Technology Bridges for Student Achievement in Agricultural Education

John Ricketts
Jason Peake
Brian Parr
Dennis Duncan
John Wiggins
Kellie Thompson
University of Georgia

Introduction

Technology education can elevate current discipline-specific technologies to the status of a "technology bridge"; connecting sound pedagogical skills and key content. Many states have instituted a mandate requiring students to complete coursework in instructional technology. Instead of seeing this required technology education requirement as a tool to enrich our teaching methodology toolbox, many program providers and instructional technology students see this as a necessary evil or just another computer class.

How it Works

For Agricultural Education majors at the University of Georgia the required instructional technology credit is much more than a computer class. The state-mandated instructional technology course, referred to as *Technology Bridges*, has shown to be effective in providing a quality educational experience. The students enrolled in this course have exhibited much excitement concerning the content and process of the course. This excitement stems from the relevant nature of the course where students are being introduced to specific agriculture technologies used in industry today.

The course is offered in conjunction with the student teaching experience during the final Spring semester of the pre-service teachers' teacher education program. Students meet all day for six days throughout the semester. The idea is to introduce students to relevant technologies, develop lesson plans, implement the technologies, and to reflect as a cohort on their usefulness. The course is held in conjunction with student teaching for the purpose of having real-world practice with the equipment. The following is a list of technologies that students are challenged to incorporate during the student teaching experience with the help of the *Technology Bridges* course: (1) laptop computer with AgEd-related software, (2) LCD projector, (3) classroom response systems, (4) ELMO visual presenter, (5) wireless slate, (6) laser range finder, (7) digital camera, (8) graphing calculators and sensor probes (i.e. light, turbidity, pH, dissolved O^2), (9) handheld GPS mapping devices.

Implications

The *Technology Bridges* course is a unique opportunity for pre-service teachers during their student-teaching semester. It provides resources and support that enable them to incorporate technology into the teaching and learning process. Students 1) participate in technology connected activities that model a variety of methods and technology management strategies; 2) develop and implement appropriate learner-centered technology lesson plans and activities; 3) continuously analyze and reflect on how technology can improve the teaching and learning process; and 4) develop a collegial support network with other pre-service teachers.

This course is designed to meet state technology standards for educators as mandated by the state Professional Standards Commission (Georgia Professional Standards Commission, 2006). However, the long-term implications are far more important than meeting a set of standards. Agricultural Education teachers who are willing to support and incorporate student-centered, relevant technology will be more successful in helping students achieve in their program (Khalili & Shashoani,1994; Moore & Kearsley, 1996; Bialo & Sivin-Kachala 1999).

While the target audience for this course is Georgia pre-service agriculture teachers, another audience was serendipitously discovered. This course has provided a way to reach out to practicing agriculture teachers and to increase their knowledge level and integration of technology. Pre-service agriculture teachers enrolled in this course have developed into effective change agents for their corresponding supervising teachers; effectively creating an exponential effect in terms of educating [state] agriculture teachers on emerging educational technologies.

Future Plans/Advice to Others

It is the intent of the Agricultural Education faculty at the University of Georgia to continue offering the *Technology Bridges* course. Each year, at the conclusion of the course, students complete evaluation instruments to determine their perceptions concerning the usefulness of various aspects of the course. This course is effective partially because the instructors of the *Technology Bridges* course and the Agricultural Education faculty have made adjustments and changes each year that are relevant and seek to meet the needs of participants in the course. It has also been found that meeting with supervising teachers prior to the student teaching experience is helpful. The supervising teachers become excited about the opportunity to use the technology in their classroom, and they are also helpful in determining technology needs for students in their particular situation.

Costs/Resources Needed

The majority of the costs for the program are incurred by the Instructional Technology Department and partially offset through grant monies. The cost to students is minimal; in addition to the normal cost of a three hour course at the university, there is a $75.00 materials fee for the course.

References

Bialo, E. R. & Sivin-Kachala, J. (1999). The effectiveness of technology in schools: A summary of recent research. Retrieved April 4, 2003, from http://www.ala.org/aasl/SLMR/slmr_resources/select_ bialo.html.

Georgia Professional Standards Commission. (2006). Computer Skill Competency Assessment. Retrieved on November 4, 2006, from http://www.gapsc.com/TeacherCertification/TestReminders.asp

Khalili, A., & Shashoani, L. (1994). The effectiveness of computer applications: A meta-analysis. *Journal of Research on Computing in Education, 27*(1), 48-61.

Moore, M. G., & Kearsley, G. (1996). *Distance education: A systems view.* Belmount, CA: Wadsworth Publishing Company.