Technology & Best Teaching Practices

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9/18/07
Kids of Today

- They have grown up in a visual landscape and are wired for multimedia.
- They are referred to as “digital natives” by Marc Prensky.
- We can find similarities between our “hanging out” and “mixing tapes” to their “chat rooms” and “creating playlists”.
- They are different in that they have taken personal culture and have entered the public culture.
- Kids may be “tech literate” but we are “life literate”.
Kids of Today

• Think graphically and they even read differently.
  – We read in a Z pattern and their eyes scan in more of an F pattern according to Nielsen.

• Jensen says that about 80% of our students are not auditory learners.
Common Activities – Pew Internet & American Life Project

• 8 out of every 10 kids have a game console in their home. Over half of those have more than one.
• 57% of adults watch and download videos and the largest segment is the young adult.
• 55% of our youth (ages 12-17) use social networking sites.
• About 79% of American teens 15-17 have cell phones, according to C&R Research Services in Chicago.
• 74% of American teens regularly post information to the internet.
Brain Studies

• Ian Dukes recently quoted an article from Scientific American Mind.
• He said if you look at a fmri scan the visual cortex is 15% larger than it was 20 years ago.
• Digital immigrants can recall 60% of video content, kids can recall 90% and our parents can recall 10% of visual content.
Schools are Traditionally Slow to Change

• Many schools continue to teach with methods of the 1950’s.
  – Rote memorization of dates, places, and facts that are quickly forgotten after “the test”.

• The Association for Supervision and Curriculum Development says, “In 10 years, there will be two kinds of people: the well educated and the hardly employable.”

• Knowledge and technology will be the great equalizers of this millennium.
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• We must create an environment that facilitates learning.
  – We must have a climate that is enriching and emotionally supportive. This is best done by making it safe to make mistakes.
  – We must create an environment that is:
    • Moderate Stress (some stress prevents boredom)
    • High Challenge
    • Realistic in its goals for attainment
    • Supportive
Practical Example

• **Connection Meetings** Connection Meetings began after the 2006 GISA Conference when the faculty and administration learned about the importance of each student’s connection within the school.

• Teachers meet twice a year and answer 4 questions about each student. Academic, social, athletic, and artistic strengths are reviewed. Making sure each child is connected and successful in one or more
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• Incorporate a wide variety of teaching strategies that address different learning styles.
  – 98% of new learning enters the brain through visual, tactile, and auditory experiences.
  – Sousa (1995, 2001) says adolescents tend to drop out mentally after 15 or 20 minutes of lecture. In young children the drop out rate is 5 to 10 minutes.
  – Follow segments of instruction with opportunities to work with the new learning.
  – Reteaching should be done in the preferred modality of the learner.
Classroom Examples

- Lego Mindstorm NXT
- Claymation
- Interactive Whiteboards
- Active votes
- Mounted Projectors
- Data collection probe ware
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• Incorporate strategies that help students make connections from prior learning and experiences to new learning across disciplines.
  – Jensen says “The brain thrives on meaning, not random information”.
  – We must find out what they know, what misinformation they have about the subject, and where no structure exist, create scaffolds for the new information.
  – We can help students “get it” from the beginning.
Classroom Examples

• Concept Mapping
  Software – Cmap
• TimeLiner – Tom Snyder
• Google Earth –
  Virtual Field Trip preview
• Virtual Field Trips
• KWL charts
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• Teaching for long-term memory is a primary goal.
  – Emotion, relevance, and concrete models will assist students in moving random facts into a concrete form.
  – Employ interesting techniques that motivate the students to know more.
  – Real life applications by teachers who demonstrate a love for learning.
Classroom Examples

- Photostory
- United Streaming
- Kidpix
- Geometry Sketchpad
- Celestia
- planet exploration
- Exploration websites – extensions
  - NASA – what if I was an astronaut?
  - Mayflower – what if I was a pilgrim?
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• Constructing knowledge through higher-level thinking processes.
  – Critical thinking, creative thinking and problem solving should be encouraged and rewarded.
  – Inductive thinking skills such as distinguishing cause and effect and making inferences.
  – Deductive thinking skills such as logic.
Classroom Examples

When we teach, we should be mindful of Bloom’s Levels:

- Knowledge
- Comprehension
- Application
- Synthesis
- Analysis
- Evaluation

• Alice
  • Scratch

• Oregon Trail

• Online gaming communities give us important clues about how to design learning environments. (complex, difficult and time consuming, yet players…)
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• Collaborative learning is an integral part of the classroom.
  – The US Department of Labor puts collaborative skills right up there with math and reading.
  – Students should be provided numerous opportunities to work together to practice the learning, to develop concepts, to discuss ideas, and to produce quality products.
Classroom Examples

• Moodle Emma
• Lemonade Stand – Virtual Lemonade Stand, pricing, procurement, inventories, profit and loss in Excel, advertisement brochure for own business.
• 21st Century Learning
• Oreo Cookie Project - Experiment, Graph Club, Creative Writing – how do you eat the cookie? Draw picture…class book.
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• Bridging the gap between all learners, regardless of race, socioeconomic status, sex, or creed.
  – Teachers will use direct teaching techniques to help provide cognitive structures where none exists.
  – The climate in the classroom will be, at all times, a supportive and nurturing one where building relationships is a priority and where there will be no hidden agendas.
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• Evaluating learning through a variety of authentic assessments.
  – Independent projects, experiments, and complex problem solving are some of the ways this can be accomplished.
Classroom Examples

- 3rd Grade State PowerPoint
- Internet Safety Skits
- 6th Grade Webpage
- Computer Applications Class (Alice Project, web site Project, video editing project, graphic, etc.)
- Menu in Publisher
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• In-depth understanding that leads to real-world practices.
  – We must look at relevance and how it applies to learning. (How are we ever going to use this?)
  – Depth of understanding will be evident through journals, products, and written materials, and a part of the assessment will be the student’s ability to tie the learning to real-world situations.
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- Seamless integration of technology for high-quality instruction.
  - Schools should place a priority on providing technology tools to everyone.
  - Includes both instructional technology, which deals with creating an optimum teaching and learning environment, and educational technology which deals with technology literacy.
  - Emphasis should be on productivity tools not expensive drill-and-practice software.
  - Student products should reflect the use of those tools.
Classroom Examples

• Laptop Program
  – Nova 5000
  – Classmate

• Technology Curriculum
• Mounted Projectors
• Calculators
• Hand held devices
• Student products will indicate that students have been taught the elements of information retrieval, the difference between fact and opinion, and the ethics of using technology responsibly.

• Will Richardson says we need to be teaching our kids how to find information. He also says we should connect our kids to people who know more than we do. Ex. The Secret Life of Bee’s

• Distance learning and video conferencing should be a consideration.
  • Ning, Twitter, Skype, Elluminate
• “Students enter our schools from a digital world that not only allows them to communicate throughout the world, but also gives them the ability to solve problems, do research, and perform at the levels never before available in the history of man.”

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Questions?

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