20TH ANNUAL
CENGAGE LEARNING COMPUTING CONFERENCE
MARCH 18-20, 2015 • PHOENIX, AZ

Education 3.0:
My, Our Learning World is Changing!

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

CENGAGE Learning

#20CLCC

Poll #1:

Are you interested in Education 1.0?

A = Yes
B = No
C = Not sure

2   2015 Cengage Learning Computing Conference

CENGAGE Learning

The Problem with Learning Technology
Karen Wilcox, November 7, 2014, Chronicle of Higher Education
https://chroniclevitae.com/news/792-the-problem-with-learning-technology?cid=at&utm_source=at&utm_medium=en

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October 21, 2014
Teaching and the University of Tomorrow.
Chronicle of Higher Education, Kelly J. Baker
https://chroniclevitae.com/news/768-teaching-and-the-university-of-tomorrow?cid=at&utm_source=at&utm_medium=en

Image: France in 2000 year (XXI century). Future school. From a postcard by Villemard, 1910.

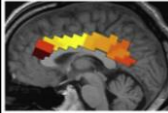**Instructor as Credit Manager**

#20CLCC

Poll #2:

Are you interested in Education 3.0?

EDUCATION 3.0: GETTING TO KNOW THE BRAIN

A = Yes
B = No
C = Not sure

6   2015 Cengage Learning Computing Conference

CENGAGE Learning

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Education 3.0

The Genesis and Emergence of Education 3.0 in Higher Education and its Potential for Africa, First Monday, by Derek Keats and J. Philipp Schmidt, March 2007
http://firstmonday.org/ojs/index.php/fm/article/view/1625/1540

EDUCATION 3.0

Characteristics	Education 1.0	Education 2.0	Education 3.0
Table 1: Educational generations in higher education			
Primary role of professor	Source of knowledge	Guide and source of knowledge	Orchestrator of collaborative knowledge creation
Content arrangements	Traditional copyright materials	Copyright and free/open educational resources for students within discipline, sometimes across institutions	Free/open educational resources created and reused by students across multiple institutions, disciplines, nations, supplemented by original materials created for them
Learning activities	Traditional, essays, assignments, tests, some groupwork within classroom	Traditional assignment approaches transferred to more open technologies; increasing collaboration in learning activities; still largely confined to institutional and classroom boundaries	Open, flexible learning activities that focus on creating room for student creativity; social networking outside traditional boundaries of discipline, institution, nation

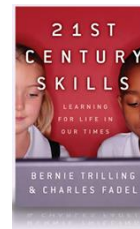## Instructor as Conductor

Instructor as Concierge

What skills do we need in the 21st Century?

Bernie Trilling, 21st Century Skills: Learning for Life in Our Times (2006, Toward Learning Societies)
http://21stcenturyskillsbook.com/
http://toped.svefoundation.org/2011/08/05/the-digital-natives-are-coming/

The Seven Cs – 21st Century Lifelong Skills

Seven Cs	Component Skills
Critical Thinking-and-Doing	Problem-solving, Research, Analysis, Project Management, etc.
Creativity	New Knowledge Creation, "Best Fit" Design Solutions, Artful Storytelling, etc.
Collaboration	Cooperation, Compromise, Consensus, Community-building, etc.
Cross-cultural Understanding	Across Diverse Ethnic, Knowledge and Organizational Cultures
Communication	Crafting Messages and Using Media Effectively
Computing / ICT Literacy	Effective Use of Electronic Information and Knowledge Tools
Career & Learning Self-reliance	Managing Change, Lifelong Learning and Career Redefinition

March 2015

America's Skills Challenge: Millennials and the Future
Madeline Goodman, Anita Sands, and Richard Coley, ETS
http://www.ets.org/s/research/30079/index.html

