

1 ☐ Remember the Luddites:
Asking Critical Questions about Educational Technology

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4 ☐ Who were the Luddites?

- Movement begin in 1811 near Nottingham, England to protest job loss to industrialized textile production
- Campaign of breaking machines
- Neo-Luddites refers to people critical of technology's role in "progress"
- Technophobe: rejects tech
- Technophile: blindly embraces tech

5 ☐ Educational perceptions of technology

- Perception = "Recognition and interpretation of sensory stimuli based chiefly on memory."*
- Perceptions shape reality
- Some perceptions we will discuss are explicitly stated and followed in education, others are implicit

6 ☐ Objectives

- Challenge your assumptions / beliefs about the roles of technology in education
- Encourage critical thinking about educational technology
- Help you improve the ways you choose to use / not use technology in the classroom

7 ☐ Categories of Educational Perceptions

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- Educational Philosophy & Our Culture

- Student Beliefs

- Parent / Educator Beliefs

- Objectionable Content Access

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- Standardized Testing

- Technology Integration

- Technology Acquisition

8 ☐ We Live in a “Technologically Intoxicated Zone”

1. We favor the quick fix
2. We fear and worship technology
3. We blur the distinction between real and fake
4. We accept violence as normal
5. We love technology as a toy
6. We live our lives distanced and distracted

9 ☐ Educational Philosophy & Our Culture

10 ☐ Progress always Æ Improved Quality of Life

- Our culture is moving toward 24/7 accessibility
- “We are ruled not by the week or day but by the minute.” Living in time of exponential growth
- Reduces our “margin: the space that once existed between ourselves and our limits.”

11 ☐ More Information Æ Better Decisions

- In past 24 hours, 2 million new Web pages were added.
- By 2002, more Web pages than people on earth.
- Now: > 300 million users / 170 countries.
- By 2005 will 1 billion regular internet users.
- Web size doubling (by page content) / 120 days
- Conservatively it is doubling in size 3 times per year!
- > 80% of the sites that will be existing a year from now don't exist today.
- “dealing with all these changes has far less to do with the gadgets than it does with people and their mindsets.”

12 ☐ Information = Knowledge

- Information age?
- Information hurricane headed into warmer waters
- Information becomes knowledge when it is processed and filtered by a learner
- How many of us know how to fly into the eye of the hurricane?

13 ☐ Human Brain = A supercomputer

- Neil Postman in Technopoly: “the computer redefines humans as ‘information processors’ and nature itself as information to be processed”
- Rejects biological basis of the mind
- We accept explanations: “The computer shows...” or “computer has determined...”
- Technopoly’s equivalent of “God’s will”
- We equate tech innovation with human progress

- 14 ☐ Our problems can be solved by greater and faster access to info
- Assumption of “progress”
 - This “solution” is being delivered at exponentially increasing rates
 - Most serious personal and public problems are not due to inadequate information
- 15 ☐ Info Age requires wholly new literacy skills
- Many recognize that a new skill set is required
 - Access to info has changed, skills must also
 - Traditional literacy skills are pre-requisite to new ones
- 16 ☐ Merger of TV - Computer is Good
- Nicholas Negraponte: Being Digital
 - 225 channels right now on Direct TV
 - 3 Discovery Channels!
 - Bandwidth increasing exponentially
 - Firehose of potentially unfiltered video content on the way
- 17 ☐ The more kids are on computers, the better / it improves learning
- “According to statistics from the American Association of School Administrators, ninety-four percent of all teachers and superintendents believe that technology has improved student learning.” *
 - “Just because children- particularly young ones-- are performing tasks that look technologically sophisticated does not mean they are learning anything important.” - Healy (27)
 - We must avoid technolust & blind faith in technology-- establish reasonable limits
- 18 ☐ The world is predictable and rational
- Underlying assumption of industrial age
 - Defied by exponential trends
 - (insert Margin graphs here)
- 19 ☐ Computers are another “special” (like art / music / PE)
- How many use computer time to cover conferences?
 - Must also be time for the classroom teachers in the computer lab
 - Need to view tech as another tool in teacher’s toolkit
- 20 ☐ Public Education should be secular / values free
- Issue of “objectionable” internet content access
 - Who defines “objectionable?”
 - Shows the need / demand for values education
 - Character Counts
- 21 ☐ Need for “new literacy skills”
= a passing trend
- Education loves new bandwagons
 - Systemic roots of our network economy / new literacy skills indicate its staying power

