

Education 20/20: Visions of Our Changing Learning World!

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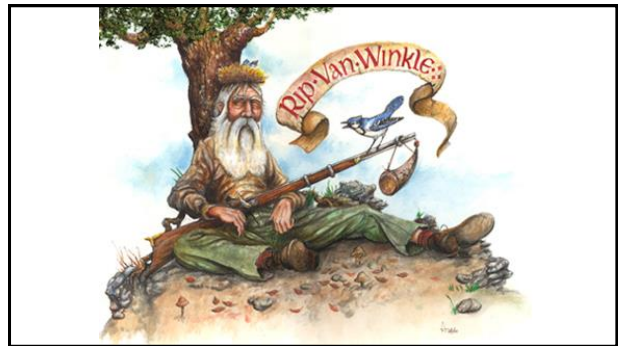


Talk Overview

1. Education 20/20 and PBL
2. New Roles of the Instructor (for PBL?)
3. First and Last Principles of Instruction (for PBL?)
4. Artificial Intelligence vs. Intelligence Augmentation
5. Megatrends of Learning: Engagement, Access, and Customization (30 ways that learning is changing...)
6. Future Trends and Ideas



(Circa Confucius 551–479 BCE)

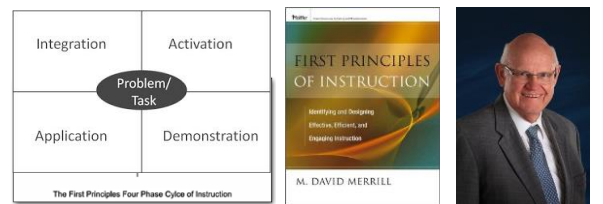


**What happens to
sleeping students?**



Merrill's First Principles of Teaching/Instruction

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



Education 20/20 (Links to PBL?)



1. Instructor as Credit Manager



2. Instructor as Counselor



3. Instructor as Consultant



4. Instructor as Conductor**5. Instructor as Course Ambassador****6. Instructor as Curator****7. Instructor as Concierge****8. Instructor as Camping Trip Guide****Bonk's Last Principles of Teaching/Instruction (The PBL Instructor?)**

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>
<http://www.applcadthal.com/articles/education-4-9/>



1. The Principle of Flexibility

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



2. The Principle of Convenience

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



3. The Principle of Collegiality

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



4. The Principle of Cheerfulness and Optimism

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



5. The Principle of High Expectations

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



6. The Principle of Choice and Options

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



7. The Principle of Empowerment and Autonomy

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



8. The Principle of Support and Feedback

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



9. The Principle of Spontaneity

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



10. The Principle of Organization

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



11. The Principle of Sharing

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



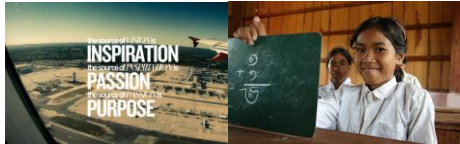
12. The Principle of Nontraditional Learning

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



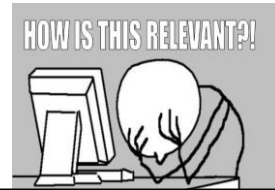
13. The Principle of Passion and Inspiration

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



14. The Principle of Relevance and Meaningfulness

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



16. The Principle of Expanded Resources

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



17. The Principle of Human Connectedness

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



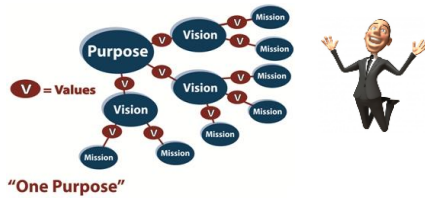
18. The Principle of Cognitive Apprenticeship

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



19. The Principle of Purpose and Vision

<http://travelledman.blogspot.com/2011/05/bonks-1st-principles-of-instruction.html>



20. ??? (what is missing)

<http://travelledman.blogspot.com/2011/05/bonks-1st-principles-of-instruction.html>



Learning is Changing...



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



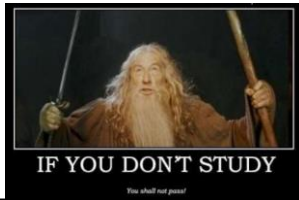
Mimeograph machine.

Poll #2: Fast Forward 50 more Years...

Do you remember education 2.0?



Poll #3: Do you really remember what was to be education 2.0?



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



Education 3.0...



