

Manage All The Computer Labs on Campus? What Did I Do To Deserve This?

Kathy DuBose

Manager, Client Services, Information Services
The University of Akron
Akron, Ohio 44325-3501
(330) 972-7183

dubose@uakron.edu

ABSTRACT

This paper will discuss how the Information Services Client Services group facilitates the support of campus computer labs. It will discuss how one group consisting of three full-time and one part-time staff went from supporting six computer labs to supporting over twenty computer labs.

The primary factor that led to this decision was that there was no centralized place for departments to go for help when installing, upgrading or maintaining computer labs. The department would have to contact the Computer Store for prices (hardware/software); the networking group; the server group; the PC Install group (install software / hardware); and the physical facilities group if room renovations (doors, electrical outlets, etc.) were required. Furthermore, there was no proactive mechanism for keeping departments informed of information related to computing on campus or for keeping Information Services aware of what departments were doing in their computer labs.

Since 1997, our group has become the primary support and liaison for all computer labs. We handle everything from providing general information to installing new computers labs. We coordinate the groups needed to install or upgrade a lab so that a department need only contact us and we take care of everything else. We hold meetings of departmental lab managers to inform them of hardware, software, networking and other issues that concern computer labs.

This paper will also discuss how the Information Services department has fostered a relationship of mutual respect with departments relating to their computing needs.

Keywords

Computer, lab, support, manager

1. BACKGROUND

The Information Services Division of The University of Akron

has always been the primary support for all computing on campus. Specifically, it has been the job of the Client Services group of the Information Services Division to provide this support. Client Services was responsible for mainframe and microcomputer support, programming languages and software support, developing training materials and seminars, providing research assistance, test scoring and survey support. We were the original Help Desk handling both phone and walk-in questions.

Client Services also supported the general-purpose computer labs. General-purpose labs are labs that are funded by Information Services and available to any student, faculty or staff member of the University.

Then as PCs began to appear on desktops and things like local area networks, pc servers and computer sales entered the scene Client Services was the group responsible for the support.

1.1 Client Services Evolution

It is easy to see that to keep pace with the technical computing support that our campus was demanding, Client Services would need an overhaul. Specialized groups began to evolve under the umbrella of Client Services. These groups included Help Desk, Networking, PC Services, Technical Services/Servers, Training and a Computer Store. In addition to the new groups that were formed, several groups that existed elsewhere, under different departments on campus, also came to join the Information Services Division/Client Services.

Even though very few new staff (if any) was added to these newly formed groups, Client Services was still able to provide an above adequate level of computing support to the campus.

While all these changes were going on in the Information Services Division, other departments on campus were experiencing their own growing pains. Academic departments were beginning to see the need for specialized computing for their students, located in (or physically close to) the department. We began to see an increase in what we termed departmental computer labs (for use only by students, faculty and staff of that department).

1.2 Computer Lab Management

As Client Services continued to evolve, the original, core Client Services group was still responsible for first and second tier support to students, faculty and staff, including support of general-purpose computer labs. Initially the responsibility of installing and maintaining computers on faculty and staff desks and departmental labs was assigned to another group in Client Services. Our group (the core Client Services group described above) had the responsibility of providing software support.

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This arrangement worked well for a while, but in a continuing effort to provide the best computing support possible it was decided that our group would be given the responsibility of managing all the computer labs on campus. When we were first told that we would manage all the computer labs on campus it was no big deal. We were already managing six general-purpose computer labs and thought we were familiar with the other departmental labs on campus. This would simply be an extension of what we were already doing...until we started to see the work orders.

1.3 And This Is Where Our Story Begins

As we begin to discuss the initial challenges we faced the reader is asked to keep in mind that we were given this responsibility on top of our current workload, with no additional staff. Initially we were somewhat curious about the added responsibility, but looked forward to the new challenge.

There were two issues that hit us from the very beginning; first we were given all open work orders for computer labs (over fifty) with at least five new work orders being opened daily and secondly, many of the work orders were for labs that we didn't know existed!

The first and biggest issue was to get caught up with outstanding work orders. Information Services uses a Problem Tracking/Inventory system to assign work orders to various groups and individuals. When the Help Desk receives a request for work that needs to be done by a group in Information Services, they open an electronic "work order."

As we began to plow through the work orders, our investigative skills were put to the test. The group that previously supported the departmental labs was a big help, but there were still issues that made the job difficult. For example, there was no complete list of all the labs on campus. Many departments did not have a person in the department identified as the contact person for the lab. If a student was using the lab and had a problem the student would call the Help Desk who in turn would open a work order. Many times the work order would simply say the "computer/printer doesn't work" or "computer/printer is down." Without a contact person, we had no way to get background information on the specifics of the problem, which made it difficult to troubleshoot problems.

