

Education 20/20: Visions of a New Learning World

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<http://mypage.iu.edu/~cjbonk/>

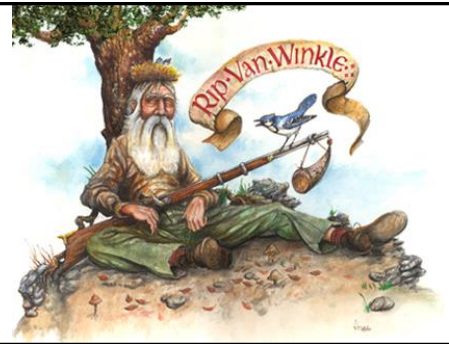


Session Overview

1. Education 1.0, 2.0, and 3.0
2. Education 20/20 and the Role of the Instructor
3. First and Last Principles of Instruction
4. Learning is Changing
5. Megatrends of Learning: Engagement, Access, and Customization (30 ways that learning is changing...)



(Circa Confucius 551–479 BCE)



What happens to
sleeping students?



Poll #1: Remember Education 1.0**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

**Fast Forward 200 Years...****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 (On Wisconsin, Fall 2014)

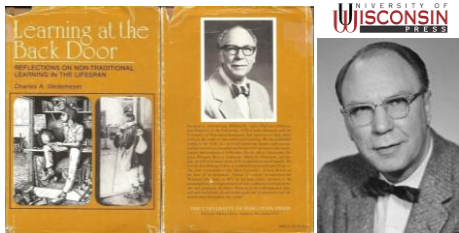
MOOC, Meet MORC



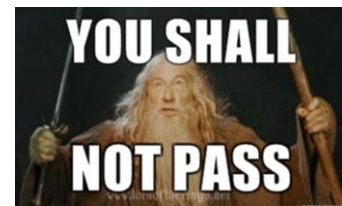
Mimeograph machine.

**Correspondence, Mail, Satellite,
Radio, and TV Courses**

Charles Wedemeyer, University of Wisconsin

**May 10, 2013****Poll #2: Who remembers these?****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/>**Poll #3: Fast Forward to the 1980s and
1990s...****Education 2.0...Teacher is a Guide on
the side...****Poll #4:****Do you really remember those
days Education 2.0?**



Fast Forward 30+ More Years...
"Anyone can now learn anything from anyone at any time."

SKILLSHARE | LIVES | REACT

Learn anything from anyone, anywhere.



Join us! Start learning and discover unique classes in your city.

Education 3.0...Education 20/20



"In Education 3.0, classrooms would move away from lectures, such as this one, to having class time be spent on discussions and projects, using digital technology."
 (Per Wikipedia: https://en.wikipedia.org/wiki/Education_3.0)

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

Table 1: Educational generations in higher education			
Characteristics	Education 1.0	Education 2.0	Education 3.0
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

Education 20/20



From Instructor as Credit Manager and Court Room Judge



1. Instructor as Counselor



2. Instructor as Consultant**3. Instructor as Conductor****4. Instructor as Course Ambassador****5. Instructor as Curator****6. Instructor as Concierge****7. Instructor as Camping Trip Guide**

8. Instructor as Cultivator



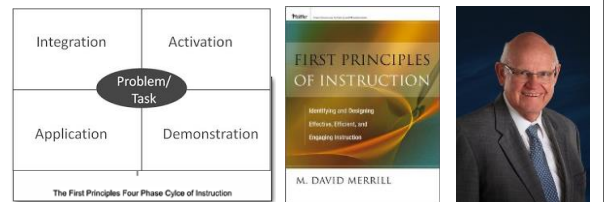
20 New Roles of the Instructor

Captain Course Ambassador Consumer Advocate
 Counselor Curator Cook Change Catalyst
 Conductor Concierge Comedian
 Consultant Camping Trip Guide Coach
 Course Expedition Leader Collaborator
 Community Organizer Chemist Care Giver
 Cultivator Colleague



Merrill's First Principles of Teaching/Instruction

<http://travelinman.blogspot.com/2011/05/books-first-principles-of-instruction.html>



