

TECHS

Technology Education Challenges in High School

Section 3 - Proposal abstract and justification

Proposal Abstract

The Technology Education Challenges in High School (TECHS) seeks to provide technical education and career opportunity awareness for students with skills in information technology. This program will be unique as the ESU 10 and 11 network information services staff will be the instructional team who will address real-time technology issues that will then be applied by the students in support of their school's technology network.

Proposal Justification

The core indicator for this project is the attainment of challenging academic and vocational skill proficiencies.

During this time of tightening budgets, limited human resources, and increasing reliance on technology in both the educational, business, and personal sectors, the questions schools must ask:

- Are students who are interested in technology offered challenging technical education opportunities?
- Are educational and career opportunities shared with students?
- Are students provided opportunities to demonstrate technology understanding in a controlled environment?
- Are the teachers that support technology training provided with real-time training in an ever-changing technology era?
- Are schools going to be able to provide real-time maintenance on hardware, software, and network operations?

Alan Greenspan, Chairman of the Federal Reserve System, recently commented about the role of K-12 education in providing the skills necessary for our students to compete in a high tech world.. "Many of our students languish at too low a level of skill and the result is an apparent excess of supply [of low-skill workers] relative to a declining demand. These changing balances are most evident in the failure of real wages at the lower

end of our income distribution to rise during the past quarter century.... In short, our secondary school system needs to serve the requirements of a changing economy in the same way that the expansion of high schools with a broad curriculum served us so well in the first half of the twentieth century." Alan Greenspan, Chairman of the Federal Reserve System - February 24, 2004 - Omaha Nebraska.

Need for this proposal

In March 2004, a survey was sent out to local area network (LAN) managers of the 26 schools in the Tri-Valley Distance Education Consortium. The survey was seeking information regarding current information technology offerings and if students played a role in maintenance of the district's hardware, software, and network systems. Sixteen out of 26 schools responded to the survey and the results provide evidence of need for the TECHS proposal. (The survey can be viewed at the following web site - <http://survey.esu10.org/phpesp/public/survey.php?name=tvdec>)

Question 1 - Do students provide troubleshooting for your school's network? Half (50%) of the schools reported that students do help with the support of the school's network. This provides justification that the LAN manager relies on extra help to troubleshoot the network.

Question 2 - When do students provide troubleshooting support? All schools who use students for troubleshooting reported that the students provided the support during their free or work experience periods. As the TECHS training program includes student support tracking, the organizational flow should improve the quality and quantity of technology support at the district level.

Question 3 - Does your school offer a regular class on information technology? Four out of the 16 schools currently offer an advanced technology class. Three of the four address networking and hardware/software maintenance. Thus only 18% of the students have limited training to address troubleshooting or maintenance issues at their school.

Question 4 - What types of training should be included in an advanced technology class? Interest results included printers (16), workstations (14), software (12), virus/spam removal (8), network design (6), and wireless networks (1). All these topics could be addressed as these are real-time issues handled by the ESU 10 technology staff.

Question 5 - What level of interest might your district have in an advanced information technology class? All schools reported that they have some interest in such a class with 11 of the 16 expressing that they had interest or great interest in such an offering.

Addressing the Needs

In order to utilize the expertise of the ESU 10 and 11 instructional team, the TECHS course will be shared over the Tri-Valley Distance Education network. The course will be presented to these schools two days each week. Participating schools will be grouped based upon platform choice.

The tentative plan for curriculum topics include:

First Semester				
	Distance Education Training	Blackboard Training	ODIE Tracking Training	ISafe Training
	Workstation Troubleshooting	Printer Troubleshooting	Software Troubleshooting	Ethics
Second Semester				
	Network Design	Network Troubleshooting	Virus Control	Spam Control
	Wireless Networks	Job Shadowing	Careers and Education	

On non-instructional days, students will be providing support for their district's technology network. The TECHS mentor and ESU 10 helpdesk will provide support for students troubleshooting/maintenance activities.

- Blackboard and email will be used by the TECHS mentor to assign troubleshooting tasks.
- ODIE, an ESU 10 troubleshooting tracking program, will document problems from the time a ticket is created through the completion phase. The ticket process will monitor student activity.
- The ESU 10 helpdesk will be available to assist students as they work through technology problems. The TECHS mentor must give approval before students can use this resource.
- Archived videos of instructional lessons will be available for viewing for students

support in maintenance and troubleshooting.

Funding the project benefits

Funding of this project will provide both students and teachers access to curriculum and resources that are being used in real-time maintenance/troubleshooting. Funds will also allow ESU 10 to archive all lessons so that these resources could be accessed by schools who are not participating in this project and for sustaining the project beyond one year.

Designing the curriculum and accompanying lessons will be completed during the first year, therefore this grant should be sustainable in future years. ESU 10 and 11 are committed to providing support to this program.

Section 4: Proposal Activities

Project Goal

The goal of Technology Education Challenge in High Schools (TECHS) project is to provide professional development for Career and Technical Education instructors that will improve and apply student technical skills for their personal and/or career goals.

The core indicator of performance addressed by the goal is the attainment of challenging academic and vocational skill proficiencies.

Measurement of Success

Impact on Core Indicator - The Technology Education Challenge in High Schools (TECHS) project provides students challenging opportunities as:

1. The curriculum is presented by technical professionals whose work focuses on a specific information technology areas. The series will provide students with current knowledge and hands-on applications needed to be successful in an entry-level information technology support field or preparation for an informational technology degree in higher education.
2. Students will be exposed to real-time applications as they work to support their school's Local Area Network (LAN), troubleshoot hardware and software problems, and improve their interpersonal skills as they work with the TECHS mentor and teachers at their school.
3. Students will be collaborating with the TECHS instructional team, students from other schools, and outside professional resources through the distance education connection.

Evaluation

The following page includes the methods for evaluation for this project. During the summer of 2004, the TECHS instructional team will prepare the pre-assessment activities and lesson plans. The course management program Blackboard will host assessment and lesson plan information. The results of this project will be shared with interested organizations at local and regional meetings and conferences and in the final report.

Explanation of activities and strategies based on the objectives of the project:

The TECHS project will begin in July 2004 and go through June of 2005. The following activities will support the objectives of the project:

Objective 1 - To increase the TECHS team understanding of information technology and how it applies to personal and career goals.

Activity 1 (June - July 2004) - The TECHS instructional team which includes the grant director, ESU 10 and 11 technology trainers, and ESU 10 and 11 technology training team will:

- plan the curriculum, instructional timeline, instructional materials and equipment, and the responsibilities of the instructional team for the course.
- review the TECHS applications submitted by schools interested in participating in the program. (Note - The grant proposal will be shared with principals at the April, 2004 meeting of the Tri-Valley Distance Education Consortium (TVDEC). If this grant is approved, application materials will immediately be sent out to TVDEC member schools.) Due to instructors time availability, this class can only be taught four days each week. This limits the number of live remote connections to six schools. Course materials will be designed for a class of five students and one mentor.

Activity 2 (August 2004) - The TECHS instructional team will present an overview of the project to technology instructors from participating schools. The instructional team will:

- discuss the curriculum for the TECHS course
- present the instructional timeline for the 2004-05 terms
- distribute instructional materials and equipment
- provide distance education technology training

The distance education training module will be introduced through the Blackboard course management program. During the first weeks of the course, students will use this module as an introduction to distance education and Blackboard.

Activity 3 - (August 2004-May 2005) - The TECHS course will be presented to participating schools over the Tri-Valley Distance Education Network. Each school will receive a portable distance education system which will allow for mobility in location and