

Current Research Projects in Technology Education - 2005

Council on Technology Teacher Education (CTTE) Research Committee

Researcher(s): Phillip L. Cardon & Ray Davis

Title: Recruitment through an on-line database of technology education graduate programs.

Start: July 1, 2002

End: On-going

Project Description: To develop an on-line database of technology education graduate programs for the distinct purpose of recruitment.

Funding/Grant Source:

Institution(s) or Organization(s): Eastern Michigan University
14 Sill Hall, Ypsilanti, MI 48197
Telephone: 734-487-4330

Researcher(s): Aaron Clark

Title: VisTE: Visualization in Technology Education, Supplemental Extension.

Start: 2005

End: 2006

Project Description: This project is to continue the VisTE project in areas of improving materials, conducting more research in visualization, and provide workshops for teachers.

Funding/Grant Source: NSF (\$184,481.00)

Institution(s) or Organization(s): NC State University
Dept. of Mathematics, Science, and Technology Education
Box 7801
Raleigh, NC_27695-7801
919-515-1771

Researcher(s): Aaron Clark

Title: Development of Master's and Online Certificate Programs in STEM Community College Teaching.

Start: 2003

End: 2006

Project Description: This project meets the needs of community college faculty and their students by providing knowledge and skills in teaching and learning to community college STEM faculty for on-line, distance delivery of instruction. A prototype program for professional development of the STEM teaching faculty will be developed and extends the initial success of previously developed certificate programs and adapts them for instructional improvement. The project combines the resources of adult and community college education and technology education to provide a unique learning experience for community college STEM faculty.

Funding/Grant Source: NSF (\$919,486.00)

Institution(s) or Organization(s): NC State University
Dept. of Mathematics, Science, and Technology Education
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Raleigh, NC_27695-7801
919-515-1771

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Researcher(s): Aaron Clark

Title: VisTE: Visualization in Technology Education

Start: 2002

End: 2005

Project Description: This grant creates visual-based materials that help students develop visual literacy, and at the same time, enhance their understanding of technology and science. The project includes the development of 12 units of instruction with activities within each unit that are standards-based. These materials are reviewed, piloted in public schools, and evaluated by experts in fields related to industry, technology, science, and education.

Funding/Grant Source: NSF (\$923,645.00)

Institution(s) or Organization(s): NC State University

Dept. of Mathematics, Science, and Technology Education
Box 7801
Raleigh, NC_27695-7801
919-515-1771

Researcher(s): Rodney L. Custer, Michael K. Daugherty, and Rick Satchwell

Title: Project ProBASE

Start: 2002

End: 2005

Project Description: Project ProBASE is a NSF funded, standards-based curriculum development project designed to develop 8 units of instruction for 11th-12th grade technology education. The materials are grounded in a set of essential understandings, which have been developed based on the Standards for Technological Literacy. Units are being developed for each of the seven context standards.

Funding/Grant Source: NSF (\$750,00.00)

Institution(s) or Organization(s): Illinois State University

211A Turner Hall
Normal, IL 61790-5100
(309) 438-3661

Researcher(s): Michael K. Daugherty

Title: The Connections: High Schools That Work Project

Start: 2004

End: 2005

Project Description: This is the Illinois/SREB teacher professional development and educational reform project.

Funding/Grant Source: Illinois State Board of Education (\$250,000.00)

Institution(s) or Organization(s): Illinois State University

211A Turner Hall
Normal, IL 61790-5100
(309) 438-3661

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Researcher(s): Michael K. Daugherty

Title: The Futures in Technology and Science (FITS) Project.

Start: 2004

End: 2005

Project Description: This is a pilot-project designed to investigate methods of promoting the study of science and technology among elementary/middle-level students.

Funding/Grant Source: University Council for Career and Technical Education (\$5,000.00).

Institution(s) or Organization(s): Illinois State University
211A Turner Hall
Normal, IL 61790-5100
(309) 438-3661

Researcher(s) and/or Contacts: Michael Hacker and David Burghardt

Project title: MSTP - The Mathematics, Science and Technology Partnership: Math across the Middle School Curriculum

Start: September 1, 2003

End: August 31, 2008

Project description: MSTP is a targeted math/science partnership (MSP) focused on improving mathematics understanding in ten high-need middle schools. MSTP is funded at \$11.6m over five years, and is distinctive because mathematics, science, and technology teachers are full partners. Therefore students revisit important mathematics ideas in three different contexts. See WWW.HOFSTRA.EDU/MSTP

Funding/grant source: NSF (\$11.6m over five years)

Institution(s) and/or organization(s): 113 Hofstra University
243 Gallon Wing
Hempstead, NY 11549-1130

Researcher(s) and/or Contacts: Hansen, J.W.

