

Education 20/20 Meets Education 3.0: Visions of Our Changing Learning World!

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<http://curtbonk.com/>



Talk Overview

1. Jobs are changing
2. Education 20/20 and the Role of the Instructor
3. First and Last Principles of Instruction
4. Megatrends of Learning: Engagement, Access, and Customization (30 ways that learning is changing...)
5. Future Trends and Ideas



(Circa Confucius 551–479 BCE)



April 30, 2017 'Those Jobs Are Gone'

Steve Kolowich, The Chronicle of Higher Education
<http://www.chronicle.com/article/Whos-Left-Whos-Down-in/23986>

'Those Jobs Are Gone'

By Steve Kolowich

APRIL 30, 2017

As the world of work changes, the

future of education is uncertain.

For the first time in decades, the

future of education is uncertain.

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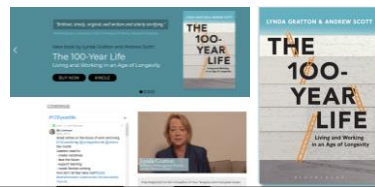
future of education is uncertain.



July 24, 2018

The 100-Year Life: Living and Working in an Age of Longevity Lynda Gratton and Andrew Scott

<http://www.100yearlife.com/>
<https://www.amazon.com/100-Year-Life-Living-Working-Longevity/dp/1543624634>



November 28, 2017
Automation could kill 73 million U.S. jobs by 2030

Paul Davidson, USA Today

<http://www.usatoday.com/story/news/2017/11/28/automation-kill-73-million-u-s-jobs-2030/98870002/>

Video (1:20): <http://curtbonk.com/automation.html>

Video (1:20): <http://curtbonk.com/automation2.html>

Automation could kill 73 million U.S. jobs by 2030



March 29, 2017
Every industrial robot takes up to 6 jobs, study finds

Steve Goldstein, MarketWatch

<http://www.marketwatch.com/story/every-industrial-robot-takes-up-to-6-jobs-study-finds-2017-03-29>

Video: 1:46 <http://curtbonk.com/futureandroids.html>

Video: :49-1:12: <http://curtbonk.com/futureandroids2.html>

Video: :01 to :49: <http://curtbonk.com/futureandroids3.html>

Video: 01-:25: <http://curtbonk.com/futureandroids4.html>

Every industrial robot takes up to 6 jobs, study finds



December 6, 2017
Jobs lost, jobs gained:

What the future of work will mean for jobs, skills, and wages
 By James Manyika, Susan Lund, Michael Chui, Jacques Bughin, Jonathan Woetzel, Parul Batra, Ryan Ko, and Saurabh Sanghvi

McKinsey and Company

<https://www.mckinsey.com/featured-insights/future-of-organizations-and-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages>

video (2:30): <http://curtbonk.com/automation-work.html>



Poll: 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)

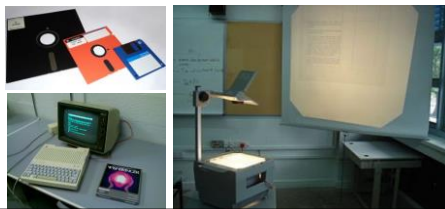
1728-1990s – Generally postal system based



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/>



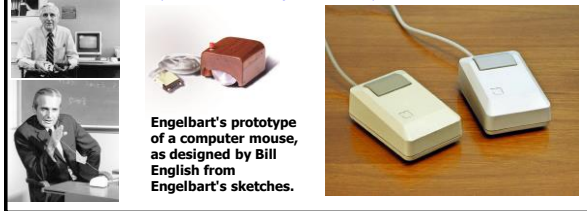
Intelligence Augmentation and Amplification

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.ameson.com/Machine-Learning-Source-Collection-Intelligence-98812084>



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

Poll: Remember Education 2.0?



Fast Forward 30+ Years...

"Anyone can now learn anything from anyone at any time."



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/>



Going 'phigital?' 4 things schools need to know about Generation Z



The Creation of Effective Learning Environments

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



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

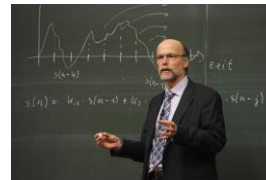
Oskar Cymerman, Teaching Channel

<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...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.

