

The Technology Learning Center (TLC): A Comprehensive Learning Environment for Students

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ABSTRACT

As technology becomes more pervasive in our lives, and continues to change rapidly, it is essential for college students to have opportunities to improve their computer abilities and learn new skills. The use of technology for teaching and learning is becoming widespread, and students are often required to use various forms of technology in their classes. In addition, students who are entering the work force are finding that employers are demanding an increasingly higher level of technology prowess and learning skills. Created in 1997 to address the need for timely, up-to-date learning opportunities for North Dakota State University (NDSU) students, the Technology Learning Center (TLC) has evolved into a comprehensive learning environment. The TLC is funded by student technology fees and staffed by a coordinator and student trainers. In this paper, and the corresponding poster presentation, I will present an overview of the TLC and share new initiatives, challenges, and future plans.

Categories and Subject Descriptors

K.3.1 [Computers in Education]: *General*

General Terms: Human Factors, Management, Documentation.

Keywords: Training, Student Support, Student Services, Faculty Support, Learning, Projects, Documentation.

1. BACKGROUND INFORMATION

In 1995, the North Dakota State Board of Higher Education directed all state campuses to begin collecting a student technology fee to fund campus technology needs. The NDSU president established a Technology Fee Advisory Committee (TFAC) charged with making recommendations on how to best use the funds to benefit students. After identifying four major areas of need, one of which was student and faculty training, the committee used open forums, focus groups, meetings, and surveys to review the need areas. The university community was then invited to submit action plans to address those need areas. [1]

An action plan was submitted by Information Technology Services (ITS) staff to address student technology training needs, and the

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program was funded in Fall 1997. A full-time training specialist was hired to provide technology training for students. The plan also funded student trainers to help teach classes, market the classes to students, and assess training outcomes. [2]

For the first three years, the training group provided classes for the general student population on College-standard technology topics including Microsoft Office products, Web development topics, and Adobe software. It soon became clear, however, that computer classes alone were not meeting the technology learning needs of students. Students needed just-in-time learning, e.g., help with computer-related course work, personal projects, and learning goals. Since the training group did not have a dedicated training facility, they were able to provide only very limited individual assistance. Consequently, the training group began exploring ways to provide more learner-centered services.

Although space is at a premium in the ITS Department, the training group, by then known as the Technology Learning Center, acquired a small computer lab near the main public computer lab in the fall of 2000. TLC staff submitted a proposal to the TFAC, requesting funds for 10 computers and a video projector to set up a dedicated training facility. The plan was funded, and in Spring Semester 2001, the new and improved TLC was open for business.

2. TLC MISSION AND SERVICES

The purpose of the Technology Learning Center is to meet academic and personal technology learning needs and goals of NDSU students while promoting autonomous learning.

To fulfill this mission, the TLC:

- provides one-on-one and small group assistance with technology-related course work, class projects, personal projects, and learning goals on a walk-in or by-appointment basis. The computer lab is open approximately 50 hours per week with student trainers on duty to assist students.
- provides hands-on classes on College-standard topics including Microsoft, Adobe, and Macromedia software programs as well as non-software specific topics like computer hardware, networking, scanning, etc. More than 75 classes are offered each semester; the classes are usually 1 – 2 hours long and are held between 4 – 8 p.m. New classes are added each semester.
- offers students opportunities for self-paced learning by providing books, training manuals, and special software in the lab as well as online resources. The TLC Web site contains links called “Learning Links” to online learning resources on many topics.

- assists faculty members who assign technology-intensive projects, like creating Web sites, PowerPoint presentations, electronic portfolios, and videos. The TLC helps with project planning, identifying best methods, in-class student training, and coordinating support and learning services for students.



Figure 1. TLC Logo

TLC student trainers come from diverse academic fields and possess a wide range of computer skills. Although all trainers can assist students in general computing areas, each trainer has specific areas of expertise, which are posted on the TLC web site and in the lab. TLC trainers are not equipped to handle hardware repairs or troubleshoot cluster computers/printers and do not support some department-specific specialized software. The TLC works in cooperation with two other IT service areas, the Service Center/Multimedia Area and the Help Desk, to provide comprehensive technology support and learning services for NDSU students.

The TLC Mission Statement and definition of services appears on the TLC Web Site [3].

3. TLC WEB SITE

The new TLC Web site (Figure 2), launched in Summer 2003, uses PHP scripting and a MySQL database to make accessing, updating, and maintaining the site dynamic, flexible, and easy.

At the Web site, students can choose a technology topic they need help with from a drop down menu (see upper left corner under the header on Figure 2). A "[Topic] Resources" page is dynamically created, based on a continually changing database, that contains the following sections and corresponding information:

- Trainers on Duty
- Classes on [Topic]
- Books and CDs in the Lab
- Learning Links
- SPONGE Resources

On the "Lab Schedule" page [3], students are able to see the weekly schedule in grid form, displaying which trainers are on duty during which hours. On the "Meet the Staff" page [3], student trainer profiles provide students with up-to-date information about the trainers, including their pictures, lab hours, and their areas of expertise. An administrative interface makes updating the database fast and easy.