There were so many issues to deal with in those first few weeks that we were dazed...it was at this point I walked into my boss' office and asked what had I done to deserve this? I then began to rattle off a deluge of issues that our group had encountered in just the first few weeks.

But never-the-less we kept at it and soon the work orders were down to a manageable number and we could move on to the real task of managing the computer labs.

2. WHERE ARE THE COMPUTER LABS AND WHO IS IN CHARGE?

During the first year we would receive work orders for computer labs and our first response would be..."I didn't know there was a computer lab in that building/room!" We would go out to the alleged location of the lab and sure enough, there would be several computers (and sometimes there would only be one or two computers) qualifying it as a computer lab. We made a lot of

progress in lab management during that first year. We were able to begin building a database of department labs and contact persons. We also began developing a relationship with departments and they were beginning to call us with not only problems but also other issues related to their computer lab.

2.1 Where Are The Computer Labs?

Part of the challenge with compiling a database with computer lab information is that some departments were not eager to share information about their computer labs. For example, some departments don't want their lab equipment publicized for fear that the lab will become overcrowded with students from other departments and the students of their department will not be able to complete assigned work. Others may feel that they are quite capable of supporting the lab entirely themselves and do not want our help.

We have been able to alleviate some of this apprehension by assuring the departments that we respect the usage of the labs and we are collecting information only so that it can benefit all computer labs. We also stress that we are not going to exploit or force the department to do anything against their wishes.

2.2 Who Is In Charge?

Along with identifying where the labs were located, we needed to establish a contact person for each lab. Some departments had clearly defined who was responsible for the lab, while others had not. These contact persons ranged from a full-time staff person to undergraduate students. Therefore, our next task was to, tactfully, request that each department assign a staff/faculty member to be our primary contact person. While we are quite willing to work with anyone the department assigns to maintain the lab on a daily basis, such as a student assistant, a primary contact was still needed for decision-making.

During that first year, we formed a group that included all departmental computer support persons, lab managers and the primary contact persons mentioned above. This group became known as the departmental lab managers and began meeting to discuss issues that are of general interest as well as special topics. Many groups are involved in supporting a computer lab: Networking, Telecommunications, Computer Store, Help Desk, Repair, etc. We invite representatives from each of the fore-mentioned groups to attend our meetings. The departmental lab managers have an opportunity to meet and talk with each other as well as the other groups in Information Services that are involved in supporting computer labs. This group has been a tremendous success. To the credit of organizing this group, over 90% of the departmental lab managers attend these meetings.

We also formed an email discussion list consisting of all the departmental lab managers. This also has proved to be a very successful tool to keep everyone informed of computer related issues in a timely manner.

It is important to remember that not all departmental lab managers are technical people. The skill level ranges from Office Administrators with little technical skills to faculty to staff who maintain their own network servers and hardware. However, our group facilitates the departmental lab managers meetings and discussions in such a way that everyone feels welcome and they all gain some useful information for supporting computer labs.

The departmental lab managers group has allowed us to build a good working relationship with the other departments on campus. The departmental lab managers have come to understand that we are not trying to tell them how to run their labs or what hardware/software to purchase; instead we are collecting and distributing information to help them make better decisions and to establish standards for computing on campus. The departmental managers are also glad to have this on-campus support base. Many times the departmental lab manager is the only technical person in the department and the departmental lab managers group allows them the opportunity to meet and interact with their counterparts on campus.

2.3 What Is A Computer Lab?

We also found that we needed to further define “computer lab.” Initially, we assumed that a computer lab was a room with several computers that were available to many students. If a particular department purchased the computers then it became a departmental computer lab available to only students of that department. However, we soon learned that there are many special-purpose computer labs on campus. For example, our Career Placement Center lab is for any student, but for the purpose of job search services and the computers in Computer Based Education & Testing are available to all students, but only for testing purposes. Currently we have identified 5 categories of computer labs.

3. SUPPORTING THE COMPUTER LABS

The previous discussion might leave you wondering what we do if each department has a departmental support person. Let us look at some specific services that we provide.

3.1 New / Upgrade Computer Lab

When a department informs us that they want to install a new computer lab, upgrade an existing computer lab or move a computer lab we begin with a site survey of the proposed lab and/or location

All through the process, we strive to understand the purpose of the lab and who will use the lab. We ask a lot of questions for both our information and to help the department verbalize what may have only been an idea in someone’s head. At the University of Akron, we support a variety of hardware, software and operating systems. We do not try to limit a department in their hardware and software choices, but we do give straightforward and honest information and guidance. We have lists of hardware and software that is supported by Information Services and we make sure departments are aware of supported hardware and software.

