Technology's Impact on a Changing Society

Bruce Hawkins, CEO, MCOECN

Changing Society

Major Impacts on a child's life:

1950's	1980's	1990's	Present
Home	Home	Peers	TV
School	Peers	TV	Peers
Church	TV	Home	School
Peers	School	School	Church
TV	Church	Church	Home

Changing Society

Consider how we view careers:

- The post WWII generation typically held the same job from high school until retirement (Less than five jobs changes)
- **Today's average 38 year old will switch jobs from 10 to 14 times before retirement**

Changing Society

What kind of employee is needed today?

What we used to teach	What we need to teach today
Work Independently	Work in Teams
Follow Instructions	Think Strategically
Don’t question leadership	Handle Diversity
Don’t make mistakes	Learn Dynamically

21st Century Implications...

Technology:

- Expanding learning communities. Connecting teachers, students, and communities with each other and with the world.
- Teaching Media Literacy (social networking rules, truth vs. fiction, intellectual capital).
- Using emerging technologies. Developing new generations of technologies.
- Closing the digital divide.

Gary Marx, President, Center for Public Outreach, Vienna, Virginia

Emerging Careers

- Artificial Intelligence Technician
- Automotive Fuel Cell Battery Technician
- Computational Linguist
- Information Broker
- Cybrarian (organizing a library growing at more than a million pages a day)
- Leisure Consultant
- Cryonics Technician
- Virtual Set Designer
- Ring Tone Composer
- Tissue Engineer
- Smart-Home Technician
- Medical Diagnostic Imaging Technician

Gary Marx, President, Center for Public Outreach, Vienna, Virginia

Our Choice

We have a choice.
We can simply defend what we have or create what we need.

Gary Marx, President, Center for Public Outreach

Rewrite the Dictionary…

- Blogs, wikis, Furl, netTrekker, Flikr, Netfliks
- WI-FI, TiVo, Artificial Intelligence, cybercell
- The Blackberry, Blue Tooth, Instant Messaging
- iPODs and podcasting, the iPhone, google, Wii
- MySpace.com, YouTube.com, Facebook, Second Life (avitars), twitter, Club Penguin (social networking late elem. kids)
- Teraflops (1 trillion computations/second)

Convergence and Divergence are happening simultaneously.
Gary Marx, President, Center for Public Outreach, Vienna, Virginia

Rewrite the Dictionary…

- RFIDs (Radio Frequency Identification Numbers)
- DNA Computer (330 trillion operations/second, 100,000 times the speed of the fastest PC, Smallest biological computing device)
- E-Learning, Mouse Potato, Cyber-Bullying, Sparknotes, Digital Tutoring
- XM and Sirius, dashboards, web analytics
- To ABC, NBC, CBS, CNN, and Fox, add Univision, Telemundo, AZN, CTI, SBTN, TFC, RTN

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Other Issues

Filtering

- Every ITC has some kind of filtering in place
- Many schools add a second layer of filtering
- We filter 40M spam messages per day
- Why?
  - To reduce network impact
  - To protect from infection/loss of data
  - To comply with CIPA, FERPA, E-Rate, etc.
  - Most important ➔To protect our children

Other Issues

But filtering has a downside:

- Loosing battle
- Cost of time and financial resources
- Good content is intermixed with bad content
- Are we failing to teach students to make their own decisions?

