It is through practical, meaningful research and dialogue that technology education will further position itself in the mainstream of education.

**Action Research Defined**

Stephen Corey (1953) described action research as a process for practitioners to study and solve their own problems. A more formal definition and explanation of action research is:

A continual disciplined inquiry conducted to inform and improve our practice as educators. Action research asks educators to study their practice and its context, explore the research base for ideas, compare what they find to their current practice, participate in training to support needed changes, and study the effects on themselves, their students, and colleagues (Calhoun, 2002, p.18).

Regardless of the definition of action research you find, use, or implement, the key principles of action research involve strategies to improve teaching and learning. Sagor (2000) suggested that teachers should engage in action research to: (1) build the reflective practitioner; (2) make progress on school-wide priorities; and (3) build professional cultures (p. 7). Simply put, action research is a formal process of improvement, which requires discovering, analyzing, interpreting, and acting upon what is happening in the classroom and school.
Steps in Action Research

Like any type of research, there are general steps, procedures, or processes that one should follow. Johnson, 2002; McNiff, 2002; Quigley, 1997; and Sagor, 2000 all list their specific “plan of attack”; however, each author or plan has the same basic features in principle. McNiff outlined the following process for action research: (1) review your current practice; (2) identify an aspect you want to improve; (3) imagine a way forward; (4) try it out; (5) take stock in what happens; (6) modify your plan based on what you discovered; (7) evaluate your action; and (8) keep evaluating and changing your action until you are satisfied. Johnson’s process is characterized by the following: (1) identifying a problem or research topic; (2) setting the problem or research topic in a theoretical context; (3) making a plan for data collection; (4) beginning to collect and analyze data; (5) if necessary, allowing the question or problem to change as you collect data; (6) analyzing and organizing the data; (7) reporting the idea; (8) making your conclusions and recommendations; and (9) creating a plan of action.

In an attempt to make a working process of action research, Delong (1996) presented a list of sequenced questions for classroom teachers to ask and answer, which may provide a framework for a particular action research project: (1) What is the problem? (2) What are some possible solutions? (3) What is the possible solution I want to investigate? (4) How do I make the solution work? (5) How do I record data and reflect on it? (6) How do I share my experiences with others? and (7) What is next?

Regardless of which expert model or process you embark on, action research will help you address a “burning problem or issue” that you want to investigate. Often, however, the burning problems solved by teachers are rarely reported. While action research is targeted to help you frame and act on a specific situation in your classroom, school, or community, sharing results with all technology education teachers would be beneficial. Odds are that another technology teacher has experienced, or is experiencing, the same type of problem, and your solution may help frame their action research or, even better, solve their problem.

References


Technology Education Example

Wallace Shilkus, a middle school technology education teacher in Illinois, recently published a chapter in an action research text that dealt with the teaching and learning in his classroom/laboratory. Shilkus wanted to know how relevant technology education was to middle school students; whether his methods of instruction made a difference in the classroom; and whether Gardner’s multiple intelligences had a role to play in the classroom. Shilkus posed the following question to himself: “How could my action research help me document my teaching methods and the benefits my students gain?” (2001, p. 144). Using CO2 cars as the activity and Gardner’s multiple intelligences as the theory, Shilkus discovered that his students used and were engaged in demonstrating most of the “intelligences.” Throughout this process, Shilkus noticed differences in himself as the teacher and his students as the learners. Moreover, Shilkus discovered that by presenting the material and requirements of the CO2 car activity in different forms, the students excelled. Wallace Shilkus’ experience is just one example of how action research can have an effect on teaching and learning, and is practical in nature.

Conclusion

Teachers engaging in action research will become more aware of the educational process, options, and possibilities for not only the classroom, but for the entire school. Johnson (1993) noted that teachers embarking on action research improve their understanding, methodology, and approach to the teaching process. Like any potential change agent, teachers doing action research will probably encounter barriers. Having time in the day, working with others, gaining support from administrators, and securing funding are all obstacles that will have to be addressed. However, all good teachers, who promote change in their professional development career, experience one or more barriers. Action research at the pre-service or practitioner levels is a logical step in helping solve topics or problems that need to be researched in technology education. It is through practical, meaningful research and dialogue that technology education will further position itself in the mainstream of education. So, what will you begin to research today?


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This is a refereed article.

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**Silent Auction Winners - Albuquerque - 2004**

**Evan Biddulph**, Brigham Young University, Provo, UT

**Penn State Industries**, handmade pen and case

**Laura Hummell**, Manteo Middle School, Manteo, NC

**Goodheart-Willcox Publisher**, technology teacher support kit

**Robin Kessler**, New Town High School, Baltimore, MD

**Nida Corporation**, electronic calendar/calculator and Nida sweatshirt

**Tony Korwin**, Alamogordo Public Schools, Alamogordo, NM


**Matt Sabini**, Epsilon, Minnetonka, MN

**Lovegreen Risk Management**, motor control for machinery

**Sid Rader**, Princess Anne High School, Virginia Beach, VA

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**Chris Smith**, Conestoga Valley, Lancaster, PA

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