



Disclaimer –

I mix the terms “digital media”, “multimedia” and “educational technology”.

Presentation Outline:

- A few failures
- Some successes
- Lessons to be learned
- Top 10 technologies (with examples)
- User contributed materials
- Some suggestions
- Understanding Generation M
- Specific research Findings
- The future of E.T.

The past 30 years-

- Learning from our mistakes.
- A lot of successes forgotten or taken for granted.
- Need to separate hype from help.

The Ball and the Bowl

Technology and teaching

The Emphasis should be on:

- Learning
- Teaching
- Productivity
- Creativity
- Vocational

A Few Failures...

- less than optimal applications and inappropriate uses... in my opinion:

Logo –

- Skills didn't transfer

Multimedia authoring

- Hypercard, HyperStudio, Dreamweaver?
- “A solution in search of a problem”

Digital portfolios-

- Are they measurable? NCLB
- “What can be counted, counts”

CAI, CBI –

- Sales of educational software down 25% over the past five years.
- Sylvan, SAT prep

Video game approach

Mistaking activity for achievement

- Busy computer labs
- Games-
- Oregon Trail

Hardware and software obsolescence

- Is it worth the expense?

PowerPoint – *The same old wine...*

- “Sage on the stage” or hyperlearning?
- Outdated instructional methods.

Some Successes:

- Enough negative thinking, a positive spin...
- More about how you use it, than what you use.
- Research has shown that any technology can be effective, if used effectively.
- It’s about the content... is the software any good? Is TV good or bad... depends on the programs.

Motivation

- Makes learning fun
- Active engagement
- Non-traditional students

Productivity

- Power tools
- Automation, AI.
- New, more powerful techniques
- Vocational

21st century skills

Multimedia approach

Multiple intelligences

Kids language

- Speaking in terms kids understand
- Visual learning
- Multi-sensory
- Multitasking
- Online
- Music
- MySpace
- Video

Communication

Project- based learning

- On the job approach
- Farmington High in Michigan: Tech department functions like an engineering firm, with teachers as project managers, a Ford Motor Co. engineer as a consultant and students working in teams. Teaches calculus, physics, chemistry and engineering.

Interdisciplinary learning

“Advancement comes when someone gains mastery in two different disciplines and is able to apply expertise from one into the second in new and creative ways... for example psychology and music, or science and art”.

Some Lessons to be Learned:

Learning happens

- Learning with digital media involves more than “educational technology.”
- It is in their homes, backpacks, pockets and cars.
- Learning happens with digital media even if it is not explicitly educational or academic.
- Configuring an iPod, exchanging IM, or posting to a bulletin board are all learning moments.
- Bring popular culture into an educational context.

“We need to understand how digital media has changed how young people play, learn, relate to others, get information, and create knowledge and culture”.

Mimi Ito

“Multimedia Learning”

by Dr. Richard E. Mayer

“Over-a-decade of research shows that multimedia can be effective in both learning and retention but, the results depend strongly on how multimedia is used, on the environment of use, and on the actual multimedia content. If multimedia is not used well, it can end up being a detriment.”

Need some formalized learning

Media Literacy

“If students aren’t taught the language of sound and images, shouldn’t they be considered as illiterate as if they left college without being able to read or write”

George Lucas

Top 10 Technologies for Tomorrow:

1. Digital photography & imaging

- Photoshop Elements, iPhoto, Picasa,
- Stills into video – Elements, PhotoStory, iMovie
- Electronic sharing

2. Digital video

- Camcorders and editing software
- Student video festivals
- YouTube – video storehouse
- United Streaming 40,000 videos

“For Life”

- Best Secondary Video Award
- California Student Media and Multimedia Festival
- Val Verde High School

3. “iPod-ography”

4. Podcasting- audio

- iTunes
- Garage Band

- Audacity

Podcasting- audio

- Charter Schools- Larry Cuban

5. Digital storytelling

- Not every story will benefit from multimedia.
- Grounded in the process of writing.
- Presentations that showcase real people and real things do better with users than those that don't.
- Anticipate users' needs based on the content presented.
- Interactivity can add to the user experience.

6. Acrobat

- Glues together multimedia pieces.
- Can include hyperlinks.
- Easy way to distribute online.

7. User contributed material

- Blogs, wikis, virtual worlds
- Amateur or professional?
- Genius or junk?
- The wisdom of the mob.
- Virtual county fair, garage band, personal journals.
- Copied or created? Mash ups.

MySpace

- 100 million accounts - 60 million uses a month
- 4th most popular in U.S.
- Publicity and parties
- Purchased by Rupert Murdoch – Fox News

YouTube

- Over 7 million videos, 100 million viewed daily
- 65,000 videos uploaded per day
- 20 million users per month
- Bought by Google for \$1.6 billion
- Copyright issues
- Now used by TV networks

FaceBook

- Social networks
- 7th most visited web site.
- Photo sharing and blogging.
- 13 million registered users.

Second Life

- M.U.V.E.
- Millions of users

Educational uses

Curriki.org

- Open source resources and curricula
- User contributed (wiki)
- Global Education and Learning Community

8. Vista, Leopard

- iLife suite for photos, audio, video, podcasting, web design, video conferencing

Vista

- Improved multimedia
- Mac-like - "Copycat"

9. The Web becomes ubiquitous

- Wireless hotspots
- Cell phones and other mobile devices

10. Digital portfolios

- Exhibit
- Documents
- Aligned to standards
- Authentic assessment

Some Suggestions for Leveraging Educational Technology:

Understanding Generation M:

We need to relate to and understand today's students:

- "Digital Natives"
- "Generation M"

- "Generation Media"
- Slackers or creative
- A closer look...