"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/ntsc/index.php/fm/article/view/1625/1549>

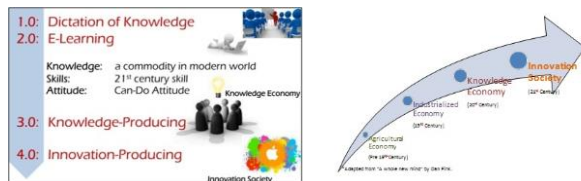
EDUCATION 3.0

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

Now What is Education 4.0?

"Innovation-producing education. Learn more in: Development of Individual Agency within a Collaborative, Creative Learning Community"

<http://www.igi-global.com/dictionary/education-40/41755>
<https://thinc.in.th/engadmission/education4.html> (Chula Engineering)



January 14, 2016

The Fourth Industrial Revolution: What it means, how to respond

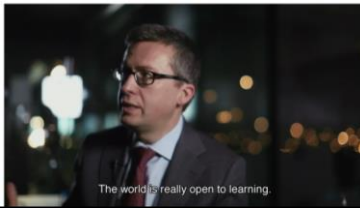
Klaus Schwab, Founder and Executive Chairman, World Economic Forum
<https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>
 (Ubiquitous, mobile supercomputing, artificially intelligent robots, self-driving cars, massive technological brain enhancements, genetic editing, etc.)
<http://www.trainingshare.com/fourth-industrial-revolution-what-it-means-and-how-to-respond>

Navigating the next industrial revolution

Revolution	Year	Information
1	1784	Steam, water, mechanical production equipment
2	1870	Division of labour, electricity, mass production
3	1969	Electronics, IT, automated production
4	?	Cyber-physical systems

April 13, 2016**The Fourth Industrial Revolution:
What it means, how to respond**

Klaus Schwab, Founder and Executive Chairman, World Economic Forum
<https://www.weforum.org/agenda/2016/04/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>
<http://trainingshare.com/fourth-industrial-revolution-video-clip.php>
<http://www.tube8shop.com/watch/8280981>

**August 21, 2016****ST Future Economy Roundtable:
Is Asia ready for the Fourth Industrial Revolution?**

The Straits Times

<https://www.straitstimes.com/asia/is-asia-ready-for-the-fourth-industrial-revolution>


"It's quite clear that the established models of education have to change and adapt to the new environment."

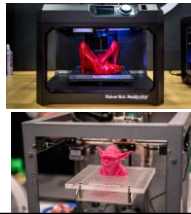
August 17, 2016**Research: 3D Printing Market to Double by 2020**

Joshua Bolkan, Campus Technology

<https://campustechology.com/articles/2016/08/17/research-3d-printing-market-to-double-by-2020.aspx>

Research: 3D Printing Market to Double by 2020

By Joshua Bolkan 08/17/16

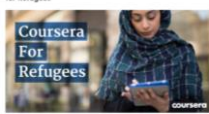
**June 7, 2016****Teaching refugees how to code
CNN Money**
<http://money.cnn.com/video/technology/2016/06/07/recorded-refugees-code.cnnmoney/index.html>
**June 20, 2016****Coursera on a Mission to
Help Refugees**

Lauren Camera, US News and World Report

<http://www.usnews.com/news/articles/2016-06-20/coursera-on-a-mission-to-help-refugees>

Coursera Blog

Coursera and the U.S. Department of State Launch Courses for Refugees



Refugees around the world can now take online classes for free

**September 21, 2016****Udacity Unveils Nanodegree Program
for Self-Driving Car Engineers**

Sri Ravipti, Campus Technology

<https://campustechology.com/articles/2016/09/21/udacity-nanodegree-program-for-self-driving-car-engineers.aspx>


Udacity Unveils Nanodegree Program for Self-Driving Car Engineers

By Sri Ravipti 09/21/16



February 9, 2017
More black and Latino students learn to code as Code.org classes swell

essica Guynn, USA Today

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

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



July 28, 2016

Knod

(Per Dr. Michael Mayrath: work with employers to diagnose skills gaps, then provide a platform to deliver content to build those skills in a learn by doing experiences, real projects with employers)

<http://www.knod.net/>



Poll:
Read any good books lately detailing this shift?