- Don't know when J-curves will become S-curves in many cases

22 ☐ Computers are more for boys than girls

- U.S. Bureau of Labor Statistics, in January 2000
- 28% technical jobs held by women (static)
- # women in workforce almost 50%
- Women make up 51 percent of all Internet users
- Why? Early education, computer game violence, role model shortage, stigma

23 ☐ If we build the highway, they will come

- Reference to Field of Dreams
- Necessary but not sufficient to provide hardware and network connectivity
- Sustained training essential for instruction / learning to improve

24 ☐ Kids will learn better from a lesson with technology

- “Kids are always learning, but they're not always learning what we think they're learning!” (Healy)
- What ACOT level is the teacher modeling?
- Can facilitate constructivist / learner centered instruction

25 ☐ Virtual tours via computer will improve students' world perspective

- What is more valuable to the child: “examining a leaf or pebble... or a published CD-ROM” *
- Shouldn't devalue or de-emphasize hands on learning
- Are we just pointing / clicking or is metacognitive learning taking place?
- How much finger painting?









26 ☐ Kids today are different and require technology to maintain attention

- “Fast paced, nonlinguistic, and visually distracting television may have literally changed childrens' minds making sustained attention to verbal input, such as reading or listening, far less appealing than faster-paced visual stimuli.” (Healy)
- Basic human needs for love, validation, and meaningful relationships the same


27 ☐ Parent / Educator Beliefs

28 ☐ Kids are the “experts” in the Information Age


- Parents feel threatened by new technologies
- Tendency is to turn it all over to kids
- Don Tapscott's perspective on N-Gen
- “idea of a ‘naturally’ computer literate child is more of a social construct than an empirical reality” (Healy, Failure to Connect, p. 21)
- Main distinction: lack of fear

- 29  **Kids learn better with technology**
- Univ of London study: “parents tended to greatly overestimate the power of computer hardware to help their youngsters’ learning and ‘secure their educational future.’”
 - Few knew/know how to support tech use
- 30  **“The screen” is not “real”**
- Is the justification for violence in media and games
 - “electronic games have been incorporated into the daily routines of 65 percent of all U.S. households, 85 percent of those with male children.”
 - Electronic game industry = \$16 billion / year in US (Hollywood \$7 billion)
- 31  **“The Screen” is not “real” (2)**
- “Violent video games harden young people for shooting at humans. The entertainment industry conditions the young in exactly the same way the military does.”
- 32  **“The Screen” is not “real” (3)**
- American Academy of Pediatrics: Nearly 1000 studies confirm a correlation between aggressive behavior in children and media violence
 - Chairman of APA’s Commission on Violence and Youth: “There can no longer be any doubt that heavy exposure to televised violence is one of the causes of aggressive behavior, crime, and violence among young people in our society.”
 - 1984 attorney general’s task force on family violence found “overwhelming evidence that TV violence contributes to real violence.”
 - Lt Gen Grossman: “We have raised a generation which has learned to associate violence with pleasure.”
- 33  **Young children are just capable of playing games on computers**
- No question children love to
 - Capable of sophisticated multi-tasking
 - Main difference w/ adults: no fear of technology
 - Limited by “traditional literacy” skills
- 34  **To be a good teacher today, you must use technology**
- Tendency to look down on “slow adapters” / those who are hesitant
 - Socratic ideal: a good teacher doesn’t need any tools
 - Use of technology does not necessarily = quality instruction
 - Our efforts to care and challenge are worth more than Microsoft
- 35  **I (the teacher) must know everything about a computer skill before I teach it**
- Teacher fear is a major obstacle to technology integration
 - Steve Jobs: “There are no experts”
 - Need to accept risk of not being “the expert” at everything during a lesson with technology
- 36  **AR is a good application for school computers**
- Large amount of research on AR
 - AR can “eat” all the computer time in a classroom

- Effect: Conditions students to read for external rewards rather than intrinsic benefits

