

Access Means Impact: Handheld Devices for Student Learning

Do handhelds in the classroom really improve student learning? This has been the focus of the mobile learning research conducted by the Research Center for Educational Technology at Kent State University (RCET). Research questions under investigation include:

- ◆ How can handheld computers in the classroom improve teaching and learning?
- ◆ What is their impact on student motivation, self-efficacy, and academic progress?
- ◆ How can handhelds be adapted to harness their full potential in formal and informal learning environments?

The purpose of this session is to provide an overview of K-12 handheld integration projects and associated research projects at RCET's SBC Ameritech Classroom and surrounding school districts in Northeast Ohio, USA. Findings indicate that mobile computing devices can provide anyone, anytime, anywhere access to a variety of computing tools; that they can influence student motivation, self-efficacy, and academic progress; and that they play an important role in a ubiquitous computing learning infrastructure. Findings also indicate that handhelds provide students with both private and public workspaces, and opportunities to show conceptual understanding of what has been learned in a wide variety of ways. While mobile technology is by no means perfect for schools (e.g. different operating platforms and standards, lifespan of devices, battery life, data transfer and networking issues), the potential for these devices to create a revolutionary change in education is tremendous, as the ubiquitous computing environments of tomorrow will enable teachers and learners to create ad-hoc networks of a variety of mobile devices in order to create and exchange information.

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Mark van 't Hooft is a tech specialist and senior researcher for the Research Center for Educational Technology at Kent State University (RCET). His current research focus is on



the use of handhelds in K-12 education, especially in the area of social studies education. His research, in collaboration with his colleagues, has enabled RCET to build relationships with both corporate and non-profit entities, including SRI, palmOne, AlphaSmart, and Texas Instruments. He has published his research findings in journals such as the Journal of Educational Computing Research, the Journal of Research on Technology in Education, and Social Education, is currently working on an edited book on ubiquitous computing, and has presented at national and international conferences such as SITE, NECC, and AERA. In addition, he has been the conference chair for two RCET conferences on handheld technology in the K-12 classroom. Prior to his work at RCET, Mark taught middle school and high school social studies and language arts in Austin, Texas. He holds a B.A. in American Studies from the Catholic University of Nijmegen, the Netherlands, and an M.A. in History from Southwest Texas State University. He recently received his doctoral degree with a dual major in Curriculum and Instruction (Social Studies Education), and Evaluation and Measurement.

Department of Education, the National Science Foundation, and the NYC Board of Education. She is an Effective Practices Editor for the Sloan Consortium, the Special Issues Editor for the Journal of Educational Computing Research, and Editor of the Journal of the Research Center for Educational Technology.

Dale Cook is the Director of the Research Center for Educational Technology and the Summit Professor for Learning Technology at Kent State University. Dr. Cook devotes his time to the advancement of learning technology efforts, especially in the Research Center for Educational Technology and the SBC Ameritech Classroom. Dr. Cook also serves as a faculty member in the Education Administration program located in the TLCS Department of the College and Graduate School of Education, Health, and Human Services.



Karen Swan is Research Professor in the Research Center for Educational Technology at Kent State University. Dr. Swan's research has been focused mainly in the general area of media and learning on which she has published and presented nationally and internationally. Her current research focuses on online learning, and on student learning in ubiquitous computing environments. Dr. Swan has also authored several hypermedia programs, co-edited a book on Social Learning from Broadcast Television and is currently working on a co-edited book on ubiquitous computing. She served as a project director on several large scale grants including work for the US

