






Digital Thinking, Digital Learning: Twenty-First Century Skills as a Requisite for Life in a Flatter Learning World

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

The Learning World has become Flat!

Singapore and Taipei

(Intel Press Release, 2006)

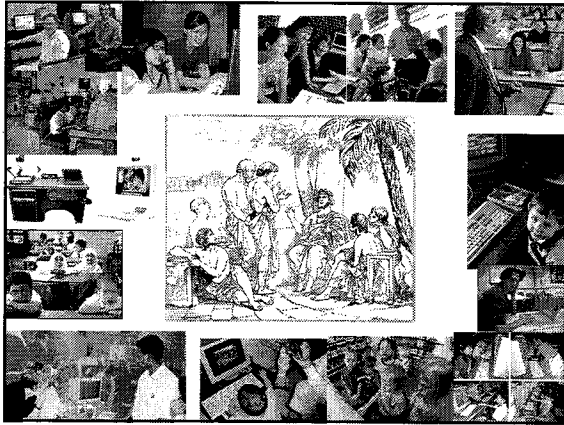
- Singapore, the island city-state in Southeast Asia, is about to complete a major new public/private project that will see large chunks of the 270 square mile city provided with Wi-Fi access by the end of 2008. The entire city, indoors and out, is due to be covered by 2015.
- In the coldest capital in Canada, the city residents of Iqaluit (pop. 6,000) enjoy free wireless from one free hotspot (with two more due soon to cover the suburbs), while Taipei, Taiwan (pop. 2.6 million) has a few more—over 4,000 hotspots that provide coverage for 90 percent of the city.

The Ten Forces that Flattened the Learning World

1. Tools for Searching/Finding Media and Information Resources
2. Availability of Quality Online and Blended Learning Environments
3. Free and Open Source Software for Learning
4. Open CourseWare (free content)
5. Online Learning Object Repositories and Portals (shared content)
6. Virtual Collaboration Software (synchronous and asynchronous)
7. Online Massive Gaming, Simulations, and Virtual Worlds (e.g., Second Life)
8. Learning Mobility and Portability (low-cost mobile devices+wireless communication)
9. Personalized Learning Tools (Blogs, Podcasts, MySpace, Flickr, and RSS)
10. Open Information Communities (Wikipedia, Slashdot, Digg)

Who is the world flattening for?



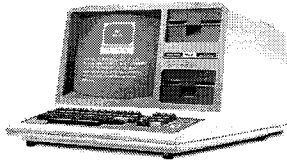
Telegraph: Flattening the world in 1860

Eighth-grade students Tayler Bernholtz, left, Amy Lostro and Kelsey Cardiff check out a weblog discussion related to the Civil War historical-fiction book 'Guerrilla Season' At South Valley Junior High School in Liberty, Mo. (Blogging now begins young USA Today, By Ashley Bleimes, USA TODAY, November 15, 2006, 12D). http://www.usatoday.com/life/2006-11-14-blogs-education_x.htm

Schools, Teachers, and Students of the 1880s

Many Innovative Technologies in by people in this audience

Technology of the 1980s



Radio Shack TRS-80 Model III

Introduced: July 1980
 Price: US \$699 base model
 US \$2495 w/ 32K, dual drives.
 CPU: Zilog Z-80, 2.03 MHz
 RAM: 4K, 48K max.
 Ports: Cassette tape, expansion, serial
 Display: 12-inch BW monitor; 64 X 16 text
 Storage: 0, 1, or 2 internal 178K floppy drives
 External cassette @ 500 / 1500 baud
 OS: BASIC in ROM, TRS-DOS on disk