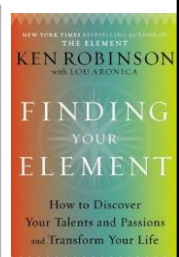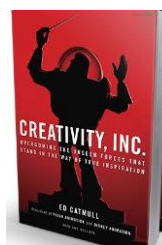**AMERICA'S SKILLS CHALLENGE:**

MILLENNIALS AND THE FUTURE

BY MADELINE J. GOODMAN, ANITA M. SANDS, RICHARD J. COLEY, EDUCATIONAL TESTING SERVICE

OVERVIEW
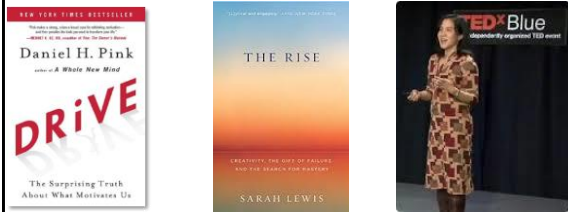
Poll#3: Read any good books lately? Creativity, Inc. (2014)
http://www.creativityincbook.com/

The Rise: Creativity, The Gifts of Failure, and the Search for Mastery
Sarah Lewis (2014)

Creating Innovators:
The Making of Young People Who Will Change the World
Tony Wagner (2012)
http://creatinginnovators.com/

The Innovators:
How a group of hackers, geniuses, and geeks created the digital revolution. New York: Simon & Schuster.
Walter Isaacson (2014)
http://books.simonandschuster.com/The-Innovators/Walter-Isaacson/9781476708690
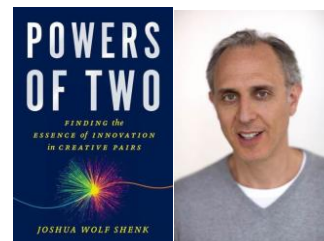

Powers of Two:
Powers of two: Finding the essence of innovation in creative pairs. Boston: Houghton Mifflin Harcourt.
Joshua Wolf Shenk (2014)
http://www.shenk.net/powersoftwo/

Poll #4: Listen to the Radio Lately?
November 14, 2014
School lessons by radio in Sierra Leone, Liberia, IRIN (Humanitarian News and Analysis), MONROVIA/FREETOWN/DAKAR
http://www.irinnews.org/report/100838/school-lessons-by-radio-in-sierra-leone-liberia
http://www.pce.uw.edu/about/Leadership/
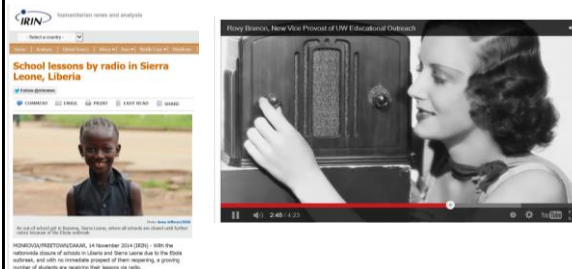
Poll #5: Turn on the TV Lately?
November 14, 2014 (2:25)
Why online ed disrupts the traditional model,
Fareed Zakaria GPS, CNN, On GPS, Stuart Butler & Anant Agarwal explain why students are drawn to online higher education: tuition debt & exciting new technologies
http://www.cnn.com/video/data/2.0/video/bestoftv/2014/11/15/exp-gps-moocs-sot.cnn.html

Poll #6: Read Your Email Lately?
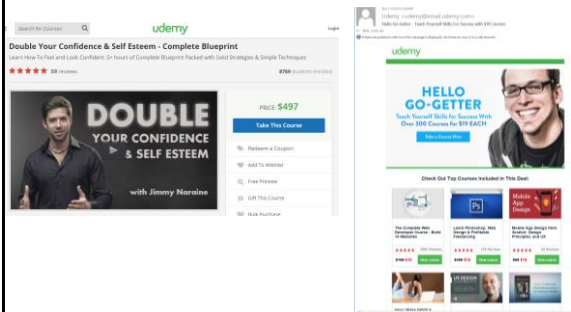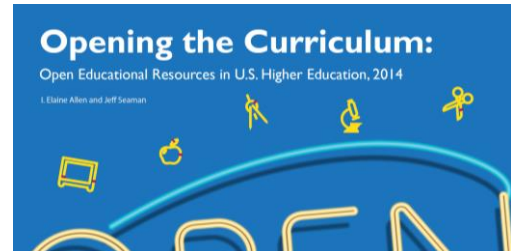### January 15, 2015

