September 2011   Research and Innovation in Learning

Research Update
Center for Technology in Learning

Preparing Preservice Teachers via a Mathematics Dynabook

As digital textbooks become commonplace, can teaching and learning improve?

Dynabook's Graphic Table of Contents

Classrooms of preservice teachers at San Francisco State and San Diego State Universities are getting a unique opportunity to explore the intersection of mathematics content, pedagogy, and technology through SRI International's Dynabook project. Inspired by the pioneering vision of Alan Kay and the possibilities of today's social media and interactive book technologies, Dynabook is investigating the co-emergence of new forms of mathematics literacy and new digital resources for supporting mathematics teaching and learning. In one signature activity, teachers compare and contrast digitally enacted "scripts" they have written for engaging a student struggling with ratio, identifying ways to address common core process standards. By comparing scripts, teachers rethink their own sense of ratio, how dialogue can engage students making sense of ratio, and how interactive tools and representation can support diverse learners. Now in its third project year, the Dynabook team is building a broader network of teacher educators to work with. If you would like to join this network, please contact: **mphillips@inverness-research.org.**
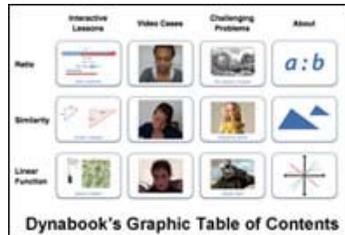
SRI Assists with the Development of a Federal Learning Registry

The Learning Registry makes digital learning resources easier to find, easier to access and easier to integrate into learning environments.

THE **LEARNING REGISTRY**

SRI is participating in the development of the Learning Registry, an informal collaboration among several federal agencies that share the same goal: making digital learning resources and primary source materials easier to find, access and integrate into educational environments. Working with the the U.S. Department of Education's Office of Educational Technology and the DoD's Advanced Distributed Learning Initiative, in addition to other contributors, we're collaborating on the development of a simple and inexpensive system for distributing information about learning resources and their uses.

The Learning Registry concept is based on a social model of sharing and interaction among users. The Learning Registry will alleviate the problem of disparate standards for describing resources by changing the business model for suppliers from hand-curation of descriptive data (the "library model") to tapping data streams from social networks and learning management systems (among others) to locate and identify resources (the "recommender model"). The Learning Registry will make resources easily available, share information about their usage and enable filtering to help users find their most relevant content. **Learn more.**

Read about Barbara Means' Research on STEM Schools in the *Ed Week* article "New STEM Schools Target Underrepresented Groups"

Barbara Means, SRI's Co-Director for the Center of Technology in

Stay Connected

Upcoming Events

Wonder Dialogue: "Developing the Scientists of Tomorrow" November 2, evening

As part of the NSF-supported **San Francisco Bay Area Science Festival**, on November 2 SRI will host one of several "Wonder Dialogues" for the public. Barbara Means Ph.D., director of SRI's Center for Technology in Learning, and UCSF Prof. Bruce Alberts, editor-in-chief of *Science* and past president of the National Academy of Sciences, will discuss what it takes to nurture today's students to become tomorrow's scientists. NPR Tech Nation host Moira Gunn will moderate the discussion. Contact **basf@sri.com** for more information.

Cyberlearning Summit January 18, 2012

CTL and the Lawrence Hall of Science are organizing a **Cyberlearning Summit**, with a format inspired by the TED series of talks, to share visions of cyberlearning across research communities and with policy makers. This summit, sponsored by the National Science Foundation, will occur on January 18, 2012 in Washington, DC. (Please note the new date.) Vision, strategy, and challenges for cyberlearning will also be captured in a community wiki. For more information on how to become a speaker, attend, or participate in the conference and wiki, please visit **cyberlearning.sri.com**

The Latest News

Now Available: The International Experiences with Technology in Education Report
In an effort to learn from the experiences of other countries, the U.S. Department of Education funded the study, International Experiences with Technology in Education (IETE). The IETE study has collected information from 21 countries regarding their policies and programs to support the use of technology in education. The study is a substantial collection of information about the areas of interest and investment to governments of countries including Singapore, Finland, Portugal, Estonia and Australia and provides ideas about the potential for technology in education in the US and beyond. The **full report** is available on the U.S. Department of Education's website under Current Activities.

Improving Student Achievement in Mathematics by Systematically Integrating

Learning, was interviewed by *Education Week* for the article "New STEM Schools Target Underrepresented Groups." Ms. Means talks about STEM schools' different approaches to STEM education, evidence of STEM school effectiveness and a future long-term study, funded by NSF, on STEM schools that target underrepresented populations. **Read the article.**

Watch Jeremy Roschelle's talk "Helping Scientists Engage the Next Generation"

We all know that our world needs many more students to learn science much more deeply. And many of us believe that technology will inevitably be part of the solution. Beyond these agreements, however, we often face a confusing array of claims about HOW technology could improve learning: make learning fun; teach students through games; personalize learning objects; allow anyplace/anytime instruction; use iPads for anything; blog this, twitter that, and facebook in your free time, etc. Scientists who make the commitment to dedicate time to education deserve the advantage of a stronger knowledge base than this. In this talk, I will review the fundamental discoveries that have accrued in the learning sciences over the past 20-30 years, in a condensed, high level form that is eminently usable in teaching practices. **Watch now.**

Effective Technology
Today's world makes a burgeoning array of technologies available to classrooms, ranging from graphing calculators to computers and electronic whiteboards. This paper, co-authored by Jeremy Roschelle, provides the latest information from research and experience to guide teachers and leaders in the strategic use of technology in the classroom. Read the **paper.**

Coming in our January Issue!

SRI, the University of South Florida St. Petersburg, and the Pinellas County School district in Florida are teaming up to dramatically improve middle school math education. This multi-year collaboration was just awarded a Next Generation Learning Challenge award to build upon their past success and increase the scope of their work to reach more teachers and students in Pinellas.

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