Project title: Professional Development for Technology Education

Start: January 2005

End: May 2006

Project description:

Funding/grant source: Texas Education Agency (\$65,000)

Institution(s) and/or organization(s): University of Houston
College of Technology
312 Technology Building
Houston, TX 77204-4021

Researcher(s) and/or Contacts: Hansen, J.W.

Project title: Educational Excellence for Technology Education

Start: January 2005

End: May 2006

Project description:

Funding/grant source: Texas Education Agency (\$325,000)

Institution(s) and/or organization(s): University of Houston
College of Technology
312 Technology Building
Houston, TX 77204-4021

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Researcher(s) and/or Contacts: Hansen, J.W.

Project title: Project Lead The Way

Start: September 2004

End: August 2005

Project description:

Funding/grant source: Texas Education Agency (\$200,000)

Institution(s) and/or organization(s): University of Houston
College of Technology
312 Technology Building
Houston, TX 77204-4021

Researcher(s) and/or Contacts: William L. Havice & Pamela A. Havice

Project title: Enhancing Student Digital Portfolios: Rich Media Presentations

Start: July 2004

End: December 2005

Project description: Digital portfolios are an effective tool to use in education. This project utilizes rich media (streaming video) to enhance digital portfolios. The different portfolios developed provided a means for students and professionals to creatively showcase their skills through a dynamic and effective means.

Funding/grant source: SonicFoundry - MediaSite

Institution(s) and/or organization(s): 534 Edwards Hall
Clemson University
Clemson, SC 29634

Researcher(s) and/or Contacts: Chih-Chien (Steven) Lai

Project title: A Study on Technology Teachers' Sense of Efficacy in Taiwan

Start: September 2004

End: March 2005

Project description: After the new grade 1- 9 curriculum implementing in Taiwan, technology teachers in junior high schools have met a great change for learning field merged. The study investigated the in-service technology teachers those teach in junior high schools in Taiwan, to inquire their senses of instructional efficacy.

Funding/grant source:

Institution(s) and/or organization(s): Department of Industrial Technology Education
National Taiwan Normal University
162 Ho-ping East Road
Taipei City 10612
Taiwan, Republic of China

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Researcher(s) and/or Contacts: H. Middleton, M. Hoepfl, B Walmsley, & J. Stevenson

Project title: Using cognitive holding power concepts and activity theory to develop student thinking in technology education

Start: 2002

End: 2005

Project description: This project involves the administration of the Cognitive Holding Power Questionnaire (CHPQ) with technology education students and the development of interventions to improve higher-order thinking. Videotaping of technology education classes is used to provide qualitative data that can be interpreted using activity theory. The CHPQ measures the “press” exerted by any learning environment on students to engage in particular kinds of thinking.

Funding/grant source: Technical Foundation of America and Australian Research Council (\$70,200)

Institution(s) and/or organization(s): Centre for Learning Research
Griffith University
Nathan, Queensland, 4111
Australia

Researcher(s) and/or Contacts: H. Middleton, R. Barnes, & J. Stevenson

Project title: The development of creative thinking abilities in Technical and Further Education (TAFE) design students

Start: 2003

End: 2006

Project description: This study involves the mapping of the processes used by TAFE design students and the development of an intervention employing contextualised imagery training to improve the creative thinking abilities of students. One output will be an improved program that TAFE design teachers can use with their classes.

Funding/grant source: Yeronga Institute of Technical Further Education and Australian Research Council (\$67,200)

Institution(s) and/or organization(s): Centre for Learning Research
Griffith University
Nathan, Queensland, 4111
Australia

Researcher(s) and/or Contacts: H. Middleton, M. Pavlova, I. Chester, G. Finger, & R. Jamieson-Proctor

Project title: Developing sustainable communities in a technological world

Start: 2004

End: 2005

Project description: This project is examining the perceptions, thoughts and decision-making processes of the residents of a designated community called Varsity Lakes, on the Gold Coast of Queensland, concerning the range of technologies encountered in this recently created suburb. The second stage of the project is to analyse the implication of the findings for technology education

Funding/grant source: Centre for Learning Research (\$16,000)

Institution(s) and/or organization(s): Centre for Learning Research
Griffith University
Nathan, Queensland, 4111
Australia

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Researcher(s) and/or Contacts: H. Middleton, M. Pavlova, & G. Finger

Project title: Researching school change in technology education

Start: January 2004

End: December 2004

Project description: The project examined the progress of the implementation of the new technology syllabus in three designated “Innovator Schools”, using a case study methodology. The schools included a rural middle school, a rural high school and an urban high school.

Funding/grant source: Education Queensland (\$12,000)

Institution(s) and/or organization(s): Centre for Learning Research
Griffith University
Nathan, Queensland, 4111
Australia

Researcher(s) and/or Contacts: Richard Peterson, John Penick, Sarah Berenson, Rosanne White, Tom Shown, Victoria Deaton, Mellissa Morrow, Donovan Bowers, and George Willcox

Project title: TECH know: Integrated Instructional Materials for Technological Literacy

Start: August, 2001

End: July, 2005

Project description: The purpose of the TECHknow Project is to create twenty instructional units for middle and high school teachers. The units are based upon selected Technology Student Association competitive events and correlated with the *Standards for Technological Literacy*, *National Science Education Standards*, and *Principles and Standards for School Mathematics*.