February 29, 2016 Instructional Design: Demand grows for a new breed of academic

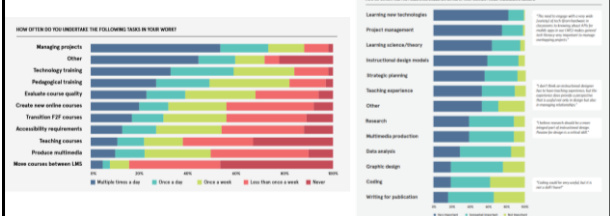
The Chronicle of Higher Education, Dan Berrett

<http://chronicle.com/article/Instructional-Design/235425>



April, 2016 Instructional Design in Higher Education, Gates Foundation and Intentional Futures

http://intentionalfutures.com/reports/instructional_design/files/instructional_design%20Design%20in%20Higher%20Education%20Report.pdf

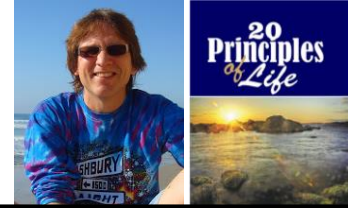


Instructional Designer Morphs into Learning Environment Engineer



Bonk's Last Principles of Teaching/Instruction

<http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



1. The Principle of Flexibility

<http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



2. The Principle of Convenience

<http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



3. The Principle of Collegiality

<http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



4. The Principle of Cheerfulness and Optimism

<http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



5. The Principle of High Expectations

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



6. The Principle of Choice and Options

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



7. The Principle of Empowerment and Autonomy

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



August 8, 2017

Professor's plan to let students grade themselves gets an F

Paul LeBlanc, CNN

<http://www.cnn.com/2017/08/08/health/students-choose-grades-stress-reduction-trnd/index.html>

Professor's plan to let students grade themselves gets an F



8. The Principle of Support and Feedback

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



9. The Principle of Spontaneity

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



10. The Principle of Organization

<http://travelinedman.blogspot.com/2011/05/books-last-principles-of-instruction.html>



11. The Principle of Sharing

<http://travelinedman.blogspot.com/2011/05/books-last-principles-of-instruction.html>



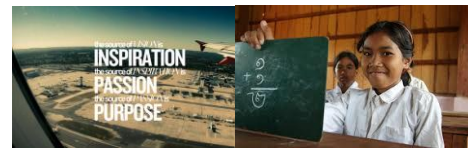
12. The Principle of Nontraditional Learning

<http://travelinedman.blogspot.com/2011/05/books-last-principles-of-instruction.html>



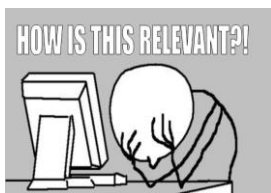
13. The Principle of Passion and Inspiration

<http://travelinedman.blogspot.com/2011/05/books-last-principles-of-instruction.html>



14. The Principle of Relevance and Meaningfulness

<http://travelinedman.blogspot.com/2011/05/books-last-principles-of-instruction.html>



15. The Principle of Trial and Error (i.e., it is ok to fail)

<http://travelinedman.blogspot.com/2011/05/books-last-principles-of-instruction.html>



16. The Principle of Expanded Resources

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



17. The Principle of Human Connectedness

<http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



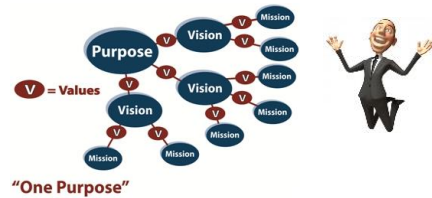
18. The Principle of Cognitive Apprenticeship

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



19. The Principle of Purpose and Vision

<http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



20. ??? (what is missing)

<http://traveledman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



Bonk's 20 "Last" Principles of Instruction (LAST = Learning Activation System Template)

<http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>

Flexibility Support and Feedback Choice and Options
Convenience Spontaneity Nontraditional Learning
Collegiality Organization Passion and Inspiration
Cheerfulness and Optimism Relevance and Meaningfulness
High Expectations Sharing Trial and Error (i.e., it is ok to fail)
Purpose and Vision Expanded Resources
Empowerment and Autonomy Human Connectedness #20 ???
Cognitive Apprenticeship

Poll: #5.