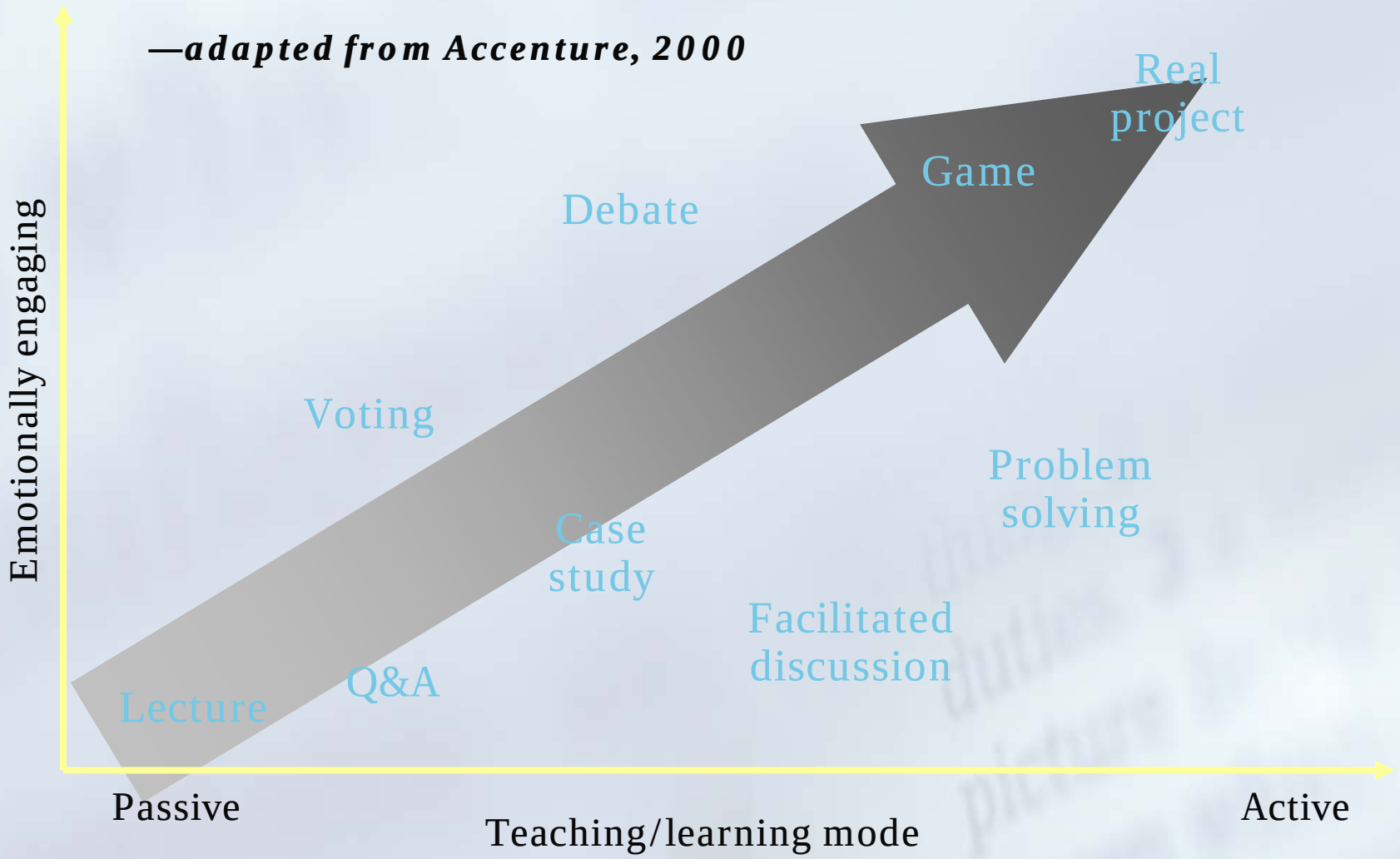
Using Technology in Education

- Premise:
  - Today's students are more "wired".
  - Students today have been exposed to iPod, cell phone, electronic mail, MySpace, YouTube...
  - Studies show the average student has five on-line personalities
- What does this mean for education?
  - Students spend more time on activities they enjoy.
  - Many of today's students enjoy electronic games and other Internet based activities.
  - Can these be used for good educational purposes?