Future plans for the TLC Web site include incorporating an online discussion forum to enable students to post questions and view responses. Also, staff is exploring the possibility of offering assistance to students via online chat.

4. FACULTY ASSISTANCE AND SPONGE

If the TLC is to remain an integral and viable organization at NDSU, the center must be responsive to the growing support needs of faculty who utilize technology in their classrooms and in their assignments. The fourth annual EDUCAUSE Current Issues

Survey (2003) identified the top ten current IT issues for college campuses: No. 5 was Faculty Development, Support, and Training. According to the authors of the follow-up article in *EDUCAUSE Quarterly*: "The future of technological successes at higher education institutions depends not only on the availability of technology but also on the extent to which faculty are supported as they develop innovative ways to integrate technology into the learning and research experience" [4].

At NDSU, increasingly, instructors are requiring their students to create Web sites, PowerPoint presentations, electronic portfolios, videos, and other such projects. Although these types of assignments can create rich opportunities for learning, they can also cause frustration for instructors, students, and IT staff, mainly because of the high learning curve for some of the technologies and a lack of clear communication between instructors, students, and IT service providers.

In the fall of 2002, IT staff responded to the challenge to improve services to instructors and their students by implementing a project called SPONGE, which uses the metaphor "soak up the knowledge." Along with the TLC, SPONGE serves as a communication "bridge" between instructors, students, and IT staff and service areas.

The initiative required some reorganization of IT services and also the addition of Media Assistants to the TLC staff. Media Assistants are student employees who possess skills in multimedia hardware and software and/or Web technologies. Instructors are invited to meet with IT service providers to plan projects, identify needs, and coordinate support for students that includes in-class training and individual assistance with their projects from TLC staff.

A vital part of the SPONGE project is a Web site that provides students with necessary guidelines and instructions for completing their assignments [5]. The SPONGE interface enables students to choose from a list of project types (e.g., Create a Web Site, Create a Video) to access a complete outline of guidelines and steps. They also have the options of getting quick help on a more specific task and searching the database for pertinent information. The SPONGE Web site uses PHP and MySQL to reuse documentation that applies to multiple situations.

During Fall and Spring Semester of the 2002-2003 school year, the TLC provided support for 28 instructors who assigned 32 projects that included Web sites, newsletters, electronic portfolios, PowerPoint presentations, music videos, infomercial videos, Photoshop artwork, and projects that required the use of Excel and Access. TLC and SPONGE staff provided 65 classes for students in these classes, with a total of more than 1300 student contacts. In addition to the classes, students received individual assistance with their projects in the TLC lab and had access to online resources via the SPONGE Web site.

Future plans for SPONGE include showcasing SPONGE and TLC-supported assignments and student projects to promote awareness and interest among faculty.

For a more detailed description of the SPONGE project, see the article by Kornkven and Lilleberg in the SIGUCCS 2002 Conference Proceedings [6].

5. CHALLENGES

Following are some of the major challenges facing the TLC at this time.



Figure 2. Technology Learning Center Home Page: www.ndsu.edu/tlc

1. The TLC needs more space. The center is located in a small computer cluster with nine training stations and one instructor machine. Often, students work in groups on projects, and there is little room for students to gather around a computer.
2. The TLC staff must continually hone their technology skills and re-evaluate, re-design, and add new classes in order to keep pace with constantly changing technology and incoming “tech-savvy” students.
3. Identifying the technology learning needs of the general student population and finding viable ways to meet those needs is an ongoing challenge.
4. Funding is needed for software, hardware, and student trainers in the TLC. Partnerships can help. For example, since the TLC trainers tutor many students on JAVA, the Computer Science Department funds a JAVA tutor to work in the TLC each semester. More partnerships like this one will enable the TLC to continue to expand services while becoming less dependent on student technology fees.
5. Funding and time is needed to research and explore best methods for student projects like electronic portfolios and creating Web sites, areas many faculty are interested in.
6. Once best methods are identified, funding must be found to make the desirable software and hardware available to students.
7. Keeping accurate records of student contacts is an ongoing challenge.
8. The TLC must collaborate, cooperate, and communicate with other IT service providers.

6. CONCLUSION

In 1995, the TFAC identified student and faculty training as one of four campus technology need areas. Eight years later, the need for timely, up-to-date technology learning opportunities for students is even greater. Great potential exists for the TLC to continue to

expand services as staff members respond to the changing needs of students.

As the TLC continues to evolve, in this age of technology, it is important for students, faculty, and IT service providers to realize that the real skills necessary to succeed are not specific computer skills, but rather learning skills. What Seymour Papert, founding faculty of MIT Media Lab, asserted in 1993 is as true today as it was ten years ago:

The most important skill determining a person's life pattern has already become the ability to learn new skills, to take in new concepts, to assess new situations, to deal with the unexpected. This will be increasingly true in the future: The competitive ability is the ability to learn. [7]

7. REFERENCES

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