

Best Practices for Online Learning: Introducing the R2D2 and TEC-VARIETY Models

Curtis J. Bonk, Professor, Indiana University
 cjbonk@indiana.edu
<http://mypage.iu.edu/~cjbonk/>



Audience Poll #1: Has learning technology ever transformed your life.

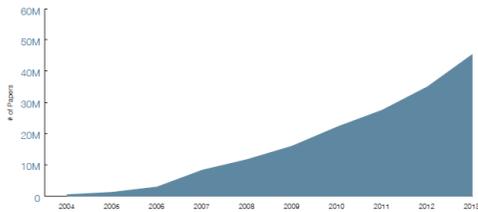


February 5, 2014

Turnitin Study Shows Impact of Plagiarism Prevention and Online Grading at Higher Education Institutions, Turnitin

<http://www.turnitin.com/~/media/Images/Marketing/EF02/turnitin.pdf?book=38AMMWWF9weRohK%2F92XKopJufvK67%2B0uX5C14kz2Efy%2B1LHETopdMSV9P%2B7FAwTGS5u0V98ZuCM1u0uQWR9h>

Chart 2: Papers Submitted to Turnitin by U.S. Higher Education Customers, 2004-2013

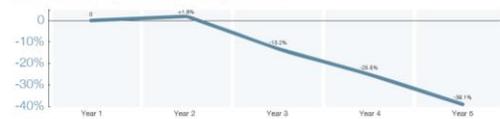


February 5, 2014

Turnitin Study Shows Impact of Plagiarism Prevention and Online Grading at Higher Education Institutions, Turnitin

<http://www.turnitin.com/~/media/Images/Marketing/EF02/turnitin.pdf?book=38AMMWWF9weRohK%2F92XKopJufvK67%2B0uX5C14kz2Efy%2B1LHETopdMSV9P%2B7FAwTGS5u0V98ZuCM1u0uQWR9h>

Chart 1: Levels of Unoriginal Content, All U.S. Higher Education



1728: 1st correspondence course advertised Boston (learn shorthand from Caleb Phillips thru weekly mailed lessons)

The First University Correspondence Course
 (University of London, External Program, 1858)

1728-1990s – Generally postal system based

1930s – phonograph and radio based

1950s and 1960s – television

1970s and 1980s – VHS tapes

1980s and 1990s – DVD



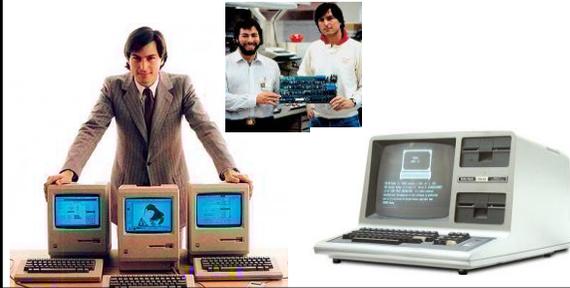
May 10, 2013

10 ed-tech tools of the 70s, 80s, and 90s
 eSchool News, Meris Stansbury

<http://www.eschoolnews.com/2013/05/10/10-ed-tech-tools-of-the-70s-80s-and-90s/print/>



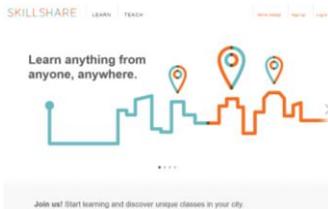
Looking to the Past...



Life as an accountant/CPA in a high tech company in the 1980s...



Fast Forward 25+ Years... "Anyone can now learn anything from anyone at any time."



Audience Polls #2:

- I. Who remembers where they were when they found out that Steve Jobs died?
- II. Who remembers what they were doing on 9/11?
- III. Who remembers what they were doing on April 4, 2001?



Charles Vest (April 4, 2001)

<http://web.mit.edu/newsoffice/2001/ocw.html>

"This is about something bigger than MIT. I hope other universities will see us as educational leaders in this arena, and we very much hope that OpenCourseWare will draw other universities to do the same. We would be delighted if -- over time -- we have a world wide web of knowledge that raises the quality of learning -- and ultimately, the quality of life -- around the globe."



