What Do Our Students Really Know? A Workshop in Informed Design & Action Research

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Accountability: The National Science Foundation and accreditation organizations are demanding it. Technology educators are being called upon to conduct classroom research that demonstrates the impact of technological education on their students’ learning. The premise is that the integration of mathematics, science and technology creates an environment for students to effectively learn the mathematical and scientific concepts in the context of real-world, contemporary technical problem solving activities. But how can we prove it?

This workshop, led by educators from the National Science Foundation funded New York State Professional Development Collaborative (NYSPDC), is designed to introduce two-person teams of high school and college technology educators to methodologies for conducting action research* in their classrooms. The workshop will first give participants a chance to experience informed design in the context of an engineering design challenge: design, construct & test a dehydrator that dries fruit in as short a time as possible while maintaining the quality of the foodstuff. Participants will be provided with guidance and with a step-by-step approach to conducting classroom research that gets at the question, “Are my students truly learning/understanding the mathematical and scientific concepts that will help them be savvy engineering/technology problem solvers?” They will then apply these strategies to develop their own action research projects based on prior work they have done with their students.

Participants will experience hands-on activities in the workshop. They will gain the knowledge and skills to incorporate informed design and action research in their classrooms. Workshop facilitators have conducted extensive action research in their classrooms as a part of the NSF NYSPDC Project and are prepared to disseminate their findings and share strategies for implementing action research in high school and college classrooms.

• Workshop: Six hours in length, limited to 20 participants (10 two-person teams of college engineering technology faculty and high school technology teachers). This is a pre-conference workshop, sponsored by the American Society for Engineering Education (ASEE) and the ASEE Engineering Technology Division.

• Date/location: Sunday, June 18, 2006. Chicago IL, Hyatt Regency Chicago-Riverside Center.

• Participants will receive up to $1100 per person to help cover travel, lodging and registration for the 2006 American Society for Engineering Education (ASEE) Conference in Chicago June 19-21.

• Teams (comprised of one high school technology teacher & one college faculty member) must submit a workshop application (application will be available on NYSPDC’s website, www.hofstra.edu/nyspdc). Selection of participating teams will be competitive and will be based on application responses.

• For more information about NYSPDC, we encourage you to visit www.hofstra.edu/nyspdc; or contact Peggie Weeks at peggie.weeks@adelphia.net.

*Action Research in education is study conducted by colleagues in a school setting of the results of their activities to improve instruction.
—Carl Glickman (1992)
Action Research is a fancy way of saying let’s study what’s happening at our school and decide how to make it a better place.
—Emily Calhoun (1994)