Need teacher and administrator training and current equipment.

- Perhaps single largest factor for success..
- Can be costly.
- Needs to be ongoing.
- Curriculum integration
- Build capacity

Employ digital content

- E-books.
- Electronic resources.

Use real world problems

- Project based learning
- Global teams
- Contact with professionals
- Service learning

Develop visual literacy

- Teach how to interpret and create visual messages.
- Include mass media literacy.
- Include copyright and ethical issues.
- Appeals to visual learners
- Multiple intelligences
- Multi-sensory
- Important 21st century skills

Specific Research Findings

Graphics Lessons

- Eye movement (Eyetrack III study)
- Heatmaps

Text vs. multimedia

- More likely to correctly recall facts, names, and places when presented in a text format.
- New, unfamiliar, conceptual information more accurately recalled when received in a multimedia or graphic format.

- Attend to only two forms of media at a time, e.g. audio, still images, and written captions.

South Florida *Sun-Sentinel* study

- Online experience supplemented print articles.
- Fun and educational idea of what it would be like to operate a Civil War era submarine.

Encourage interactivity

- Active vs. passive
- Leapfrog's – 7 second rule

Project Tomorrow

- Promotes research-based uses of science, math, and technology resources to develop critical thinking, problem solving, and creativity skills in K-12 students.

“Students are frustrated by the limits on their tech use at school and have many good ideas of ways that technology could be better used within their education.”

Julie Evans

Findings:

- Students are strong believers in the power of technology.
- Students are using technology in innovative ways to support their learning and lifestyles.
- Sixth grade is the point when students begin to show their enthusiasm for using technology.
- Younger students adopt sophisticated technologies in the footsteps of their older siblings.
- Students and teachers want ready access to up-to-date technology at school.
- No significant differences between how younger teachers and older teachers approach technology use.

Partnership for 21st Century Schools

- Made up of U.S. Dept of Ed, tech companies, publishers and national associations.
- Skills include:
 - Mastery of core subject areas
 - Learning skills such as critical thinking and problem solving, and interpersonal and self-directional skills
 - Using 21st century tools such as communication and information technologies to develop learning skills
 - Learning global awareness, and business and civic literacy.

More 21st Century Skills

- Scientific and technological literacy
- Visual and information literacy
- Cultural literacy
- Adaptability/managing complexity
- Curiosity, creativity, and risk taking
- Sound reasoning
- Prioritizing, planning, and managing results

The Seven C's

3R's x 7C's = 21st Century Learning

- Critical thinking
- Creativity
- Collaboration
- Communications
- Cross-cultural understanding
- Computing
- Career & learning self-reliance

The Future of E.T.

America's Digital Schools 2006 survey

More mobile computing

- By 2011 more than half of student devices will be mobile.

Online learning

- Classic courses – taught by a team
- National classes
- Online communities, peer-to-peer
- 1 to 1 computing
- \$100 laptop
- Handhelds

Bandwidth crisis

- Video and multimedia.
- May not be an issue.

We still need to...

- Include digital media projects in lesson plans.
- Adopt authentic assessment methods.
- Develop measurable outcomes.
- Align projects to local, state and national standards.
- Develop rubrics and evaluation instruments.
- Conduct and apply more research.

“Rethinking Learning in the Digital Age”

- The MacArthur Foundation-
- \$50 million digital media and learning initiative

Key research questions include:

- How can digital skills be encouraged in after-school programs?
- How might classrooms, libraries, and museums adapt to meet the needs of the digital generation?
- How do young people use critical thinking skills on the Internet?
- How are ethical decisions and judgments made in digital environments?
- How can games foster experimentation, innovation, new identities, and learning?

Links:

- Dimenxian www.dimenxian.com
- Lingo2Word www.lingo2word.com
- Mimi Ito www.itofisher.com/mito
- Richard E. Mayer
www.psych.ucsb.edu/people/faculty/mayer/index.php
- George Lucas Ed. Foundation
www.edutopia.org
- YouTube www.youtube.com
- UnitedStreaming
www.unitedstreaming.com
- Curriki www.curriki.org
- Second Life www.secondlife.com
- Stanford on iTunes
<http://itunes.stanford.edu>
- Digital Story Telling article
www.proscenia.net/pronews/discussion/010106.htm
- Examples of K-12 digital stories
www.meli.dist.maricopa.edu/learnshops/digital/examples.php
- Multimedia and Internet @ Schools magazine www.mmischools.com
- Spotlight – Digital Media and Learning blog <http://spotlight.macfound.org/>
- EyeTrack study
<http://poynterextra.org/eyetrack2004/main.htm>
- Project Tomorrow www.tomorrow.org
- Kaiser Family Foundation study
www.kff.org/entmedia/entmedia030905/pkg.cfm
- MacArthur Foundation – Digital Media and Learning grants
www.digitalllearning.macfound.org
- Partnership for 21st Century Schools
www.21stcenturyskills.org
- America’s Digital Schools- stats
www.ads2006.org
- Apple Learning Interchange
<http://edcommunity.apple.com/ali/>

For handouts, links, publications, workshop and presentations contact:

Dr. Arnie Abrams

abrams@sou.edu

www.arnieabrams.net