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/1625/1546>

EDUCATION 3.0

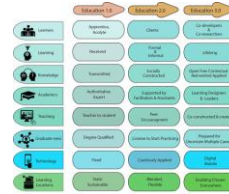
Characteristics	Education 1.0	Education 2.0	Education 3.0
Primary role of professor	Source of knowledge	Guide and source of knowledge	Orchestrator of collaborative knowledge creation
Content arrangements	Traditional copyright materials	Copyright and freeware educational resources for students within discipline, sometimes across institutions	Freely 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 assigned 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

September 18, 2017

Education 1.0 to 3.0

Gilly Salmon, University of Liverpool, UK

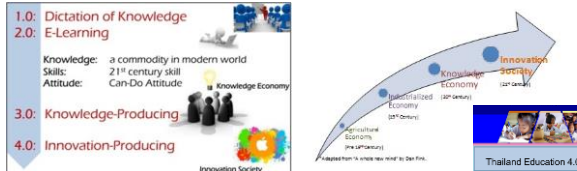
<http://www.gillysalmon.com/learningfuture.html>



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, mostly superconducting, artificially intelligent robots, self-driving cars, neuro-technological brain enhancements, genetic editing, etc.)
<http://www.trainingshare.com/fourth-industrial-revolution-video-clip-ahad.php>

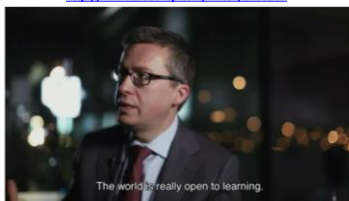
Navigating the next industrial revolution

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
<http://www.weforum.org/agenda/2016/01/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

<http://www.stratimms.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."



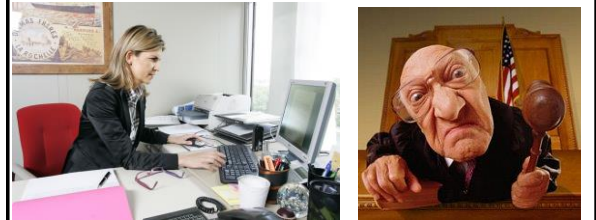
Clearly... Learning is Changing!



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

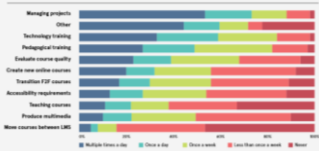
Captain **Course Ambassador** **Consumer Advocate**
Counselor **Curator** **Cook** **Change Catalyst**
Conductor **Concierge** **Comedian**
Consultant **Camping Trip Guide** **Coach**
Community Organizer **Course Expedition Leader** **Collaborator**
Cultivator **Chemist** **Care Giver**
Colleague



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

http://intentionalfutures.com/reports/instructional_design/2016/instructional_design_to_dringer%20education%20report.pdf
http://intentionalfutures.com/reports/instructional_design/

HOW OFTEN DO YOU UNDERTAKE THE FOLLOWING TASKS IN YOUR WORK?



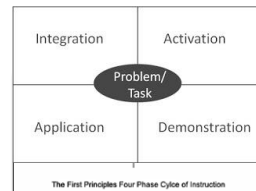
Instructional Design

Desired games for a new level of academic

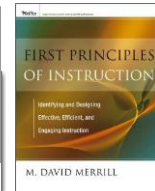


Merrill's First Principles of Teaching/Instruction

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

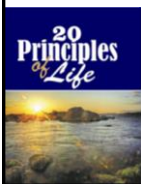


The First Principles Four Phase Cycle of Instruction



Bonk's Last Principles of Teaching/Instruction (Education 4.0?)

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>
<http://www.applicadhai.com/articles/education-4-0/>



Education 4.0

1. The Principle of Flexibility

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



2. The Principle of Convenience

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



3. The Principle of Collegiality

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



4. The Principle of Cheerfulness and Optimism

<http://travellinedman.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>



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



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



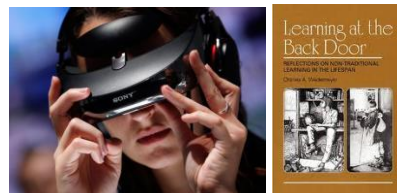
<http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



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



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



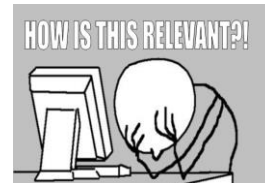
13. The Principle of Passion and Inspiration

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



14. The Principle of Relevance and Meaningfulness

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



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

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



16. The Principle of Expanded Resources

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



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



17. The Principle of Human Connectedness

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



18. The Principle of Cognitive Apprenticeship

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



19. The Principle of Purpose and Vision

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



20. ??? (what is missing)

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



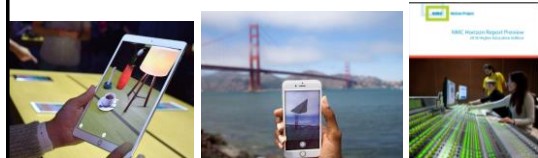
Bonk's 20 "Last" Principles of Instruction (LAST = Learning Activation System Template)

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



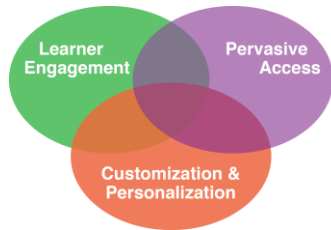
Thirty Ways Learning is Changing...