Big Magic:
Creative Living Beyond Fear (2015)

Elizabeth Gilbert

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

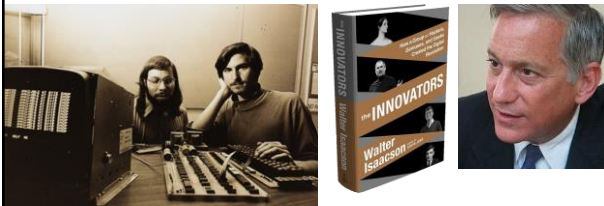
https://www.ted.com/talks/elizabeth_gilbert_mean_fear_and_the_drive_to_keep_creating



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/9781475708600>



Machines of Loving Grace:

The Quest for Common Ground Between Humans and Robots. HarperCollins.

John Markoff (2015)

<http://www.amazon.com/Machines-Loving-Grace-Common-Ground/dp/0062266883>



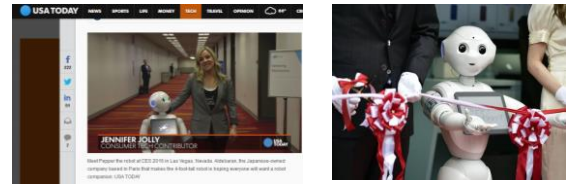
Artificial Intelligence John McCarthy, Stanford AI Lab

<http://www.amazon.com/Machines-Loving-Space-Common-Between/dp/0062266483>



May 19, 2016 Pepper the robot needs U.S. programmers, Marco della Carva, USA Today

<http://www.usatoday.com/story/tech/news/2016/05/19/pepper-robot-ai-android-robot-programmers/8446172/>
Usual internal link: <http://trainingshare.com/usa2.html>
New download link: <https://www.dropbox.com/s/hxcuwqgva20oiv/pepper-the-robot2.mp4?dl=0>



March 14, 2016 Artificial Intelligence and Robots Paul Basken, The Chronicle of Higher Education

<http://www.chronicle.com/article/Artificial-Intelligence-and-Robots/234863>
<https://www.youtube.com/watch?v=7H7U2J4V760>

Behind a Computer's Surprise Victory,
Hints of Global Economic Upheaval

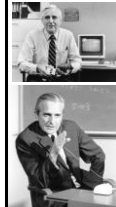


Forget the robots — here come the geniuses!



Intelligence Augmentation and Amplification Douglas Engelbart's "The Mother of All Inventions" (1968) Augmentation Research Center (ARC)

(The live demonstration featured the introduction of the computer mouse, video conferencing, teleconferencing, hypertext, word processing, hypermedia, object addressing and dynamic file linking, bootstrapping, and a collaborative real-time editor.)
<http://www.amazon.com/Machines-Loving-Space-Common-Between/dp/0062266483>

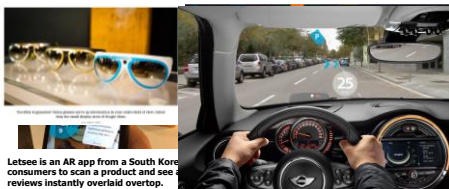


Engelbart's prototype
of a computer mouse,
as designed by
Bill
English from
Engelbart's sketches.



June 10, 2015 Augmented reality promises 'superpowers', and people are listening The USA Today, Marco della Cava

<http://www.usatoday.com/story/tech/2015/06/10/what-are-superpowers-and-the-2015-ai-robot/20150610/>
Microsoft HoloLens: <https://www.youtube.com/watch?v=aThc0P5yA>



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

June 3, 2016 Virtual Reality Lets Med Students Experience What It's Like To Be 74

Elyse Wanshel, Huffington Post
<http://ht.ly/bSpe300XEP>

Virtual Reality Lets Med Students Experience What It's
Like To Be 74

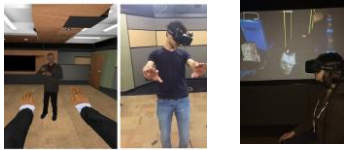
This could be surgery 2.0 for the average med student, who is 34.

© 2016 Huffington Post



I don't remember what I'm supposed to do

April 10, 2016
Virtual reality tested by NFL as tool to
confront racism, sexism
 Marco della Cava, USA Today



One VR diversity demo places the user in the body of an African-American woman as a white male avatar gets aggressive mere feet away. (In one Stanford VR demo, subjects are made to feel what is like to be homeless, as in this scene where the user is transported into the body of a woman riding the bus with a few possessions.)

