Implementing Learner-Centered Teaching in a Technology-Rich Environment

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Nature AND Nurture: Pedagogy

Technology

People, Society, Culture, etc.

Telegraph: Flattening the world in 1860

Schools of the 1880s

Eighth-grade students Taylor Bernholtz, left, Amy Lostroh and Kelsey Cardiff check out a weblog discussion related to the Civil War historical-fiction book 'Guerrilla Season' At South Valley Junior High School in Liberty, Mo. (Blogging now begins young USA Today, By Ashley Kleines, USA TODAY, November 15, 2006, 12D). http://www.usatoday.com/life/2006-11-14-blogs-education_x.htm
Technology of the 1980s

21st Century Technology: Podcasts and Wikis and Blogs, Oh My!!!
Top 5 "In" Things on Campus
June 7, 2006, USA Today

Adventure Blogging: North Pole Marathon

Jean Pennycook (Geographical blogging)
http://www.penguinccom.com/clim_change_ms.php

Jerry Kronenberg Monday, August 4, 2008
Boston Herald
Designers on quest to build $12 computer

Wikis and Online Encyclopedias
Open Access Books

Magic Pens! (The Pulse from Livescribe)

Capella Tower
225 South Sixth Street, Minneapolis
Formerly, the "Halo"

Next Generation of Students
Tech Creates Bubble for Kids
Alejandro Gonzalez, USA TODAY, Updated 6/29/2006 10:34 AM ET

INFORMATION TECHNOLOGY

Yahoo News
Love me, love my blog," as Netorati couple-surf
BY SARA LEDWITH Thu Aug 3, 8:30 AM ET

- Nick Currie and his girlfriend Shizu Yuasa (R) surf the internet over breakfast in Tokyo in this handout photo. As the Internet evolves -- with its webcams, iPods, Instant Messaging, broadband, wi-fi and weblogs -- its image as a relationship-wrecker is changing. Now a sociable habit is emerging among the Netorati: couple-surfing. (Nick Currie/Handout/Reuters)

- "For my birthday, he upgraded my RAM and I thought it was incredibly romantic," writes Jess.
Bonk’s Addiction Q’er
1. Who has 2 or more cell phones with Internet access?
2. Who has 2 or more laptop computers with wireless connections?
3. Who is on email in the morning? At noon? Who does it at night?
4. Who suffers from nervous tension when you cannot get on email?
5. Who is on the Web right now?

Most ID Models in the 1980s Prescriptive

Robert Gagne’s 9 instructional events
- gainning attention
- informing learners of the objective
- stimulating recall of prior learning
- presenting the stimulus
- providing learning guidance
- eliciting performance
- providing feedback
- assessing performance
- enhancing retention and transfer

show variety of computer generated triangles
"What is an equilateral triangle?"
review definitions of triangles
give definition of equilateral triangle
show example of how to create equilateral ask students to create 5 different examples
check all examples as correct/incorrect
provide accurate and remediation
show pictures of objects and ask students to identify equilaterals

Learner Control: Xer
- Xers expect a range of options, in terms of what they learn and how they learn it. They require autonomy and flexibility for their own learning. They demand a variety of instructional methods from which they can choose to learn, e.g., videotapes, self-paced modules, interactive CDs.
  - "Online gives me something to do when I’m bored with the professor."
  - "I respect myself more as a self-teacher."
- Dziuban, Moskal, & Hartman (2005)
Learner-Centered Learning Principles
American Psychological Association, 1993

Cognitive and Metacognitive Factors
1. Nature of the learning process
2. Goals of the learning process
3. Construction of knowledge
4. Strategic thinking
5. Thinking about thinking
6. Context of learning

Developmental and Social Factors
7. Developmental influence on learning
8. Social influences on learning

Individual Differences
9. Individual differences in learning
10. Learning and diversity
11. Standards and assessment

Motivational and Affective Factors
12. Motivational and emotional influences
13. Intrinsic motivation to learn
14. Effects of motivation on effort

Learner-Centered on the Web
(Bonk & Cummings, 1998)

1. Safe Lrng Community: 6, 11
2. Foster Engagement: 1-6, 11
3. Give Choice: 8, 9, 12
4. Facilitate Learning: 2, 9, 11
5. Offer Feedback: 3, 6, 8, 11, 13
6. Apprentice Learning: 3, 6, 7-9, 11, 13
7. Use Recursive Tasks: 1, 3, 8-9, 10, 13
8. Use Writing & Reflection: 3, 8, 12-13
9. Build On Web Links: 2-4, 8-9, 12-14
10. Be Clear & Prompt Help: 2, 9, 11, 14
11. Evaluate Dimensionally: 1-5, 14
12. Personalize in Future: 6, 8, 10-13

Constructivist Teaching Principles
(Brooks, 1990)

1. Build on student prior knowledge.
2. Make learning relevant.
3. Give students choice in learning activity.
4. Student autonomy & active learning encouraged.
5. Use of raw data sources & interactive materials.
7. Seek elaboration on responses and justification.
8. Pose contradictions to original hypothesis.
9. Ask open-ended questions & allow wait time.
10. Encourage reflection on experiences.