October 31, 2013

The launch of OERu: Towards free learning opportunities for all students worldwide, BC Campus (Canada)

<http://ocw.mit.edu/ocw/2013/10/31/the-launch-of-open-educational-resources-opportunities-for-all-students-worldwide/>

The launch of OERu: Towards free learning opportunities for all students worldwide

October 31, 2013

Imagine anyone in the world having access to a world-class education online for free, and getting credentials for it. With the launch of Open Educational Resources University (OERu) on November 1, that's exactly what is now possible. The launch is a significant milestone in higher education globally, and marks a transition from an international collaboration prototype to a sustainable, scalable program of accessible OERu study.



The official launch takes place at Thompson Rivers University in Kamloops, B.C. for free-to-learn participants and credential fees for registered credit participants. The launch comes at the end of a two-day meeting of OERu anchor partners and will be hosted by Dr. Alan Shaker, President, Thompson Rivers University, Dr. John Daniel, Chair of United World Colleges (UWC) will give the keynote address and officially "push the button" to launch the OERu website.

"The OERu launch is an important milestone in the long campaign to make quality higher education more flexible and less expensive," said Dr. John Daniel. "Getting it established will be a slow process because the concept is so radical. However, coming at a moment when higher education is in crisis because of rising costs and high youth unemployment," the OERu provides solutions to a host of challenges. In the end, it's free for all, but it's not a free lunch."

It is very open!
(at least in Norway & the Philippines)

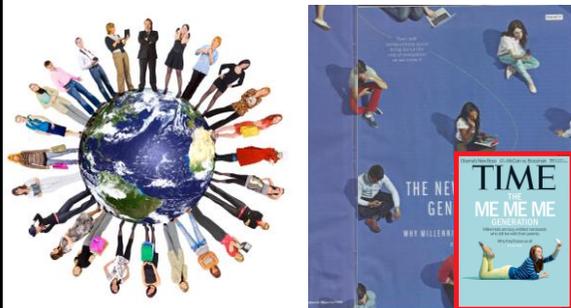


Part I. Learning is Changing
New Technologies =
New Delivery Methods...



May 20, 2013
The New Greatest Generation: Why Millennials
will Save Us All, Time, Joel Stein

<http://www.time.com/time/magazine/article/0,9171,2143001,00.html>



I. Learning is More Mobile
This Holiday Season, Learn on the Go with
the New Coursera App for iOS!
Coursera Blog, December 8, 2013

<http://blog.coursera.org/post/6951855384/this-holiday-season-learn-on-the-go-with-the-new>



II. Learning is More Video-Based
Adora Svitak, WFP Youth Representative - 2013
ECOSOC Youth Forum, March 27, 2013

"Shaping tomorrow's innovators: Leveraging science, technology, innovation and culture for today's youth", Statement by the World Food Programme Youth Representative, Ms. Adora Svitak at the 2013 ECOSOC Youth Forum.
<http://webtv.un.org/meetings/economic-and-social-council/other-meetings/2013/adora-svitak-wfp-youth-representative-2013-ecosoc-youth-forum-shaping-tomorrow-innovators-leveraging-science-technology-innovation-and-culture-for-today-youth/222787205004>



III. Learning is More Global
UC Irvine (2013 report)

Example 3: Fundamentals of Japanese

Dr. Hidemi Riggs, Fall 2012 & Winter 2013, Tech-enhanced; [EEE AdvancedWebSpace \(Stream Weaver\)](#), [Skype](#) video conferencing tool, [Active Learning](#), Format: 5 - 1A lectures (24 students maximum); 3 - 2A lectures (24 students maximum); 2 - 3A lectures (24 students maximum)



January 2014

Grade Change: Tracking Online Education in the United States, 2013

The Sloan Consortium, I. Elaine Allen & Jeff Seaman, 2013 Survey of Online Learning Report
<http://sloanconsortium.org/publications/survey/grade-change-2013>
 Direct connect: <http://www.onlinelearningurvey.com/reports/gradechange.pdf>