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



ARKit lets you create immersive augmented reality experiences on iOS devices. (Photo: Apple)

30+ Ways Learning is Changing: The Mega Trends



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



August 31, 2016

Learning is More Mobile

Samsung ticks forward with new Gear S3 smartwatch

Edward C. Baig and Eli Blumenthal, USA TODAY

<http://www.usatoday.com/story/tech/2016/08/31/samsung-gear-s3-smartwatch/90644266/>



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.

January 3, 2018

Learning is More Mobile

CES 2018: Your guide to the biggest consumer electronics show

USA Today

<https://www.usatoday.com/story/tech/news/2018/01/03/ces-2018-your-guide-to-the-biggest-consumer-electronics-show/396678001/>



The Octopus watch from Joy, an icon-based watch for kids to have good habits is on display during CES.



August 4, 2017

Learning is More Mobile

When our smartphones leave us out of touch

Brett Molina, USA Today

<https://www.usatoday.com/story/tech/news/2017/08/04/when-our-smartphones-leave-us-out-of-touch/39493801/>



May 15, 2018

Learning is More Mobile

Sony Digital Paper

<https://www.sony.com/electronics/digital-paper-notebooks/dpt-rp1>

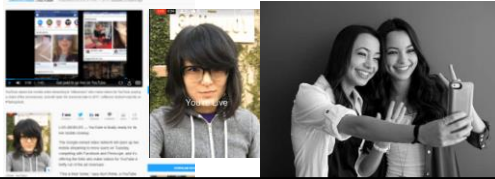


February 7, 2017 (Engagement) Learning is More Social

YouTube takes on Facebook with mobile live
Jefferson Graham, USA Today

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

YouTube takes on Facebook with mobile live



May 31, 2017 Learning is More Digital and Resource Rich Enticing Students to Read Again

Ellen McCracken, The Chronicle of Higher Education
Digital Dubliners—a guide to Joyce's stories written for students by students, will bring a new reading experience to today's classroom.

<https://digitaldubliners.com/about/>

In South Korean classrooms, digital textbook
revolution meets some resistance



Enticing Students to Read Again



Digital Dubliners



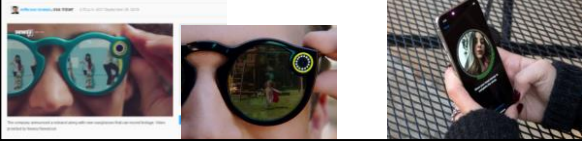
January 2, 2018 Learning is More Visual

5G to AR: Here are 7 technologies to watch in 2018
Edward C. Baig, USA Today

<https://www.usatoday.com/story/tech/2018/01/02/5g-to-ar-7-technologies-to-watch-in-2018/485813001/>

Face ID takes less than a minute to set-up. In practice, it works better than expected, but it's not perfect

Snapchat's Spectacles expected to be big hit



April 22, 2018 Learning is More Visual

Microsoft AI Commercial ft. Common

Video 1:00: Microsoft AI Commercial ft. Common: <https://www.youtube.com/watch?v=9UacY2Jhh84> (Feb 11, 2018)

Video 1:48: Microsoft AI: Amplifying Human Ingenuity: <https://www.youtube.com/watch?v=M0nu723H9P4>

Video 1:00: Microsoft AI + Ecosystem: Preserving History ft. Common: <https://www.youtube.com/watch?v=ZDZj8tH8M8M> (April 22, 2018)

Video: 0:44: Microsoft AI + The Yield: Taking the guesswork out of farming ft. Common: <https://www.youtube.com/watch?v=7ruxfx5H4e> (April 22, 2018)



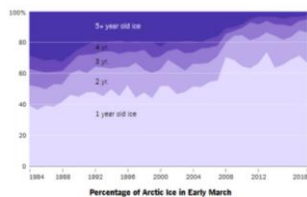
May 14, 2018 (Engagement) Learning is More Adventurous