A Circle of Knowledge Building and Sharing

Create
Support for creating representations of pedagogical knowledge.

Open Knowledge Exchange Zone
Provide venues for sharing experienced evidence to improve practice.

Use
Encourage teachers to review, critique, and learn from each other's represented knowledge.

Re-mix
Enable teachers to integrate other's knowledge into their knowledge.

Promote these organically & sustainably

From the Web 2.0 to Learning 2.0
The way in which the Web 2.0 has emerged in the last few years is reflected in the way that the Web 2.0 has become ever more

Ok, Million Dollar Question: How do you motivate learner with technology?

I even reflected on this for a moment...I thought about the people I met
TEC-VARIETY Model for Online Motivation and Retention

1. Tone/Climate: Psych Safety, Comfort, Belonging
2. Encouragement, Feedback: Responsive, Supports
3. Curiosity: Fun, Fantasy, Control
4. Variety: Novelty, Intrigue, Unknowns
5. Autonomy: Choice: Flexibility, Opportunities
6. Relevance: Meaningful, Authentic, Interesting
7. Interactive: Collaborative, Team-Based, Community
8. Engagement: Effort, Involvement, Excitement
9. Tension: Challenge, Dissonance, Controversy
10. Yields Products: Goal Driven, Products, Success, Ownership

Intrinsic Motivation

"...innate propensity to engage one's interests and exercise one's capabilities, and, in doing so, to seek out and master optimal challenges

(i.e., it emerges from needs, inner strivings, and personal curiosity for growth)


1. Risk
   Low Risk -- High Risk
   Easy to Embed --- Extensive Planning
   Free or Inexpensive --- Enterprise Licenses
   Instructor-Focused --- Student-Focused
   Low --- High

1. Tone/Climate:
   A. Coffee House Expectations
      1. Have everyone post 2-3 course expectations
      2. Instructor summarizes and comments on how they might be met
   B. Public Commitments: Have students share how they will fit the coursework into their busy schedules

1. Tone/Climate: C. Video Course Intros
   (examples from Northern Virginia Community College and Indiana University KD (online MBA) program)
2. Encouragement, Feedback, etc.:
A. Instructor Presentation in Synchronous Sessions
   (Breeze, Elluminate, WebEx, etc.)

B. Thinking About the Readings (TARS) JIIT;
   Claude Cookman, IU, Photography Class

3. Curiosity, Fun: A. Games
e.g., Online Jeopardy Game
Games2Train: The Challenge; Thiagi.com

B. Exploration and Demonstration:
   Virtual Tours and Timelines (HyperHistory)
   http://simile.mit.edu/timeline/

4. Variety, Novelty:
A. Video Streamed Lectures & Expert Commenting

5. Autonomy, Choice: A. Read, Listen, etc.
to online books (e.g., "An International Episode" by Henry James)
5. Autonomy, Choice: B. Online Literature Search (Class Google Jockeys)
The Electronic Literati, in Search of a Voice, June 1, 2007, Chronicle of Higher Education, Jeffrey Young (links to text, soundtracks, video clips, etc.)

5. Autonomy, Choice: C. Volunteer Technology Demos (Bonk, 1996)
- Take students to a computer lab.
- Have students conduct a technology demonstration that relates to something from the class (replaces an assignment).
- Include handout
- Debrief

5. Autonomy, Choice: D. Clickers; Innovation is but one click away...

5. Autonomy, Choice: E. Multiple Topic Forums or Task Options
- Generate multiple discussion prompts and ask students to participate in 2 out of 3
- Provide different discussion "tracks" (much like conference tracks) for students with different interests to choose among
- List possible topics and have students vote (students sign up for lead diff weeks)
- Have students list and vote.