Read any good books lately
detailing this shift?



1. Originals (2016):

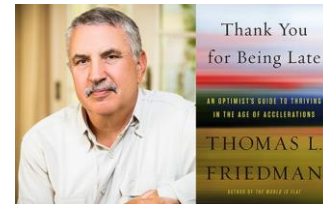
How Non-Conformists Move the World

Adam Grant

Pinkcast 2. Advice from Adam Grant: Look for "disagreeable givers"
(March 2, 2016)



2: Thank You for Being Late: An Optimist's Guide to Thriving in the Age of Accelerations (2016)



3. Creating Innovators

Tony Wagner (2012)

<http://creatinginnovators.com/>

Most Likely to Succeed (2015):

Preparing Our Kids for the Innovation Era

Tony Wagner and Ted Dintersmith

<http://www.tonywagner.com/1933>

- Play
- Passion
- Purpose and life goals
- Open cultures of innovation and interdisciplinary problem solving
- Collaboration
- Intrinsic motivation



Clearly... Learning is Changing!



The Creation of Effective Learning Environments

<http://study.com/academy/notes/learning-environment-in-the-classroom-definition-impact-importance.html>



Café Classroom and Café Connectedness



Poll #6: Who wants one of these? Starbucks



July 29, 2016 Reimagine Your Learning Space: Starbucks Your Classroom!

Oskar Cymerman, Teaching Channel

<https://www.teachingchannel.org/blog/2016/07/29/starbucks-your-classroom/>



Sterile, industrial-era rows aren't very attractive or motivating. Even more, I've become convinced that traditional educational settings dull the senses. We know that breaks and interruptions after periods of focused activity actually help in learning, yet we sometimes ask our students to sit still for an hour or more with little freedom of movement. I believe the "Starbucks" environment will promote that freedom and movement. Freedom is the key ingredient to social-emotional well-being and deeper learning. Rows and columns constrict. They hold and stifle. That is the truth. That is the reality in many U.S. classrooms today. But no longer in mine. Never again.

The World is Open: How Web Technology Is Revolutionizing Education



TEN OPENERS: (WE-ALL-LEARN)

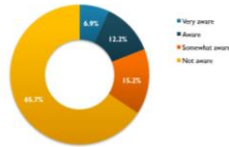
1. Web Searching in the World of E-Books
2. E-Learning and Blended Learning
3. Availability of Open Source and Free Software
4. Leveraged Resources and OpenCourseWare
5. Learning Object Repositories and Portals
6. Learner Participation in Open Information Communities
7. Electronic Collaboration
8. Alternate Reality Learning
9. Real-Time Mobility and Portability
10. Networks of Personalized Learning



July 2016 The Awareness Problem: Opening the Textbook: Educational Resources in U.S. Higher Education, 2015-2016

I. Elaine Allen and Jeff Seaman, Babson Survey Research Group
<http://www.onlinelearningnews.com/reports/openingthetextbook2016.pdf>

AWARENESS OF OPEN TEXTBOOKS: 2015-16



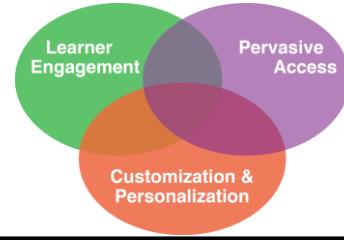
OER Use to Triple Over Next 5 Years

By Jeff Seaman | 08/17/16

Open educational resources (OER) are replacing proprietary textbooks in higher education, with the potential to triple use over the next five years, a report released by the Babson Survey Research Group (BSRG) shows.

The report, titled "Opening the Textbook: Educational Resources in U.S. Higher Education, 2015-2016," found that the use of OER for educational purposes is expected to increase from 13 percent to 39 percent over the next five years. The report also found that the use of OER for educational purposes is expected to increase from 13 percent to 39 percent over the next five years.

