Engage, Number One: This is the Next Generation

Dr. Curtis J. Bonk
Professor, Indiana University
http://php.indiana.edu/~cjbonk
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Audience Poll #1:
Has learning technology ever transformed your life.

Looking to the Past...

Change not possible as an accountant...
(Life as a CPA, 1981-1986)

Knowledge Navigator (1987)
Apple Computer
http://www.youtube.com/watch?v=hb4AzF6wEoc

Fast Forward 25+ Years...
“Anyone can now learn anything from anyone at any time.”
Learning is Changing
New Technologies = New Delivery Methods…

I. Learning is More Technology Driven
Robots teaching English and Virtual Worlds
Dr. Meeyong Kim, Dajeon, Korea, May 2012

II. Learning is More Video-Based
Adora Svitak, WFP Youth Representative - 2013
ECOSOC Youth Forum
“Shaping tomorrow’s innovators: Leveraging science, technology, innovation and culture for today’s youth”, 27 Mar 2013 - Statement by the World Food Programme Youth Representative, Ms. Adora Svitak at the 2013 ECOSOC Youth Forum.

III. Learning is More Mobile

IV. Learning is More Open
S. Korea Medical University - BYOD
Moving from lecture-centered to student interaction centered model
Developed local evaluation rubrics
New MOOC Provider Says It Fosters Peer Interaction
Chronicle of Higher Education, Jake New
http://novoed.com/

Major Players in the MOOC Universe,
Chronicle of Higher Education, Jake New

iPad gives voice to kids with autism
Supraja Seshadri, CNN, May 14, 2012

Sharia Siddiqui uses an iPad to help her communicate. Her father says it’s “given her a sense of control she never had.”

Facebook to help overhaul ICT curriculum,
Money, Andrew Marszal, Telegraph, Oct. 19, 2012
IX. Learning is More Collaborative
Collaboration and Discussion in Google Hangouts or with iPad, Jan. 28, 2013
(Carrie Gong from Beijing Normal University)

X. Learning is More Modifiable
New Learning Space Designs

XI. Learning is More Bendable
Flexible displays bend what’s possible for computers,
Jon Swartz, USA Today (May 4, 2012)

XII. Learning is More Streamed
April 9, 2013
Computer fashions face social test: Can wearable computers fit in?
Scott Martin, USA Today

Google Glass
http://www.google.com/glass/start/what-it-does/
Will Google Glass find a home in healthcare?  
HER Intelligence, Jennifer Bresnick  
http://www.fiercemobilehealthcare.com/story/google-glasses-could-have-strong-potential-healthcare-use/2013-03-18

Google Glass could change Healthcare,  
Julie Moore, April 3, 2013  
Blue Sky Medical Staff Software  
http://www.incrowdnow.com/2013/02/google-glass-what-would-you-do-with-it/

1. Help deaf people to “see” what others are talking about.  
2. Communicate with deaf people by showing a live transcription.  
3. Real-time medical history taking app that would record & upload doctor/patient interactions  
4. Notify the deaf when a loud noise identifies a hazard outside of their field of view

Kathi Browne, founder of the Healthcare Talk Community, imagines how a physician might use Google Glass…
1. In place of a stethoscope, more sanitary and never cold  
2. As a means to communicate securely with other physicians  
3. To magnify moles or injuries  
4. Administer visual tests to several patients at one time  
5. Screen patients for glaucoma  
6. Access info… CPT codes, drug information, research articles  
7. Record office visits via hands-free dictation  
8. As a tool in bio-feedback therapy  
9. Make a telemedicine consult possible

How Google Glass could revolutionize medicine,  
Timothy Aungst, iMedicalApps, March 11, 2013  
http://www.imedicalapps.com/2013/03/google-glass-medicine/

1. A nurse scans the medication they are about to give the patient and confirms the correct drug and right patient by overlaying their patient profile with the person in front of them.  
2. A student brings up their notes and lab reports as they present their patient case to their attending, with data available in real time.  
3. An oncologist can overlay the MRI scan over a patient, and show the patient and their family where the cancer exists.

1. A pharmacist is able to scan medications and verify the proper drugs after comparing the drug with images available in the database, ensuring the right drug is dispensed.  
2. A physical therapist can see past sessions with a patient from previous recordings, overlaying their current range of motion, identifying changes as well as progression.  
3. Any healthcare professional could walk up to a patient’s bed and instantly see all their vitals such as pulse, BP, O2 Sats, etc.

How Google Glass could revolutionize medicine,  
Timothy Aungst, iMedicalApps, March 11, 2013  
http://www.imedicalapps.com/2013/03/google-glass-medicine/

1. An emergency responder arriving at a motor vehicle accident is able to live stream to the emergency department the status of the patients and the associated trauma suffered to a patient. The ER is then able to assemble and prepare for a patient’s emergency treatment.  
2. A surgeon live streams to residents and students a live surgery.