37  #1 Educational Goal = Standardized Test Preparation

- To what degree is this an administrative or instructional attitude?
- Network economy demands ability to think creatively
- Problem solving / information fluency skills key

38  Teachers can integrate technology by themselves on top of everything else they are expected to do


- Working assumption of many school districts
- Yes, some will integrate with or without support
- Facilitators / training support is essential
- “Most troubling is that most teachers have no underlying conception of what they ought to be doing with these things.” - Al Rednitsky, Smith College quoted by Dr. Jane Healy, Failure to Connect (pg 31)

39  Tech Integration can happen w/o schedule / staff changes


- Facilitators are essential
- Sustained staff development is essential
- Peer support is essential
- What is the tech training model in many districts?

40  Technology Use Saves Time

- Our culture has blind faith in “progress”
- Technology is value neutral
- Everything you own owns a part of you (your time)
- Time saved: gradebook
- Time wasted: internet searching

41  Paramount to develop student tech literacy at school

- Alan November says no: Action is in the home
- Where do students spend the most time on the computer
- Schools need to reach out to parents and the community

42  1 Size / Arrangement of computers fits all

- How many have K-1 students in labs?
- How many labs are set up differently for them?
- Who is asking questions about ergonomics and health?

43  Network Economy requires workers with greater literacy

- Order at McDonalds: No reading skills required
- Technology serves as crutch for low literacy
- May benefit those with “challenges”
- Will these jobs provide livable wage?

44  Teachers cover everything in the curriculum guide

- Lack of vertical alignment \bar{E} curricular overlap

- Not enough time
- $\ddot{\text{E}}$ curriculum a mile wide, an inch deep (Jukes)

45 Student Beliefs

46 Statistics about “today’s kids”

- > 50% of US children have a TV in their bedroom
- 1 in 5 have their own VCR or video game player attached
- 80% of US boys play video games regularly
- Average US citizen “spends half of his or her personal time watching television waiting for a vacation.”

47 If it is on the internet, it must be true

- Students go to the internet before the library for info
- Educators must provide opportunities to challenge ideas
- Stephen Glenn: Right brain passive absorber unless experience triggers left brain activity / ?ing
- 1998 study found only 4 in 41 websites had up to date info on child fever

48 Final draft is all that matters

- If final draft is all that is graded, this is the message
- Need to evaluate steps in the writing process
- This addresses plagiarism
- Puts value on each component of the assignment

49 Ability to create a webpage indicates high literacy level

- Anyone can create a webpage
- How many webpages don’t have anything valuable to share?
- How well is information organized and communicated?
- Traditional literacy is prerequisite to tech literacy

50 Objectionable Content Access

51 Internet filtering software offers a complete solution to online safety

- “1 in 5 kids aged 10 to 17 have received a sexual solicitation or have been approached for sex online in the last year. 97% of these solicitations were from persons the children met online.”

52 Child’s computer should be in their room

- Along with TV, VCR, and Nintendo / Playstation?
- “Be sure to make this a family activity. Consider keeping the computer in a family room rather than the child’s bedroom. Get to know their “online friends” just as you get to know all of their other friends.”*

- Will further reduce family dialog opportunities

53 ☐ Objectionable content seen most by kids is pornography

- Depths of depravity accessible online is mind boggling
- “Have nothing to do with the deeds of darkness, but rather expose them. For it is shameful even to mention what the disobedient do in secret.” - Ephesians 5:11-12
- Photos of dismemberment, accident deaths, etc. very popular with young people also
- Read Slouching Toward Gomorrah by Robert Bork, pages 135 - 142)

54 ☐ The web is mainly filled with porn / evil / objectionable stuff

- Estimated “only 1% of web content is pornographic” (www.cyberangels.org)
- Is a very profitable segment of eBusiness
- “The percentage of child pornography and illegal obscenity on the Internet doesn’t matter. Because children can access all of it, it is a serious problem.” (www.enough.com)

55 ☐ Standardized Testing

TAAS - CSAP - “High Stakes Testing”

56 ☐ De-contextualized, non-thematic, worksheet based drill and kill is the best way to prepare students for vocational success in the 21st Century

- We must always ask: how are our lessons preparing students for the workforce?
- Instruction should respect / embody what we know about student learning

57 ☐ We should teach kids to pass TAAS, not be creative

- Creativity is not valued on TAAS
- Even writing is formula based
- Real world demands original thinking for success
- How many entrepreneurs are being “fed” in your classroom?