Funding/grant source: National Science Foundation

Institution(s) and/or organization(s): North Carolina State University
Box 7801
Raleigh, NC 27695-7801

Researcher(s) and/or Contacts: Philip A. Reed

Project title: The Technology Education Graduate Research Database (TEGRD)

Start: 2000

End: On-going

Project description: The TEGRD highlights the history of research within technology education, provides a springboard for researchers, and helps scholars build upon past research and create diverse new research. The TEGRD is available in two forms. The first format is a monograph containing theses and dissertations from 1892-2000 that may be downloaded and printed. The second format is designed as an online, searchable database. Both formats are available on the CTTE website (<http://www.teched.vt.edu/CTTE/>) under the *Monographs* link.

Funding/grant source:

Institution(s) and/or organization(s): Old Dominion University
Department of Occupational & Technical Studies
228 Education Building
Norfolk, VA 23529

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Researcher(s) and/or Contacts: John M. Ritz and Philip A. Reed

Project title: Re-establishing Goals for Technology Education

Start: May, 2004

End: May, 2005

Project description: A Delphi study to redesign goals for technology education, K-12. The Delphi panel was composed of the boards of ITEA, CTTE, CS, TECA, and, TECC. The third round of the study is verifying the need for the 12 goals identified through the study.

Funding/grant source: Old Dominion University

Institution(s) and/or organization(s): Old Dominion University
Department of Occupational & Technical Studies
228 Education Building
Norfolk, VA 23529

Researcher(s) and/or Contacts: Mark Sanders

Project title: Bridges for Engineering Education: Virginia Tech

Start: September, 2003

End: August, 2005

Project description: Bridges for Engineering Education: Virginia Tech is designed to bring engineering and education faculty at Virginia Tech together to: 1) Increase K-12 engineering content via: the development of a new Technology Education masters/licensure program for engineering graduates at Virginia Tech; and the establishment of the "Virginia Engineering / Education Collaborative;" and 2) Develop a framework for improving engineering pedagogy at Virginia Tech.

Funding/grant source: National Science Foundation

Institution(s) and/or organization(s): Virginia Tech
300B War Memorial Hall
Blacksburg, VA 24061-0313

Researcher(s) and/or Contacts: Mark Sanders

Project title: Graphic Communication Electronic Publishing Project (GRAPHIC COMM CENTRAL)

Start: March, 1997

End: On-going

Project description: With continuous funding since 1997, the GRAPHIC COMM CENTRAL Project (<http://TechEd.vt.edu/GCC/>) continues to be the Web portal for Communication Technology educators and students. The site hosts/links to *more than 4,000 educational resources*, receives nearly 2 million electronic accesses/year, and continues to operate the GCC Listserv, to which the most active communication technology educators in the world subscribe.

Funding/grant source: Graphic Arts Education and Research Foundation (GAERF)

Institution(s) and/or organization(s): Virginia Tech
300B War Memorial Hall
Blacksburg, VA 24061-0313

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Researcher(s) and/or Contacts: Kenneth Volk

Project title: Pupil's Attitudes Toward Technology (Gender)

Start: 2002

End: On-going

Project description: Replication of a previous study by the same researcher. The major outcome of this research was to force the Education Department to have girls take Design & Technology and that boys take Home Economics. In the past, they did not. Now, with girls in some schools completing Secondary 3 D& T, I am examining to see the difference between the "haves and have-nots". Approximately 4,000 surveyed, with surveys being returned now.

Funding/grant source:

Institution(s) and/or organization(s): Hong Kong Institute of Education

Researcher(s) and/or Contacts: Kenneth Volk

Project title: Pupil's Attitudes Toward Technology (Academic Banding)

Start: 2002

End: On-going

Project description: Using the data set from the above study, the researcher will examine the differences according to the academic band students are in. In Hong Kong, students are grouped into three bands of secondary schools, according to tests they take in 6th grade. This research may have implications as to how D & T is taught in such schools. Also the negative effects of "labeling".

Funding/grant source:

Institution(s) and/or organization(s): Hong Kong Institute of Education

Researcher(s) and/or Contacts: Karen Zuga & Theodore Lewis

Project title: Technology Teacher In-Service Education

Start: September 2002

End: 2005

Project description: The goal is to create a conceptual framework for technology education as defined by the new standards and to create a content outline for agricultural and medical technologies. This information is to be distributed to the field via web pages operated by NAITTE.

Funding/grant source: National Science Foundation

Institution(s) and/or organization(s): The Ohio State University
1100 Kinnear
Columbus, OH 43212