30+ Ways Learning is Changing: The Mega Trends



July 11, 2017 Going 'phigital'? 4 things schools need to know about Generation Z, Todd Kominak, TrustEd <http://trustedk12.com/phigital-digital-learning/>

May 15, 2017

3 must know's about the rising "phigital" student-and why their impact is enormous, Meris Stansbury, eCampus News
<https://www.ecampusnews.com/campus-administration/education-gen-z-phigital-student/>



How Learning is Changing: Mega Trend #1. Learner Engagement



July 17, 2017 Learning is More Collaborative

Buildings That Foster Collaboration
Lawrence Biemiller, The Chronicle of Higher Education
<https://www.chronicle.com/story/2017/07/20/stocks-rise-high/49695901/>

Buildings That Foster Collaboration



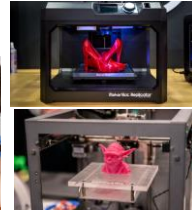
Social spaces, like this one in an interdisciplinary-science building at Arizona State U., don't qualify for federal reimbursement of research-overhead costs. So now "we don't build any single-purpose space," says the university architect.

August 17, 2016 Learning is More Hands-on

Research: 3D Printing Market to Double by 2020
Joshua Bolkman, Campus Technology
<https://campustechnology.com/articles/2016/08/17/report-3d-printing-market-to-double-by-2020.aspx>

Research: 3D Printing Market to Double by 2020

By Joshua Bolkman | 08/17/16



February 9, 2017

Learning is More Hands-on

More black and Latino students learn to code as Code.org classes swell

Jessica Gwynn, USA Today

<http://www.usatoday.com/story/tech/news/2017/02/09/coding-reaches-black-latino-students/97671518/>

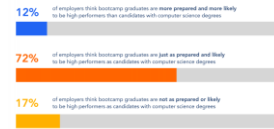


May 3, 2017

4 out of 5 Companies Have Hired a Coding Bootcamp Graduate

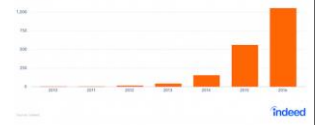
Sri Ravipati, Campus Technology

<https://campustechnology.com/articles/2017/05/03/4-out-of-5-companies-have-hired-a-coding-bootcamp-graduate.aspx>



Resumes with "coding bootcamp" education experience

(Per 1,000,000 resumes on Indeed)



February 7, 2017 (Engagement)

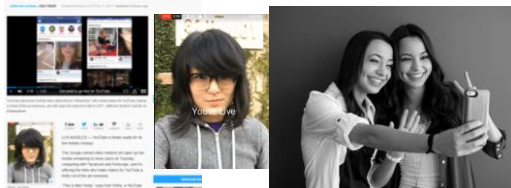
Learning is More Social

YouTube takes on Facebook with mobile live

Jefferson Graham, USA Today

<http://www.usatoday.com/story/tech/2017/02/07/youtube-takes-facebook-mobile-live/97566592/>

YouTube takes on Facebook with mobile live



June 10, 2015 (Engagement)

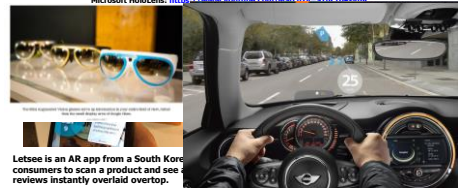
Learning is More Immersive

Augmented reality promises 'superpowers', and people are listening

The USA Today, Marco della Cava

<http://www.usatoday.com/story/tech/2015/06/10/augmented-reality-promises-superpowers-and-people-are-listening/34827861/>

<http://www.cnet.com/news/microsoft-holo-lens-how-it-works/34827861/>



Letsee is an AR app from a South Korea consumers to scan a product and see reviews instantly overlaid on top.

