Stretching the Edges of Technology-Enhanced Teaching: From Tinkering to Tottering to Totally Extreme Learning

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What did Jean-Luc Picard say?

That’s right, Engage!

How can technology address diverse learner needs?

Framework #1: The R2D2 Model

1. Read (Auditory and Verbal Learners)
2. Reflect (Reflective Learners)
3. Display (Visual Learners)
4. Do (Tactile, Kinesthetic, Exploratory Learners)
1. Auditory or Verbal Learners

- Auditory and verbal learners prefer words, spoken or written explanations.

   Read 1a. Collect and Listen to Interactive Stories
   (e.g., Meograph: http://www.meograph.com/)

   Read 1b. Follow on Twitter
   https://twitter.com/USArmy
   https://twitter.com/electricians

   Read 1c. Online Crossword Puzzles
   (e.g., http://www.eclipsecrossword.com/)

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 2a. Big Issue Reflections
   (Big Questions Online (BQO)), January 8, 2013
   (e.g., Do We Have Souls?)
   https://www.bigquestionsonline.com/content/do-we-have-souls
3. Visual Learners

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

Display 3b. Concept Mapping and Timeline Tools (VUE, Bubbl.us, Cmap, Freemind, Gliffy, Mindmeister, or Mindomo)

Display 3c. Interactive Map Timelines (adults with college degrees by county, May 7, 2012)

Reflect 2b. Reflect on Virtual Timelines
(Dipity, xtimeline, Simile, etc.)


Reflect 2c. Workplace and Field Reflections


http://www.usatoday.com/story/life/movies/2013/04/10/harrison-ford-jackie-robinson/2001783/

Display 3a. Virtualize Words Used
(e.g., Wordle, Tagzeda, Tagul, WordSift, Word It Out)

http://shellyterrell.com/2010/02/14/12-word-cloud-resources-tips-tools/
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. Student Class Documentaries
Umida’s R546 Documentary Project
http://www.youtube.com/watch?v=EMLTzqCV_5A

Do 4b. Survey Research and Market Analysis
(e.g., SurveyShare, Zoomerang, SurveyMonkey)

Do 4c. Book Trailers for Readers
http://www.booktrailersforreaders.com/how-to-make-a-book-trailer/
http://www.booksparks.com/content/video_book_trailer_samples.htm

Poll #1:
Any light bulbs going off in your head so far...?
A. Yes definitely
B. Maybe
C. No

Poll #2: What phase of the R2D2 Method did you get the most ideas from?
A. Read (Auditory and Verbal Learners)
B. Reflect (Reflective Learners)
C. Display (Visual Learners)
D. Do (Tactile, Kinesthetic, Exploratory Learners)
Part II: How do we apply these ideas?

Where to next?

Sleepy U?

February 24, 2013
Big (MOOC) Data, Inside Higher Education, Dayna Catropa
http://www.insidehighered.com/blogs/strategy/big-mooc-data

What was it that he said?
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)


Motivation Research Highlights
(Jere Brophy, Michigan State University)
1. Supportive, appropriate challenge, meaningful, moderation/optimal.
2. Teach goal setting and self-reinforcement.
4. Novelty, variety, choice, adaptable to interests.
5. Game-like, fun, fantasy, curiosity, suspense, active.
6. Higher levels, divergence, dissonance, peer interaction.
7. Allow to create finished products.
8. Provide immediate feedback, advance organizers.
9. Show intensity, enthusiasm, interest, minimize anxiety.
10. Make content personal, concrete, familiar.

Ok, Million Dollar Question: What words come to mind when I say that I want to motivate learners?

Framework #2: TEC-VARIETY 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

I just Love it when they "make it so!"

MAKE IT SO
Examples of TEC-VARIETY

1. Tone/Climate: Social Ice Breakers

A. 8 nouns (adjectives, verbs)
- List of nouns: (e.g., pirate, computer, traveler, roadrunner, wind, bookworm, musician, mentor, etc.)
- List of adjectives: (e.g., lazy, powerful, shy, bored, exotic, cooperative, sloppy, rebel, etc.)
- List of verbs: (e.g., coordinate, entertain, amuse, push, unite, beg, dream, publicize, etc.)

1. Tone/Climate: B. Video Course Intros
   http://www.youtube.com/watch?v=iWOUyqSnKLo

2. Encouragement, Feedback, etc.: A. Voice Feedback
   Vocaroo; http://vocaroo.com/
   http://vocaroo.com/i/s0F4hvHRH8qu (East Central)

2. Encouragement, Feedback, etc.: B. Quizlet (online quiz tools)
   http://quizlet.com/

2. Encouragement, Feedback, etc.: C. Create Screencasts
   (Jing, GoView, Screenr, slide from Zaid Ali Alsagoff [zaid.alsagoff@gmail.com])
2. Encouragement, Feedback, etc.: D. Blog and Website Polling (e.g., Poll Everywhere, BlogPolls, BlogPoll, MicroPoll)
   http://www.polleverywhere.com/

3. Curiosity, Fun: E. Create Cartoons, Movies, and Animations (e.g., Go Animate, xtranormal, PowToon, etc.)

3. Curiosity, Fun, Fantasy, Control:
A. Online Database Activities (e.g., WolframAlpha)
   http://www.wolframalpha.com/

3. Curiosity, Fun:
B. Something in the News (e.g., Fauja Singh, 101, finishes last race, February 24, 2013)

3. Curiosity, Fun:
C. Online Quiz Games
   Jeopardy Labs
   https://jeopardylabs.com/play/ganttpardy

4. Variety, Novelty, Fun, Fantasy:
A. Timers (Random.org, Stopwatches, coins, playing cards, dice, Countdown Timers, Stopwatch Bombs, etc.; http://www.online-stopwatch.com/countdown-timer/)
5. Autonomy, Choice:
A. Commonwealth of Learning, March 2013