Trends in Technoloyg: Gaming

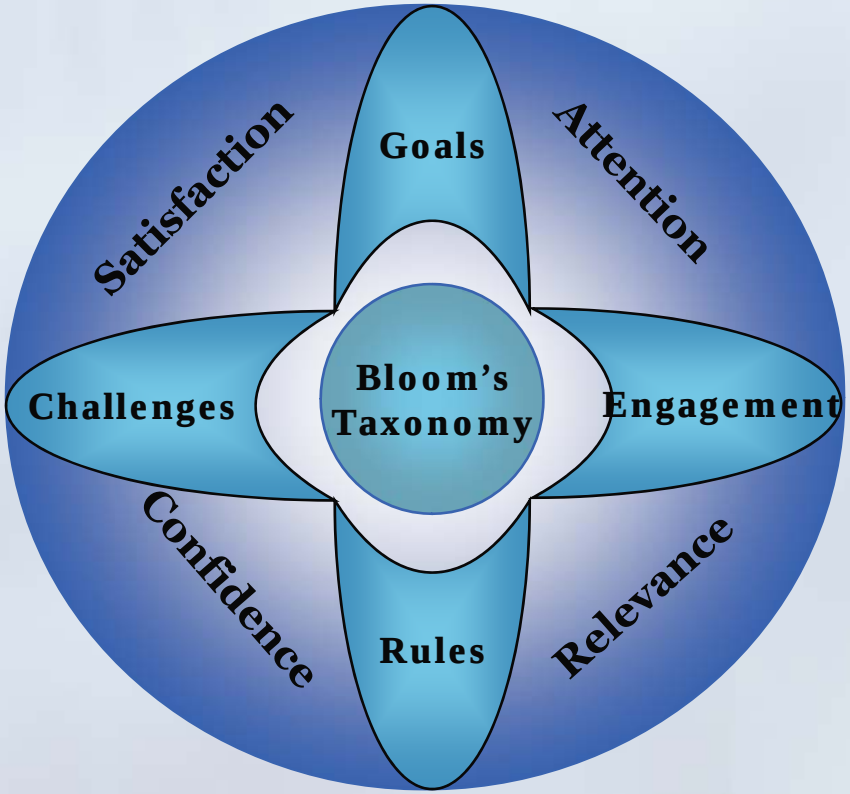
- Students use games to emulate real-life situations.
- To gain the advantage in the game (score more points) the student will need to learn about the game environment – and the real-life environment in the process.
- Also promotes group strategies and cooperative learning styles.

