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# National Educational Computing Conference 2007 – Atlanta, GA

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## iPod® and Handheld Computer Integration into the Curriculum

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3  Teacher Standards (NET-T)

- I. Technology Operations and Concepts
- II. Planning and Designing Learning Environments and Experiences
- III. Teaching, Learning, and the Curriculum
- V. Productivity and Professional Development

4  Student Standards (NET-S)

- II. Social, Ethical, and Human Issues
- III. Technology Productivity Tools
- IV. Technology Communications Tool
- V. Technology Research Tools

5  Standards for Administrators

- I. Leadership and Vision
- II. Learning and Teaching
- III. Productivity and Professional Practice
- IV. Support, Management, and Operations
- VI. Social, Legal, and Ethical Issues

6  Handheld Computers Enhance Student Achievement

- First year of study, handheld computer groups did 2% better than non-handheld groups.
- Second year of study, handheld groups performed 13% better in science than non-handheld groups.

<http://www.goknow.com/sbr/GoKnow%20SBR%20Announcement.pdf>

## 7 **Handheld Computers Enhance Student Achievement**

- In the five-week instruction, the handheld test group outperformed the flash card group by 7% in the gain scores from pre-test to post-test.
- During the same test period, the handheld test group with low-achieving students performed 11% better in the gain scores than the flash card group.

<http://www.goknow.com/sbr/GoKnow%20SBR%20Announcement.pdf>

## 8 **Types of Handheld Devices**

- Palm Operating System
- Pocket PC Operating System
- iPod
- Other MP3 Players - Zune
- Sony Reader
- Smart Phones

## 9 **Strength of the Palm**

- Ease of Use
- Large Selection of Educational Software
- Ease of Reading
- Low Prices for Entry Level Models
- Syncs Easily with a MAC
- - "Weaker on Multimedia"

## 10 **Strengths of the Pocket PC**

- Seamless with Microsoft Office Products
- More Flexibility to Customize
- More Accessories
- More Memory
- Ease of Reading
- Powerful Multimedia
- WiFi & Blue Tooth Communications

## 11 **Strength of the iPod**

- Multimedia Ready
- Ease of Use
- Ease for Podcasting
- Popular with Students
- Accessories Becoming Available
- Compatible with iTunes
- Can Be Used as Backup Hard Drive
- - Difficult to Read Text

## 12 Other MP3 Players (Zune)

- Microsoft's Copy of iPod
- Accesses Own Online Music Store
- Receives FM Radio
- Shares Files with Other Zunes Wirelessly
- Play Media via A/V Composite Connector to a Television

## 13 Sony Reader

- Feels as if Reading Actual Book
- Holds up to 80 Books
- Plays MP3s
- Can access Blogs and RSS Newsfeeds when docked to a PC
- View JPEGs, personal documents, and PDFs
  
- - Books Can Only Be Ordered from Sony's Connect Online Bookstore

## 14 Strengths of Smartphones

- Full-featured Mobile Phone
- Personal Computer Like Functionality
- Camera Phones
- Applications for Enhanced Data Processing and Connectivity can be Installed
- Miniature QWERTY Keyboard
- Touch Screen

## 15 Strength of Blackberries

- Leader in Wireless Communications
- Access to e-Mail
- Access to Phone Service
- Access to Data Applications
- Access to the Internet
- Can Be Customized

## 16 Accessories for Handheld Devices

- Memory cards
- Keyboards
- Connectivity
- Microphones
- Speakers
- GPS Systems
- Scientific Probes

## 17 Memory Cards

- CompactFlash Card
- MultiMedia Card
- Secure Digital Card

- Sony Memory Stick

## 18 Microphones for Handheld Computers

- Most Pocket PCs come with built-in microphones
- External microphone port exist on some PDAs
- Both wired and wireless microphones available
- Palm TX External Microphone
- Audacity Digital Voice Recorder

## 19 Microphones for the iPod®

- Belkin® iPod Voice Record
- Griffin iTalk
- MicroMemo™

## 20 Speakers and Handheld Devices

- Most will play with a ¼" jack in plug for earphones
- Some use Bluetooth communication
- Wide selection
  - iPod speakers
  - iPod alarm clock
  - Sound plasma speakers
  - Multimedia speakers

## 21 GPS Systems

- Components of GPS
  - a space segment
  - a ground segment
  - and a user segment
- GPS only handheld device
- Compact Flash slot add-on
- SDIO-based GPS Systems
- Smartphones GPS System