July 19, 2017

HoloLens Assists in Live Surgery

Tommy Palladino, Next Reality

<https://hololens.realitynews.com/news/2017/07/19/holo-lens-assists-live-surgery-9178887/>

Video #1: 1:09: <http://curtbonk.com/hololens.html>

Video #2: 1:37: <http://curtbonk.com/hololens2.html>

07/19/2017

HoloLens Assists in Live Surgery
Numerous examples exist of doctors and surgeons using HoloLens to plan surgeries. The device has even been used to view reference images during a procedure and stream it to a remote audience. Until recently, it has not been used to augment the surgeon's view of the patient during a live surgery.

Original Video: <https://hololens.realitynews.com/news/2017/07/19/holo-lens-assists-live-surgery-9178887/>



July 19, 2017

Modern medicine breathes new life into virtual training

<https://www.usatoday.com/videos/tech/2017/07/19/modern-medicine-breathes-new-life-into-virtual-training/34827861/>

Videos

2:34 (entire video): <http://curtbonk.com/vr-medicine4b.html>

.01-.21: <http://curtbonk.com/vr-medicine.html>

.37-.56: <http://curtbonk.com/vr-medicine2.html>

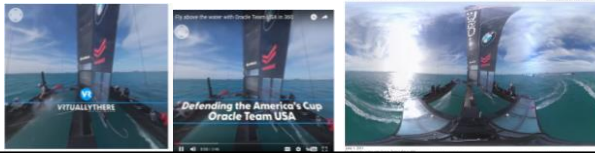
.57-1.29: <http://curtbonk.com/vr-medicine3.html>

1:30-2:27: <http://curtbonk.com/vr-medicine4.html>



May 30, 2017
Learning is More Immersive
 Fly above the water with Oracle Team
 USA in 360

<http://www.oracle.com/usa/360>
 The first 17 seconds <http://caribonk.com/sailing-17.html>
 1:14 to 1:54 <http://caribonk.com/sailing-46.html>
 Whole video <http://caribonk.com/sailing-101.html>
 1:01: <http://caribonk.com/sailing-101.html>



August 8, 2017
Learning is More Game-like
ShortSims

<http://www.shortsims.com/>
 Clark Aldrich clark@clarkaldrichdesigns.com



February 15, 2017 (Engagement)
Learning is More Synchronous

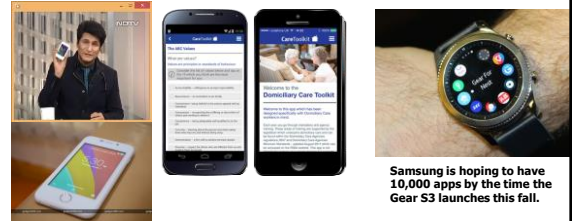
Shindig, Future Trends Forum, Bryan Alexander
<https://bryanalexander.org/the-future-trends-forum/>
<http://www.shindig.com/>
<http://events.shindig.com/event/rf-anniversary>



February 17, 2016 (Engagement)
Learning is More Mobile

World's Cheapest Smartphone at \$3.67

<https://m.facebook.com/hacking/launched?refid=525...>
https://m.facebook.com/story.php?story_fbid=1615376001211579&set=192827336797
<http://gadgets.ndtv.com/videos/freedom-251-launches-as-world-s-cheapest-smartphone-at-rs-251-40484>



Samsung is hoping to have
 10,000 apps by the time the
 Gear S3 launches this fall.

How Learning is Changing:
Mega Trend #2. Pervasive Access



Learning is More Online (Access)

<http://tec-variety.com/>



What motivates?

1. TonaClimate: 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 Product: Goal Driven, Purposeful Vision, Ownership



April 6, 2017 (Access) Learning is More Free and Open

Indiana University's eText program saves students over \$3.5 million (Program makes digital textbooks cost less and do more, grows 56 percent),
Indiana University Newsroom

<https://itnews.iu.edu/articles/2017/indiana-university-stext-program-saves-students-over-3.5-million.php>



Indiana University's eText program saves students over \$3.5 million

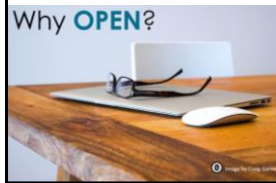
April 6, 2017 | News & Events

March 27, 2017 (Access) Learning is More Free and Open

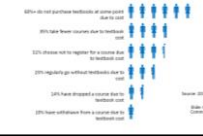
Beyond Free: Harnessing the resonant value in open and collaborative practices for the public good

David Porter, CEO, eCampus Ontario,
Open Education Ontario Summit

https://www.slideshare.net/David_Porter
<https://www.oels.ca/events/open-education-ontario-summit>



There is a direct relationship between
textbook costs and student success



May 14, 2016 (Access) Learning is More Immediate...