Aaron Doering, Chasing Seals, TEDx

<https://chasingseals.com/>

<https://twitter.com/chasingseals>

<https://www.nytimes.com/interactive/2018/05/14/climate/arctic-sea-ice.html>



August 8, 2017 Learning is More Game-like ShortSims

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



July 29, 2018

Learning is More Collaborative

Why Silicon Valley is teaming up with San Quentin to train young people to code

Jessica Guynn and Megan Diskin, USA TODAY

<https://www.usatoday.com/story/tech/2018/07/25/collaborative-learning-code-prison-help-san-quentin-johanna/810122002/>
Video (1:46): <http://curtbonk.com/san-quentin.html>

Why Silicon Valley is teaming up with San Quentin to train young people to code



March 21, 2018 (Engagement)

Learning is More Collaborative

Chatterbox

The overall winner in the competition was [Chatterbox](https://www.chatterbox.org/), an online language school powered by refugees

<https://www.chatterbox.org/>



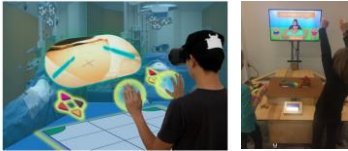
May 1, 2018

Learning is More Hands-on

3 ways districts can use AR and AI

Justin Anglio, eSchool News

<https://www.eschoolnews.com/2018/05/01/3-ways-districts-can-use-ar-and-ai/>



EarthShake, the first educational game for the NoRILLA system, teaches early physics principles through hands-on learning.

May 1, 2018

Learning is More Immersive

3 ways districts can use AR and AI

Justin Anglio, eSchool News

<https://www.eschoolnews.com/2018/05/01/3-ways-districts-can-use-ar-and-ai/>



When a teacher glances around her classroom, Lumilo allows her to see real-time analytics (in the form of icons) floating directly above each student's head. The teacher can glance directly at a student or "click" on a student's icon to see more detailed information about where and how that student might be struggling.

July 19, 2017

Learning is More Immersive

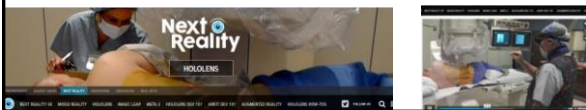
HoloLens Assists in Live Surgery

Tommy Palladino, Next Reality

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.reality.news/news/hololens-assists-live-surgery-0178867/>

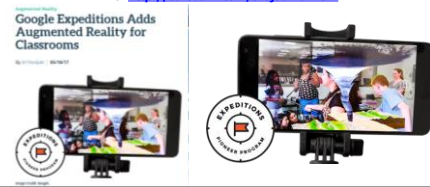


May 18, 2017

Learning is More Immersive

Google Expeditions Adds Augmented Reality for Classrooms, Sri Ravipati, THE Journal
<https://thejournal.com/articles/2017/05/18/google-expeditions-adds-augmented-reality-for-classrooms.aspx>

<https://www.youtube.com/watch?v=DYqMWTYg>
27 seconds <http://curtbonk.com/thejournal27.html>
38 Seconds <http://curtbonk.com/thejournal38.html>
1: 10: <http://curtbonk.com/thejournal.html>



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



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

http://363.co.kr/web7page_id=244
http://363.co.kr/web7page_id=244

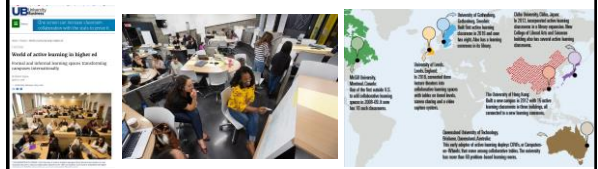


April 17, 2018 Learning is More Ubiquitous Massive work of 'sentient art' unveiled at Luddy Hall is also a learning tool for students Indiana University

<https://www.independent.co.uk/news/education/education-news/sentient-art-luddy-hall-indiana-university-a8000001.html>
Video (2:17): <https://www.youtube.com/watch?v=...>
Bessley is renowned for the use of cutting-edge technologies and materials – sensor arrays, 3-D printed materials and Internet-connected objects – to create [ubiquitous works of art](https://www.youtube.com/watch?v=...) that gently move or react as people pass near or through them.



April 16, 2018 Learning is More Informal World of active learning in higher ed Formal and informal learning spaces transforming campuses internationally Sherrie Negrea, University Business, May 2018 <https://www.universitybusiness.com/article/world-active-learning-higher-ed>



August 23, 2016 Learning is More Global e.g., reef videoconferencing (Great Barrier Reef, Australia)

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



May 7, 2014 (Access) Learning is More Global CNA - Speaking Exchange (video chats) FCB Brazil and the CNA language school network are launching the Speaking Exchange project, which connects CNA students in Brazil with Americans living in retirement homes.



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-ghostbusters/101475888/>
 15 second: <http://curtbonk.com/ghostbusters15.html>
 27 second: <http://curtbonk.com/ghostbusters27.html>

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



July 11, 2018

Learning is More Immediate...