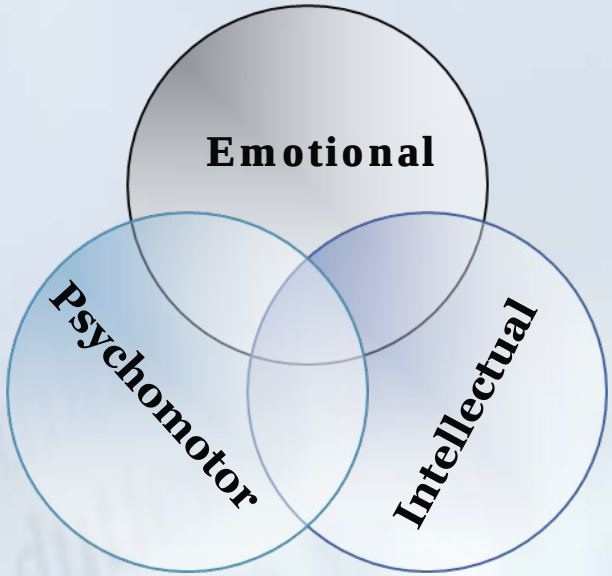
Engaging learning experiences



Game-based learning model

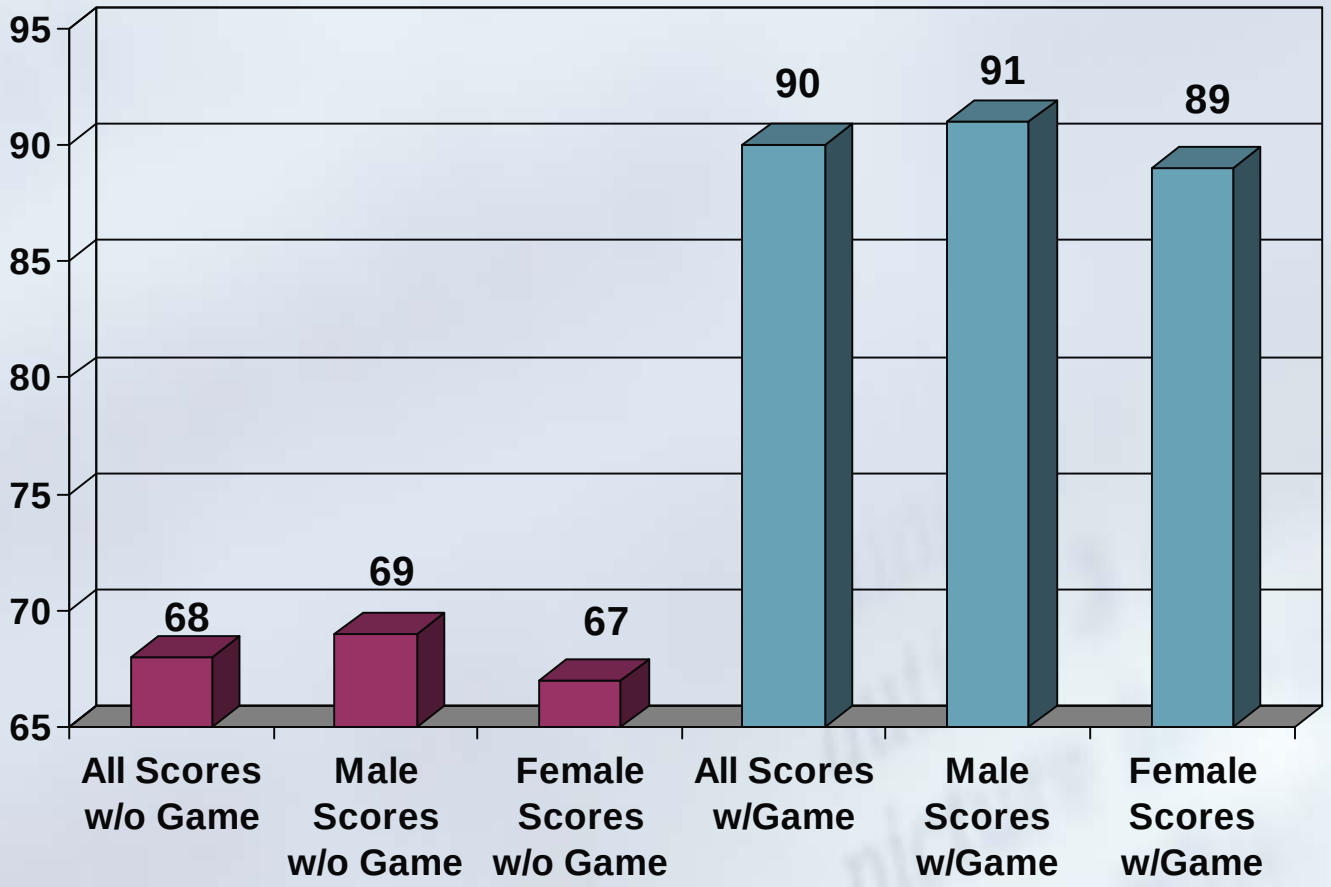
Game → **yields** → **Engagement**





Adapted from Chris Clark's Principles of Game-Based Learning While at BreakAway Games

The study looked at the relationship between overall scores and gender and game play