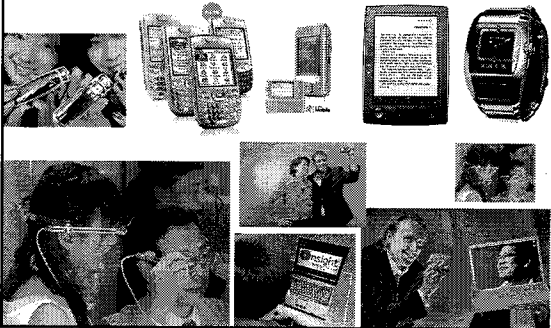


Connecting the Digital Dots: Literacy of the 21st Century

Barbara R. Jones-Kavalier and Suzanne L. Flannigan
 Educase Quarterly (2006), 29(2)

"These days, new media literacy technical skills catapult traditional learning methods into orbit—traditional chalkboards and overheads with pens do not occupy the same realm as current capabilities. As an example, now teachers can do a PowerPoint presentation with streaming video, instant Internet access, and real-time audio-video interaction, and they can do it with relative speed and ease."

Technologies of the 2000's



Students click on learning

New school laptops help Jonas Salk pupils up their grades

By Chelsea Phua - Bee Staff Writer
 Published 12:00 am PDT Thursday, April 5, 2007
 Story appeared in ARDEN CARMICHAEL section, Page G1

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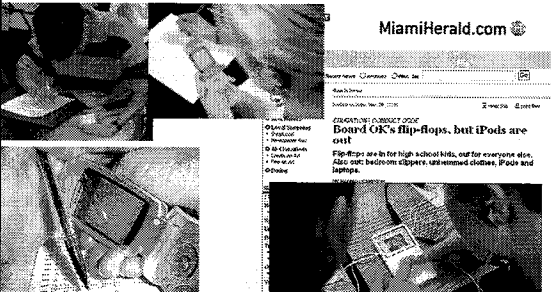
Jonas Salk is a public magnet school in San Diego, Calif. In October, the school began its technology initiative, which includes the purchase of laptops.
 A report by the San Diego Union-Tribune on Jan. 24, 2007, said that the school's new laptops are helping students improve their grades. The report also mentioned that the school is using the laptops to teach students how to use the Internet and to research information.

You can get more information about this story by clicking on the link below. You can also click on the link below to see the original story. You can also click on the link below to see the original story.



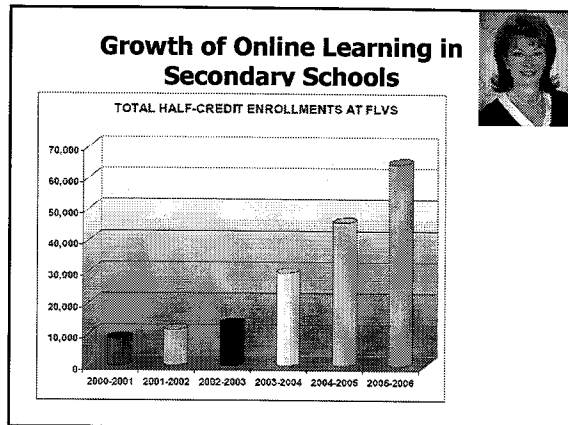
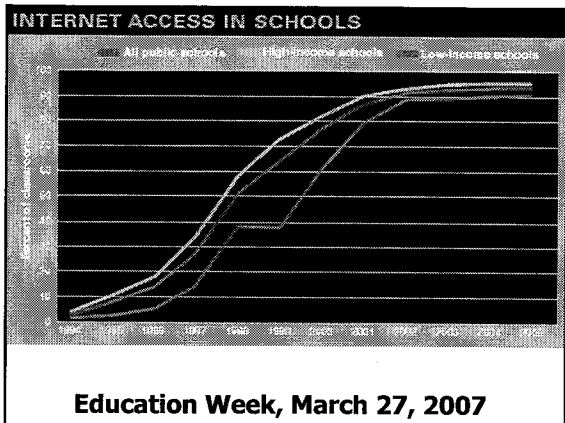
Poll #1: Should kids be allowed to bring mobile phones, MP3 players (iPods) to school?