Knowledge Navigator (1987)
Apple Computer

<http://www.youtube.com/watch?v=3l8d4Gf6e0c>



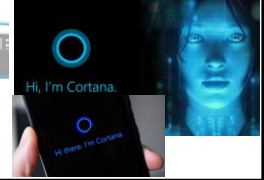
October 14, 2011
Siri (co-founder Tom Gruber)

<http://www.imore.com/siri>

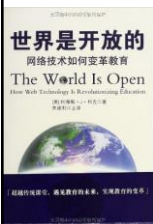


May 9, 2016
Personal Digital Assistants (PDA)
Personal digital assistants are on the rise (and
they want to talk) USA Today, Edward Baig
 (i.e., Google codename of "Chirp"), Elizabeth Weise, USA Today

<http://www.usatoday.com/story/tech/columnists/baig/2016/05/09/personal-digital-assistants-are-on-the-rise-and-they-want-to-talk/8522251/>
<http://www.usatoday.com/story/tech/columnists/weise/2016/05/09/google-codename-of-chirp/8522251/>



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



The World is Open



The World is Open



The World is Open



The World is Open



The World is Open



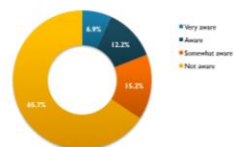
The World is Open



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
<https://www.babsonsurveygroup.com/reports/openingthetextbook2016.pdf>

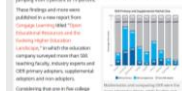
AWARENESS OF OPEN TEXTBOOKS: 2015-16



OER Use to Triple Over Next 5 Years

By 10/2020: 2021/20

Open Educational Resources (OER) are rapidly growing apace in higher education, with the potential to replace or supplement the use of print textbooks. However, the use of OER has not yet reached its full potential. The use of OER has increased significantly in the past few years, but it is still a relatively small portion of the total textbook market. The use of OER has increased significantly in the past few years, but it is still a relatively small portion of the total textbook market. The use of OER has increased significantly in the past few years, but it is still a relatively small portion of the total textbook market.



The Evolution of E-Learning (All 7 year cycles)



Phase I, 1994:
THE AGE OF
PORTALS AND
PAGES (NETSCAPE
GOES PUBLIC).



Phase II, 2001:
THE AGE OF
OPENNESS
(MIT OCW &
WIKIPEDIA BORN).



Phase III, 2008:
THE AGE OF
MOOCs (FIRST
MOOC OFFERED).



Phase IV, 2015
THE AGE OF
PERSONALIZATION.

Other prior significant e-learning dates: 1985: FIRST ONLINE COURSE, LINDA HARASIM, UNIV. OF TORONTO
1987: HYPERCARD FIRST SHIPPED.

January 15, 2016 Wikipedia is 15!

Scott McLemee, Inside Higher Ed



Wikipedia at 15

Celebrate or hate it as you will, writes Scott McLemee, Wikipedia has metamorphosed from its beginnings as a gangly cultural interloper into the de facto reference work of first resort.

January 15, 2016
by Scott McLemee

Wikipedia came into the world 15 years ago today -- and, man, what an ugly baby. The first snapshot of it in the Internet Archive is from late March of 2001, when Wikipedia was already 10 weeks old. At that point, it claimed to have more than 3,000 pages, with an expressed hope of reaching

April 4, 2016 MIT OpenCourseWare is 15!

<http://ocw.mit.edu/about/15-years/>



August 6, 2016 The Web is 25!

Happy (sort of) birthday, World Wide Web!,
Erica Fink and Jonathan Tortora, CNN Money (Tech)

<http://info.cern.ch/> (First website)

<http://info.cern.ch/hypertext/WWW/TheProject.html>
<http://money.cnn.com/2016/08/06/technology/world-wide-web-25-years-old/index.html?hpid=hp-stack-dom>



1971 Email is 35 years old!

Raymond Tomlinson, inventor of modern email, dies, USA Today (March 7, 2016)

<http://www.usatoday.com/story/tech/2016/03/07/raymond-tomlinson-dies/81432464/>

Raymond Tomlinson, inventor of modern email, dies

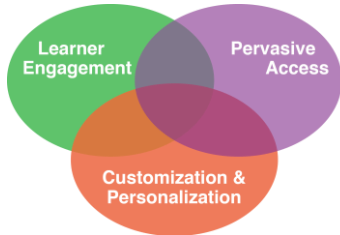


Thirty Ways Learning is Changing...

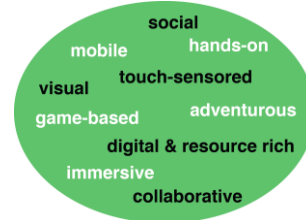
(i.e., it's more informal, video-based,
ubiquitous, collaborative, self-directed,
global, mobile, open, massive, etc.)