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http://www.imedicalapps.com/2013/03/google-glass-medicine/

1. A visiting nurse seeing a patient in their own home video records and captures images of the patient’s wound (for which they are caring for) and sends them back to the physician.
2. A resident’s physical exam of a patient is streamed back to an attending physician, who can critique their work and make recommendations on questions to ask in real time.

XIII. Learning is More Personal
iPotty Aims To Entertain Toddlers During Toilet Training, Mashable, Kate Freeman (January 10, 2013)
http://mashable.com/2013/01/10/ipotty/

XIV. Learning is More Global
(Book Review by Dr. Mimi Miyoung Lee: Ed Tech Magazine, May-June 2013)
(e.g., TakingITGlobal (TIG), RoundSquare, etc.)
RoundSquare (http://www.roundsquare.org/) and Taking IT Global (http://www.tigweb.org/)

XV. Learning is More Web-Based
April 15, 2013
Google boss: Entire world will be online by 2020, Doug Gross, CNN

April 20, 2013
Two Cheers for Web U!
A. J. Jacobs, New York Times
The Web of Learning

It is very open!
(Norway, the Philippines, Saudi Arabia, etc.)

We are entering a jumping off point…

I’m an Armchair Indiana Jones…

Framework #1: WE-ALL-LEARN:
Ten Forces that Opened the Learning World
- Web Searching in the World of e-Books (i.e., Darwin)
- E-Learning and Blended Learning
- Availability of Open Source and Free Software (e.g., Moodle)
- Leveraged Resources and OpenCourseWare (e.g., MIT)
- Learning Object Repositories and Portals (i.e., shared content)
- Learner Participation in Open Info Communities (YouTube)
- Electronic Collaboration and Interaction (sync and async)
- Alternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)
- Real-Time Mobility and Portability (e.g., iPhone)
- Networks of Personalized Learning (Blogs, RSS)

What did Jean-Luc Picard say?
That’s right, Engage!

How can technology address diverse learner needs?

Framework #2: The R2D2 Model

The R2D2 Method
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.

1. Risk
   - Low Risk: Easy to Embed
   - High Risk: Extensive Planning

2. Time
   - Low Risk: Free or Inexpensive
   - High Risk: Enterprise Licenses

3. Cost
   - Low Risk: Instructor-Focus
   - High Risk: Student-Focus

4. Student-Centered
Read 1a. Twitter Fed Class Discussions

Read 1b. Grammar Checkers
(e.g., Grammarly
http://www.grammarly.com/)

Read 1c. Interactive Stories
(e.g., Meograph
http://www.meograph.com/)

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

Read 1e. Talking Dictionaries for Rare Languages
The Wall Street Journal, February 18, 2002

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. Workplace Internship, Practicum, and Field Reflections

Reflect 2b. Cultural Blogs (e.g., Dr. Kim Foreman, San Fran State University, Come and See Africa Blog: http://comeandseeafrica.blogspot.com/)

Reflect 2c. Virtual Timelines with Media
http://simile.mit.edu/timeline/

Reflect 2d. Interactive Timeline Tools (e.g., MLK Memorial Timeline)

Reflect 2e. Scenario Learning (e.g., Krispy Kreme Management 101)

3. Visual Learners
- Visual learners prefer diagrams, flowcharts, timelines, pictures, films, and demonstrations.
Display 3a. Wordle
APedagogy of Abundance or a Pedagogy to Support Human Beings? Participant Support on Massive Open Online Courses, IRRODL, Kop, Fournier, & Sui Fai Mak, November 2011

Display 3b. Interactive Maps
(adults with college degrees by county, May 7, 2012)
http://todayscampus.com/article/Keith_Hampson_Interviews_Josh_Keller_on__Interactive_Graphics_for_Higher_Education

Display 3c. More Interactive Maps
Where and Who the College Graduates Are, Chronicle of HE, February 24, 2013

Display 3d. More Interactive Maps
(e.g., New USDA climate zone map reflects northward warming trends, By Janice Lloyd, USA TODAY, January 26, 2012)

Display 3e. More Interactive Maps
USGS (US Geological Survey) (Biodiversity Serving Our Nation or BISON)
http://bison.usgs.gov/

Display 3f. Unique OER
(e.g., Dead Sea Scrolls)
http://www.deadseascrolls.org.il/explore-the-archive
http://www.deadseascrolls.org.il/explore-the-archive/search#q=site_en:'Qumran,_Cave_4'
http://www.deadseascrolls.org.il/home
Display 3g. Visual Library Search
DPLA (Digital Public Library Of America)
http://dp.la/

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

Display 3i. Human Embryology Animations
(Valerie O’Loughlin, Indiana University)

Display 3j. Online Timelines
(US Presidents)

Display 3k. Video Art Tutorials
ArtMaker.com
http://artmaker.com

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. Podcast Productions and Shows

Do 4b. Community Oral Histories (e.g., The History Harvest, December 21, 2012) http://historyharvest.unl.edu/collections

Do 4c. Student Expertise (e.g., Learnist) http://learnist.com/category/featured/

Do 4d. Student Class Documentaries Umida’s R546 Documentary Project http://www.youtube.com/watch?v=EMLTzqCV_5A

Do 4e. Negotiate Meanings Online (e.g., MeetingWords: 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!

