Chapter 4.5
Online Calculator Training in Mathematics and Technology

William Brescia
University of Arkansas, USA

Tammy Cline
University of Arkansas, USA

EXECUTIVE SUMMARY

This is the case of three institutions attempting to identify and address a need for professional development training for high school algebra teachers. Teachers across the state were facing two problems: (1) a need for training on how to successfully integrate the graphing calculator into the math curriculum and (2) training was not available that would fit into a teacher's schedule. Teachers rarely had time to attend the instruction necessary to integrate new technology into the curricula being offered at remote sites. With Web-based training, teachers should be able to complete the training at their own pace and convenience. Online Calculator Training in Mathematics and Technology would demonstrate the effective use of online training to teach the basics of graphing calculators and the integration of graphing calculators into the math curriculum.

ORGANIZATION BACKGROUND

Organization 1: Center for Science, Mathematics, and Technology Education (CSMTE) at Humongous State University (HSU)

The mission of the Center for Science, Mathematics, and Technology Education (CSMTE) has always been to advance science, mathematics, and technology education in the state through the support of the best practices and delivery of programs that enhance the scientific, mathematical, and technology knowledge and skills of the state's teachers and students.

CSMTE offers support, training materials, and resources at no charge to K-12 faculty and students as well as training and professional development for anyone in the region who is interested in science, mathematics, and technology excellence in public schools. CSMTE is staffed by a director;

two secondary and three elementary specialists each in science, mathematics, and technology education; two administrative assistants; and a receptionist. The staff provides assistance in science, mathematics, and technology training whenever and wherever it is needed throughout the state. Additional information is available at the CSMTE Web site. The CMSTE annual budget for new program development plus a budget for consultant costs is found in Appendix A.

CSMTE has an advisory board made up of representatives from the faculty at each of the school districts in the service area; an equal number of executives from area businesses interested in science, mathematics, and technology; two members appointed by the governor; parents and students; and one representative from the National Association of Curriculum Designers.

The Center provides names of qualified faculty who are willing to consult with other schools on how to improve their science, mathematics, and technology programs. CSMTE also has a classroom laboratory, where teachers and students can observe new instructional techniques and receive individual training. With assistance from the requesting school, the Center sends specialists to remote locations to provide training. In these cases, it is usually necessary to bring together science, mathematics, and technology teachers from nearby schools. CSMTE also provides digital images to anyone in the service area who requests them via the Center's Web site. The Center makes a special effort to provide services to underserved communities and takes seriously the inclusion of everyone who supports the mission of the Center in any of the offered services.

The Center actively seeks support from funding agencies both locally and nationally. Currently, the Center is receiving funding from 13 local businesses, eight foundations, and four federal grants. These agencies support special after-school, preschool, bilingual, and special-education programs in science, mathematics, and technology.

While the Center makes available a number of ready-to-use materials and established workshops, it is always open to working with teachers to develop new materials or workshops that address emerging issues in science, mathematics, and technology (Preparing People for Prosperity, 2003).

Organization 2: Computer Education Department (CED) at HSU

The Computer Education Department's mission is to meet the diverse needs of communities throughout the state. CED offers distance, blended, and traditional courses at various sites throughout the state and with a variety of delivery methods. Courses are designed to promote interactivity and to support student learning to allow the state's residents to pursue excellence in education at all levels. Web-based courses are available to students whenever and wherever they have access to the Internet.

CED is headed by the dean, Francis McCloud. She has served as dean since the creation of CED 17 years ago. As dean, she has shepherded the department from a three-person operation to a multi-service agency. There are currently three divisions — Distance Education, Commerce and Industry, and Conferences — each of which is headed by an associate dean. The largest division is Distance Education, employing four full-time instructional designers, two media specialists, a faculty liaison specialist, an administrative assistant, and a secretary. Colleges, departments, and programs wishing to offer distance-learning courses are assisted by the staff to make sure the courses they offer are designed using effective learning principles.

CED also offers a number of non-credit courses, all Web-based. These courses include continuing legal education, training in food

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