

The New Dependent Variables of Learning & Learners: Thoughts of a Recovering Researcher

NCTI Panel: Research on Educational Technology
Washington, DC, November 15, 2007

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Research on Old Technology

- Sesame Street: New Model of Preschool Mind
- Can 3-Year-Olds Count from 1 to 40?
- Experts Were Wrong: Gladwell's *Tipping Point*
- Integration of Creative Production Skill, User Research, Curriculum
- "Expensive" R & D Investment
- Can US Innovate Again, 40 Years Later?

Medical Research: 20th Century Advances

- Superstition to Science: Bloodletting to Germ Theory of Disease
- Technology for Diagnosis: Brain, heart scans
- Technology for Health: Hip joint replacement
- Educational Equivalent of CATscan?

Educational Research: 20th Century Models

- “Covering” Vs. “Uncovering” the Curriculum”: Breadth vs. Depth
- Facts/Memory vs. Thinking/Analysis
- Binary (Either/Or) vs. Synthetic (Both/And) Models: Phonics vs. Whole Language, Technology Good/Bad
- A 21st Century Model of the Learner: *How People Learn*, National Academy of Sciences, 1999

New Dependent Variables

- Use Computer-Aided Design: Design School of the Future, Present to School Architects
- Use GPS Devices: Track Horny Toad Lizards, Train Farmers to Collect Data
- Use Speech-to-Text Software: Cerebral Palsy Student Writes School Newspaper
- Use of YouTube: Teen Uploads Rock Guitar Version of Pachelbel's Canon (Canon Rock), Remixed/Mashed by Others, Globally

Interaction Effects of Teachers

- Teaching Quality Amplifies/Dampens Technology-Based Learning
- Teacher Behaviors: Organizing, Encouraging, Mentoring vs. Primary Source of Instruction

Need for New Research Methods

- Qualitative and Quantitative Methods
- “Thick Description” of Dependent Variables
- Technology as a Tool for Researchers, as well as Learners (e.g., Real-Time Monitoring of Learners)
- National Initiative for Research and Development

GLEF Research

- Literature Review of Project-Based Learning, Cooperative Learning (Linda Darling-Hammond et al., Jossey-Bass 2008)
- Field Experiment: Project-Based (LegSim) vs. Traditional AP Course (Am. Gov, Envir. Sciences), Bellevue, WA (2008-09), John Bransford, U. Wa.