Poll #7: Read Any Research Lately?
October 25, 2014
Opening the Curriculum: Open Educational Resources in U.S. Higher Education, 2014
I. Elaine Allen and Jeff Seaman
http://www.onlinelearningsurvey.com/reports/openingthecurriculum2014.pdf

November 25, 2014
OER Research Hub, OER Evidence Report: Building Understanding of Open Education 2013-2014
http://oerresearchhub.files.wordpress.com/2014/11/oerrh-evidence-report-2014.pdf

Looking to the Past...

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
1950s and 1960s – television
1970s and 1980s – VHS tapes
1980s and 1990s – DVD

September 15, 2014
Open, Distance and Online Learning: A Brief History, Sir John Daniel
International Conference on Emerging Technologies in Education and Computer Science, Universidad Da Vinci, Cancun, Mexico
http://vimeo.com/106002761 (password knou)
Notes and Slides: http://sirjohn.ca/wordpress/?page_id=29

Lord Geoffrey Crowther
Inauguration of the Open University
1969

Postal systems

SHORT COURSE

Correspondence
course – 1841

Fall 2014, On Wisconsin
MOOC, Meet MORC (**Massive Open Radio Course**)
WHA, UW Madison, College of the Air,1933,
Vocational Training dedicated to Agriculture,
and later Home Economics and Typing

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/

Took Correspondence & TV Courses
(thanks to Bob Clasen and Charles
Wedemeyer, the University of Wisconsin)
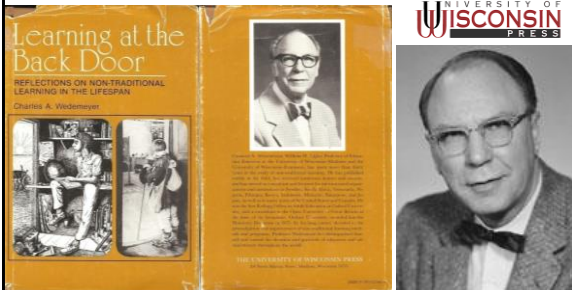
**Life as an accountant/CPA in a
high tech company in the 1980s...**

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."

Thirty Ways
Learning is Changing...
(i.e., it's more informal, video-based, ubiquitous, collaborative, self-directed, global, mobile, open, massive, etc.)

Learning is Technology Based
**New Technologies =
New Delivery Methods...**

I. Learning is More Mobile
August 5, 2014
Timex enters smartwatch category. No phone needed, Edward C. Baig, USA Today,
http://www.usatoday.com/story/tech/columnist/baig/2014/08/05/timex-enters-smartwatch-category-no-phone-needed/13597331/

II. Learning is More Flipped
January 7, 2015
When a Flipped-Classroom Pioneer Hands Off His Video Lectures, This Is What Happens, Jeffrey R. Young, The Chronicle of Higher Education
http://chronicle.com/article/When-a-Flipped-Classroom/151031/
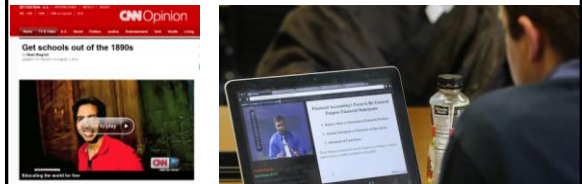
A student watches a video of Norman Nemrow's accounting class. Mr. Nemrow started the video lectures nearly 15 years ago at Brigham Young U. He is now retired, but students still watch him on the screen.

