

Our starting point was an unwritten policy that students could call or email the Help Desk for assistance. But the only in-person support students would receive was from staff in the computer labs, who helped only with software issues confronting students in the lab. We began to write a statement of services for personally owned computers, but quickly realized that such a formal document would lead us to preach about what services we could *not* provide rather than emphasizing those that we could. This realization, and the emerging vision that the Help Desk should be the “front end” for all of Technology at Simmons College, turned the document into a description of all of the services Technology makes available to Simmons students. This allowed us to emphasize all that we have to offer students, to give students one unified view of our entire department, and to place support for personally owned computers within that context.

We needed to describe our support for faculty and staff as well, so we established categories for software that would be the same regardless of who owned the computer. This software included standard software/operating systems, non-standard operating

systems, academic/accepted software, and forbidden software. All members of the Simmons community would receive full support, including training, for software in the standard Simmons suite that was installed on a Simmons computer. That suite currently includes Windows XP and Mac OS X, Microsoft Excel, PowerPoint, and Word, Meeting Maker, Outlook/Netscape and Entourage/Mail for email, and Internet Explorer/Firefox and Safari/Firefox. On a student computer, we would provide largely the same support for the standard suite, except we made it clear we would not install or remove software. For academic and accepted software, we would assist with universal functions (e.g. opening, saving, and basic printing), help restore corrupted files, and provide training for selected applications. We added one category of software to our description of support for personally owned computers: deprecated software. We urge students not to use deprecated software, such as file sharing software, but only mandate they cannot run “forbidden software” (i.e. viruses and other malicious software) that puts the student or the Simmons community at risk.

We wrote and rewrote the section regarding student-owned hardware and peripherals. While initially compliant (“whatever you decide, you’re the boss”) Help Desk staff finally rejected the notion that we would never open a student’s computer or install components. The agreement ended up with multiple caveats allowing for the possibility we *might* work on a student’s hardware. This enables a technician to install a network card—or see if she can rouse the hard drive long enough to grab that seminar paper by connecting it to another machine—without making such work the norm.

We had long discussions about if or when it would be acceptable to deny a student service. Was it the student’s fault if her operating system’s missing security patch let a worm loose? Should we tell a student without antivirus software to go to one of the computer repair shops? Even the most draconian among us felt pity for the uninformed. We decided that we would advise students without up-to-date antivirus software and operating systems *once*, and then refer them to alternate resources. If, despite having followed our advice about antivirus software and OS updates, someone still had problems, we would assist, even if it was the second or third time. It has been unusual for us to see the same person twice.

In addition to making sure Help Desk staff could abide by the guidelines we were establishing, we vetted the entire “Technology Services and Support for Students” with several organizations. The Technology Governance Committee read and approved the document, making it official as Simmons policy. We distributed it to each school’s student government and visited meetings of those interested in a discussion about it. The most interesting meeting was with the undergraduate student government. They thought the guidelines were fair and reasonable. They admitted some ignorance about how to care for their own computers and expressed interest in learning more. And they wholeheartedly encouraged us to get the message of computer safety and security to student’s parents before they arrive at school: “while we’re still listening to them.”

By fall 2004, we had turned the entire document into a “For Students” section of the Technology web site.

## 7. NOW AND INTO THE FUTURE

The Self-Help Clinic is by no means perfect; we face plenty of ongoing challenges. However, driven by our philosophy that we

want students to learn to help themselves, our approach to student support has become more and more integrated. Our experience during the clinics has been driving other work. Clinics begat documentation, which in turn provided sufficient fodder to drive educational campaigns.