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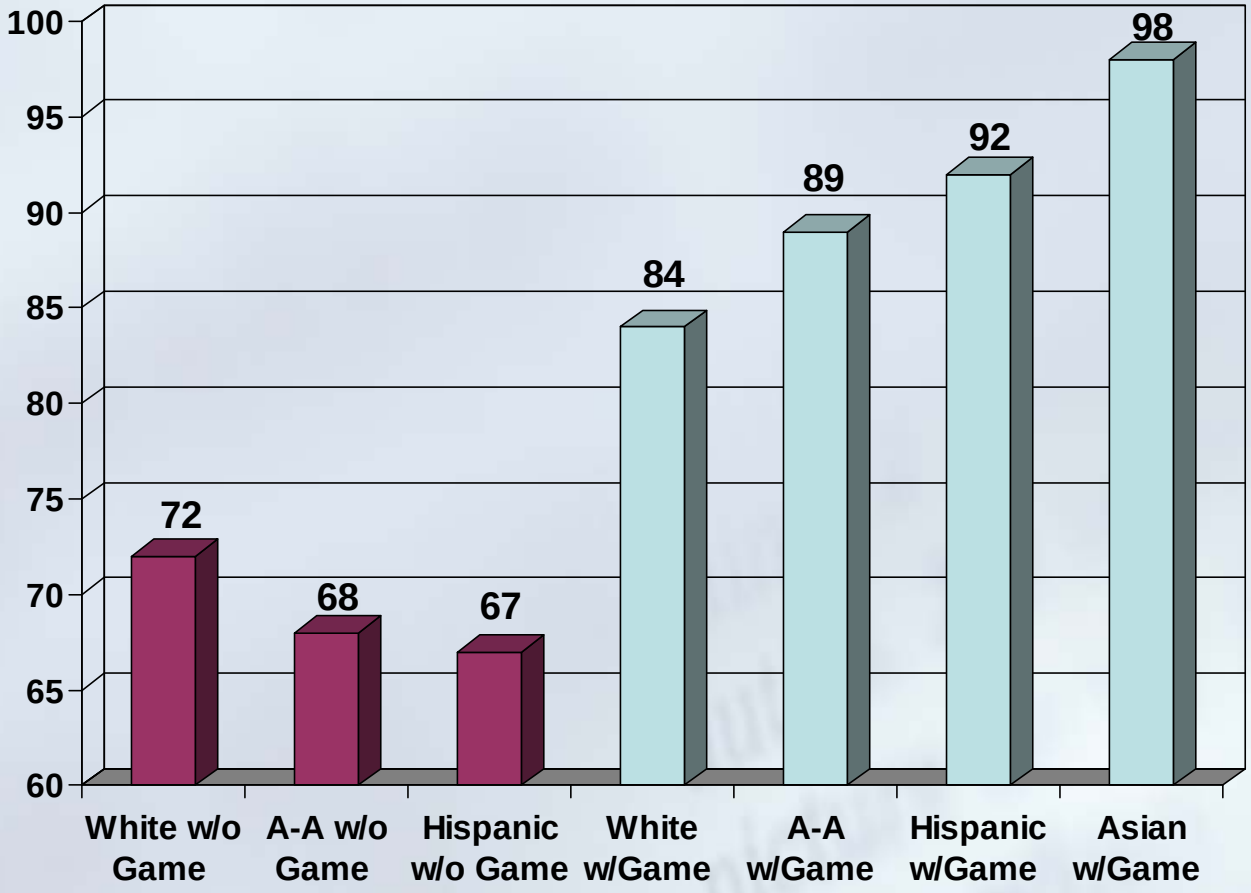
The study looked at the relationship between ethnicity and game play



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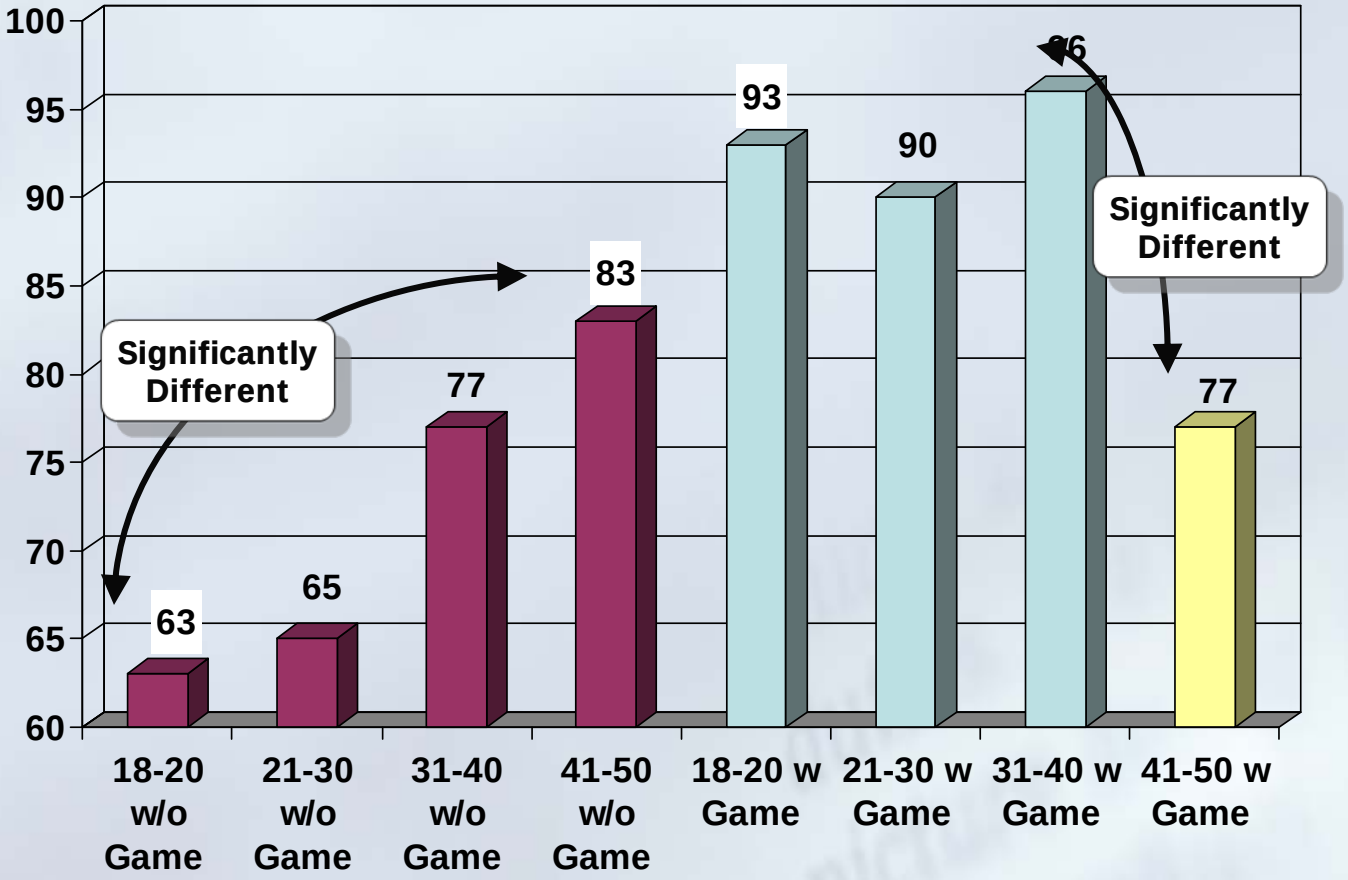
The study looked at the relationship between age and game play