III. Learning is More Video-Based
February 15, 2015
Lynda.com Excel Training, IU
http://www.lynda.com/Excel-tutorials/Excel-2010-Essential-Training/61219-2.html

IV. Learning is More Visual
September 22, 2014
**110 Foot Engagement,
Elliott Masie's Learning 2014**
http://www.learning2014.com/index.php/item/110-foot-screen-engagement.html

October 6, 2014
Stanford U Display Wall Takes Visualization to a Higher Level,
Dian Schaffhauser, Campus Technology

V. Learning is More Touch Sensored
October 16, 2013
Corporate Classrooms: Adapting to Change
Chief Learning Officer, Frank Kalman
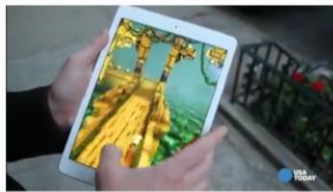http://www.clomedia.com/articles/corporate-classrooms-adapting-to-change

VI. Learning is More Game-Based
October 21, 2014
Sexy iPad Air 2 is fabulous but not a must upgrade, Edward Baig, USA Today
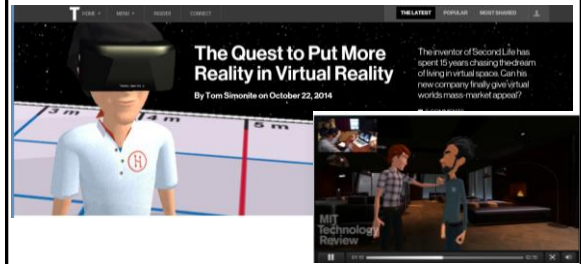http://www.usatoday.com/story/tech/columnist/baig/2014/10/21/ipad-air2-fabulous-tablet-is-not-must-upgrade/17658295/

VII. Learning is More Immersive
October 22, 2014
The Quest to Put More Reality in Virtual Reality,
Tom Simonite, MIT Technology Review
http://www.technologyreview.com/featurestory/531753/the-quest-to-put-more-reality-in-virtual-reality/utm_campaign=newsletters&utm_source=newsletter-daily-all&utm_medium=email&utm_content=20141022

VIII. Learning also is More Collaborative
March 26, 2014
Flat Connections: Welcome to Flat Connections - Learning about the world, with the world
http://www.flatconnections.com/
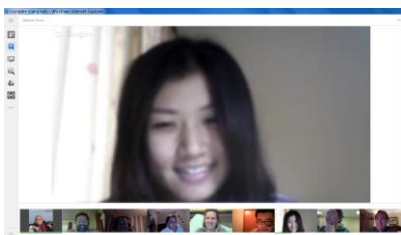
IX. Learning is More Social
October 24, 2014
Facebook launches Rooms app for anonymous sharing of interests,
USA Today, Jessica Guynn
http://www.usatoday.com/story/tech/2014/10/23/facebook-rooms-josh-miller-branch-mobile-app-creative-labs/17769167/
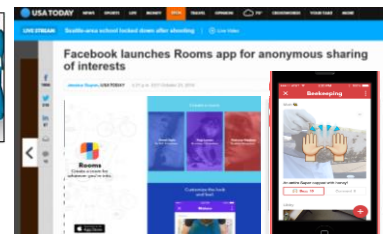
X. Learning is More Adventurous
Aaron Doering, Chasing Seals, TEDx
http://chasingseals.com/

Speaking for Change and Humanity

From the Arctic to Africa, Aaron loves to share his story of how he believes technology, education, and adventure can change how we deliver education throughout the world.

