

The Next Small Thing: Are Handhelds the Future of Education Technology?

~ by Erica Levy

They're popping up everywhere nowadays: tiny little handheld computers with much of the functionality of a full desktop computer. From the business world to the classroom, these small machines are shifting from being a cool gadget for techies to an important tool for putting what you need into the palm of your hand. No one doubts that these little tools can be incredibly valuable for personal productivity, but do they have a pedagogical place in the classroom? This article will look at handhelds in the context of education technology trends and give examples of some of the common ways that educators are using these powerful tools.

The handheld revolution, while significant in its own right, is an echo of the even larger revolution of education technology throughout the 1980s and '90s. As more and more businesses and individuals started depending on computers for commercial and personal productivity throughout the '70s and '80s, computers entered schools with the assumption that they would be of equal educational value. What no one knew, however, was how to best use these powerful, new tools to improve the tasks that educators and students needed to complete. The market for educational software was huge and untapped, and vendors rushed to fill the void. It was like a gold rush: an

Erica Levy is a Professional Development Specialist for Mass Networks Education Partnership. She is presenting a workshop on this topic at the MassCUE conference on November 13.

unmitigated and unregulated rush for market share. Suddenly, the generation of children who grew up with a diet of Sesame Street and Mister Rogers were able to learn addition and vowels from Oscar the Grouch. But while no one doubted the entertainment value of such software, discerning educators soon started to question not only what programs could best help their students learn but also how computers in general could add pedagogical, not just entertainment value. Through the '90s to today, a body of best practice has emerged for integrating technology, whether offline or online, into classroom instruction. Instructional technology using desktop or laptop computers is so commonplace; in fact, there are many courses in which computer use is the expectation, not the exception.

Into this technology-friendly environment emerges a new player: the handheld computer. Suddenly, we are thrust back into the gold rush, into a Roaring Eighties of a time when anything goes. Or does it? The Palm, Inc. website boasts over 10,000 educational titles, but who is overseeing the quality of these applications? Who is testing how well they work in the classroom? For better or for worse, handhelds' debut into the classroom comes at a very different time from the honeymoon period of education technology in the '80s. In an era of accountability, high-stakes tests, and No Child Left Behind, educators can no longer afford to use an instructional technology just because its bells and whistles are entertaining to the students. The issue isn't whether

Suddenly, we are thrust back into the gold rush, into a Roaring Eighties of a time when anything goes. Or does it?

Oscar the Grouch or Cookie Monster teaches addition, but how well they teach it. Educators need to be able to prove with data that they are raising student achievement, and the onus is on them to prove the efficacy of their methods, including the use of technology.

So what can handhelds do for us? The point isn't to find a use for a handheld; the point is to identify tasks that you already have to do that a handheld could make easier for you. Another way to look at ways that handhelds can improve teaching and learning is to picture limitless technology resources: how could technology improve your lessons if every student could have continual access to computers, wherever they are? If you can come up with easy answers to that question, there are probably handheld applications out there to make this dream a reality.

Read below for a list of some ways that educators are starting to use handhelds in their classrooms. Try them out, and then decide for yourself if handhelds are, in fact, the next small thing.

Continued on page 14.

Types of Use

Administrator Productivity

- ❖ EPrincipal Mobile (<http://www.media-x.com./products/eprincipal/mobile.php>)
 - Allows a principal to transfer school related data to a PalmOS handheld PDA
 - Provides easy access to the latest report card information for every student as well as school summary data
 - View student information such as their timetable, report card, or attendance records
- ❖ ScheduleFinder (<http://www.trusmart.com/>)
 - Student Schedules In Real Time
 - Student Demographic Information
 - Student Photo Identification
 - Student Search Capability
 - Student Tracking Lists