Do 4f. Student Collaborative Knowledge Building and Sharing (e.g., Popplet: http://popplet.com/)
**Do 4g. Student Mobile App Creation**
Mintian Guo (April 2013): [http://myapp.is/r685final](http://myapp.is/r685final)

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**Poll #2: What phase of the R2D2 Method will you use most?**
A. Read (Auditory and Verbal Learners)
B. Reflect (Reflective Learners)
C. Display (Visual Learners)
D. Do (Tactile, Kinesthetic, Exploratory Learners)

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**Poll #3: How many new ideas did you get from Part 1?**
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.

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**What was it that he said?**
That's right, Engage!

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**Where would we all like to work?**
ENGAGE UNIVERSITY
April 15, 2012
Can Colleges Manufacture Motivation?,
Dab Berrett, Chronicle of Higher Ed

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

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

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.

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)

Framework #3: 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

Examples of TEC-VARIETY

1. Tone/Climate: A. React to Maps
   The happiest and saddest states according to Twitter
   Heather Kelly, CNN Tech, February 19, 2013
   [Link](https://www.cnn.com/2013/02/19/tech/social-media-twitter-happiness/index.html)

2. Tone/Climate: B. Share Visuals
   (e.g., Panoramio, [Link](http://www.panoramio.com/))
2. Encouragement, Feedback, etc.: A. Create Screencasts
(Jing, GoView, Screnner, slide from Zaid Ali Alsagoff
[zaid.alsagoff@gmail.com])

2. Encouragement, Feedback, etc.: B. Voice Feedback
Vocaroo; http://vocaroo.com
http://vocaroo.com/i/s1m173yb7nV

2. Encouragement, Feedback, etc.: C. Blog and Website Polling
(e.g., Poll Everywhere, BlogPolls, BlogPoll, MicroPoll)
http://www.polleverywhere.com/

2. Encouragement, Feedback, etc.: D. Vocab Sushi ($25 for 3 months)
http://www.vocabsushi.com/

3. Curiosity, Fun:
A. Online Social Networking Games
(e.g., scrabble, hangman, etc.)

http://quizlet.com/
3. Curiosity, Fun: B. Online Database Activities (e.g., WolframAlpha)
http://www.wolframalpha.com/

3. Curiosity, Fun: C. Track a Scientist, Scholar, Celebrity, Writer
(e.g., Biography.com, biography online, FamousPeople.com)

3. Curiosity, Fun: D. Blog Adventures
Tracing the fate of Algal Carbon Export in the Ross Sea, Antarctica TRACERS: The NBP13-02 Cruise, February 12 to April 5, 2013
http://tracers-nbp1302.blogspot.com/p/the-project.html
From: Cassandra Brooks [cbrooks1@stanford.edu]
Sent: Thursday, January 31, 2013 12:09 AM
Subject: I’m heading out today to New Zealand, then flying to Antarctica where we pick up our NSF icebreaker. We’ll be at sea for about 54 days.

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

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. Online Resource Search
(Class Google Jockeys)
(links to text, soundtracks, video clips, etc.)
5. Autonomy, Choice:
B. Web Exploration Assignments
1. Complete Works of Charles Darwin Online: http://darwin-online.org.uk/
4. Einstein Archives Online: http://www.alberteinstein.info/
7. iBerry (Open Courseware Directory): http://iberry.com/

5. Autonomy, Choice:
C. Commonwealth of Learning, March 2013

5. Autonomy, Choice:
D. Center for Open Educational Resources and Language Learning
http://www.coerll.utexas.edu/coerll/
LRC (Language Resource Center)
http://www.nfrc.org/

Poll #4:
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

Poll #5:
Any light bulbs going off in your head so far...?
A. Yes definitely
B. Maybe
C. No

6. Relevance, Meaningfulness:
A. Multimedia Glossaries
Ozgur Ozdemir, December 2012
http://r685glossary.shutterfly.com/
6. Relevance, Meaningfulness:
   B. Summary Web Resource
   Umida Khikmatillaeva, Creating a Global Classroom
   World is Open for Language Learners
   [Link to Resource]

7. Interactive, Collaborative:
   A. Online Language Learning
      (Skype, MSN, ECpod, Mixxer, Livemocha, Babbel, KanTalk etc.)