5. Autonomy, Choice:
B. Online Resource Search
(Class Google Jockeys)
(links to text, soundtracks, video clips, etc.)

Poll #3:
Which of the first 5 motivational principles will you use the most?
A. Tone/Climate
B. Encouragement/Feedback
C. Curiosity/Fun
D. Variety/Novelty
E. Autonomy/Choice/Flexibility

6. Relevance, Meaningfulness:
A. Video Scenario Learning
(Franklin University, cost and forensic accounting course)
http://video.franklin.edu/Franklin/acct/managerialAccounting/cost
http://video.franklin.edu/Franklin/acct/342/common/fraudScenario02.html
http://www.youtube.com/watch?v=cJmosLSUgQ8&list=TLzymmALKW1TI

6. Relevance, Meaningfulness:
B. Design
Multimedia Glossaries
Ozgur Ozdemir, December 2012
http://r685glossary.shutterfly.com/
Umida Khikmatillaeva, Dec. 2011, P540
http://learningplanet.shutterfly.com/

7. Interactive, Collaborative:
A. Collaboration and Discussion in Google Hangouts
(January 29 and February 25, 2013)
7. Interactive, Collaborative:
B. Negotiate Meanings Online
(e.g., PiratePad: http://meetingwords.com/)
MeetingWords is a simple text editor for the web. Your text is saved on the web, and more than one person can edit the same document at the same time. Everybody’s changes are instantly reflected on all screens. Work together on meeting notes, brainstorming sessions, homework, team programming and more!

8. Engagement, Effort:
http://www.guardian.co.uk/world/interactive/2011/mar/12/middle-east-protest-interactive-timeline
B. Life on Timeline
How Jimmy Wales’ Wikipedia Harnessed the Web as a Force for Good, Ted Greenwald, March 19, 2013, Wired Magazine
http://www.wired.com/wiredenterprise/2013/03/jimmy-wales-wikipedia/2/

9. Tension, Challenge, etc.:
A. Decision-Making Scenarios
(e.g., Articulate Storyline)

10. Yields Products, Goals:
A. Final Product Video Summaries
Piercarlo Abate: http://www.youtube.com/watch?v=_7URuH9O8sI
Gagnam: http://www.youtube.com/watch?v=Q4OfOIrZuUK&feature=youtu.be
Miguel Lara (Web 2.0 FREEDOM): http://www.youtube.com/watch?v=RmCTW99W8
B. I Done This, Milestone Planner, and 43 Things
Changing your life is hard. Doing it by yourself is harder.
43Things is the world’s largest collection of projects. People want to.

Start listing your goals now.
Poll #4:
Which of the last 5 motivational principles will you use the most?
A. Relevance/meaningfulness
B. Engagement/effort
C. Interactive/Collab/Community
D. Tension/Challenge/Dissonance
E. Yielding Products/Goals

Commitments:
Stop and Share:
Which principle(s) of TEC-VARIETY will you use?
Tone/Climate
Encouragement, Feedback
Curiosity
Variety
Autonomy
Relevance
Interactive
Engagement
Tension
Yields Products

Poll #5:
Do you feel “MOTIVATED” to try any of this out?
A. Yes, R2D2
B. Yes, TEC-VARIETY
C. Yes, both
D. Neither

Poll #6: How many new ideas did you get so far?
1. 0 if I am lucky.
2. Just 1.
3. 2, yes, 2...just 2!
4. Do I hear 3? 3!!!!
5. 4-5.
6. 5-10.

Part III:
Wait, we are not done yet!

From Tinkering to Tottering to Totally Extreme Learning...
Tinkering

Tinkering #1. Educational Videos: TED-Ed
http://education.ted.com/

Tinkering #2. Tracking the Life of a Scientist
(e.g., Brian J. Ford, independent scientist)
http://www.youtube.com/user/tellymonitor#p/a/u/1/LhGeApsKjasr
http://www.labnews.co.uk/news/prehistoric-revolution/
http://www.youtube.com/embed/kjmNnRFHCzk?rel=0

Tinker #3. Video Animations and Simulations

Tinker #4. Online Experiments
(e.g., psychology)

Tinker #5. Anchor Course Concepts and Activities in Brief Shared Online Videos
Tinker #6. Online Practice Tests and Quizzes

Tottering

Totter #1. Combining Asynchronous and Synchronous Events (flipping classes)

Totter #2. Uploading Mobile Books (e.g., BookRix, http://www.bookrix.com/)

Totter #3. Student Collaborative Knowledge Building and Sharing (e.g., Popplet: http://popplet.com/)

You Want Totally Extreme?
Apple’s new ‘spaceship’ campus: What will the neighbors say?, Doug Gross, CNN, May 22, 2012
Totally Extreme #1.
iPod Learning from MIT OCW
(e.g., Wendy Ermold, University of Washington)

Totally Extreme #2.
MBAs from War Zones...!

Totally Extreme #3.
Blogging Field Archeology Research
(e.g., Lily Henry Roberts, UCLA digging in Hope, BC, Stó:lō First Nation people from 12,000 years ago)

Totally Extreme #4.
Virtual High School Learning by Boat
(e.g., Bridey Fennell and her family sailing and learning in the Caribbean)

What 3 things did you learn?

Who is Content Now?
And Who is Stretched Now?
Website: www.Extreme-Learning.com
Slides at: TrainingShare.com
Book: http://worldisopen.com/
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