Fossil of first giant dinosaur, dubbed
 Ingentia prima, found in Argentina
 Brett Molina, USA Today

<https://www.usatoday.com/story/news/science/2018/07/11/first-giant-dinosaur-found-argentina/7748300/>

Fossil of first giant dinosaur, dubbed Ingentia prima, found in Argentina



September 21 and November 12, 2017
Learning is More Immediate...

Scientists just discovered the first brainless animal that sleeps

Sara Kaplan, Washington Post

<https://www.washingtonpost.com/science/scientists-discover-first-brainless-animal-that-sleeps/2017/09/21/>
 This ancient shark with a snake head and 300 teeth is why we should just say
 nope to the ocean

Cleve R. Woodson, Jr., Washington Post



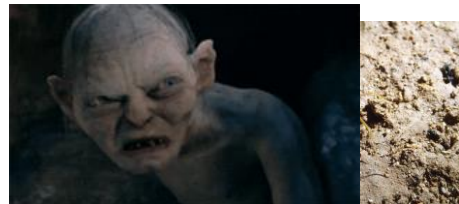
A *Cassiopea* jellyfish rests upside-down on black sand and pulses, rhythmically contracting and relaxing its bell. At night, *Cassiopea* jellies pulse less frequently — a clue that they're sleeping, researchers report. (Photo by JanEaster.com)

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/science/2015/11/19/new-daddy-longlegs-named-after-lord-of-the-rings-character-smeagol/7433284/>



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 19, 2018

Learning is More Online (Access)

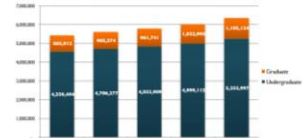
Grade Increase:

Tracking Distance Education in the United States

Joshua Kim, Inside Higher Ed

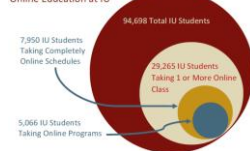
<http://online.inhired.com/data/grade-increase/>

<https://data.inhired.com/data/grade-increase/>



November 1, 2017 Learning is More Online (Access) Indiana University, Office of Online Education

Fall 2017
Online Education at IU



*Starting in fall 2017, ACP students are excluded from counts.

Trends for Total Hours Taken in Online Classes



July 29, 2018 Learning is More Online Can a Huge Online College Solve California's Work- Force Problems?

Karin Fischer, The Chronicle of Higher Education

<https://www.chronicle.com/article/Can-a-Huge-Online-College/244054>

<http://curtbonk.com/link>

Can a Huge Online College Solve
California's Work-Force Problems?



The new college is being created to help
California's adults improve their job prospects in
growing fields like IT support.

May 10, 2017 Learning is More Online (Access) 50-year-old Bible college in Colorado Springs to sell campus, switch to online-only instruction, Debbie Kelley, The Gazette

<http://gazette.com/50-year-old-bible-college-to-sell-campus-switch-to-online-only-instruction/article/2482872>

© 50-year-old Bible college in Colorado Springs to
sell campus, switch to online-only instruction

By Debbie Kelley May 10, 2017 Updated May 10, 2017 at 10:01 am



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).

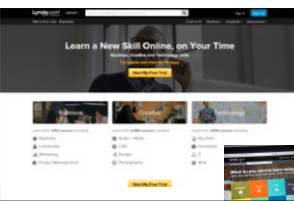


Phase IV, 2015
THE AGE OF
PERSONALIZATION.

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

June 14, 2016 Learning is More Video-based Microsoft to Acquire LinkedIn for \$26.2 Billion, Jay Greene, CNN Money

Microsoft to Acquire LinkedIn for \$26.2 Billion
Deal is for \$198 per LinkedIn share, a 10% premium to Friday's close.



June 20, 2016 Learning is More Free and Open 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>

Teaching refugees how to code, CNN Money
<http://money.cnn.com/2016/06/22/technology/coursera-refugees-coding-courses/index.html>

Coursera Blog

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



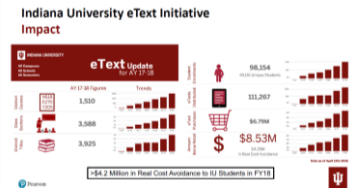
CNN Money

Teaching refugees how to code



April 6, 2018 (Access)
Learning is More Free and Open
 Indiana University's eText 101: Are your students paying too much for textbooks?