## 22 Scientific Probes

- Develops interpretive skills in students
- Encourages students to interact and share their findings
- Easy assess to the problems they are working
- Ability to graph within same device
- Ability to record and manipulate data within the same device

## 23 Inventory Control

- One of primary uses in schools
- Most circulation packages has bar code reader as an add-on module.
- For smaller collections – Software under \$25
  - BookBag <[www.wakefieldsoft.com/bookbag/](http://www.wakefieldsoft.com/bookbag/)>
  - AudioList <[www.wakefieldsoft.com/audiolist/](http://www.wakefieldsoft.com/audiolist/)>
  - VideoList <[www.wakefieldsoft.com/videolist/](http://www.wakefieldsoft.com/videolist/)>

## 24 Classroom Management with a Handheld Device

- Schedule and Appointment Reminder
- Track Student Progress <[www.learnerprofile.com](http://www.learnerprofile.com)>
- Recording and Tabulating Grades <[www.centuryltd.com](http://www.centuryltd.com), <[www.gradebook.com](http://www.gradebook.com), <[www.gradebusters.com](http://www.gradebusters.com), <[mCLASS <www.wirelessgeneration.com/web/products.html>](http://mCLASS.wirelessgeneration.com/web/products.html)>
- Attendance Tracker <[www.baggetta.com/attendracker.com](http://www.baggetta.com/attendracker.com), <[www.baggetta.com/passtrackerlogger.htm](http://www.baggetta.com/passtrackerlogger.htm)>
- Lesson Planner <[www.tapperware.com](http://www.tapperware.com), <[www.baggetta.com/portable\\_planner.htm](http://www.baggetta.com/portable_planner.htm)>
- Student Information Systems
- Teacher Resources <<http://www.baggetta.com>>
- Administrative Use of Handhelds

## 25 Student Organizational Software

- Use Outlook or other PIM for schedule
- For the Palm – 4.0Student™ <[www.handmark.com/products/detail.php?id=46&r\\_id=05\\_aug15\\_plam-nsltr](http://www.handmark.com/products/detail.php?id=46&r_id=05_aug15_plam-nsltr)>
- ClassWork Organizer
  - <<http://downloads-zdnet.com/3000-2161-10147721.htm>>
- Recording Option to Take Audio Notes
- Ability to take notes in notepad or Word using portable keyboards
- Reference Tool with eBooks

## 26 Managing Classroom Sets

- Techniques of managing handheld devices in a classroom are dependent on the number of handhelds the objective of teacher.
  - One-to-one – each student has own 24/7
  - One-to-two – students share
  - Class sets shared among teachers
  - Limited number
- Allows teachers to handout and receive documents – GSS HiHo – Classroom Edition <[www.grantstreetsoftware.com/Products/gsshiho/index.html](http://www.grantstreetsoftware.com/Products/gsshiho/index.html)>

## 27 Managing Computer Networks

- IT administrators can solve mobile management problems and streamline system management with programs such as Afaria from iAnywhere® <[www.ianywhere.com/products/afaria.html](http://www.ianywhere.com/products/afaria.html)>
- SonicAdmin from Avocent® <[www.sonicmobility.com/](http://www.sonicmobility.com/)> helps IT personnel manage the network and server from their handheld computers.

## 28 Sources for Software Handheld Computers

- Palm Software Application Store  
– <<http://palmsource.palmgear.com/>>
- PDAS~~tr~~et.com <<http://www.pdastreet.com/>>  
lists products, news, and reviews of hardware, software, and other resources for all brands of PDAs .
- Handmark.com <<http://handmark.com/>>

## 29 Sources Programs for the iPod®

- Apple is very tight-lipped about its iPod software.
- iPod **third-party software** consists of programs that use or build on current iPod functions without changing the way the device is supposed to work.
- Many types of DVD to iPod converter available
- Many iPod eBook Creators available  
– <<http://www.ambience.sk/ipod-ebook-creator/ipod-book-notes-text-conversion.php>>

## 30 From e-Learning to m-Learning

- Electronic learning refers to any computer-based learning that enables students to access and make use of course materials at a distance and at their convenience.
- Mobile learning capitalizes on the increasing availability of wireless networks and mobile devices.