30+ Ways Learning is Changing: The Mega Trends



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



Learning is More Social



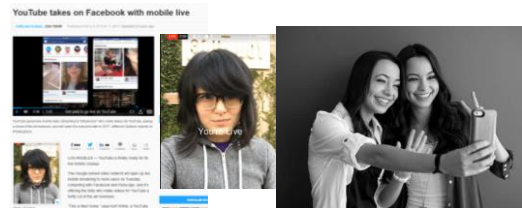
February 7, 2017 (Engagement)

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/>



August 23, 2016 (Engagement)

Learning is More Visual

e.g., reef videoconferencing
(Great Barrier Reef, Australia)

<http://www.reefhq.com.au/education-at-reef-hq-aquarium/reef-videoconferencing>



Learning is More Adventurous



May 7, 2015 (Engagement)

Learning is More Adventurous

Aaron Doering, Chasing Seals, TEDx

<http://chasingseals.com/>

<https://twitter.com/chasingseals>



July 22, 2016 (Engagement)

Learning is More Game-like

When Pokémon Goes to Campus:

The Good, the Bad, and the Ugly

Gabriel Sandoval, Chronicle of Higher Education

<https://www.chronicle.com/article/When-Pok%C3%A9mon-Goes-to-Campus/235000>



Pokémon Go players converged last week on the U. of Nebraska at Lincoln's Memorial Stadium, which officials had opened to the animated-monster hunters. The hit augmented-reality game has prompted many colleges to jump on the bandwagon.

April 2, 2015 (Engagement)

Learning is More Immersive

The Quest to Put More Reality in Virtual Reality,
Review: Samsung rises to challenge with Galaxy S6 and S6 Edge,
Edward Baig, USA Today

<http://www.usatoday.com/story/tech/smartphones/2015/03/31/samsung-galaxy-s6-challenge-with-galaxy-s6-edge/2322753/>



NextVR crewmembers set up their virtual reality cameras at an NBA game, allowing viewers of the live event to see the game from a variety of positions in the arena.

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/ftf-anniversary>

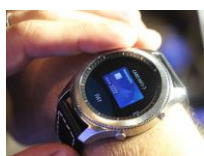


February 17, 2016 (Engagement)

Learning is More Mobile

World's Cheapest Smartphone at \$3.67

https://m.facebook.com/haitag/launches?refid=528..._tn...=5286
https://m.facebook.com/story.php?story_fbid=10153969012115798&id=101527030797
<http://indiaetv.com/videos/trendon-251-samsungs-cheapest-smartphone-21-19-251-40402>



Samsung Pay on the Gear S3. (Photo: Eli Blumenthal, USA TODAY)



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

September 7, 2016 (Engagement)

Learning is More Mobile

Learning Apps - Personalized Interfaces for Performance

Elliott Masie's Learning TRENDS; trends@masie.com

Personalized for an employee based on their development goals, competency gaps and changing skill/information matrix in the workplace. A Learning App could provide a just in time set of content, context, collaboration connections, coaching sets and real time feedback.

Learningpool: <https://www.learningpool.com/services/apps-for-learning>



Want "FREE" engagement?
How about
"Adding Some TEC-VARIETY"?
<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



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



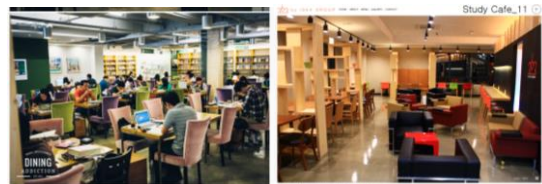
July 21, 2016 (Access)
Learning is More Ubiquitous
Facebook's Aquila drone completes
first test flight
 Jessica Guynn, USA Today



An aerial view of Aquila, an autonomous aircraft Facebook is designing to deliver mobile broadband networks to isolated people (mission to fly 60,000 above Earth for up to 3 months at a time; current record for solar-powered unmanned flight is 2 weeks). (Photo: Facebook)

August 1, 2016 (Access)
Learning is More Ubiquitous
363 by Idea Group; Study Café
Meeting Place; Idea Space (Seoul, Korea)

http://363.co.kr/news/7?page_id=244
http://363.co.kr/news/7?new_gallery=study-cafe_11



February 22, 2017 (Access)
Learning is More Informal

Digital citizenship lessons from a 9-year-old with 18,000 Twitter followers, Alan November, eSchool News