Mastodon bones offer clues of earliest humans in North America, Faith Karim, CNN

Abstract: <http://advances.sciencemap.org/content/2/5/e1600375>
Full Article: <http://advances.sciencemap.org/content/2/5/e1600375.full>
Supplemental materials (PDF): <http://advances.sciencemap.org/content/suppl/2016/05/10/2.5.e1600375.DC1>
PDF: http://advances.sciencemap.org/content/suppl/2016/05/10/2.5.e1600375.DC1.1600375_S01.pdf

Mastodon bones offer clues of earliest humans in North America



November 19, 2015 (Access) Learning is More Immediate...

New daddy longlegs named after 'Lord of the Rings' character Smeagol, Mary Bowerman, USA Today

<http://www.usatoday.com/story/tech/2015/11/19/new-daddy-longlegs-named-after-lord-rings-character-smeagol/7802286/>



May 9, 2017 (Access) Learning is More Immediate...

Meet Zuul, the new dinosaur species named after 'Ghostbusters' demon
Traci Watson, USA Today

<https://www.usatoday.com/story/news/2017/05/09/new-species-dinosaur-named-ghostbusters/102475468/>
15 second: <http://curtbook.com/ghostbusters15.html>
27 second: <http://curtbook.com/ghostbusters27.html>

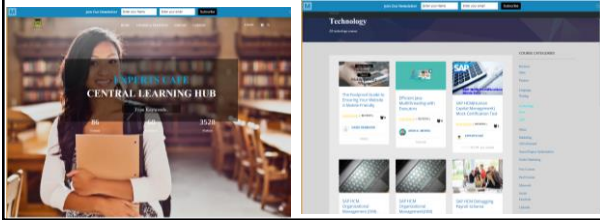
Meet Zuul, the new dinosaur species named after 'Ghostbusters' demon



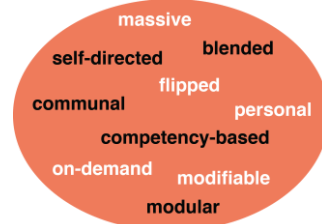
Learning is More Direct from Experts



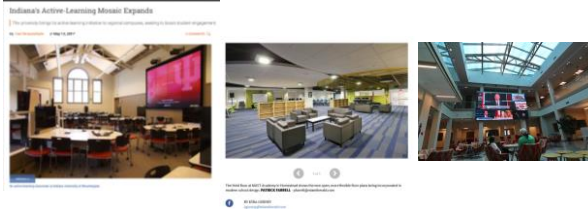
June 20, 2016 (Access)
Learning is More Direct from Experts
 (e.g., The Expert Café)
<http://expertscafe.com/>



How Learning is Changing:
Mega Trend #3. Customization



May 12, 2017 (Customization)
Learning is More Modifiable
 The Future of Collaboration Spaces Encompasses Video
 Interactive, Mobile, Julie Johnston, IU, Campus Technology
<https://www.campus-technology.com/2017/05/12/the-future-of-collaboration-spaces-encompasses-video-interactive-mobile-julie-johnston-iu/>



October 14, 2011
Learning is On Demand
Siri (co-founder Tom Gruber)
<http://www.imore.com/siri>



May 9, 2017 (Customization)
Amazon Echo Show brings chatty Alexa to a two-way, video touchscreen
 Edward C. Baig and Elizabeth Weise, USA Today
<https://www.usatoday.com/story/tech/2017/05/09/amazon-echo-show-features/4448844/>
 24 seconds: <http://curtbonk.com/jetsons24.html>
 44 seconds: <http://curtbonk.com/jetsons44.html>