## 31 Advantages of eBooks

- Size of the eBook
- Currency
- Price
- Availability
- Access to materials no longer in print
- Cost of eTextbooks

## 32 eBook Readers Formats

- DOC (similar to Microsoft Word)
- Text
- Acrobat Reader 7 <[www.adobe.com/products/acrobat/](http://www.adobe.com/products/acrobat/)>
- Microsoft Reader <[www.microsoft.com/reader/](http://www.microsoft.com/reader/)>
- Mobipocket Reader <[www.mobipocket.com/](http://www.mobipocket.com/)>
- E-Reader Pro <[www.ereader.com/products/ereader/pro/](http://www.ereader.com/products/ereader/pro/)>
- Tomeraider <[www.tomeraider.com/](http://www.tomeraider.com/)>
- iSilo <[www.isilo.com/](http://www.isilo.com/)>
- Namu HandStory <[www.namu.com/products/handstory?](http://www.namu.com/products/handstory?)>
- HTML eBook

## 33 eBook Reader Sources

- Project Gutenberg <[www.gutenberg.org/](http://www.gutenberg.org/)>
- eBooks.com <[ebooks.com/](http://ebooks.com/)>
- Digital Books <[www.digitalbookindex.org/](http://www.digitalbookindex.org/)>
- eFollette.com <[ebooks.efollett.com](http://ebooks.efollett.com/)>
- Microsoft Reader eBooks <[www.mslib.com](http://www.mslib.com/)>
- International Children's Digital Library <[www.icdlbooks.org](http://www.icdlbooks.org/)>

- MemoWare <[www.memoware.com](http://www.memoware.com)>

### 34 eBook Reader Sources

- Fictionwise™ <[www.fictionwise.com/](http://www.fictionwise.com/)>
- Wikibooks <[http://en.wikibooks.org/wiki/Main\\_Page](http://en.wikibooks.org/wiki/Main_Page)>
- Bibliomania.com <[www.bibliomania.com](http://www.bibliomania.com)>
- Inebooks.com <<http://inebooks.com/>>
- eBooks-in-Print.com <<http://ebooks-in-print.com>>
- eBookLocator <[www.ebooklocator.com/](http://www.ebooklocator.com/)>
- Google Scholar <<http://scholar.google.com/>> searches for scholarly papers.

### 35 Reading Strategies with eBooks

- Dr. Terry Cavanaugh's eBook Reading strategies <[www.drs.cavanaugh.org/ebooks/ebrs/intro.htm](http://www.drs.cavanaugh.org/ebooks/ebrs/intro.htm)>
  1. "activate background knowledge
  2. Set a purpose for reading
  3. Help in identifying the main idea
  4. Support the main idea with clear, complete explanations
  5. Organize information
  6. Increase comprehension of vocabulary and concepts
  7. Develop their metacognition process"

### 36 More eBook Reading Strategies

- Dr. Terry Cavanaugh's eBook Reading strategies <[www.drs.cavanaugh.org/ebooks/ebrs/intro.htm](http://www.drs.cavanaugh.org/ebooks/ebrs/intro.htm)>
  - "Take notes while reading to assist in understanding
  - When text becomes difficult, read aloud to assist in understanding (Text-to-Speech)
  - Underline or mark-up information in the text to assist in understanding (Highlighting)
  - Use reference materials (dictionaries, etc.) hyperlink

### 37 More eBook Reading Strategies

- Paraphrase/restate to better understand
- Go back and forth in the text to find relationships among ideas
- Ask self-questions to find answers in the text

### 38 Circulating eBooks

- OverDrive <<http://overdrive.com/>> leading provider of Digital Rights Management (DRM) that enables the management and distribution of digital media.
- Libwise <[www.libwise.com/](http://www.libwise.com/)> allows patrons to download eBooks to either a desktop PC or a handheld device.
- NetLibrary <[www.netlibrary.com](http://www.netlibrary.com)> content delivery system.

### 39 Writing eBooks and eNotes

- Need the specific writer to match the matches the desired eBook Reader.
- Research papers can be prepared on the desktop or laptop and synched onto a handheld or done directly on the handheld device.
- Educators can add their own notes to a student's eNotes.
- Have the ability to beam a book to other handhelds.

#### 40 eBooks for People with Disabilities

- Bookshare.org <[www.bookshare.org](http://www.bookshare.org)> is a web-based system supplying accessible books in digital formats designed for people with disabilities.
- Accessible Book Collection <[accessiblebookcollection.org](http://accessiblebookcollection.org)> offers an eBook subscription for people with disabilities.
- The Texas Text Exchange <<http://tte.tamu.edu/>> first Web-based digital library for students with disabilities.

#### 41 Accessing the Web Sites

- Most handheld devices allow users to download Web sites from a desktop and read at the user's convenience.
- Many handheld devices comes Wi-Fi enabled which allows direct Internet browsing.
- Not all Web sites are optimized for mobile browsing.
- The main difference between a mobile Web site and a desktop/laptop Web site is that the mobile site information is condensed into a simple column with fewer graphics.