TOTAL AND ONLINE ENROLLMENT IN DEGREE-GRANTING POSTSECONDARY INSTITUTIONS - FALL 2002 THROUGH FALL 2012

	Total Enrollment	Annual Growth Rate Total Enrollment	Students Taking at Least One Online Course	Online Enrollment Increase over Previous Year	Annual Growth Rate Online Enrollment	Online Enrollments as a Percent of Total Enrollment
Fall 2002	16,611,710	NA	1,602,970	NA	NA	9.6%
Fall 2003	16,911,491	1.8%	1,971,397	368,427	23.0%	11.7%
Fall 2004	17,272,043	2.1%	2,329,783	358,386	18.2%	13.5%
Fall 2005	17,467,481	1.2%	3,180,050	850,267	38.5%	18.2%
Fall 2006	17,758,872	1.6%	3,488,381	308,331	9.7%	19.6%
Fall 2007	18,248,123	2.8%	3,938,111	445,730	12.9%	21.6%
Fall 2008	19,102,811	4.7%	4,606,353	668,242	16.9%	24.1%
Fall 2009	20,427,711	6.9%	5,579,022	972,669	21.1%	27.3%
Fall 2010	21,016,126	2.9%	6,142,280	563,258	10.1%	29.2%
Fall 2011	20,994,113	-0.1%	6,714,792	572,512	9.3%	32.0%
Fall 2012	21,253,086	1.2%	7,126,549	411,757	6.1%	33.5%

February 2, 2014

Cost of college textbooks out of control, group says

Herb Weisbaum, CNBC, USA Today,
<http://www.usatoday.com/story/national/2014/02/02/college-textbook-costs-out-of-control/2638807/>
<http://www.usatoday.com/story/national/2014/02/02/college-textbook-costs-out-of-control/2638807/>

- Between 2002 and 2013, the price of college textbooks rose 82% — nearly three times the rate of inflation, according to a recent study by the Government Accountability Office.

The Web of Learning

We are entering a jumping off point...

Part II. Motivation and Engagement

January 2014

Grade Change: Tracking Online Education in the United States, 2013

The Sloan Consortium, I. Elaine Allen & Jeff Seaman, 2013 Survey of Online Learning Report
<http://sloanconsortium.org/publications/survey/grade-change-2013>
 Direct connect: <http://www.onlinelearningurvey.com/reports/gradechange.pdf>

RETAINING STUDENTS IS A GREATER PROBLEM FOR ONLINE COURSES THAN IT IS FOR FACE-TO-FACE COURSES: 2004, 2009 AND 2013

How do we engage online?



What was it that he said?



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.
3. Offer **rewards** for good/improved performance.
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.

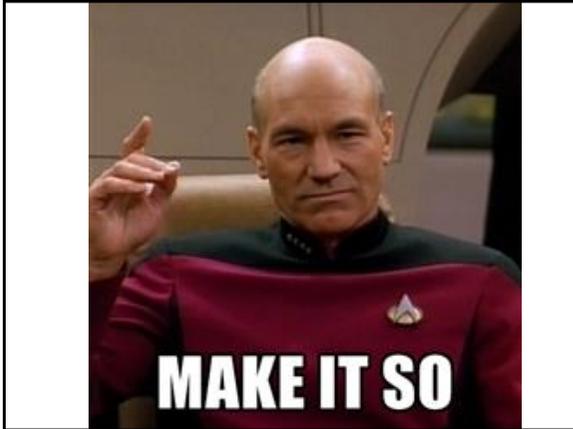


Framework #1: TEC-VARIETY for Online Motivation and Retention

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. Video Introductions, e.g., Flipgrid

<http://flipgrid.com/#429f88c5>

1. Tone/Climate: B. Share Visuals of Favorite Places (e.g., Panoramio, <http://www.panoramio.com/>)

2. Encouragement, Feedback, etc.: A. Voice Feedback

Vocaroo; <http://vocaroo.com/>
<http://vocaroo.com/i/s00c4D6iUNmN> (Wed Nov 13)