<http://www.eschoolnews.com/2017/02/22/9-year-digital-citizenship-twitter/>
<https://www.eschoolnews.com/2017/02/22/9-year-digital-citizenship-twitter/>
<http://www.eschoolnews.com/2017/02/22/9-year-digital-citizenship-twitter/>
<https://www.eschoolnews.com/2017/02/22/9-year-digital-citizenship-twitter/>
<https://www.eschoolnews.com/2017/02/22/9-year-digital-citizenship-twitter/>
<https://www.eschoolnews.com/2017/02/22/9-year-digital-citizenship-twitter/>



August 5, 2015 (Access)
Learning is More Informal
Shubham Jaglan (10 years old) Overwhelmed by
"Dream" Return Home After Double World
Championship

Disha Chopra, NDTV Sports

<http://www.ndtv.com/sports/shubham-jaglan-overwhelmed-by-dream-return-home-after-double-world-championship-121244>
<http://www.ndtv.com/sports/shubham-jaglan-overwhelmed-by-dream-return-home-after-double-world-championship-121244>



June 13, 2016 (Access)
Learning is More Free and Open
Nine-Year-Old Anvitha Vijay is the Youngest Developer at WWDC (age 9)
 (Apple Worldwide Developers Conference), Gadgets



May 4, 2016 (Access)
Learning is More Free and Open
This Mongolian Teenager Aced a MOOC
 (140,000 people take the MIT MOOC on Circuits and Electronics, 1 of 300 to get a perfect score)
 The Chronicle of Higher Education, Jeffrey R. Young
<http://chronicle.com/article/This-Mongolian-Teenager-Aced-a-MOOC/236362>



May 19, 2016 (Access)
Learning is More Free and Open
From MOOC to bootcamp to MIT
MIT News, Office of Digital Learning
 (Jin Wu—from MITx to MIT Global Entrepreneurship Bootcamp to master's student)
<http://news.mit.edu/2016/mooc-bootcamp-mit-0519>



September 28, 2016 (Access)
Learning is More Free and Open
Bookshare, An accessibility online library for people with disabilities
<https://www.bookshare.org/>

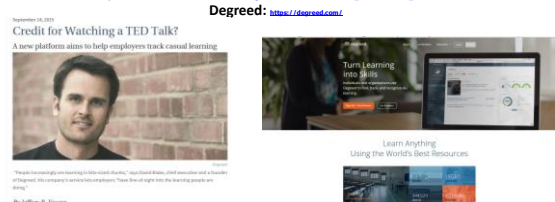


May 4, 2016 (Access)
Learning is More Video-Based
What I Learned at the ASU GSV Summit
 Kenneth Green, Inside Higher Ed
<https://www.insidehighered.com/digital-learning/article/2016/05/04/what-i-learned-at-the-asu-gsv-summit>

July 18, 2016 (Access)
 Survey: Video Usage in Ed Continues Ramp-up,
 Dian Schaffhauser, THE Journal



September 14, 2015 (Access)
Learning is More Video-Based
Credit for Watching a TED Talk? A new platform aims to help employers track casual learning
 Chronicle of Higher Education, Jeffrey R. Young
<http://chronicle.com/article/Credit-for-Watching-a-TED-Talk/230723>



May 14, 2016 (Access)

Learning is More Immediate...

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

Abstract: <http://advances.sciencemag.org/content/2/15/e1600375>
Full Article: <http://advances.sciencemag.org/content/2/15/e1600375.full>
Supplemental materials (PDF): <http://advances.sciencemag.org/content/suppl/2016/05/10/2.5.e1600375.DC1>
PDF: http://advances.sciencemag.org/content/advances/suppl/2016/05/10/2.5.e1600375.DC1/1600375_SM.pdf

Mastodon bones offer clues of earliest humans in North America

By Faith Karimi, CNN

25 November 2016 10:00 AM EST, Last May 14, 2016

NEW THIS MORNING

DISCOVERY COULD CHANGE AMERICAN HISTORY

CNN

NEW THIS MORNING

CLOSEST SITE OF HUMAN LIFE FOUND IN SOUTHEAST U.S.

CNN



November 19, 2015 (Access)

Learning is More Immediate...