58 ☐ Technology Integration in the Classroom

59 ☐ Tech Tools (PowerPoint) = fancy replication of traditional teaching

- Can be true
- ACOT integration steps: Adoption (phase 2)
- Technology infusion without philosophy change stagnates integration
- Is different: can avoid text capture focus
- Can help change student - teacher relationship

- 60 ☐ Tech Integration = AR Testing and Word Processing
- True that >90% of computer use is word processing
 - Look at TA-TEKS to see the breadth of skills
 - Integration of application skills and application is key
- 61 ☐ Technology is an “add on” to the regular curriculum
- Perception of teachers
 - What are the essential skills needed by a 21st Century workforce?
 - Perceptions correlate to action / inaction
- 62 ☐ Tech Integration = Searching / Surfing for Information
- Easiest way to waste classroom time is to turn students loose on search engines
 - Information ≠ Knowledge
 - Searching for info IS an important TA-TEKS element, but not THE ONLY one
- 63 ☐ Tech Use at All Levels Improves Achievement
- Unquestioning faith in progress & technology
 - ACOT showed impact of tech integration on standardized test scores neutral
 - What is the nature and quality of the tech use?
 - “We must make sure that computer use includes the important step of requiring children to “elaborate” their knowledge... creating some kind of original representation of what they are learning.” - metacognition (Jane Healy, Failure to Connect, p. 141)
- 64 ☐ CAI is bad
- CAI used to = computer use (Jostens)
 - Perception that computer use must be product based or project based
 - There is a place for CAI, but it shouldn't define computer use
- 65 ☐ School District's responsibility: provide hardware & highway
- How many districts act like that is the only tech responsibility?
 - Study after study: Staff development is the key
 - Operative assumption is spontaneous combustion
- 66 ☐ Administrators are responsible for overcoming tech integration obstacles
- Brainstorm perceptions of obstacles to tech integration
 - Categories by who has responsibility
 - Teachers uniformly view admin as more responsible
- 67 ☐ Best Tech Staff Development Model is a Big Course Menu
- Courses offered constantly
 - People take as desired
 - ACOT supports training teams of teachers
 - Peer support / mentoring critical
 - Tech training is not a meal any teacher should consume alone

68 ☐ Educational Technology Acquisition & Support

69 ☐ Windows 95/98/2000 is the best operating system for everyone

- Most people recommend the platform they know
- Most people only know Windows
- Need to be open to alternatives
- Criteria: powerful, easy to use / support, reliable, long lasting

70 ☐ Microsoft Office is the only application students should use

- Majority of the business world does use Office
- TEKS are application independent
- Other considerations: age appropriate, runs on older computers, cross-platform

71 ☐ Successful technology integration requires a LOT of \$\$\$

- Technology expenditures are a “black hole”
- Without the hardware, software, and highway, it’s hard to go anywhere
- Key ingredients are people, training, motivation, & scheduling

72 ☐ School computers must be as new / fast as possible

- Depends on purpose
- 90% of computer use is word processing
- 6th graders don’t type that fast
- Possible to build gardens of school computers for word processing

73 ☐ Technology has to be complicated & hard to support

- Wide gap remains between IT and the classroom
- Dell Technician: no virus protection / format C: regularly
- Learning both Windows / Mac systems: it is incredible how much easier Macs are to support

74 ☐ Recommended Reading

- Bork, Robert. Slouching Toward Gomorrah.
- Healy, Jane. Failure to Connect.
- Jukes, Ian. www.thecommittedsardine.net
- Naisbitt, John. HIGH TECH, high touch.
- Negraponte, Nicholas. Being Digital.
- Tapscott, Don. Growing Up Digital.
- Postman, Neil. Technopoly.
- Swenson, Richard. Margin: Resoring Emotional, Physical, Financial, & Time

Reserves to Overloaded Lives.

75 ☐ **Don't be afraid to ask critical questions about technology!**

Tools for the TEKS: Integrating Technology in the Classroom
www.wtvi.com/teks/luddites