2. Encouragement, Feedback, etc.: B. Blog and Website Polling (e.g., Poll Everywhere, BlogPolls, BlogPoll, MicroPoll)

<http://www.pollerywhere.com/>

3. Curiosity, Fun: A. Something in the News

(e.g., Fauja Singh, 101, finishes last race, February 24, 2013)
http://espn.go.com/sports/tenure/story/_/id/8979487/fauja-singh-101-caps-career-10k-hong-kong

Fauja Singh, 101, finishes last race

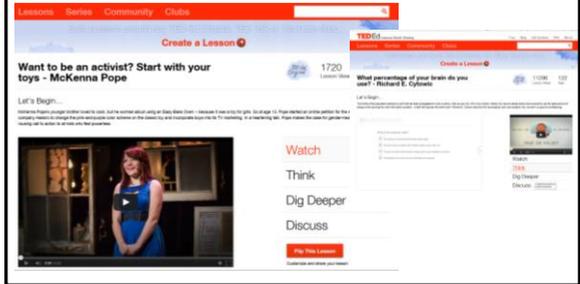
3. Curiosity, Fun: B. Online Quiz Games Jeopardy Labs

<https://jeopardylabs.com/play/ganttpardy>



3. Curiosity, Fun: C. Online Quizzes (e.g., Want to be an activist? Start with your toys - McKenna Pope, TEDEd)

<http://ed.ted.com/lessons/want-to-be-an-activist-start-with-your-toys-mckenna-pope/watch>



4. Variety, Novelty, Fun: A. Random Lists (Random.org—clocks, coins, playing cards, dice, integers, passwords, jazz scales, lists, sequences, etc.)



5. Autonomy, Choice: A. Online Database Activities (e.g., WolframAlpha)

<http://www.wolframalpha.com/>



6. Relevance, Meaningfulness: A. Design Multimedia Glossaries

Ozgur Ozdemir, December 2012
<http://r685glossary.shutterfly.com/>
Umida Khikmatillaeva, Dec. 2011, P540
<http://learningplanet.shutterfly.com/>

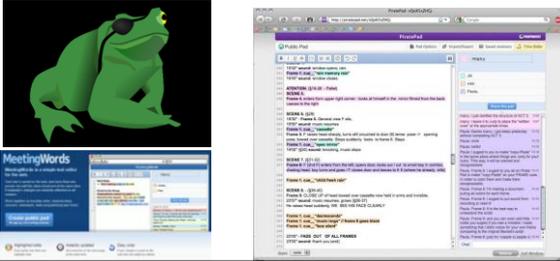


7. Interactive, Collaborative: A. Collaboration and Discussion in Google Hangouts, Jabber, Skype, etc (January 29 and February 25, 2013)



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: A. Arab spring: an interactive timeline of Middle East protests, The Guardian, Garry Blight, and Sheila Pulham, July 12, 2011 <http://www.guardian.co.uk/world/interactive/2011/mar/22/middle-east-protest-interactive-timeline>



8. Engagement, Effort: B. Mapping the Nation <http://mappingthenation.net/map.html>



9. Tension, Challenge, etc.: A. Vocabulary Competitions (e.g., Kids learning new words at warp speed, January 14, 2014, Greg Toppo (Georgia Scurettis, Dir of Curriculum Development, for Vocabulary.com (Thinkmap) presents a banner to Marc Williams, Brooklyn Technical High School) <http://www.43things.com/blog/news/articles/2014/01/13/vocab-ox-schools-online-competition-ndkafjsoi-students-learn-4455087/>) Vocabulary.com: <https://www.vocabulary.com/>



10. Yields Products, Goals: A. Final Product Video Summaries

Piercarlo Abate: <http://www.youtube.com/watch?v=-TURzH00aU>
Qi Li, Gangnam: <http://www.youtube.com/watch?v=7Q429lqxZaU&feature=youtu.be>
Miguel Lara (Web 2.0 FREEDOM): <http://www.youtube.com/watch?v=8cmCFwI9lW8>



10. Yields Products, Goals: B. I Done This, Milestone Planner, and 43 Things



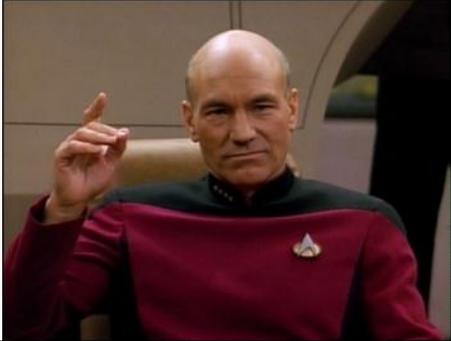
Commitments:
Stop and Share:
 Which principle(s) of TEC-VARIETY will you use?