<http://www.indiana.edu/~edtext101/index.html>



December 19, 2017 and April 24, 2018
Learning is More Free and Open
eTexts 101: A Practical Guide

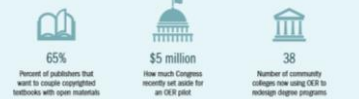
<https://lib.ub.amin.org/eTexts101/front-matter/introduction/>
<https://lib.ub.amin.org/eTexts101/>



June 7, 2018
Open Educational Resources
The Chronicle of Higher Education

https://images.results.chronicle.com/Web/TheChronicleofHigherEducation/780c6562a-5ee6-4c74-80e4-4891448213a5/v02_2018_OpenEducationalResources_infographic_v4.pdf

... And New Players Are Supporting It



... And They Have Concerns



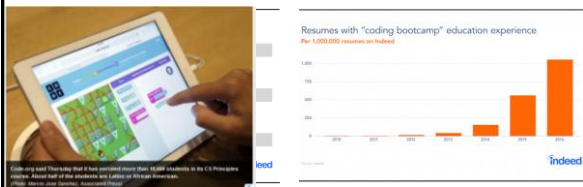
May 19, 2016 (Access)
Learning is More Free and Open
From MOOC to bootcamp to MIT
MIT News, Office of Digital Learning
(Jin Wu—from MITx to MIT Global Entrepreneurship Bootcamp to master's student)

<http://news.mit.edu/2016/mooc-bootcamp-mit-0519>



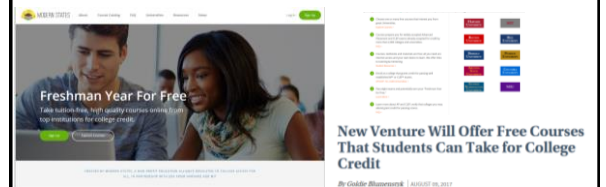
May 3, 2017
Learning is More Free and Open
4 out of 5 Companies Have Hired a Coding Bootcamp Graduate
Sri Ravipati, Campus Technology

<http://www.campus-tech.com/2017/05/03/4-out-of-5-companies-have-hired-a-coding-bootcamp-graduate/>



August 9, 2017
Learning is More Free and Open
Modern State Education Alliance

<https://modernstates.org/>



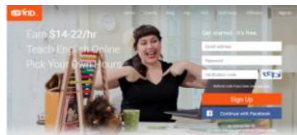
March 6, 2018**Learning is More Direct from Experts**

By connecting Chinese pupils with North American teachers, Beijing-based platform is building cultural bridges, one online English class at a time.

Most Innovative Companies, Fast Company

Interview with VIPKid CEO Cindy Mi

<https://www.fastcompany.com/company/vipkid>

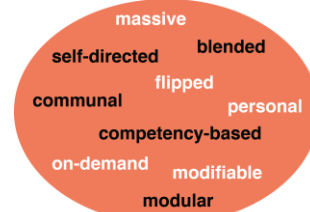
**March 21, 2018****Learning is More Direct from Experts****TeachMeNow**

TeachMeNow is a gig-economy platform for teachers. This marketplace connects teachers, experts, and mentors to students. The technology combines scheduling, payments and live virtual sessions that can connect on any device allows tens of thousands of teachers to create their own online businesses, with some earning over \$100,000 last year. In addition, schools and companies including Microsoft use TeachMeNow software to create their own-branded online learning communities.

<https://teachmenow.com/>

**September 25, 2017****Learning is More Direct from Experts****Professors Have Taken Over the MOOCs:****How open online learning is changing****Joshua Kim, Inside Higher Ed**

<https://www.insidehighered.com/blogs/technology-and-learning/professors-have-taken-over-moocs>

**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://campustechnology.com/articles/2017/05/12/future-of-collaboration-spaces-encompasses-video-interactive-mobile.aspx>

Indiana's Active Learning Mission Expands

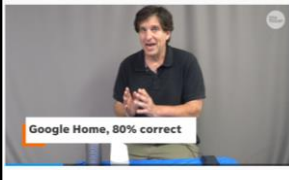


The university is expanding its mission to include video interactive, mobile, and other technologies.