Teacher/Student Productivity

- ❖ eStandards (<http://www.media-x.com./products/estandards/index.php>)
 - Provides access to curriculum standards
 - Supports various jurisdictions including: Ontario, California, Texas, Florida, British Columbia, Wisconsin, Kansas, and Minnesota (Massachusetts not yet available)
 - Browse state or provincial standards on your handheld PDA
 - Mark selected standards that have been covered in the classroom
 - Print to an infrared printer
 - Prepared to support other material such as university course outcomes or professional teaching standards
- ❖ Tome Raider (<http://www.tomeraider.com/>)
 - A fast, flexible, and powerful cross-platform reference viewer giving instant and free access to thousands of megabytes of encyclopedias, dictionaries, guides, religious works, philosophical texts, e-texts, and novels in TomeRaider format
- ❖ Documents To Go (www.dataviz.com)
 - Use Word, Excel, and PowerPoint files on your handheld anywhere, anytime. Now you can quickly view, edit, and create new tests, essays, and more on the handheld as well as synchronize email with attachments, PDF files, pictures, and Excel-like charts
- ❖ Quizzler (<http://www.pocketmobility.com/quizzler/quizzler.html>)
 - Quizzler is the standard assessment software for handheld computers. It is loaded with features, has a simple easy-to-use interface, and you can even make your own quizzes easily
- ❖ Assessa PDA (<http://www.eyecues.com/asa/>)
 - Enables educators and researchers to access an extensive databank of items and quizzes as well as enter, maintain, and administer tests and surveys via HTTP, XML, Java, and very soon Macromedia Flash. Administration can take place on a variety of devices, including Palm/PocketPC, via the Internet, via wireless devices, or on stand alone PCs (Mac, Linux, Windows)
- ❖ AvantGo (www.avantgo.com)
 - Provides interactive and personalized content and applications to handheld and Internet-enabled phone users
- ❖ 4.0 Student (<http://www.handmark.com/products/detail.php?id=46>)
 - Class Information Management
 - Coursework Management
 - Grade Tracking and Prediction

Types of Use

Student Curricular Use

- ❖ Palm Reader (<http://www.palmdigitalmedia.com/product/reader/browse/free>)
 - Read books and periodicals wherever you are and whenever your schedule permits. Turn that wait at the doctor's office into valuable reading time!
- ❖ PicoMap (<http://www.goknow.com/Products/PiCoMap.html>)
 - Allows students to create, share, and explore concept maps on their Palm OS computer. This program allows users to create multiple nodes and relationships leading to elaborate concept maps for brainstorming, visual outlining, or assessment purposes. PiCoMaps can also be beamed to other students, the teacher, printed directly to an IR-equipped printer, or synchronized to a desktop computer.
- ❖ Imagimath (<http://www.imagiworks.com/Pages/Products/ImagiMath.html>)
 - This suite provides an integrated set of software applications that turns a Palm OS handheld computer into a compelling mathematics learning environment. The suite provides three applications for exploring mathematics: **ImagiGraph™**, a mathematics visualizer; **ImagiCalc®**, a full-featured calculator; and **ImagiSolve™**, a mathematical worksheet and equation solver. Offering unprecedented ease of use, flexibility, and power, ImagiMath meets the calculation and graphing requirements of science and math education.
- ❖ PowerOne Graph (<http://www.infinitysw.com/products/poweronegraph.html>)
 - Simplifies traditional graphing and scientific calculator functionality by utilizing the touch screens and larger displays of Palm OS handheld computers. Whether analyzing functions, data, or equations, PowerOne Graph is the perfect solution for professionals and students in engineering, medicine, sciences, research, computer science, or mathematics.
- ❖ ChemTable (<http://www3.sympatico.ca/marywong/ChemTable/>)
 - Freeware Periodic Table application that runs on monochrome Palm OS handhelds. The program is quite straightforward to use. Tapping on any of the element boxes in the Periodic Table will bring up a form showing a list of physical/chemical properties. In the Options menu, you can choose to display either element symbols or atomic numbers in the table.
- ❖ JflashCard (<http://www.handango.com/>)
 - A compact, easy-to-use flashcard program. It comes with a carefully selected dictionary of 1200 words that often appear in SAT/GRE/TOEFL/ACT verbal exams.

References

<http://www.kent.edu/rcet/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=2216>
<http://www.rainbowtech.org/Palm/palmapps.htm>
<http://www.intel.com/education/handhelds/index.htm>
<http://www.k12handhelds.com/apps.php>
<http://education.mit.edu/pda>
<http://www.mpsomaha.org/willow/p5/handhelds/index.html>
http://www.techlearning.com/db_area/archives/TL/2003/04/spotlight.html
<http://www.tomeraider.com>
<http://www.trusmart.com>
<http://www.handango.com>
<http://www.goknow.com/Products/PiCoMap.html>
<http://www.handmark.com/products/detail.php?id=46>
<http://www-2.palmone.com/us/education>
<http://software.palm.com>