7. Interactive, Collaborative:
   B. Online Teams
   Paul Km, Stanford: Oct 28, 2012
   17,380 students. I haven’t met f2f. I am shocked to see students from places where Internet is very limited. You will find students from even Zanzibar!!! Many teams are formed and they meet f2f in the region where they live.
   [Link to Teams]

7. Interactive, Collaborative:
   C. Collaboration and Discussion in Google Hangouts
      (January 29 and February 25, 2013)

8. Engagement, Effort:
   [Link to Timeline]

8. Engagement, Effort:
   B. Life on Timeline.
   How Jimmy Wales’ Wikipedia Harnessed the Web as a Force for Good, Ted Greenwald, March 19, 2013, Wired Magazine
   [Link to Wired Article]
8. **Engagement, Effort:**

C. Timelines with Oral Histories, Slavery and the Making of America Time and Place, PBS

http://www.pbs.org/wnet/slavery/timeline/1857.html

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8. **Engagement, Effort:**

D. Interactive Simulations

http://phet.colorado.edu/en/simulation/energy-skate-park

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8. **Engagement, Effort:**

E. Cyber-Anatomy

http://www.cyber-anatomy.com/

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8. **Engagement, Effort:**

F. Visualizing Emancipation (June 12, 2012, Chronicle of HE, Angela Chen, Interactive Map Traces Slaves’ Path to Emancipation)

http://dsl.richmond.edu/emancipation/

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8. **Engagement, Effort:**

G. Visualizing Careers

Harrison Ford takes the field in ‘42

Scott Bowles, USA Today, April 11, 2013

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

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8. **Engagement, Effort:**

H. Cage Match or Debate

MOOCs at SXSWedu (Curt Bonk & Chuck Severance)


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9. **Tension, Challenge, etc.:**

A. Cage Match or Debate

MOOCs at SXSWedu (Curt Bonk & Chuck Severance)

9. Tension, Challenge, etc.:
   B. Final Four Competitions; i.e., Math March Madness
   Greg Toppo, March 26, 2013, USA Today
   [Website Link]

   Fibonacci Final Four? Math March Madness coming

9. Tension, Challenge, etc.:
   C. Articulate Storyline
   [Website Link]

9. Tension, Challenge, etc.:
   D. Peer Discussion on Final Projects
   (from Paul Kim's MOOC, Stanford)

9. Tension, Challenge, etc.:
   E. Peer Ratings on Final Projects
   (from Paul Kim's MOOC, Stanford)

10. Yields Products, Goals:
    A. Student YouTube Products
    Qi Li: R685 Gangnam Style, December 2012
    [Website Link]

10. Yields Products, Goals:
    B. Interactive Timelines
    (e.g., The Big Sleep, Kate Hurd)
    [Website Link]
10. Yields Products, Goals:
C. WikiBook Chapter
http://en.wikibooks.org/wiki/Web_2.0_and_Emerging_Learning_Technologies/Andragogy_and_Technology

10. Yields Products, Goals:
D. Final Product Presentations
(on IQ Wall, April 22, 2013)

10. Yields Products, Goals:
E. Final Product Presentations
(on IQ Wall, April 22, 2013)

10. Yields Products, Goals:
F. Final Product Presentations
(on IQ Wall, April 22, 2013)

10. Yields Products, Goals:
G. Final Product Presentations
(on IQ Wall, April 22, 2013)

Final project, Mark Millard
Big Ideas in Distance and Flexible Learning (HD)

Final project, Mark Millard
Big Ideas in Distance and Flexible Learning (HD)

Final project, Mark Millard
Big Ideas in Distance and Flexible Learning (HD)
10. Yields Products, Goals:
H. Final Product Presentations
   Jeffrey Barnette
   http://prezi.com/-ijzyoths-r/685-final-project/

10. Yields Products, Goals:
I. Final Product Presentations
   Kristen Needler, Self-Directed Simulation
   http://www.youtube.com/watch?v=aT-YZj-b8-g

Poll #6:
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
- Yielding Products

Poll #7:
Do you feel “MOTIVATED” to try any of this out?
A. Yes, both
B. Yes, R2D2
C. Yes, TEC-VARIETY
D. Neither

DON'T JUST WISH FOR A GREAT 2013,
MAKE IT SO.
Are you happy now?

Stop and Share:
Three Words from Today’s Session!

Any Questions?
Try the R2D2 Model!
Try TEC-VARIETY too...

Smiley: TrainingShare.com
Sadness: PublicationShare.com
Book: http://worldisopen.com/
Email: curt@worldisopen.com