Learning is More Direct from Experts

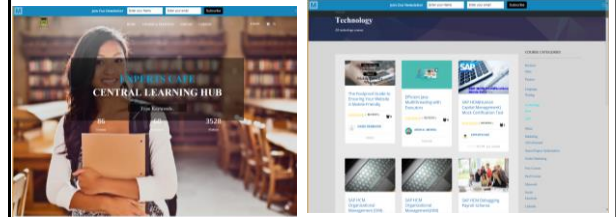


June 20, 2016 (Access)

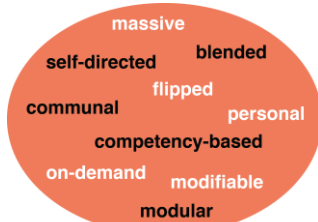
Learning is More Direct from Experts

(e.g., The Expert Café)

<http://expertscafe.com/>



**How Learning is Changing:
Mega Trend #3. Customization**



September 7, 2016 (Customization)

Learning is More Comfortable

The Future of Collaboration Spaces Encompasses Video
Interactive, Mobil, Julie Johnston, IU, Campus Technology

<http://campustechjournal.com/article/2016/09/07/01-the-future-of-collaboration-spaces-encompasses-video-interactive-mobil>



In the Indiana University Media School lobby, a large display will showcase student work and provide interactive sessions. (photo by Allen Major/The Media School © Indiana University)

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>



February 16, 2017 (Customization)

Learning is More Communal

Building Global Community, Marc Zuckerberg, Facebook

<https://www.facebook.com/notes/marc-zuckerberg/building-global-community/1819398622119847/>



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."

September 15, 2015 (Customization)

GROOCs are MOOCs for Social Impact

Social Learning for Social Impact, edX
 Join the world's first GROOC – a MOOC for groups – to collaborate with others globally and create social change.

<https://www.edx.org/course/social-learning-social-impact-the-grooc>
<https://www.youtube.com/watch?v=3d8kxWfW5A4M8>

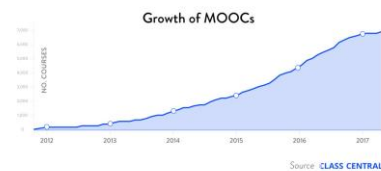


December 25, 2016

By The Numbers: MOOCs in 2016

Dhawa Shah, Class Central

<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

December 23, 2016

HarvardX and MITx: Four Years of Open Online Courses -- Fall 2012 - Summer 2016

Isaac Chung, MIT, and Andrew Dean Ho, Harvard

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2889436

Exhibit 2: Course participation and demographics

Exhibit 2a: The size and makeup of a typical HarvardX and MITx open online course	
Courses (including repeats and modules)	290
Certificates (few and fast)	244,705
Enquiries (increased >50% content)	720,280
Participants (increased content)	4,449,034
Certificate earners per course	569
Enquiries per course	2,517
Participants per course	7,862
Percentage of female participants	23%
Percentage of bachelor's degree holders	73%
Median age	29
Percentage from the United States	29%

Note: Per-course and demographic statistics are medians of course-level statistics.

- The typical HarvardX/MITx course or module certifies 500 participants.
- Around 1,500 will explore half or more of course content.
- Around 7,900 will access the course content.

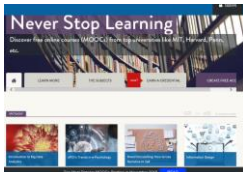


August 12, 2016 (Customization)

Class Central's Top 50 MOOCs of All Time, Dhawal Shah, Class Central Blog

"Now there are close to 6,000 MOOCs from 600+ universities around the world."

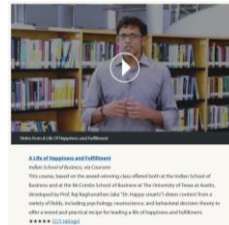
<https://www.class-central.com/report/top-moocs/>



August 12, 2016 (Customization)

A Life of Happiness and Fulfillment Indian School of Business, Rajagopal Raghunathan

<https://www.class-central.com/mooc/2869/course-a-life-of-happiness-and-fulfillment>



August 30, 2016

Thousands sign up for free online wine course, John Elmes, Wine News

<http://www.decanter.com/wine-news/online-wine-course-adds-to-32566/>



August 5, 2015 (Customization)

How Nanodegrees Are Disrupting Higher Education

John Waters, Campus Technology

<http://campustechnology.com/articles/2015/08/05/how-nanodegrees-are-disrupting-higher-education.aspx>

How Nanodegrees Are Disrupting Higher Education

How "micro" online credential programs are changing the educational landscape in several key ways.