#### 42 Using Web Sites Off-line

- If a direct Internet connection is not available, Web sites can be downloaded when it is hot synced with desktop.
- Mobile Favorites are built into the operating system of most handheld devices.
- Web clipping software are commercial products that are Internet Explorer add-ons.
- AvantGo <[www.avantgo.com/](http://www.avantgo.com/)> is a free service that provides access to more than 1,000 Web Sites optimized for mobile devices.

#### 43 Locating Mobile Web Sites

- Yahoo® Mobile <<http://mobile.yahoo.com/>>
- Google Mobile <[http://mobile.google.com/mobile\\_search.htm](http://mobile.google.com/mobile_search.htm)>
- Number of Portals
  - Eboogie.com <[www.eboogie.com/](http://www.eboogie.com/)>
  - Wireless iMenu <[www.imunu.com/wireless](http://www.imunu.com/wireless)>
- Skweezer <[www.skweezer.net/](http://www.skweezer.net/)> contains a directory of sites and lets users “skweeze” any Web site to view on a mobile device.
- Wapedia Mobile Encyclopedia <<http://pda.en.wapedia.org>> makes Wikipedia available for mobile devices.

#### 44 Audiobooks

- LearnOutLoud.com <[www.learnoutloud.com](http://www.learnoutloud.com)> the first comprehensive database of audio and video learning publishers and retailers on the Internet.

- Audible.com® <[www.audible.com](http://www.audible.com)>
- AudioBooksForFree <[www.audiobooksforfree.com/](http://www.audiobooksforfree.com/)>
- LibriVox <<http://librivox.org/>>
- Playaways <<http://www.flr.follett.com/intro/playaway.htm>>

#### 45 Overview of Podcasts

- New word by joining “iPod” and “Broadcasting.
- Differences from a radio broadcast
  - Radio broadcast requires a studio & transmitter and listeners must be tuned to transmitting frequency
  - Podcasts are audio files stored on the Internet as a time-shifting technology.

#### 46 Overview of Podcasts and Vodcasts

- Descendant of Web logs, or blogs.
- Podcasting is a process of automatically receiving time-shifted audio or video from a personally selected subscription via a podcast-enabled RSS 2.0 feed.
- Individuals can record and upload their own podcasts.

#### 47 Educational Podcasts

- iTunes U.
- The Education Podcast Network <<http://epnweb.org>>
- Directory of Educational Podcasts from the U.K. <<http://www.recap.itd.uk/podcasting/channels/podchannels.php>>.
- K12 Handhelds, Inc. <<http://www.k23handhelds.com/podcasting.php>>
- LearnOutLoud.com <<http://www.learnoutloud.com>>

#### 48 Educational Uses for Podcasts

- In the Classroom within the Curriculum
- Incorporated within the school Web site
  - Administrators can deliver audio recordings of daily news, press announcements, board meetings, or school closing.
  - Teachers can use daily or weekly podcast to summarize lessons for students and parents.
  - Teachers can personalize instruction
  - Record class sessions
- Commercial vendors include podcast feeds within database subscriptions

#### 49 Legal Issues in Podcasting

- Podcasts are not subject to direct censorship or regulatory control.
- Educators should always request permission and inform parents when students will be publishing their work online.
- Never record conversations without all participants being aware they are being taped.

#### 50 Student Podcast Copyright Issues

- When a podcast is published it is protected by copyright law.
- The creator of a podcast is the copyright owner.
- Just as students learn to respect the copyright laws of music producers, so students' work should be respected their copyright ownership.
- Teach students to place a copyright symbol and date on their work or a copyright

element information within the RSS feed or MP3 file's ID3 tag.

## 51 Options for Using Music for Podcasts

- Arrange for music licenses that cover performance rights and royalties.
- Use royalty free music.
- Create original music.