**March 2, 2018****The Architecture of Ideal Learning Environments****Emelina Minero, Edutopia**



<https://www.edutopia.org/article/architecture-ideal-learning-environments>



May 9, 2018
Learning is More on Demand
Battle of the Brains:
 We asked Google, Alexa and Siri 150 questions to see who's smartest
Jefferson Graham, USA Today
<https://www.usatoday.com/story/tech/news/2018/05/09/we-asked-ai-and-google-alexa-and-siri-150-questions/389224802/>
<http://en.usatoday.com/2018/05/09/USAT-Samples-Definitive.aspx>

August 2, 2018
Hey, Alexa, Should We Bring Virtual Assistants to Campus? These Colleges Gave Them a Shot
Lindsey Ellis, The Chronicle of Higher Education
<https://www.chronicle.com/article/Hey-Alexa-Should-We-Bring-244129>





January 9, 2017
Learning is More On Demand
 Jill Watson, Round Three, Georgia Tech course prepares for third semester with virtual teaching assistants, Jason Maderes, Georgia Tech News Center
<http://www.gatech.edu/news/2017/01/09/jill-watson-round-three>
 The Terribly Thin Conception of Ethics in Digital Technology, David Golumbia, Uncomputing
<http://www.uncomputing.org/>
 Bot teacher that impressed and fooled everyone, Donald Clark, Plan B
<http://donaldclarkplanb.blogspot.co.uk/2018/12/bot-teacher-that-impressed-and-fooled.html>






April 8, 2018
Learning is More On Demand
What I Learned When My Students Used Google Translate
Diane Loyet, The Chronicle of Higher Education
<https://www.chronicle.com/article/What-I-Learned-When-My-243017>

- I was very surprised by the results. They sent me examples of translations into English from Albanian, Chinese, Kazakh, Russian, and Spanish. **The translations from Albanian, Kazakh, Russian, and Spanish were good. They were not perfect, but the mistakes were such that, had I encountered the sentences in a student paper, I would have attributed them to grammatical errors on the part of the non-native speaker of English.** Here is one of the Spanish examples:
- Original Spanish:** Si yo fuera tú, le cobrara hasta por respirar.
- Google Translate's English translation:** If I were you, I'll even charge you for breathing.
- Accurate translation:** If I were you, I would even charge him for breathing


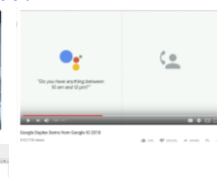


April 8, 2018
Learning is More On Demand
What I Learned When My Students Used Google Translate
Diane Loyet, The Chronicle of Higher Education
<https://www.chronicle.com/article/What-I-Learned-When-My-243017>

- In contrast, Google Translate's English version of a Chinese passage was unintelligible:**
- But the second language acquisition is a steady process, if you take a cure to do, that is, chronic diseases and even health care, unlike acute disease, once the recipe to treatment, the consequences will soon be reflected.**

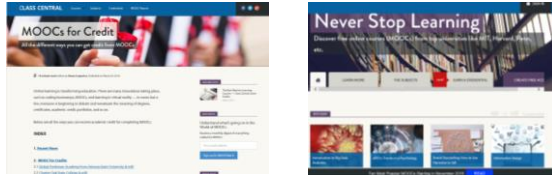



May 9, 2018
Learning is More On Demand
Google Duplex Demo from Google IO 2018
 Video (4:11): <https://www.youtube.com/watch?v=belmE2Fv98>
 Video (2:05): <http://curtbonk.com/google40-245.html>
 Entire video (4:11): <http://donaldclarkplanb.blogspot.ca/2018/05/google-just-announced-ai-bot-that-could.html?m=1>
Donald Clark Plan B

June 15, 2017
Learning is More Massive
MOOCs for Credit
Class Central

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



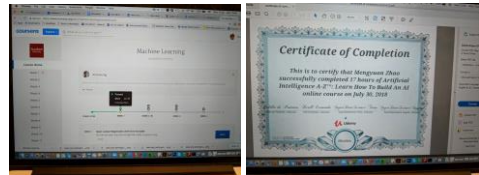
July 1, 2015 (Customization)
Chapter 14: Creating a Temporary Spontaneous
Mini-Ecosystem through a MOOC
Paul Kim and Charlie Chung, Stanford University
Figure 2. Twitter thread announcing the MOOC



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/dc-chuck-graduate-ceremony-python-specialization/>



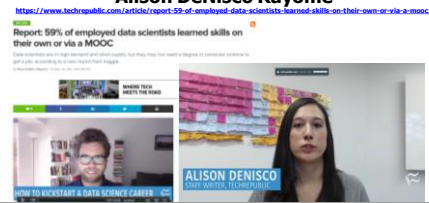
August 1, 2018
MOOC: AI A-Z: Learning How to Build an
AI Online Course and Machine Learning
Mengyuan Zhao
<https://www.udemy.com/artificial-intelligence-ai/>
<https://www.coursera.org/learn/machine-learning>



July 28, 2016 (Customization)
Learning is More Massive
Udemy: "Get cozy with a class"
<https://www.udemy.com/>



October 30, 2017
Learning is More Massive
Report: 59% of employed data scientists
learned skills on their own or via a MOOC
Alison DeNisco Rayome
<https://www.techrepublic.com/article/report-59-of-employed-data-scientists-learned-skills-on-their-own-or-via-a-mooc/>



MOOCs are Like Library Books...