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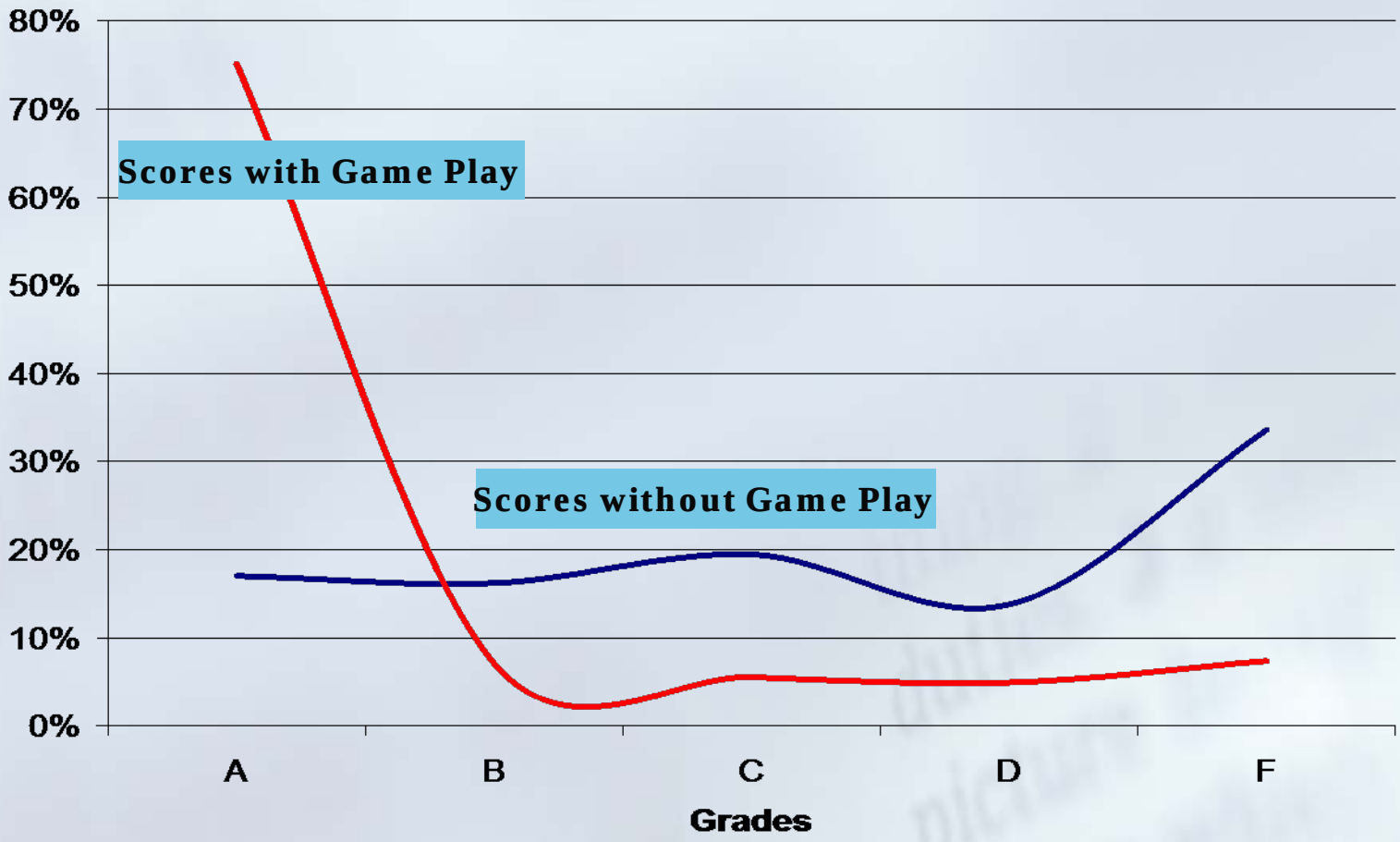
Grade distribution for study 3 with and without game play