MiamiHerald.com



Board OK's flip-flops, but iPods are out!
 Flip-flops are in for high school kids, out for everyone else. Also out: bed-on-cloppers, and removed clothes. iPods and laptops.

The screenshot shows the Education Week website with a navigation bar at the top. The main content area features a large article titled "Ed Tech Evolution" with a sub-headline "May educational technology trends over the past 10 years." Below the article is a poll titled "Should kids be allowed to bring mobile phones, MP3 players (iPods) to school?" with a progress bar and a "Vote" button. The website also includes various advertisements and a sidebar with additional news items.



- Monday April 30, 2007, USA Today
Top 25 Things that Shaped the Internet
- 747 Million adults logged on in Jan, 2007
 - 97 billion e-mails are sent each day
 - Google had 500 million visitors in Dec, 2006
 - USA: 1% broadband in 1998; 78% in 2007
 - YouTube bought by Google for \$1.7 billion
 - Adobe's Flash player on 98% of machines
 - There are 75 million blogs!!!
 - 19 million people play MMOG!
 - 173 million personalized pages in MySpace

Poll #2:
Raise your hands if you are a digital native (grew up with a computer at home).

Next Generation of Students

Tech Creates Bubble for Kids
 Alejandro Gonzalez, USA TODAY, Updated 6/20/2006 10:34 AM ET

INFORMATION TECHNOLOGY

Bonk's Addiction Q'er

1. Who has 2 or more cell phones with Internet access?
2. Who has 2 or more laptop computers with wireless connections?
3. Who is on email in the morning? At noon? Who does it at night?
4. Who suffers from nervous tension when you cannot get on email?
5. Who is on the Web right now?

Neomillennial Learning Styles

Planning for Neomillennial Learning Styles: Implications for Investments in Technology and Faculty
Chris Dede, Harvard University, Educause, 2005

- Fluency in multiple media--value all types of communication, activities, experiences, not a single best medium
- Actively seek, collect, and synthesize experiences, rather than absorb a single best source
- Active learning and collective reflection
- Non-linear and associated webs of learning
- Co-design of learning experiences for individual needs and preferences not pre-customized

Simulation: Xer

- "The skill to be valued in the twenty-first century is not the length of attention span, but the ability to multitask - to do many things well at once.... [and] the ability to process visual information very rapidly." (Rushkoff, 1996:50)



**What Students Need to Know:
21st Century Skills and ICT literacy;**
Susan D. Patrick, President and CEO
North American Council for Online Learning

The future will demand people who can express themselves effectively with images, animation, sound, and video, solve real world problems that require processing and analysis of thousands of numbers, evaluate information for accuracy, reliability, and validity; and organize information into valuable knowledge, yet students are not learning these skills in school.

From: The Partnership for 21st Century;
www.21stCenturySkills.org
Report: are they really ready to work (2006).
http://www.21stcenturyskills.org/documents/FINAL_REPORT_PDF_9-29-06.pdf



**What Students Need to Know:
21st Century Skills and ICT literacy;**
Susan D. Patrick, President and CEO
North American Council for Online Learning

- Information and communication skills;
- Thinking and problem-solving skills;
- Interpersonal and self-direction skills;
- Global awareness;
- Financial, economic, and business skills; and
- Civic literacy.

From: The Partnership for 21st Century;
www.21stCenturySkills.org
Report: are they really ready to work (2006).
http://www.21stcenturyskills.org/documents/FINAL_REPORT_PDF_9-29-06.pdf

Megabits

(p. 59 May/June 2007, Tech Trends)

"More than 60 percent of educators said that their schools are not putting enough emphasis on media literacy; and 80 percent said that they have to learn media literacy on their own..."

The results of the CIC Educator Survey, **Media Literacy: A Vital and Underserved Need in Schools**, can be found online at <http://i.ciconline.org/docs/CICmedialitreport11-2006.pdf> (November, 2006)