What have you learned so far?
- Solid and Fuzzy in groups of two to four

6. Relevance, Meaningfulness: A. Authentic Data Analysis
Jeanne Sept, IU, Archaeology of Human Origins: Components: From CD to Web
- A set of research q's and problems that archaeologists have posed about the site
- A complete set of data from site
- Students work collab to interpret age of site
- Interpret of ancient environments
- Analyze artifacts/fossils from site
6. Relevance, Meaningfulness: B. Mobile News (New York Times): A new way to take your news with you on the iPhone and iPod touch

Connected (Part 1/2) from Albrene Christian (url: http://www.youtube.com/watch?v=TmB1gQByd9I)

7. Interactive, Collaborative: A. Online Language Learning (Mixter, Livemocha, Friends Abroad)

8. Engagement, Effort: A. Adventure Blogging (Ben Saunders, Mark Fennell, Andrew Revkin)

99 Second Quotes (L = Cost, M = Risk, M = Time)

- Everyone brings in a quote that they like from the readings
- You get 99 seconds to share it and explain why you choose it in a sync chat or videoconference
- Options
  - Discussion wrapped around each quote
  - Small group linkages—force small groups to link quotes and present them
  - Debate value of each quote in an online forum


1. Starter reads ahead and starts discussion and others participate and wrapper summarizes what was discussed.
2. Start-wrapper with roles—same as #1 but include roles for debate (optimist, pessimist, devil’s advocate).
C. Alternative: Facilitator-Starter-Wrapper (Alexander, 2001)

Instead of starting discussion, student acts as moderator or questioner to push student thinking and give feedback

7. Interactive, Collaborative: D. Google Docs, Ning, Google Groups, MSN Groups, Yahoo Groups, Diigo, etc.

Ning in Education

8. Engagement, Effort: A. Adventure Blogging

(Ben Saunders, Mark Fennell, Andrew Revkin)
8. Engagement, Effort:
B. Just-In-Time Syllabus
(Roman, Chuck, Ford, & Scott) http://educationalassessment.sfu.ca/justin.htm
http://education.arts.sfu.ca/je.htm
Syllabus is created as a "shell" which is thematically organized and contains print, video, and web references as well as assignments. (Goals = critical thinking, collab, develop interests)
e.g., To teach or expand the discussion of supply or elasticity, an instructor might add new links in the Just-in-Time Syllabus to breaking news about rising gasoline prices.

9. Tension, Challenge, etc.:
A. Online Role Play of Famous People, Mock Trial, Debates, etc.
- Enroll famous people in your course
- Students assume voice of that person for one or more sessions

9. Tension, Challenge, etc.:
B. Electronic Guests & Mentoring
(Simon Fraser University News: http://www.sfu.ca/departmentnews/2001/Sept20Tech.htm)

10. Yields Products, Goals:
A. Produce a Podcast
JapanesePod, Arabic online, etc.

10. Yields Products, Goals:
B. Produce a YouTube Video

10. Yields Products, Goals:
C. Online Portfolios or Galleries (Flickr, Omnium)
10. Yields Products, Goals: D. Film Festivals and Competitions

What can we say about technology for teaching???

- It is everywhere!!!!!!!
- Resistance is futile!!!!!!!

99 Seconds Stop and Share: Top Three Things Learned so Far!

Part III. Addressing Learning Styles

Why Address Learning Styles?
- Promotes reflection on teaching
- Move from just one mode of delivery
- View from different viewpoints
- Offer variety in the class
- Might lower drop-out rates
- Fosters experimentation
1. Auditory or Verbal Learners
- Auditory and verbal learners prefer words, spoken or written explanations.
Read 1a. Course Announcements (e.g., Teaching with Twitter)

Read 1b. Book reviews and critiques (e.g., LibraryThing)

Read 1c. Find and Post Online Documents; Scribd
Scribd: http://www.scribd.com/

Read 1d. Podcast for Language Learning (Chinesepod—learn Mandarin)

Read 1e. Educational Applications of Podcasting (Essex, 2006, Leftwich, 2007)
1. Recordings of lectures (Coursecasting)
2. Supplemental textbook or entire book
3. Student projects
4. Interviews
5. Language lessons
6. Oral reports
7. K-12 classroom interactions
8. Downloadable library of resources
9. Recordings of performances

Read 1f. Wiki Steps on How to do Something: Wikihow
http://www.wikihow.com/
Read 1g. Indexing Sounds in Cities with Google Maps

2. Reflective and Observational Learners
- Reflective and observational learners prefer to reflect, observe, view, and watch learning; they make careful judgments and view things from different perspectives


Reflect 2b. Online Portal Explorations (e.g., The Complete Works of Charles Darwin)

Reflect 2c. ORL or Library Day (L = Cost, M = Risk, M/H = Time) (Bonk. 1999)

Reflect 2d. Paired Weblog Critiques

Student Weblogs EDER79.20 - Blended Learning

<table>
<thead>
<tr>
<th>Topic</th>
<th>Student Critique</th>
<th>Student Peer Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity (T) ORL, Role for Learning of Paper: Peer-to-Peer Discussion in Online EN100 Course?</td>
<td>Learner Zone</td>
<td>Peer Zone</td>
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More, S.A. ORL Peer-to-Peer versus Learner Zone Peer Student
Reflect 2e. Partner & Team Blogs
   (especially English writing class)

Reflect 2f. Reuse Blog, Chat
   Transcripts, Presentations

Reflect 2g. Practitioner Feedback:
   Asynchronous Threaded Discussion plus
   Sync Expert Chat (e.g., Starter-Wraper + Sync
   Guest Chat) (L/M = Cost, M = Risk, M = Time)

Half-Way...Brief Intermission
   Please Share Best Idea so far
   with neighbor

3. Visual Learners

   - Visual learners prefer diagrams,
     flowcharts, timelines, pictures,
     films, and demonstrations.