January 20, 2016 (Customization)
Learning is More Blended
Universities tap growth of craft beer, offer classes, Chicago Tribune
<http://www.chicagotribune.com/business/ct-college-craft-beer-offer-classes-20160120-story.html>



May 20, 2016 (Customization) Learning is More Massive agMOOCs (India)

<http://www.agmoocs.in/>



April 20, 2015 (Customization) Learning is More Massive

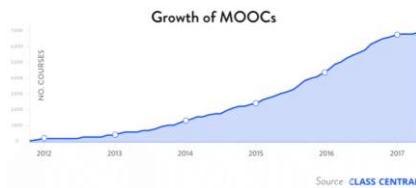
250 MOOCs and Counting: One Man's Educational Journey, Chronicle of Higher Education
<http://chronicle.com/article/250-MOOCsCounting-One/229397?cid=at>
If the MOOC movement has faded, nobody told Jima Ngei. Mr. Ngei, who lives in Port Harcourt, Nigeria, has completed and passed 250.



Jima Ngei: "I had this unrelenting fear that this miracle of free access might evaporate soon."

August 17, 2017 By the Numbers: MOOCs in 2016 Class Central, Dhawal Shah

<https://www.class-central.com/report/mooc-stats-2016/>



December 25, 2016 Class Central

<https://www.class-central.com/report/mooc-stats-2016/>



58M
Students

700+
Universities

6850
Courses

MOOCs in 2016: Analysis by Class Central

August 12, 2016 (Customization) A Life of Happiness and Fulfillment Indian School of Business, Rajagopal Raghunathan

<https://www.class-central.com/mooc/2866/course-a-life-of-happiness-and-fulfillment>

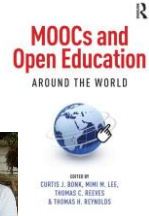
2:31 Happiness video: <http://curbhook.com/happiness.html>



A Life of Happiness and Fulfillment

MOOCs and Open Education Around the World

<http://routledge-ny.com/books/details/9781138807419/>



July 1, 2015 (Customization)
Chapter 14: Creating a Temporary Spontaneous
Mini-Ecosystem through a MOOC
Paul Kim and Charlie Chung, Stanford University
Figure 2. Twitter thread announcing the MOOC



June 14, 2016 (Customization)

Chapter 15: Learning About MOOCs by Talking to Students
Charles Severance, Univ. of Michigan
Anuar Lequerica, Class Central
<https://www.class-central.com/report/dr-chuck-graduation-ceremony-python-specialization/>

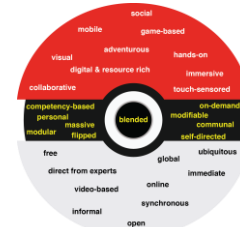


August 23, 2017

George Siemens and David Wiley Join Forces
for a MOOC About Open Education
Manuela Ekowo, EdSurge
<https://www.edsurge.com/news/2017/08/23/george-siemens-and-david-wiley-join-forces-for-a-mooc-about-open-education>



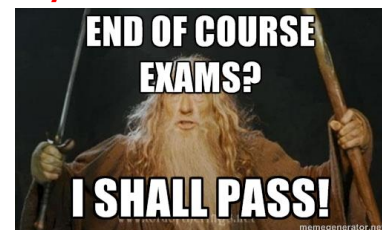
30+ Ways Learning is Changing:
Recapping the Three Mega Trends:
Engagement, Access, and Customization



The Future of Learning Plague
The new "Four Horsemen" of the
Apocalypse:
Quality, Copyright, Plagiarism, and
Assessment...



Poll #6:
Are you interested in Education



Where and when will we find Education 20/20?



We are entering a jumping off point...

(South University of Science and Technology of China, Wednesday June 10, 2015)



Things are heating up...



Education 20/20 is coming within reach!



Remember for Education 20/20 to make an impact: "I cannot do this alone."

"I cannot do this alone."
"I cannot do this alone."
"I cannot do this alone."



Any Questions or Comments?

Slides at: TrainingShare.com
Papers: PublicationShare.com
Free book: <http://tec-variety.com/>
Email: curt@worldisopen.com