XI. Learning is More Direct from Experts
February 3, 2015
Helpouts (Google)
https://helpouts.google.com/
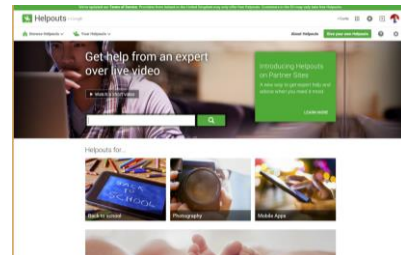
January 22, 2015
Noodle
When Can I Skip Taking the GRE or GMAT?
https://www.noodle.com/articles/when-can-i-skip-taking-the-gre-or-gmat
https://www.noodle.com/
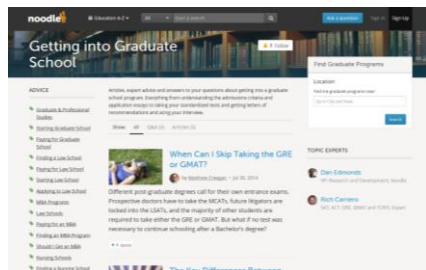
February 2, 2015
Here Comes Professor Everybody: The 'sharing economy' meets higher education,
Chronicle of Higher Education, Jeffrey R. Young
http://chronicle.com/article/Here-Comes-Professor-Everybody/151445/?cid=at

Kevin deLaplante, an associate professor at Iowa State U., makes an average of $2,500 per month teaching from his home studio (above) on sites like Udemy.

XII. Learning is More Synchronous
Dubai to Puerto Rico (Edgar Leon)
https://www.youtube.com/watch?v=Imxw0YwTh2Y&list=UUClhO-jnvl1pEXd9Skv-_Iw

Dr. Leon teaching to Dubai (in Spanish)

XIII. Learning is More Digital
October 23, 2014
New Amazon Kindle is a Voyage into eReader luxury, USA Today, Edward C. Baig
http://www.usatoday.com/story/tech/columnist/baig/2014/10/23/amazon-kindle-voyage-is-voyage-into-ereader-luxury/17781255/

XIV. Learning is Resource Rich
January 28, 2015
Discovery Education Techbook
http://www.discoveryeducation.com/what-we-offer/techbook-digital-textbooks/index.cfm

XV. Learning is More Informal
October 13, 2013
A Dozen Ways To Promote Informal Learning
Chief Learning Officer, Saul Carliner
http://www.clomedia.com/articles/a-dozen-ways-to-promote-informal-learning

XVI. Learning is More Competency-Based
July 31, 2014
Hire Education: Mastery, Modularization, and the Workforce Revolution, Michelle R. Weise and Clayton M. Christensen, The Christensen Institute
http://www.christenseninstitute.org/publications/hire/

XVII. Learning is More On Demand
May 5, 2014
Mobile MOOCs: New platform challenges conventional MOOCs
eCampus News (https://coursmos.com/)
http://www.ecampusnews.com/top-news/new-platform-challenges-conventional-moocs/print/
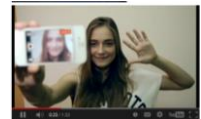
XVIII. Learning is More Hands-On
February 2, 2015
Makey Makey and the Kano
http://makeymakey.com/
https://vimeo.com/60307041

XIX. 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/

Bill Gates' classroom of the future
Gates: How to make digital classrooms work

Learning is More Personal
Localization and Translation of Open Content
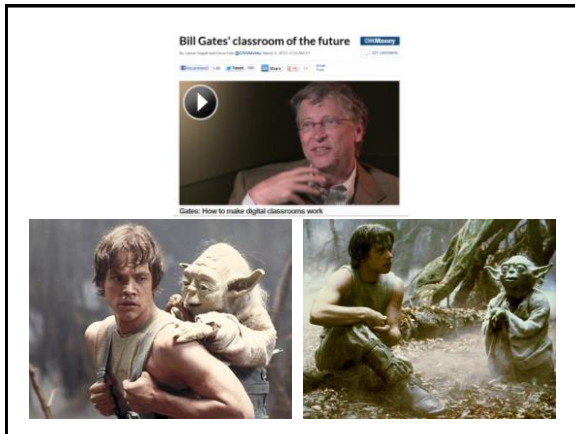Coursera, Global Translator Community, Chronicle of Higher Education
https://www.coursera.org/about/translate

Coursera Seeks to Create a 'Global Translator Community'

Bring a great education to the world.
Join the Global Translator Community.