### 7.1 CHALLENGES

Although an essential part of our tool set, we still face a number of issues with the Self-Help Clinics. Currently, we simply cannot serve as many people as quickly as there is demand. We continue to hold three scheduled clinics a week, for which people pre-register. Students are frustrated by having to wait to attend a clinic, rather than being served immediately. Some, particularly those whose ports have been shut off, are exceedingly impatient, especially if they have experienced nothing wrong with their computers and just want Internet access renewed. Once a technician helps someone at a clinic, she is generally satisfied by the experience. But a fair number of students have expressed dissatisfaction with the amount of information Technology provides them for taking care of their own computers.<sup>2</sup>

Another problem is that the better job we do advertising the clinics and successfully assisting students, the more people want to attend. Also, the more complex it becomes to scour malicious software off a machine, the more time it takes to help just one person. It takes more time to clean most machines than the 2 hours we have for the clinic. And, despite all our best efforts, the clinics have not yet become scalable: it is difficult for one technician to assist more than three people simultaneously.

Although our goal is to help students help themselves, it is not clear that the clinic is the best time and place for them to do that. On one hand, they have the desire: their computers are broken and so many are ripe for learning. On the other hand, their computers are broken and all they want is for them to be fixed; many are not interested in learning anything. In addition, some technicians do a better job than others at explaining why the user needs to follow these steps to clean her machine, or what actions to take to avoid an infection from happening again. For these reasons, we have put a lot of energy over the past several months to better document and publicize the steps necessary to maintain a clean computer.

### 7.2 THE CLINIC GOES VIRTUAL

This summer we turned the COF Antivirus CD into “Disinfect & Protect: Antivirus and Other Critical Tools for Safe Computing.” The first iteration was a cross-platform CD mailed to all incoming and returning undergraduates in July and August. The CD was accompanied by a flyer with the heading “Will my computer work on the Simmons network? Yes, but for how long . . .?”

The CD replicates the steps technicians walk students through during a clinic. Step-by-step instructions prompt Windows users to run Stinger, the Microsoft Malicious Software Removal Tool, Ad-Aware or Spybot (depending on whether or not they have an available Internet connection), Microsoft Windows AntiSpyware,

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<sup>2</sup> In the spring 2005 Student Satisfaction with Technology Survey, 13% of students disagreed with the statement “Technology at Simmons College provides me with information about guidelines/policies and instructions that help me proactively care for my personal computer.” Fewer than 5% of students indicated disagreement with most questions on the survey.

and Windows Operating System updates. We ask people to confirm they have up-to-date antivirus software, and strongly suggest they uninstall any existing antivirus software and install the Simmons antivirus software, which is currently Sophos Anti-Virus. Because we have observed a number of issues caused by having multiple versions of Java installed, and because the next version of our learning management system (WebCT Vista) requires a recent, secure, version of Java, the instructions walk Windows users through installing Java. The instructions indicate how long each step will take, and urge people to keep going. Mac users face fewer steps: these consist simply of applying Macintosh OS updates, and installing antivirus software. The CD then presents Windows and Mac users with a page warning them about file sharing software, both in terms of potentially violating copyright laws and of unintentionally downloading malicious software onto their computers. The last page reminds students that computer safety and security requires ongoing vigilance and refers them to our web site.

### **7.3 WHAT COMES NEXT?**

Before the fall 2005 semester, we will turn this virtual clinic CD into a web site. We will mount a campaign referring all students

to the site. As new students come into the residence halls, they will be asked if they ran all the tools on the CD; if they have not, they will be handed a flyer referring them to run through all the steps on the site before doing anything else on the network. We will schedule several Self-Help Clinics each of the first weeks of classes, on the residence campus, without pre-registration. During orientation we will advertise the web site, and advocate for safe computing.

By the middle of the fall 2005 semester, we hope to have a training class in place that will augment the clinic, or perhaps be a required step before attending a clinic. The course will discuss different kinds of malicious software and the ways that computers can contract them. We will describe what regular maintenance is required. One key question is: can we teach something meaningful in an amount of time short enough to encourage people to attend? But the real question is: unless it is required, will anyone come?

Despite ongoing challenges, the clinic has proven itself and will continue to play an important role in our ability to support student computing. Our hope is to get to the point where the Self-Help Clinics focus on issues other than those caused by malicious software.