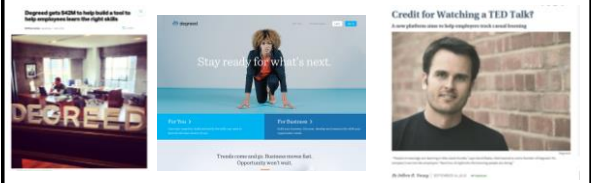
March 6, 2018

Learning is More Competency-Based

Degreed gets \$42M to help build a tool to help employees learn the right skills

Matthew Lynley, TechCrunch

<https://techcrunch.com/2018/03/06/degreed-gets-42m-to-help-build-a-tool-to-help-employees-learn-the-right-skills/>



March 3, 2017 (Customization)

Learning is More on Modular

edX Expands MicroMasters Programs With Data Science ("nanodegrees")
Digital Leadership and More, Sri Ravipati, Campus Technology

<https://campustechology.com/2017/03/03/edx-expands-micromasters-program-with-data-science-digital-leadership-and-more/>

edX Expands MicroMasters Programs With Data Science, Digital Leadership and More

By Sri Ravipati 03/03/17



January 9, 2018

Learning is More on Modular

MIT launches MITx MicroMasters in Principles of Manufacturing, MIT Open Learning

<http://news.mit.edu/2018/mit-launches-new-mitx-micromasters-program-principles-manufacturing-0109>



May 3, 2018
MicroMasters Credentials are a Pathway to Today's Top Jobs, edX
<https://www.edx.org/course>



Email inbox: June 10, 2018

edX

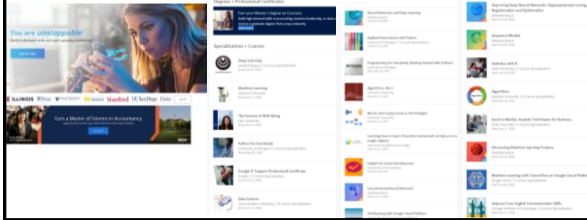
<https://www.edx.org/course>



Email inbox: June 11, 2018

Coursera

<https://www.coursera.org/>



**MOOCs and Open Education
Around the World**

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



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



WHAT'S NEXT



January 30, 2017

1. Professor Einstein PDA's

<http://www.usatoday.com/story/tech/2017/01/30/robotic-burke-how-serving-robot/95688790/>



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-burke-how-serving-robot/95688790/>

February 27, 2017

**2. World Knowledge
Refreshment Stations**

<http://www.theatlantic.com/education/2017/02/World-Knowledge-Refreshment-Stations/511111/>



February 27, 2017 3. Robot Collaborators/Partners

http://www.thefiveminute.com/43ancients/52files/Library_Alexandria.html



June 3, 2016 4. Explosion of Virtual Reality VR Lets Med Students Experience What It's Like To Be 74

Elyse Wanshel, Huffington Post
<http://ht.ly/bSpe300XEPJ>

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

This could be roughly 2.5 for the average med student, who is 24

© 2016 Huffington Post

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

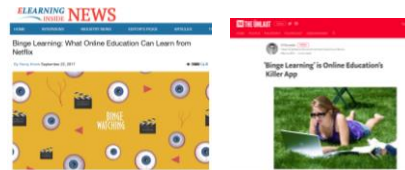
February 27, 2017 5. Web Conferencing Global Learning Partner or PBL Team Selection Walls

http://www.thefiveminute.com/43ancients/52files/Library_Alexandria.html



September 22, 2017 6. Binge Learning: What Online Education Can Learn from Netflix Henry Kronk, E-learning Inside News

<https://theunilab.com/binge-learning-is-online-education-s-killer-app-84da18f8ae76>



June 11, 2017 (New Learning Times) 7. Rise of Super E-Mentors

Twenty-Four Seven Tutoring

By: Gaila Harty



8. Café Classroom and Café Connectedness



9. Instructional Designer Morphs into Learning Environment Engineer



**Poll: Excited or does all this
give you a headache?**



**We are entering a jumping
off point...**

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



Things are heating up!

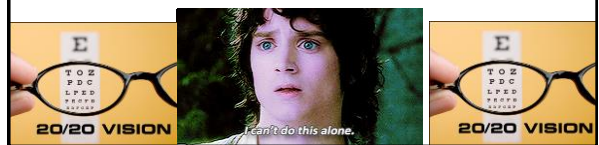


**The Learning Revolution is
coming within reach!**



Remember...
"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: cjbonk@indiana.edu

