Enhancement of Science and Technology Infrastructure  
Faculty Development, and Curriculum at Shaw University

A Final Performance Report

The two (2) primary objectives of the proposal “Enhancement of Science and Technology Infrastructure, Faculty Development, and Curriculum at Shaw University” were 1) to enhance science and technology infrastructure, faculty development, and curriculum by integrating technology throughout science education programs of study, and 2) to increase faculty and students’ knowledge of and skills in modern technologies that are designed to enhance the effectiveness of teaching and learning through education, research and communications.

These two primary objectives have been accomplished through the types of activities summarized below.

Installation and Operation of a Technology-Ready Classroom

Equipment purchased for the technology-ready classroom has been installed. These include cameras, visual presenter, monitors, receivers in addition to furniture, microphones, erasable board, and podium.

Equipment and furniture purchased for the control room has been installed. These include audio/video control desk with rack bays for rack mounting, desktop, audio/video routing switcher, audiomixer, editing player/ recorder, audio cassette recorder, scan converter, tone generator, vectorscope, status monitors, color monitor, and powered speakers. Additional equipment include the switcher/character generator. Final installation and testing of all equipment was completed on July 6, 1998. The technology-ready classroom and all supportive materials were installed by the Whitlock Group.

Upgrading CIS 200 Introduction to Computers

The course CIS 200 Introduction to Computers has been upgraded and students enrolled in this course are experiencing more practical use of the internet, e-mail, and other emerging technologies.
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Upgrading all science laboratory courses to include integration of science and technology through installation of computers

All science laboratories of biology, chemistry, environmental science, and physics that are located in Roberts Science Building have one or more computers with instructional software relative to concepts in the specific disciplines. These computers are available for students' use in supplementing theory and laboratory subject matter. Currently, there are additional software packages being purchased by Shaw University to increase the types of computer-assisted aids in science education.

Faculty Development

Eight (8) different faculty attended workshops, seminars, or conferences related to technology applicable to the sciences. Six (6) different types of technology development activities were attended by faculty. These activities include those in mathematics, computer science, physics in addition to the use of the internet, special instructional software training and communications with technology beyond 2000. These faculty development activities were held in Chapel Hill and Raleigh, NC; Atlanta, GA; Baltimore, MD; Boston, MA; and Kansas City, MO.

Invaluable information was gained from faculty attendance and participation in these specific workshops. Some faculty attending workshops. Have also provided practical exercises to faculty who did not attend the workshops.

Undergraduate Research

Three (3) of Shaw University science majors, Marva Jones, Invanette Richardson, and Tiana Woode completed internship experiences with the Environmental Sciences Division at Oak Ridge National Laboratory from June 7, 1997 – August 15, 1997. These students completed projects involving several types of surveys including waterfowl, herp/mammal, dead fish, and fish population. In brief, the waterfowl survey consisted of determining the radiation level in Canada Geese. In the herp/mammal survey, a population count was completed to determine what and how species were endangered.

The dead fish survey was designed to evaluate the travel time and distribution pattern of dying fish. The population survey provided qualitative information on fish in a specific creek locale at Y-12.

In addition to these various surveys, the students completed comprehensive research to prepare a brochure on the Oak Ridge Reservation with information regarding its origin, development, and current activities.
Outcome of Implementing Proposal

Shaw University students and faculty in particular within the Department of Natural and Physical Sciences have experienced many benefits through the implementation of this proposal.

Undergraduate science education can be seen to involve more technology-based instruction. With this technology-based instruction the depth of students' learning has been promoted to the extent that the active involvement of students has facilitated their curiosity and critical thinking skills.

Faculty are more advanced with their knowledge of technology. Their "comfort level" in articulating information about technology and working with technology materials has greatly improved.

Ultimately, the completion operation of the technology ready classroom will move Shaw University faculty into a more effective and efficient system of delivering science education to its students. Indeed, expansion of curriculum and expansion by distance will be an ultimate outcome of the technology-ready classroom.

The capacity of distance learning through telecourses, teleconferences will promote Shaw University quality of education.

Implementing this proposal has in fact enabled Shaw University to increase its effort in advancing emerging technology across its entire curriculum of study.