ABSTRACT

Wabash College has initiated an innovative strategy to solve technology staffing problems experienced by many small undergraduate liberal arts colleges. This strategy targets students talented in the use of technology and moves them through an intensive training program, culminating in certifications, graduate course work, and potential hiring. Over a period of three years, Wabash will have developed a steady stream of technology interns in the pipeline, taught skills to students which will make them very employable, and solved our own problem of recruiting computer services staff.

During the freshman and sophomore years, students who show aptitude for computer use will be asked to work as computer operators, staffing the student laboratories. As they progress through the year, they are evaluated for proficiency and are paid additionally depending on their skill level.

The best sophomores are selected to become Super Operators their junior year. They are in charge of training the regular operators and work on additional specific projects.

During their first senior year, two junior Super Operators are chosen to be Level I Master Interns. They complete two tuition-remitted Wabash courses per semester, and work half time for Computer Services. They receive certification classes and a stipend.

During their second senior year, the students again take two tuition-remitted courses per semester and work for Computer Services as Level II Master Interns. Responsibilities increase, as does their stipend.

The year after graduation, the student is employed at Wabash full time, and Wabash funds graduate school courses. The student trains and manages the Super Operators, provides workshops, and works on projects. As staff, they earn salaries and benefits.

The plan has several benefits, including the freeing of senior computer staff from routine projects, the availability of training to students with marketable skills, and the presence of trained support at a lower cost.

Keywords

Students, training, internships, staffing.

1. BACKGROUND

Wabash College, a liberal arts college for men, is located in Crawfordsville, IN, 40 miles northwest of Indianapolis. There are approximately 850 students and 250 faculty and staff.

We have a Novell/NT/UNIX network, with 521 desktop computers on campus—308 Windows machines and 213 Macintosh. 95% of these computers are less than three years old and are leased. 188 machines are primarily for students, with 121 of them in public classrooms or labs. We have five public labs—one Mac, two PC and two hybrid (PCs and Macs). In addition, we have a 32-node Beowulf parallel computer system, which is also available for student use. All fraternities and dormitories are fully wired with 100-Base-T access to the campus network. We currently have 2 T-1 lines to the Internet and will be adding a third in the very near future.

Computer Services is composed of ten full-time staff: a Director, a Network/Desktope Manager, a network analyst, two desktop support people, a repair technician, and an office manager. Three others are responsible for our administrative software system (Datatel). Additionally, we also have a dedicated support person in our Modern Languages department, a Media Center Support Specialist, and approximately 35 student lab operators.
2. PERSPECTIVE

Use of technology at Wabash is a good news/bad news scenario. The good news is that faculty, students and staff are using technology in ways we could scarcely have imagined even a few years ago. More than 85% of our faculty incorporate some form of computing technology into their course designs. The majority of courses offered at Wabash have associated class accounts—dedicated network space where shared folders are created (a typical account has a commons folder, for access by everyone in the class, individual folders for each student, which only the student and professor have access to, and a folder for web pages. Every class account also has an associated listserv). 95% of our students use a computer on our network every day—if we count all college computers available for student use, there is one available for every five students. And since 93% of students live in college-owned housing, they can connect their own computer to the network for the price of an Ethernet card.

The net result of all this is that some very innovative projects have been facilitated by this access. Some representative examples include: from faculty, the creation of a Beowulf cluster used for modeling studies of biological membranes, and a virtual recreation a medieval manuscript; from students, a documentary that was edited on computer; and from staff members, the creation and maintenance of a daily calendar.

The bad news, of course, is that faculty, students and staff are using technology in ways we could scarcely have imagined. Not only do they expect to use more technology more often, they have the unmitigated gall to expect it to work consistently! With increased use comes increased expectations. From a support perspective, this boils down to the feeling that there are always five new problems waiting to take the place of a solution. There’s never any time to celebrate our successes, when a new problem arises before we even have a chance to close the old Help Desk ticket. And users begin to wonder at the huge investment we’ve made in technology, when they’re unable to get an immediate answer to an immediate problem. Without sufficient staff support, the benefits of that investment will go unrealized.

Adding to the support difficulty is the increased competition for qualified IT staff, not only with industry, but also with public schools, which are increasing their use of technology. Edu Tech Reports lists this as one of the top ten problems in computing nationally.

3. SOLUTIONS

In addition to outsourcing training for faculty and staff in more common applications like the Microsoft Office suite, Computer Services is also revamping its Help Desk, incorporating a searchable Knowledge Base of common problems and solutions for users and setting up a single point of contact for problems and requests.