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1804

Technology Changes

Take the Cell Phone:

	30 years ago	20 years ago	10 years ago	5 years ago	Today	Future
Cost	Luxury	Expensive	Acceptable	Reasonable	Cheap	?
Usage	Rare	Limited	Growing	Popular	Common	?
Features	Voice	Voice	Voice Text	Voice Text Camera Contacts Calendar	Voice Text Camera Contacts Calendar Games Internet GPS Music	?

Trends in Technology

Andrew Tompkins, MCOECN

Going GREEN:

- Saving trees by not printing
- Presentation will be on our web site

www.mcoecn.org

Look under “Presentations”

Goals for this presentation

- See “what’s cool”
- Understand its potential impact
  - Society in general
  - Education in particular

Web 2.0

- The term “Web 2.0” has to do with applications and how people use the World Wide Web.
  - Early web (Web 1.0) was read-only
  - Some data entry via static forms, but this did not represent a major usage shift
- Web 2.0 represents a more interactive web
  - Blogs, Wiki’s, virtual reality sites, social networks, sharing sites

Web 2.0 as User Interface

- Applications where more processing activity takes place on the client (the Mac or PC) instead of or in addition to the server
- Sending/receiving data happens automatically instead of clicking a button
- Example
  - Google Maps: http://maps.google.com/

Web 2.0 Concepts

"Tagging"

- The ability to add a one or two-word descriptor to an object
- Allows ad-hoc categorizing and searching

"Mash-up"

- Combining the features of different sites to build new functionality
- Example: Geotagging
  - Combining photos with map data
  - http://www.flickr.com/photos/eraut/1811145649/map/?view=users

Web 2.0 Concepts

“Community”

- A group of people who:
  - Come together around a subject or interest
  - Contribute back to that subject or interest
- Like the web version of the booster club
- Not bound by geography

Web 2.0 Impacts

- Students today have more tools that allow them to be social
- Students today are more comfortable with technology and like to use technology
- Using classroom tools that take advantage of this social and technical nature may be helpful in increasing time on task

Web 2.0 Impacts

- Risks
  - Less control of software that exists on some server “out there” somewhere
  - Can require more better faster desktop hardware and network bandwidth

Sharing in Web 2.0

Sharing Sites

- A popular type of Web 2.0 application is the “sharing site”.
- Allows easy and free (typical) uploading of some form of content
  - Pictures
  - Video
  - Computer software
  - Lesson Plans

Sharing Sites

- Examples:
  - Pictures:
    - http://www.flickr.com/
  - Video:
    - http://www.youtube.com/
    - http://www.teachertube.com/
  - Lesson Plans:
    - http://teachers.net
    - http://www.curriki.org

Sharing Sites

- Benefits:
  - Massive volumes of material
  - Easy access to work of others
  - Tagging (easy search)
  - Community
  - Mash-Ups
- Sites geared specifically for education
- “How To” materials:
  - http://www.youtube.com/watch?v=VGoyTIGGHXA