Display 3a. Pubcasts! (videos of scientific
   papers and science)

NSF, the Public Library of Science, and the San Diego Supercomputing
Center created a YouTube for scientists to help demystify important
research papers. See SciVee http://www.sciwee.tv/
Display 3b. Online Video
(e.g., YouTube, TeacherTube, CurrentTV)
CHARLES MCGRATH, Published: July 5, 2008, A Private Dance?

Display 3c. Anchored Instruction (find anchoring event (YouTube, CNN)

Display 3d. Map Mash-ups
(e.g., Shakespeare's Global Globe, PopSci, June 13, 2008, Michael Behar
GOOGLE EARTH ENVIRONMENT GUIDE THE FREE SOFTWARE FROM GOOGLE GIVES SCIENTISTS A NEW WORLD VIEW

Display 3e. Online Timelines
(US Presidents)

Display 3f. Tracking Live Internet Events (e.g., Thawing: A Colossal of an Idea)
(caught Feb. 2007; thawed April 30, 2008)

Display 3g. Concept Mapping Tools
(VUE, Bubble.us, Cmap, Freemind, Gliffy, Mindmeister, or Mindomo)

Deep-Sea Bohomuth
Captain John Bennett examines the world’s first colossal squid on board his New Zealand fishing vessel. The giant, world record 1,089 pounds. After being frozen, scientists at New Zealand’s national museum further study.
Display 3h. Historical Documents
discoverbabylon.org

- In its final form, the multiplayer game will let you march through three-dimensional recreations of the first city-states, around 3000 B.C., the first empires, around 2300 B.C., and finally the famous Iron Age empire of Assryia...offers three-dimensional walkthroughs of sites in the Valley of the Kings.

Display 3j. Vlogging (Video Blogging)
e.g., Andy Calvin's Waste of Bandwidth
Michael L. Wesch, Kansas State, The Machine is Using Us

4. Tactile/Kinesthetic Learners

- Tactile/kinesthetic senses can be engaged in the learning process are role play, dramatization, cooperative games, simulations, creative movement and dance, multi-sensory activities, manipulatives and hands-on projects.

Do 4a. Wikibooks: International Collaboration (Web 2.0 and Emerging Learning Technologies (The WELT))

Do 4b. Wiki: Romantic Poetry Project
(Professor Mike Phillipson, English at Bowdoin College)
Do 4c. Survey Research and Market Analysis
(e.g., WebSurveyor, Zoomerang, SurveyShare, SurveyKey)

Do 4d. Virtual Worlds/Virtual Reality/MMOG
Wednesday, August 30, 2006
Harvard Law School (Charles & Rebecca Nessan)
Chronicle of Higher Ed (open to the public)
http://chronicle.com/daily/2006/06/20060830011t.htm

Do 4e. Mobile Learning and Social Networking
(e.g., Mii, Yayoi Anzai, Professor Japan)

Do 4f. Online Warm-ups Activities
Just-In-Time-Teaching (JITT)
http://webphysics.iupui.edu/jitt/jitt.html

Do 4g. Syllabus, Glossary, etc. in wiki:
Students sign up for tasks
(Ron Owston, York University)

Do 4h. Cool Resource Provider
(Bonk, 2004) Capture and Videostream Lectures
(e.g., Apreso CourseCaster)
- Have students sign up to be a cool resource provider once during the semester.
- Have them find additional paper, people, electronic resources, etc.
- Share and explain what found with class via synchronous meeting or asynchronous discussion post.
Poll #3: How many ideas did you get from this morning?

a. None—you are an idiot.
b. 1 (and it is a lonely #).
c. 2 (it can be as bad as one).
d. 3-5

e. 6-10
f. Higher than I can count!

Next up: The MATRIX!!!!!!!!!!!

- Mobile
- Auditory
- Thought-stimulating
- Reflective/Real-World
- Visually Interactive
- Extremely Hands-on

It's Over...

Poll: Ok, then, who wants more???

A. Yes
B. No
C. Not sure

It is the End!!!

Try the R2D2 Method!!!
Try TEC-VARIETY!!!

Sample papers at: http://www.publicationshare.com/
Archived talks at: http://www.trainingshare.com/