We initially access the situation and make recommendations about hardware, software and peripherals. We determine if the lab will need to be connected to a server and if so, will they need their own server or use an existing server. We discuss how the room will be wired, explaining they will need network connections for each piece of hardware and possibly a few extra for plugging in laptops. We make suggestions for room layout, furniture, power and lighting. We discuss environmental issues such as temperature and dampness. We make recommendations for the security of both the hardware and the room. We also discuss the accessibility needs for persons with disabilities.

Once we have accessed the situation, we suggest they contact our Computer Store or other vendors for product information and pricing. Since taking over the management of the computer labs, we have worked with the campus Computer Store to help them understand the specific needs of computer labs. When the department goes to the Computer Store, they receive help with ordering computers, printers and other peripherals. Our Computer Store is also responsible for the licensing of software, so they can assist departments with software purchases as well.

During this process, we may also need to contact the Telecommunications and Wide Area Networking (WAN) groups. This usually results in another site survey during which we discuss the communication needs of the lab. Once these groups have gathered their information, they contact us (or the departmental lab manager) with pricing and purchasing information for the networking hardware and wiring.

If the department will need to purchase or use a departmental server, we contact someone in our Technical Services group. They in turn handle recommendations on purchasing a server or specifics on connecting to an existing server.

Some departments require specialized or proprietary hardware/software that will be purchased from an outside vendor. We meet with the department and the vendor to discuss what will be purchased and any special requirements of the hardware/software. This helps to ensure that whatever the department purchases will operate in our environment.

Lastly, we physically set up the lab and install software. This includes the unpacking, installation and testing of hardware. If a lab is being relocated, we may also help with moving the computers.

During this entire process, we encourage the departmental support person to be present, even if they are not technically oriented. It encourages a good relationship between the department and our group and helps the departmental lab manager become more familiar with the technical aspects of the lab.

3.2 Lab Maintenance

The majority of our time is spent maintaining computer labs. Most departments request service from us by calling the Help Desk who in turn opens a work order through our Problem Tracking system. However, in the case of the lab being totally not operational (down) we encourage the department as well as the Help Desk to contact us directly.

3.2.1 Desktop, Operating System and Software Security

When we took over the computer lab management, only a few methods were being used to protect the desktop from being modified and to keep students from installing software and saving files to the hard drive.

We now use a combination of software tools to maintain the computers. First, we create Ghost images of the computer hard drive, which will be used if the computer will not boot. We also create PC-Rdist images to restore the hard drive image each time the computer boots. This is sufficient for most computer labs because it allows the student the flexibility to complete their assignments, yet the computer can be easily restored to its original

state by re-booting. Some specialized computer labs do not want students to have that flexibility and only want students to use the computer for specific, intended purposes. In these cases we add another piece of software (Storm Windows) and possibly modify the registry preferences to protect the desktop and hard drive.

We also assist with the physical security of the computers. We have even made our own security devices to secure hardware.

3.2.2 *Software Installation and License Updates*

We install software and upgrade licenses upon request. We require all departments to have current licenses for all software that we install so we have minimal problems with software being illegally installed on computers. In some labs, we run metering software that allows only a certain number of copies of a software package to be run at any one time.

The Technical Services group will usually set up the server and establish the necessary access rights. Our group usually creates the accounts, installs/maintains the software and printing.

3.2.3 *Repair*

The Repair group handles repair of hardware so we try not to get into opening the computers, but we have been known to add memory, replace a hard drive or clean a printer.

3.2.4 *Departmental Lab Manager Group Support*

One of our goals is to be the primary support resource for our departmental lab managers. A key factor in this is communication. We try to provide timely and accurate information of events affecting the campus computer network, internet/email services and virus outbreaks/fixes.

We further keep communication lines open by holding departmental lab managers meetings to keep our lab managers abreast of changes in vendors, pricing, special promotions and policies. At the meetings, we spend a lot of time discussing new and existing hardware, software and peripherals. It is a great way to pick up tips for troubleshooting problems.

We have invited various hardware/software vendors to speak at our meetings. We also have invited some of the local computer groups that are not affiliated with the University to join us. For example, there is a Linux user group in the Akron area (ALUG) and we sometimes host joint meetings with ALUG.

We offer training and demonstrations on topics like PC-Rdist, Ghost, new versions of operating systems and peripherals.