Sign Up

The Global Translator Community (GTC) is a community of volunteers and partner organizations working to make great educational content accessible across geographic and linguistic boundaries. GTC participants work together to translate top courses on Coursera into their native languages.

Join the GTC »
Meet our translators »

The Global Translator Community

XX. Learning is More Communal
April 30, 2014
New Learning Hubs Locations Hosted by The New York Public Library and Seven Other Int'l Partners, Coursera Learning Hubs
https://www.coursera.org/about/programs/learningHubs
http://blog.coursera.org/post/84322385012/new-learning-hubs-locations-hosted-by-the-new-york

February 5, 2015
XXI. Learning is More Online
2014 Survey of Online Learning
Grade Level: Tracking Online Education in the United States, 2014, Online Learning Consortium (formerly Sloan-C), by I. Elaine Allen and Jeff Seaman
http://www.onlinelearningsurvey.com/reports/gradelevel.pdf
http://edition.cnn.com/videos/business/2015/03/11/wbt-yale-offers-online-degree-2u-ceo.cnn

Yale offers its first online degree
YALE OFFERS ITS FIRST ONLINE DEGREE
Chip Paucek - Co-Founder/CEO, 2U

January 23, 2015
Gates Newsletter
http://www.gatesnotes.com/2015-annual-letter?page=0&lang=en&WT.mc_id=01_21_2015_AL2015-BG_PFPL_Img1_Top_20

ONLINE EDUCATION WILL REACH HUNDREDS OF MILLIONS OF PEOPLE

Online education will reach hundreds of millions of people. Teachers and students from Kabara to Chicago will connect with world class learning materials and each other online.

A quick overview of the bet we're making about the next 15 years.

Learning is More Online
June 15, 2014
Starbucks offers workers 2 years of free college, CNN Money, Gregory Wallace
(from Arizona State online programs)
http://money.cnn.com/2014/06/15/news/economy/starbucks-schultz-education/index.html?hpt=hp_t2
http://www.nytimes.com/2014/06/16/us/starbucks-to-provide-free-college-education-to-thousands-of-workers.html

Why Free Online Classes Are Still the Future of Education

Getting a College Degree, With Help From Starbucks

XII. Learning is More Modifiable

Inside Look: Learning Spaces, Meeting classroom teaching and collaboration expectations, University Business, Feb. 22, 2013
http://www.universitybusiness.com/article/inside-look-learning-spaces

XIII. Learning is More Comfortable

Design for Students, with Students, "Hub Central", the $42 million University of Adelaide learning hub opened in October 2011, May 8, 2012, Mike Roberts
http://designbuildsource.com.au/design-for-students-with-students

XIV. Learning is More Ubiquitous
September 23, 2014

Elliott Masie's (i-Beacon; *Bluetooth low energy proximity sensing*)
http://www.learning2014.com/index.php/learning-trends-and-challenges-webinar.html

On September 23, 2014 Elliott Masie hosted a webinar discussing Leaning Trends and Challenges in 2014. Below is the video from this dialogue.

XV. Learning is More Instantaneous
April 9, 2013

HER Computer fashions face social test: Can wearable computers fit in? Scott Martin, USA Today
http://www.usatoday.com/story/tech/2013/04/06/google-apple-iwatch-glass-jawbone-iphone-nike-microsoft-samsung/1979419/
(i.e., magnify moles or injuries, see vital signs, live stream surgeries, access previous PT sessions, access research and drug info, etc.)
http://www.fiercemobilehealthcare.com/story/google-glasses-could-have-strong-potential-healthcare-use/2013-03-18