By John A. Waters | 8/5/15

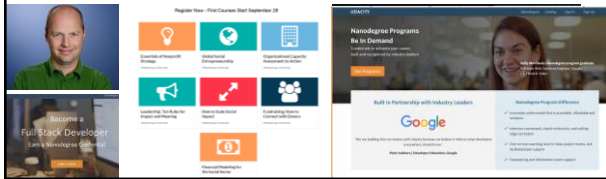


January 13, 2016 (Customization)

Degree gets you a tech job — or your money back

Marco della Cava, USA Today

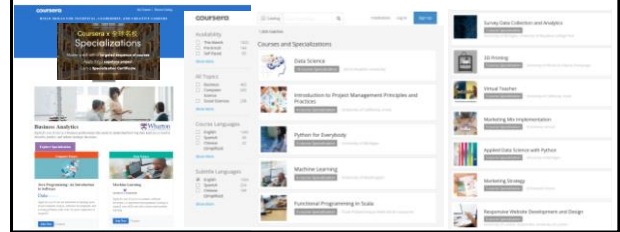
<http://www.usatoday.com/story/tech/news/2016/01/13/degree-gets-you-tech-job-your-money-back/78703230/>



July 28, 2016 (Customization)

Coursera Specializations email

Starting Monday August 1st: 9 Top Specializations



MOOCs and Open Education Around the World

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



Type of MOOC	cMOOC	xMOOC	pMOOC
Learner Role	Active	Passive	Active
Instructor Role	Co-learner	Sage on video stage	Guide on the side
Learning Theory	Connectivism	Behaviorism	Constructivism
Primary Pedagogy	Knowledge integration	Knowledge duplication	Knowledge production
Metaphor	"We link movies"	"We watch movies"	"We make movies"
Development Approach	Learning design	Instructional design	Educational design research
Primary Type of Assessment	Self Assessment	External and/or Peer Assessment	Self and/or Client Assessment
Funding Source	Seat of the pants funding	Large external funding	Moderate client provided funding

Figure 1. Differences among three types of MOOCs (Reeves & Hedberg, 2014).

Bonk, C. J., Lee, M. M., Reeves, T. C., & Reynolds, T. H. (in press). The emergence and design of massive open online courses (MOOCs). In R. A. Reiser, & J. V. Demsey (Eds.), *Trends and issues in instructional design and technology* (4th Ed.), (pp.7). Boston, MA: Pearson Education. Available: <http://www.publicationslrs.com/3>

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-graduate-ceremony-python-specialization/>



August 24, 2016

K-MOOCs (and ocMOOCs and hMOOCs)

Revolutionizing online education

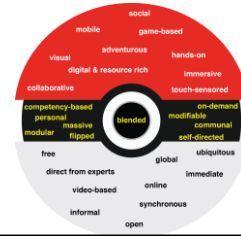
Professor creates courses tailored to cultural differences

Korea JoongAng Daily, Bong-Moon Kim

<http://www.kmooc.kr/>



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



January 3, 2017

College is Over

Roger Schank, LinkedIn

<http://www.sandiegouniontribune.com/news/science/fut-me-robots-jobs-20161213-story.html>



WHAT'S NEXT

January 30, 2017

1. Professor Einstein PDA's

<http://www.usatoday.com/story/tech/2017/01/30/robotic-barista-now-serving-really-fast/95888780/>

When the Teaching Assistant is a Robot



Professor Einstein, an educational Wi-Fi connected robot is on display at the Hanson Robot display during the opening day of Consumer Electronics Show 2017. (Photo: Robert Hanashiro, USA TODAY)

<http://www.usatoday.com/story/tech/2017/01/30/robotic-barista-now-serving-really-fast/95888780/>

February 27, 2017

2. World Knowledge Refreshment Stations

http://www.thelivingmoon.com/33ecients/22files/Library_Alexandria.html



8. Café Classroom and Café Connectedness



9. Instructional Designer Morphs into Learning Environment Engineer

The New and Improved Instructional Designer



10. The Age of Personalization



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



We are entering a jumping off point...

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



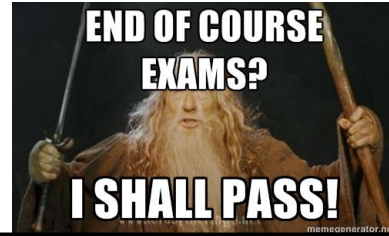
Things are heating up for PBL!



**Education 20/20 is
coming within reach!**



**Poll #10:
Who is now interested in Education
20/20...?**



**Remember for Education 20/20
to impact PBL:
"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

