The Role of Universities in K-12 Internet Access

Eric Rude
Pocatello High School
Pocatello ID

Abstract

Internet access is an important tool for schools at the kindergarten through high school levels. Students need to learn how to use the Internet as a research tool and as a means of communication. School District 25, in Pocatello, Idaho, has received help from Idaho State University in bringing Internet access to its schools. Although ISU is not our Internet service provider, it has served as a resource and an advocate, helping us to solve many problems. Training opportunities are also being provided through the university. Universities can provide much needed technical and moral support, but their persistence is needed.

The Internet in Schools

For the past ten years, I have been involved in education from the pre-kindergarten through pre-college levels. I have worked as an education coordinator for a HeadStart program on an Indian reservation, and as a high school science and mathematics teacher. I have served on committees and as a volunteer at my children's elementary schools. In all these settings, I have been an advocate for technology in the classroom.

I believe that my major role as an educator is to prepare my students for the future, for all their potential futures. This is primarily instruction in using tools: their brain for logical thinking, their values for decision making, and whatever research tools they may need to gather information. My students, therefore, need to have access to research tools and tools that will develop their thinking skills. As preparation for the future, my students must be able to use tools that are up-to-date; this is technology.

My students, therefore, must have access to the Internet. Whatever actually becomes of the “information superhighway,” some form of interactive, computer-centered communication will eventually permeate society. More and more jobs, at all levels of training, are influenced by networking. Even our everyday lives are affected. If we are to ensure that we do not become a society divided into information haves and have-nots, the Internet must become a part of K-12 education.

But the schools cannot do this on their own. Most teachers do not have the computer or networking background needed to bring the Internet to their classes. Most school districts are barely able to keep up with even modest technological advances. Universities, however, are on the cutting edge, and can play a vital role in helping their future students. They can play the roles of advocates, innovators, trainers, and troubleshooters.

Bringing the Internet to School District 25, Pocatello, ID

In the summer of 1991, I was invited to have my biology classes become part of a statewide river monitoring program. The idea was to have high schools around the state test the water quality of the local rivers, then to compare the data. We began testing in the spring of 1992; but it wasn't until that fall that we had the means to share data. This program was sponsored by the Department of Energy’s Idaho National Engineering Lab, who provided a central computer where we could store our results, then worked on providing us with local Internet access.

In my case, Internet access came through Idaho State University, in Pocatello. I was given a 9600 baud modem and an account on their Campus Wide Information Service (CWIS), a text-based service. ISU provided the software, some of the hardware, training, support, and a dial-in account for me. This was a big step forward, but still limited: I could only get one computer on-line at a time, only when a phone line was available, and only from one of the offices (there are no phones in our classrooms).

With the support of my principal, I began looking for ways that the Internet could benefit our school. Soon
I had recruited another teacher, and we quickly realized that we needed to get our fellow teachers, and our students, on-line. Word spread, and administrators at the district level became interested.

From the beginning, we had the support and assistance from ISU to help our district get Internet access. They were there to educate us, to help us explore options, and to guide us. We looked at getting our connection through ISU and through other services, such as TCI and US West.

As of spring, 1996, we have 56 Kb lines into two high schools, two junior high schools, and three elementary schools. The LANs within the schools are still limited, but growing. By the end of next school year, the plan is to have at least five computers in each of the seventeen schools in our district connected to our WAN and from there to the Internet.

Where We Are Now

At Pocatello High School, the Internet is quickly becoming a tool used by students and teachers. So far, however, only a few classes, other than the computer applications courses, have become regular users. In my Honors Biology classes, my students have gone on-line to research assigned topics, and to create web pages. Teachers have done background research for their classes.

One of our major problems, however, is that we only have access at a few places in our buildings. This includes three computer labs (used full-time by the business classes), the offices of the administrators and counselors, and one computer in my classroom. About 350 of our 1500 students have the opportunity to explore the Internet each school year.

One major stumbling block has been that teachers do not have easy access. If a teacher does not have the opportunity to practice first, they are unlikely to try anything new with their students. At least half of our staff has taken introductory Internet classes, yet most are not able to further their knowledge, and so don’t feel comfortable getting their students on-line. They have not received any instruction in how to incorporate the Internet into their classes. Besides, even if they wanted to do this, it is very difficult to schedule time to bring a class into the computer labs, already in use by computer classes.

A second problem is the poor reliability of our networks, especially the LANs. Due to a combination of factors, including low-budget hardware and the lack of experience of our district technology staff, our servers have crashed a number of times this past school year. Teachers are not willing to go through the trouble of planning a class if they are not sure the resources will be available.

Our Plans

Our Internet access is also giving us a new way of communicating within our district. Currently, more and more counselors and administrators are using e-mail; teachers are slowly joining their ranks as classrooms are connected. We are also in the process of computerizing many of our forms, which will cut down the actual paperwork and time involved in purchase orders, bus requisitions, etc. This summer, our district is offering a class to administrators and their secretaries on using e-mail.

By the end of the 1996-97 school year, every school in our district will have at least five computers on the network. The long-term plan is to have at least one computer in each classroom connected; this is already true at two of our elementary schools. We are already preparing for web pages of student projects to be put on our server, and the computer classes have begun teaching how to use the Internet for research.

Recently, through state vocational education funds, the Idaho State University School of Applied Technology has provided Pocatello High School with a distance learning lab. This includes a compressed video line and audio-video equipped lab connected with ISU and five other high schools around southeastern Idaho. In addition to using this network for teaching classes, we are beginning to have monthly meetings to discuss technology problems. This will serve as a clearinghouse for solving our difficulties with our LANs and WANs.

We have also entered into an agreement with TCI Cablevision, which will be providing us with an experimental high-speed cable connection to the Internet. Over the next year, they will be wiring the entire district.

What Have We Learned?

The drive to bring the Internet to our district was
often slow and filled with potholes and dead-ends. The problems we encountered (and are still faced with) include not only money and hardware issues, but political ones as well. We are also faced with occasional resistance from teachers (why do I have to learn something new?) and the complaint that teachers don’t have time to learn this or don’t see how it would fit into their curriculum. Universities can help solve all these problems.

Idaho State University has proven to be an excellent partner in our efforts to bring the Internet to our students. They served as a guide, a resource, and an advocate. They did not push us in any one direction, but helped us to explore the alternatives available to us.

ISU is also continuing to provide us with opportunities for training. This summer, for example, school district teachers will be trained by the university as “technology mentors.” These teachers will then teach other teachers, who will be able to earn college credit. Such cooperation between the university and the district ... The university is also beginning to offer a Master of Educational Technology program. This will hopefully entice more teachers to look into ways that they can incorporate computers, and specifically the Internet, into their classes.

Based on our experiences, we have found other ways that universities could help us out. Primarily, what the schools need are sources of information. Most teachers, and even k-12 technology advisors, are not experts in networking. One possibility would be to have the university and a larger school district form a consortium, providing training for smaller school districts. Another suggestion would be for a university to put together a “cookbook” describing as exactly as possible what a district would have to do to get Internet access. It was a common problem around here that after installing one piece of hardware, we found out that we needed another piece as well. A step-by-step handbook, describing all the equipment, software, and, as much as possible, costs and resources would be very helpful.

Probably the most useful piece of advice to universities is to keep trying. School districts tend to be caught up in many levels of bureaucracy and politics. Often there is not complete communication between the schools and the district, or there can be conflicts between different levels or departments. The paperwork and red tape can also be a hurdle.

Those at the university level need to be patient and to persevere. Keep offering assistance; it will, in the long run, make a difference.