The computer lab hardware and software database is kept up-to-date so that we can keep track of all the hardware and software used in the labs. Sometimes it is necessary to know how many or which departments have a specific type of hardware or software and the database can provide this information. We also use the information in this database to generate statistics for reports like the Information Services Annual Report.

4. ON-GOING CHALLENGES IN LAB MANAGEMENT

During the last few years we have been very successful with bringing campus computer lab management under control, but there are still some issues that make our job challenging.

4.1 Proactive Computer Support

As was discussed earlier, we were given responsibility for the computer labs with no additional staff or reduction in workload. Therefore, our main challenge and more often frustration is the lack of proactive computer support. We do not have the staff to provide regular, weekly visits to all of our labs. Instead, we “drop-in” on the lab whenever we are in the area / building. We do, however, manage to keep all of the labs fairly stable and operational. We also manage to install virus protection software updates in a timely manner. We further try to proactively install software tools that enhance computing stability in the lab.

4.2 Student Assistant Help

In the previous section, we discussed lack of regular visits and daily maintenance of departmental computer labs. In cases where departments have their own staff person providing daily support, this is not an issue. However, departments that do not have a staff person assigned to this task often hire students to help with the maintenance and support.

Some of these students are very knowledgeable and may recommend to the department that they do things differently from what our group has implemented; and sometimes the departments listen and act upon these suggestions. For example, some student assistants do not like PC-Rdist because it adds about three minutes to the boot process, which is just too long for the student assistant to wait for the computer to boot. Therefore, they cancel the PC-Rdist download process (which eventually causes the computer to have problems) or persuade the department to have it removed. The student assistant then usually proceeds to modify the registry and install shareware on the computers. However, students have a habit of graduating and shortly after they leave we are often called upon to fix problems in the labs that would have been prevented had PC-Rdist been used.

This is not to imply that students do not know what they are doing...quite the contrary. It is just that departments and their student assistants do not seem to quite understand that if one person is responsible for one computer lab the maintenance is not difficult. However, when you have four people responsible for over twenty computer labs there is a lot more work involved and other, more restrictive solutions must be implemented to protect the computers.

On the other hand, we have students (and sometimes staff) that are hired as the computer support person but they are not technically oriented. They are usually adept at using MS Office and installing software, but they lack technical troubleshooting skills. Their lack of technical skills is not a problem except when they try new things in the computer lab without our help. This sometimes creates problems that we must troubleshoot. These types of situations are compounded because the lab support person is in the lab every day, check every computer and open work orders for every oddity. These particular labs may actually have more problems than labs that do not have a person assigned to lab support.

4.3 Order First, Ask Questions Later

Another challenge we often face is getting departments to contact us with all decisions affecting the labs. We want to be a “full service” group and we encourage departments to call us whether they are considering upgrading the operating system, purchasing new hardware/software or upgrading the network hardware.

However, we are still sometimes left out of the initial planning. For example, if a department is considering upgrading the computers in their computer lab they will order the computers and peripherals and then call us to set up the equipment. To complicate matters we have some departments that try to save a few bucks and order computers and printers that do not have network cards installed. They order the cards separately, usually a generic brand, and then call us to install. I am sure you can imagine the time and effort that goes into such set ups.

Our fiscal year ends in June so lots of hardware and software gets ordered around that time and usually arrives around the end of July. We are then called upon to install hardware and software that we did not know had been ordered. Furthermore, they usually want everything set up before the beginning of school, which is at the end of August. The main problem here is that this happens with several departments and our staff is then pushed to get everything set up.

4.4 Information Services Computer Labs

Another challenge we faced initially was that when we took over management of the departmental computer labs support to our own general-purpose computer labs began to suffer. The Help Desk has since stepped in to assist with the general-purpose computer labs.

5. CONCLUSION

As part of the Client Services group, our primary goal is to meet the computing needs of our students, faculty, staff and constituents.

We do not just troubleshoot computer problems, but also manage every aspect of the computer lab. We are not trying to make anyone do things “our way,” but instead we are striving to be a source that our campus can look to for guidance and information, not just for computer labs, but also for all computing. If we cannot help them, we will direct them to the best resource. We want the departments to feel comfortable including us in every aspect of their computing needs.

We also want to empower the departmental lab managers by giving them accurate and timely information so they can handle the daily, routine aspects of lab management, freeing our group to provide the highly technical second tier support.

All in all managing all the computer labs has been a natural and good marriage in our group. Especially since our primary responsibility is to provide all types of computing support to our campus community.

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