4. MASTER INTERNSHIP PROGRAM

However, our most innovative strategy for dealing with the support problem is the Master Internship Program, where we target students interested and talented in the use of technology and move them through a training program which culminates in certification, graduate course work and potential hiring (see Figure 1).

The Master Internship Program is a three-year program that begins in a student’s senior year. The student receives educational opportunities and skills training in Information Technology while receiving a stipend as well as the remittance of tuition, room and board. While the rewards of the program are significant, so is the competition to gain entry into it.

Figure 1. The Master Internship Program outline

4.1 Freshman and Sophomore Years

The internship program begins as early as Freshman Orientation. All incoming students are given day-long orientation sessions on various aspects of living and working at Wabash (e.g., how to find your way around campus, how to use library resources). One component of this is a two-hour session on computing led by Computer Services staff, with information on public lab policies and training on how to access the network, our
system, and a quick overview of some applications they’ll need to be familiar with. At the end of the session, we invite anyone with an interest in our computing resources to apply to become lab operators.

Entry-level lab operators are given a two-day, eight-hour training course, taught by Computer Services staff and student lab supervisors (whom we term Super Operators). In these sessions, we go over lab policies and the expectations we have for operators, including customer service, and training in specific applications and skills (the Office suite, HTML editing, common questions they’ll encounter). We’ve created exercises for the operators to complete and hand in ahead of time, which allows us to focus our time during the session on any problems they may have encountered. We pay the operators for their time and feed them (never a bad idea when dealing with student employees).

At the end of each year, operators are given the option of being tested for their proficiency in a variety of applications in order to get a pay raise for the following year. It should be noted that if they decline to take the test, but we have no negative feedback on their job performance, they will still be allowed to continue working the following year.

At the beginning of sophomore year, a second, mandatory two-day training session is presented on more advanced skills and applications. At this point, students are proficient in the use of standard applications across Mac and PC platforms, are able to resolve the usual assortment of network client problems they face in the labs, and have been trained to deal effectively with users, both one-on-one and in small groups.

4.2 Junior Year

After the sophomore year proficiency test, six Super Operators are chosen from the higher-scoring students to work their junior year as interns, either in Computer Services, Modern Languages, or in the Media Center. They also help run the basic and advanced training sessions for freshman and sophomore operators and they are given another pay raise.

At the end of the year, two students are chosen from this group for the Master Internship Program. Two other students are selected to be Lab Operator Managers, where they are responsible for scheduling work shifts and resolving any conflicts that may arise. The two remaining Super Operators will continue to intern in one of the higher-end labs, or work for Computer Services.

4.3 First Senior Year

The two students are called first-year Master Interns. They complete two Wabash courses each semester (tuition and room and board are remitted), and work half-time for Computer Services in either Academic (supporting faculty and staff) or Administrative (Datatel) Computing. Duties include assisting with the management of the Help Desk, installing new equipment, managing the operators’ training classes, as well as working on special projects as needed. They also receive a stipend. During the summer, they receive extra training, possibly including Microsoft or Novell certification, internships at Datatel, as well as paid travel to an annual Information Technology conference.

4.4 Second Senior Year

Students, now called second-year Master Interns again take two courses each semester, tuition and room and board remitted, work half-time for Computer Services, and receive an increased stipend. Additional responsibilities include assisting with network administration and conducting workshops for faculty and staff. During the summer, they would again receive opportunities for certification, internships, and additional training.

4.5 Third-Year Master Intern: Full Time Staff

The students are now employed full-time for Computer Services; additionally, Wabash pays for 1 graduate-level course per semester. They train and manage the Super Operators pool, and continue to provide workshops and work on projects as defined by the Director of Computer Services.

5. CONCLUSION

The benefits for students participating in the Master Internship program are many: paid tuition and room and board, a stipend during the two senior years and a full-time job after graduation. Additionally, there are unlimited opportunities to acquire marketable skills, receive certification, and begin graduate coursework.

For Wabash, too, the benefits are compelling. Not only do we offer students an unparalleled learning opportunity, but, we benefit practically on multiple levels: staff are freed from more routine projects; there is a built-in recruitment/replacement process at each level of student employment, which results in immense savings in interviewing time and money, not to mention training costs (both time and money).

The bottom line is that we are providing our students with the opportunity of building extremely valuable job skills, our users with more trained support, and consequently, better support, and at the same time, investing less money than we would by hiring full-time staff.

6. ACKNOWLEDGEMENT

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