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Ten Global Trends in ICT and Education

1. Mobile Learning

- Mobile phones, smart phones, Ipads, Netbooks….
- 4 billion subscribers – 2/3 in developing regions
- A billion new phones produced every year.
- Iphone – 150,000 Apps

1. Mobile Learning

So what happens when we get these devices in the classroom?

http://www.youtube.com/watch?v=hut3VRL5XRE

1. Mobile Learning

Perhaps they are most useful out of the classroom.

Or we should rethink the classroom?

- 24/7 information access tool – to support where ever, whenever learning
- Data collection and sharing tool.
- Delivery of traditional lectures over podcast

Applications:

- Walking through time -- download historical maps when standing in a specific location and to annotate them.
- Listening to audio tour of city
- Texting with Wikipedia

2. Cloud Computing

Cloud Computing?

What exactly is Cloud Computing?

http://www.youtube.com/watch?v=8g9penyLM5Q

2. Cloud Computing

Why Cloud Computing is good for Education?

- Allows for cheaper devices – mobile learning with less power and memory needs.
- Allows for third party services and technical support.
- Decentralized IT support – less need to technical expertise in schools
- Device and location independent
- Ubiquitous connectivity is the challenge
- Privacy and control issues

3. One-to-One computing

- Smart phone, netbooks, tablet pcs, Xos….

Uruguay

- Plan Ceibal in Uruguay -- 380,000 XOs in Uruguay
- 8 year olds having same level of computer literacy as 18 year olds
- Schools as centers for free community wi-fi
- Started in Rural areas and worked in to Capitol.
- Teacher challenges

But…

- Comprehensive plan
- $$$
- Impact?
- E-waste

4. Ubiquitous Learning

Just-in-time learning

Self-paced

Peer Learning

Deeper Learning

Mentors

Virtual Learners

Informal Learning

5. Smart Portfolio Assessment

Forbes Magazine June 7, 2010 -- "What Schools Can Learn from Money Managers"

"Innovative schools collect data, look for small changes, intervene quickly and move resources to the formulas that work"

- The collection, management, sorting, and retrieving of data related to learning will help teachers to better understand learning gaps and customize content and pedagogical approaches.
- The Portfolio -- tools are increasingly available to students to gather their work together in a kind of online portfolio; whenever they add a tweet, blog post, or photo to any online service, it will appear in their personal portfolio which can be both peer and teacher assessed.

5. Smart Portfolio Assessment

Wired Magazine June 2010 -- "How its Done … Inside Pixar's creative magic"

"We know screwups are an essential part of making something good. That's why our goal is to screw up as fast as possible"

Should our schools not help students screw up as fast as possible?

- Assessment is increasingly moving toward frequent formative assessments which lend itself to real-time data and less on high-pressure exams as the mark of excellence.
- Should failure be seen as essential – you do not know your limits until you fail?
- Should failure be eliminated from our lexicon?
- In Africa – 4 of 10 do not move on to secondary education**. < 25-30% of each age cohort completes junior secondary education, and < 15-20% completes sr. Secondary education**

6. Personalized Learning

- Education systems are increasingly investigating the use of technology to better understand a student's knowledge base from prior learning and to tailor teaching to both address learning gaps as well as learning styles.
- This focus transforms a classroom from one that teaches to the middle to one that adjusts content and pedagogy based on individual student needs – both strong and weak.

For Instance:

- Achievement First – K to 2 given one on one reading comprehension test every 6 weeks. Individual students given extra lessons
- School of One – choose between computer instruction, traditional classes, or remote tutoring – students scoring 42 to 70 percent higher on math tests after participating
- Wireless Generation – software to monitor student and teacher performance – Chicago, DC and Indiana. – compiled 3 terabytes of data to refine teaching methods for reading and math. Software can differentiate causes of failure and prompts teachers to group similar kids with proven instructional technique to specific problems.

7. Redefinition of Learning Spaces

7. Redefinition of Learning Spaces

Learning Environments for:

- Collaborative, cross-disciplinary, students centered learning.
- light, colors, circular tables, individual spaces for students and teachers, and smaller open learning spaces for project-based learning are increasingly emphasized.
- Can we make them less like prisons and more like art gallaries?

8. Teacher-generated open content

- School systems are increasingly empowering teachers and networks of teachers to both identify and create the learning resources that they find most effective in the classroom.
- Remixed Content -- many online texts allow teachers to edit, add to, or otherwise customize material for their own purposes, so that their students receive a tailored copy that exactly suits the style and pace of the course – ie Flatworld Knowledge
- Fosters communities of practice and teacher networking.
- Copyright issues -- such activities often challenge traditional notions of intellectual property and copyright.

9. Teacher managers/mentors

- The role of the teacher in the classroom is being transformed from that of the font of knowledge to an instructional manager helping to guide students through individualized learning pathways, identifying relevant learning resources, creating collaborative learning opportunities, and providing insight and support both during formal class time and outside of the designated 40 minute instruction period.
- This shift is easier said than done and ultimately the success or failure of technology projects in the classroom hinge on the human factor and the willingness of a teacher to step into unchartered territory.

10. Gaming

- 3 billion hours per week playing games
- Young person spends 10,000 hours playing games by the time she is 21 years of age.
- Opportunity to channel time into learning
- Serious Games
- EVOKE -- Massive Multiplayer on-line Classroom with over 19,000 students of all ages learning about social innovation with no teacher, no classrooms, and a fictional comic book set in the year 2020 at the center of the learning process.
- Game started March 3, 2010 and ended on May 19, 2010

10. Gaming -- EVOKE

http://www.urgentevoke.com/

http://vimeo.com/9094186

10. Gaming -- EVOKE

Numbers – March 3 to May 23, 2010

- 19,324 Registered Players
- 2,345,583 Page Views
- 333,749 visits
- 7.03 pages per visit
- 8:19 Average time on site
- 177,673 unique visitors
- 23,502 Blog Posts
- 4,752 Photos
- 1,517 Videos

10. Gaming -- EVOKE

- They Came
- They Worked
- They Gamed
- They Gamed the System
- They helped each other
- They insulted each other
- They Shared
- They Created
- They Acted

List of In-Game Projects:

- http://www.urgentevoke.com/profiles/blogs/evoke-official-ongoing

EVOKE lessons

- Narrative as a pedagogical device – we remember stories and their lessons. The importance of being heroic.
- Social Networking – people want a niche to discuss serious subjects.
- Action-based learning – objective is to do something.
- Power assessment – effectiveness of peer assessment?
- Crowd sourcing ideas – should we not focus our students on solving real world problems?
- 90-9-1 Rule of Wikipedia for participation and information generation.
- Peer to peer learning – collaboration, feedback and critique, information exchange, developing global teams.
- Redefine notion of a teacher – mentor, peer, guide.
- Global community, solving real world problems.

10 Trend Summary

- Decentralized
- Individualized
- Data-Driven
- 24/7
- Anywhere
- Empowered
- Multiple competencies
- Inter-disciplinary
- Collaborative
- Learn, try, fail, review, relearn, try again
- Real
- Global

THANK YOU!