XVI. Learning is More Free
August 5, 2014

OpenStax Aims To Bring Free Digital Textbooks to High Schools, David Nagel, THE Journal
http://thejournal.com/articles/2014/08/05/openstax-aims-to-bring-free-digital-textbooks-to-high-schools.aspx

January 8, 2015
Obama Plan Would Help Many Go to Community College Free

JULIE HIRSCHFELD DAVIS and TAMAR LEWIN, The New York Times
http://www.nytimes.com/2015/01/09/us/politics/obama-proposes-free-community-college-education-for-some-students.html?_r=0

President Obama running onto the stage before delivering remarks at Central High School in Phoenix on Thursday. Credit Doug Mills/The New York Times

Want something FREE?
Introducing the "TEC-VARIETY" book...
http://tec-variety.com/

What motivates?

1. **Tone/Climate:** Psychological Safety, Comfort, Sense of Belonging
2. **Encouragement:** Feedback, Responsiveness, Praise, Supports
3. **Curiosity:** Surprise, Intrigue, Unknowns
4. **Variety:** Novelty, Fun, Fantasy
5. **Autonomy:** Choice, Control, Flexibility, Opportunities
6. **Relevance:** Meaningful, Authentic, Interesting
7. **Interactivity:** Collaborative, Team-Based, Community
8. **Engagement:** Effort, Involvement, Investment
9. **Tension:** Challenge, Dissonance, Controversy
10. **Yielding Products:** Goal Driven, Purposeful Vision, Ownership

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The V-PORTAL (Bonk, IU)
"Video Primers in an Online Repository for e-Teaching and Learning" V-PORTAL, TravelinEdMan (27 free/open YouTube videos)
http://www.youtube.com/user/TravelinEdMan

XXVII. Learning is More Self-Directed
February 2013
TED Talks
(Build a School in the Cloud; Self-Organized Learning Environments (SOLEs), TED Talk from Sugata Mitra
http://www.ted.com/talks/sugata_mitra_build_a_school_in_the_cloud.html

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XXVIII. Learning is More Global
August 1, 2014
Can You Really Teach a MOOC in a Refugee Camp?, Chronicle of Higher Education, Steve Kolowich
http://chronicle.com/blogs/wiredcampus/can-you-really-teach-a-mooc-in-a-refugee-camp/54191?cid=at&utm_source=at&utm_medium=en

Two men living in Dadaab, a refugee camp in Kenya, would watch lecture videos and take online quizzes at a nearby United Nations compound. (InZone)

XIX. Learning is More Open
(December 2, 2014)
Nature, Openwords, etc.
http://www.openwords.com/
https://www.facebook.com/Openwords

Audience Poll #8:
I. Who remembers what they were doing on 911?
II. 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."

XXX. Learning is More Massive
Sample Course: Open Knowledge:
Changing the Global Course of Learning
September 2, 2014 to December 12, 2014, Stanford
https://class.stanford.edu/courses/Education/OpenKnowledge/Fall2014/about#
Softcover ($30): http://www.parlorpress.com/invasion_of_the_moocs
Free (PDF): http://www.parlorpress.com/pdf/invasion_of_the_moocs.pdf

Global Health Initiatives
October 7, 2014
Online Mooc courses deliver Ebola health advice, BBC News, Sean Coughlan
http://www.bbc.com/news/education-29521360
http://www.advancelearning.com/why-wait-for-others-to-fight-ebola

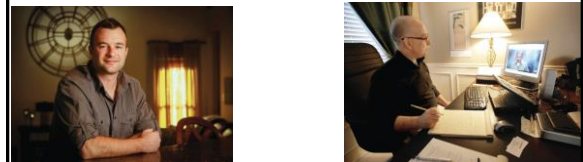WHY WAIT FOR OTHERS TO FIGHT EBOLA?

Disinfecting a room in Monrovia, Liberia: Online courses are providing health advice to fight Ebola.