Tone/Climate
Encouragement, Feedback
Curiosity

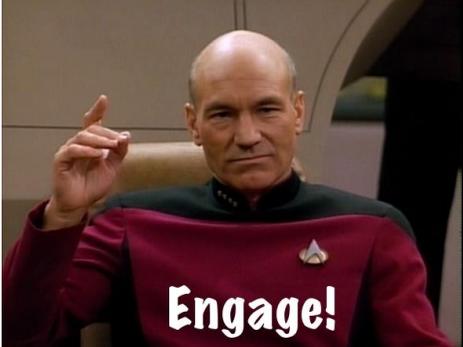
Variety
Autonomy
Relevance
Interactive
Engagement
Tension
Yields Products



What did Jean-Luc Picard say?



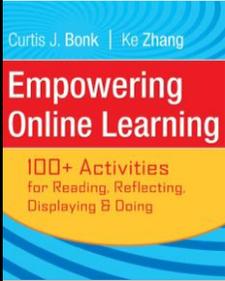
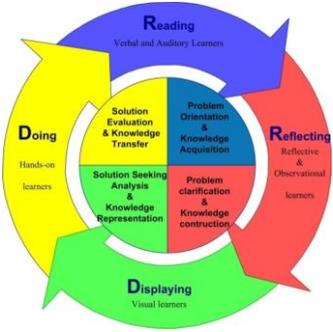
That's right, Engage!



Part III. 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)**



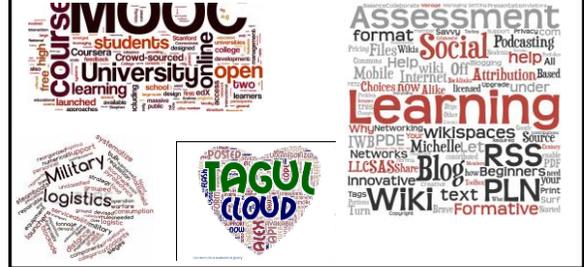
3. Visual Learners

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



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

<http://shellyterrell.com/2010/02/14/12-word-cloud-resources-tips-tools/>



Display 3b. Videos for clinical education (Sungkyunkwan University School of Medicine, www.mededu.or.kr)



Display 3c. Video Animations and Simulations



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. Uploading Mobile Books (e.g., BookRix, <http://www.bookrix.com/>)



Read more than 16126 books online for free. Create, upload and share your own books. Be a BookRix author!

Mobile Devices & Learning
How mobile devices are re-shaping the field of education

Poll #4: 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)



Empowering Online Learning
100+ Activities for Teaching, Reflecting, Displaying & Doing

Reading: Read to understand
Doing: Practice, Experiment & Knowledge Transfer
Reflecting: Reflect on what you've learned
Displaying: Present, Communicate & Collaborate

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?

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.
7. More than 10.



December 13, 2013

Former MIT president Charles M. Vest dies at 72
As the Institute's leader from 1990 to 2004, he sparked a period of dynamism.
Steve Bradt, MIT News Office
<http://web.mit.edu/newsoffice/2013/former-mit-president-charles-m-vest-dies-at-72-1213.html>



MITnews
Former MIT president Charles M. Vest dies at 72
An MIT leader from 1990 to 2004, he ignited a period of dynamism.

Leading MIT into the 21st Century
Conversation with Charles M. Vest, Former President of MIT
By Henry Brinder, September 13, 2005

Poll #6: Any Questions?

Try the R2D2 Model!
Try TEC-VARIETY too...
Slides at: TrainingShare.com
Papers: PublicationShare.com
Book: <http://worldisopen.com/>
Dr. Curt Bonk – CJBonk@Indiana.edu

