

# 1:1 and Mobile Computing



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## Mobile 1 : 1 survey

- Go to this website to take a quick survey
- <http://tinyurl.com/unietd1-to-1>



## Today

- Technology Trends
- Education Trends
- Why 1:1?
- 1:1 Technologies Used Today
- What does this mean for you?
- Current 1:1 programs



## Technology Trends

- Computer devices becoming cheaper
  - Moore's Law
- Devices becoming smaller, faster
- Convergence of devices
  - Cell phone, camera, mp3 player
- Multi-touch computers
- Ubiquitous computing



- Multi-Touch Computers
- [Http://www.youtube.com/watch?v=OWJb2UKf9zi](http://www.youtube.com/watch?v=OWJb2UKf9zi)
- Ubiquitous Computing video
- <http://www.youtube.com/watch?v=2HHEQuspi4e>




## Ubiquitous computing

- Anyone think of some examples of this happening today?
- Scary huh?!?!?




## Education Trends

- Internet
- Online education
- 1:1 computing/Mobile computing
- Eventually to Ubiquitous computing
- Your mission....


## should you choose to accept it.

- Teaching in new ways
- Engage students in ways that haven't been done (or thought of) yet
- Vision of k-12 students today



- Online education
- <http://www.youtube.com/watch?v=e50YBu14j3U>
- Vision of K-12 students today
- <http://www.youtube.com/watch?v=A-ZVCjFWf8&NR=1>

Given the realities of our modern age and the demands of our children's future, is it really okay to allow teachers to choose whether or not they incorporate digital technologies into their instruction?

## Where are we today?

- Price of mobile computers going down
- May 2005, laptops outsell desktops in US for 1<sup>st</sup> time
- Introduction of smaller, less expensive netbooks
- Projects like OLPC and India's \$10 laptop


## Why 1:1?

<b>Interactivity</b>	<ul style="list-style-type: none"> <li>• Engages students, increased learner-control</li> <li>• Less lecture, more project-based learning</li> </ul>
<b>Authentic curricular connections</b>	<ul style="list-style-type: none"> <li>• Students investigate &amp; answer complex questions (develops higher order thinking skills)</li> </ul>
<b>Motivates students &amp; improves achievement</b>	<ul style="list-style-type: none"> <li>• Some studies that support this</li> <li>• Need more research</li> </ul>
<b>Helps students be organized &amp; productive</b>	<ul style="list-style-type: none"> <li>• If used effectively in the classroom!</li> </ul>



## 1:1 Technologies Today...



- Wireless Networking
- Mobile Labs
- Laptops
- Tablet PC
- UMPC's
- Hand-Held Computing
- eBook Readers (Kindle, Nook)



## Wireless Networking


- Wi-Fi (wireless fidelity)
- IEEE 802.11 protocols
  - 11 Mbps (b)
  - 54 Mbps (g)
  - 540 Mbps (n)
- inexpensive, reliable, fast, convenient
- by 2005, half of Iowa's schools used wireless
 

(Des Moines Register, May 2005)





## Mobile Wireless Labs

- Breakout of the computer lab mentality!
- Students use technology when & where it's needed
- Emphasis is on learning
- Technology as another tool in the learning space




www.apple.com




## Laptops/Tablet PC

- Between 4-10 lbs
- Nearly as powerful as a desktop
- Screens 12"-17"
- Battery life generally good
- Cost can be \$500-\$3000
- Tablet PC
  - Adds hand writing capabilities
  - Interactivity with MS applications




## Ultra Mobile PCs (UMPC)

- Designed for "emerging markets"
- Lightweight, compact design
- SSD (no moving parts) or HD
- Smaller screen, built-in camera and mic
- WiFi, Bluetooth, Cellular broadband
- Linux or Windows OS
- Typically \$300-400




www.umpc.asus.com




## Handheld Computing

- Wireless & web compatible
- Learning tool & productivity tool
  - data collection, information organizer, calculation, writing, multimedia player, reference
- Teachers: Data-based decision making, information management




www.dreamland.com




### Handheld Educational Uses

Productivity tool	• Writing, calculating, etc.
Learning tool	• Graphic organizer, data collection, games, etc.
Reference tool	• Dictionary, thesaurus, periodic table, unit conversion, etc.
Organizational tool	• Class schedule, assignments, to-do items, reminders
Administrative tool	• Student info, emergency contacts, data collection, etc.




### eBook Readers

- Kindle (Amazon.com)
- Nook (Barnes & Noble)
- Sony Reader
- iPad? (Apple)
- Over 1 million books available
- Over 500,000 free books!




### eBook Readers Features

- Wireless (cellular and WiFi)
- Built in dictionary
- Ability to bookmark
- Access to web resources (Wikipedia)
- Highlight text
- Change text size
- Clipping text
- Text to speech




### eBook Readers in Education

- Advantages
  - Can hold several books
  - Features
  - Many free eBooks
  - Accommodation
- Disadvantages
  - Not all books available
  - Need power source
  - Some getting used to




### So Why Does this Matter?

• “... every school administrator who expects to be in a leadership position over the next decade needs to start thinking strategically for one-to-one computing.” (Complete guide to One-to-One computing in the K-12 Environment)




### What is needed for a successful 1:1 program?

- Administration
  - Supportive
  - Planning
- Teacher
  - Professional development
  - Integration into teaching
- Funding




## How do we prove success?

- Difficult to do
- Sometimes during the 1<sup>st</sup> year success rates go down
- Causes
  - Not enough teacher development
  - Not enough planning




## Maine Learning Technology Initiative

- \$37.2 million 4-year program in 2002
- Wireless laptop computers
  - all 34,000 7th & 8th graders
  - all 3000 middle school teachers
- Now expanded 7-12 2009




More Info:  
[www.state.me.us/mlte](http://www.state.me.us/mlte)  
[www.mainelearns.org](http://www.mainelearns.org)  
[www.apple.com/education](http://www.apple.com/education)




## Quaker Valley, PA

- \$3.1 million 4-year lease
- Wireless laptop computers for all students grades 9-12
  - use at school and home
- Since 2001 has provided laptop computers and wireless networks at elementary & middle schools
- 1900 students district wide




Pittsburgh Post-Gazette, 2004




## Bethlehem, PA

- 150 highest at-risk 5th graders
- Each received a wireless laptop
- in 6th grade (2002)
- Improving reading & math levels
- Expanded to 1300 laptops and all current 6th graders





www.apple.com



## Carroll & Mount Ayr, IA

- Laptops
  - all 7th grade, Carroll
  - all 7th & 8th grade, Mount Ayr
- Funded by a grant from the Iowa Learning Technology Commission (2005)

## Central City, IA

- Laptops for all students grades 5-12 & teachers
  - use at school at home
- Laptop carts for K-4 classrooms
- Paid for with school infrastructure local option (SILO) funds passed in Linn County in 2008