Let's Review:
Learning is Changing...
(i.e., it's more informal, video-based, ubiquitous, collaborative, self-directed, global, mobile, open, massive, etc.)

Frank Basile, an aircraft technician, took an MITx course on circuits and electronics to increase his knowledge.

Joe Alfonso, a financial adviser from Oregon, is taking the online finance course as a "refresher."
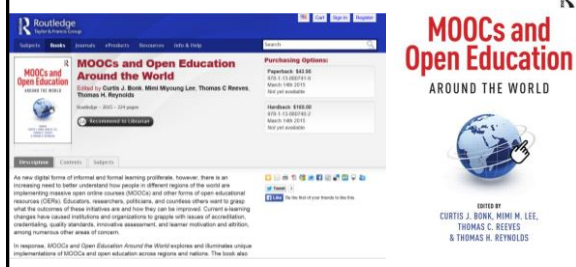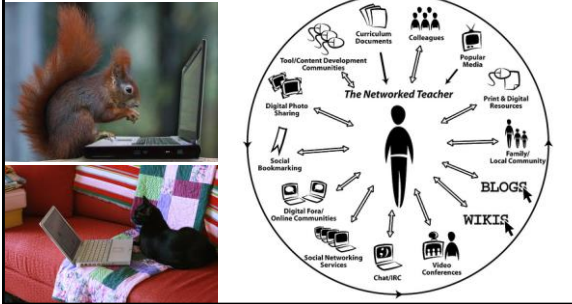
Things are heating up!
http://routledge-ny.com/books/details/9781138807419/

MOOCs and Open Education Around the Word
By Bonk, Lee, Reeves, & Reynolds

MOOCs and Open Education Around the World
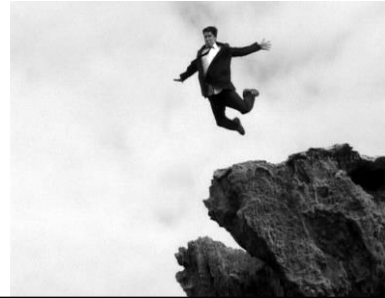http://routledge-ny.com/books/details/9781138807419/

The Web of Learning

We are entering a jumping off point...

Framework: WE-ALL-LEARN:
Ten Forces that Opened the Learning World

- **W**eb Searching in the World of e-Books (i.e., Darwin)
- **E**-Learning and Blended Learning
- **A**vailability of Open Source and Free Software (e.g., Moodle)
- **L**everaged Resources and OpenCourseWare (e.g., MIT)
- **L**earning Object Repositories and Portals (i.e., shared content)
- **L**earner Participation in Open Info Communities (YouTube)
- **E**lectronic Collaboration and Interaction (sync and async)
- **A**lternate Reality Learning (Online Massive Gaming, Simulations, and Virtual Worlds; e.g., Second Life)
- **R**eal-Time Mobility and Portability (e.g., iPhone)
- **N**etworks of Personalized Learning (Blogs, RSS)

Audience Participation!

WE
ALL
LEARN!!!

How do you now view the instructor in the Open World of Education 3.0?

Poll #9:
Instructor as Counselor?

Poll #10:
Instructor as Course Ambassador?

Poll #11:
Instructor as Curator?

Poll #12:
Instructor as Camping Trip Guide?

Charles Wedemeyer Quote:
"It should be immaterial whether one has learned at the front door or the back door of the Palace of Learning. What one has learned—not where, or how, in what sequence, at what institution, or in what period of time—is the only criterion of supreme importance."
(Charles Wedemeyer, 1981, p. 216)

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.
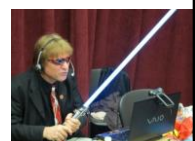Steve Bradt, MIT News Office
http://web.mit.edu/newsoffice/2013/former-mit-president-charles-m-vest-dies-at-72-1213.html

#20CLCC

Questions and Comments?

Slides at: TrainingShare.com
Papers: PublicationShare.com
Free Book: http://tec-variety.com/
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