Sharing Sites

- Potential risks
  - Might not be available when you need it
  - Can’t control what gets posted
  - Not everything is “educational” in the sense we want it to be...
  - Example:
    - Searched Flickr for the tag “Bike” it came up with more than 1.8M photos
    - However, 2,217 of those are pictures of “World Naked Bike Ride"

Social Sites

- One of the fastest growing areas
- Very popular among 14-30 age group
- Combine elements of blogs, chat, email, photo sharing, video sharing, and personal web pages
- Examples:
  - http://www.myspace.com/
  - http://www.facebook.com/

Social Sites: Positive Impacts

- Building social communities tailored around a specific subject or class
  - Students will communicate anyway, so make it a facilitated/monitored discussion
  - Peer learning, self-help
  - Facilitate teacher communication with parents and community
- What else?

Social Sites: Risks

- “Adult” nature/exposure
- Stalking/pedophilia
  - State of Virginia recently passed legislation requiring a course in Internet safety
- Questionable educational outcomes/benefits
- Cyber bullying
  - The “Mean Girls” phenomenon

Alvin Trusty's Advice

For Pre-service candidates:

- Don't post stuff that could be viewed negatively by a potential employer
- Police your friends' sites to make sure they don't post anything unflattering
- Use Google page ranking to your advantage
  - Post positively and often using your real name
  - Link to other sites
  - Get others to link to your site

Before You Interview

What you might try to find before you hire:

- Google their name and variations
  - Michael, Mike, Mick
- Get your own MySpace or Facebook accounts and search the “Members Only” areas
- Look for their on-line pseudonyms and search on those

Virtual Reality

- The big kid on the block is Second Life
  - http://secondlife.com
- Second Life is a computer simulation of (somewhat) real life
- Avatar
- Fly
- Meet people at places and chat
- Example: http://www.youtube.com/watch?v=b72CvvMuD6Q

Other Virtual Worlds

(Note: This is not an endorsement)

- Second Life
- Club Penguin
- Barbie Girls
- Habbo Hotel
- Gaia

Virtual Reality: Benefits

Potential benefits:

- Appeals to their social nature
- Fun
- Students like the “game” environment
- Increased time on task
- Repeatable (just play it again, Sam)

Virtual Reality: Disadvantages

- Resources?
- Cost of entry?
- Speed/efficiency?
- Child-safe environment?
- Addictive?
- Values?

Contra-examples:

- http://www.youtube.com/watch?v=oT9XoJLDNjE
- http://www.youtube.com/watch?v=flkgNn50k14

Its amazing what you can find...

- From Alan Levine's blog:
  - Fifty Ways to Tell a Story using Web 2.0 Tools
  - http://www.nmc.org/blog-entry/50-ways-slidecast
- The actual story and examples:
  - http://cogdogroo.wikispaces.com/Dominoe+50+Ways

Other Interesting Applications

- Portable desktop:
  - http://www.protopage.com/
- Store and share bookmarks:
  - http://del.icio.us/
- Convert voice to email, text messages, etc:
  - http://Jott.com
- How to bug your friends:
  - http://www.twitter.com
- List of WebWare's top 100 apps:
  - http://www.webware.com/8301-1_109-9883960-2.html

So how do you find all of this?

- Ask your tech coordinator
- Google words and concepts
- Look up stuff in Wikipedia
- Look at blogs
- Look at links from blogs to other blogs
- Look at educational publications & sites
- Go to conferences and actually attend sessions

Communicating in Web 2.0

Blog (Blogging, Blogger)

- A combination of “Web Log”
- Blogging is the new journalism
- Really good examples:
  - http://www.trustyetc.com/trustyblog/
  - http://johnrappold.org/blog/

Communicating in Web 2.0

Wiki

- A tool for collecting and organizing a web site (Wikipedia)
- Commonly used for reference materials and user manuals
- Tool allows for easy creation and editing of a web page
- Example:
  - http://en.wikipedia.org/wiki/Wiki

Recall the goals ...

- See “what’s cool”
- Understand its potential impact
  - Society in general
  - Education in particular

How did I do?

Any Questions?

Cool Administrative Software

Sam Martin

Cool Tools

Software mentioned during Sam Martin's presentation included:

Tool	Where to find it
Jott	http://jott.com
Twitter	http://twitter.com/
DimDim	http://www.dimdim.com/
Moodle	http://moodle.org/

Other sites of interest:

http://c4lpt.co.uk/recommended/top100.html