## 52 Sources for Copyright Cleared Music

- ASCAP (The American Society of Composers, Authors, and Publishers) <<http://ascap.com/weblicense/>>
- Harry Fox Agency, Inc. <<http://www.harryfox.com>>
- Creative Commons License <<http://creativecommons.org>>
- Online royalty free podcast music
  - PodSafe Music Network <<http://music.podshow.com>>
  - Podsafe Audio <[www.podsafesaudio.com](http://www.podsafesaudio.com)>

## 53 Hardware for Podcasting

- Any computer purchased within the last two or three years
  - 512 MB of RAM
  - 3 to 4 GB of free hard drive space
- Microphone
- Headset
- Mixer
- Media Player

## 54 Software for Podcasting

- In order to receive a podcast, podcatcher software (RSS Feed Aggregator) needs to be loaded on the computer
- Sound (or video) editing software.
- RSS Feed Generator
  - Top 6 RSS Creators Generators <<http://webdeveloper.econsultant.com/rss-creators-generators/>>
- RSS Feed Validator <[www.feedvalidator.org](http://www.feedvalidator.org)>

## 55 Planning a Podcast

- Identify the audience
- Define the purpose
- Decide who will participate
- Determine kind of script or outline will be needed
- Determine kind of music and sound effects will be appropriate

## 56 Preparing Audio for a Podcast

- Gather Information
- Write a Script
- Identify Guests
- Locate Music
- Locate a Quiet Location

- Practice Before a Microphone
- Record Podcast
- Assemble Components
- Edit Audio
- Publish MP3 file, generate a XML/RSS feed
- Check Link

## 57 Hosting a Podcast

- Popular online sites to host podcasts
  - Poderator <[www.poderator.com/](http://www.poderator.com/)>
  - Podomatic <[www.podomatic.com](http://www.podomatic.com)>
  - Podcast Alley <[www.podcastalley.com](http://www.podcastalley.com)>
  - Audioblogger <[www.audioblogger.com](http://www.audioblogger.com)>
  - iTunes <[www.apple/itunes/](http://www.apple/itunes/)>
- The Apple Podcasting Server included in the Mac OS X Server v. 10.4 makes it simple to public and syndicate online content.

## 58 Podcast Communities

- Online communities promote audio and video podcasts
  - PodcastPickle.com <[www.podcastpickle.com](http://www.podcastpickle.com)>
  - iTunes Links <[www.ituneslinks.com/](http://www.ituneslinks.com/)>
  - Yahoo Group Podcast Discussion Group
- Share ideas
- Helps podcasters get their music and message to larger audiences

## 59 Podcasting from a Cell Phone

- Record your podcast via a toll-free call from any phone. <<http://www.gcast.com/>>
  - Call 1-888-65-GCAST, enter your ID and PIN code.
  - Start recording!
- After you record, you'll have two options:
  - Save & publish
  - Save without publishing

## 60 Evaluating Student-Produced Podcasts

- Podcast Rubric from UW-Stout  
<<http://www.uwstout.edu/soe/profdev/handhelds/podcastrubric.htm>>
- Kathy Schrock's Guide for Educators - Assessment and Rubric Information  
<<http://school.discovery.com/schrockguide/assess.html>>

## 61 Areas to Evaluate Podcasts

- Introduction
- Content
- Delivery
- Interview

- Graphic and Music Enhancements
- Technical Production
- Group Work

## 62 Choosing Between Audio and Video Podcasts

- Advantages of Video
  1. The visual aspect allows for a more powerful message
  2. Some students are visual learners
  3. People like to share videos
- Other Considerations
  1. Do you really need a “talking head” to convey your message?
  2. Is there a compelling reason to have the visuals?

## 63 Shooting Video for a Vodcast

- Develop the script to limit the movement of a subject within a frame
- Keep it close, less complicated, movement to a minimum.
- Establishing shots tighter and less frequently used
- Avoid special feature of editing software
- Avoid complicated backdrops
- Avoid extra movement
- Use a tripod

## 64 What is a Video Codec?

- A codec, short for “compression and decompression,” is how the video content gets encoded, or translated into code a computer or handheld device can read.
- Most Windows Mobile Devices supports the following formats and codecs:
  - Windows Media video (.wmv)
  - Real Video (rm)
  - MPEG4 video (m4v, .mp4, or .mov)
  - H.264 video (.m4v, .mp4, or .mov)

## 65 Converting Video to Play on Handheld Devices

- iPod can play the following video formats:
  - H.264 video
  - .m4v, .mp4
  - .mov
- A number of companies offer a variety of tools to help compress videos.
- QuickTime 7 Pro will automatically create an .m4v file containing H.264 video and AAC audio that is optimized for iPod.

## 66 Issues in Using Handheld Devices in Schools

- Use of Bandwidth
- Network Security Issues
- Feat of Cheating and Inappropriate Use

- Should students provide their own equipment or should the school provide the handheld devices

67  **Summary**

- Uses of Mobile Devices in the Classroom
  - eBooks
  - eAudio and Podcasts
  - eVideo and Vodcasts
  - Scientific Probes & GPS Systems
  - Personal Organizer
  - Teacher Administration
- Issues in Using Handheld Devices