

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

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



## Talk Overview

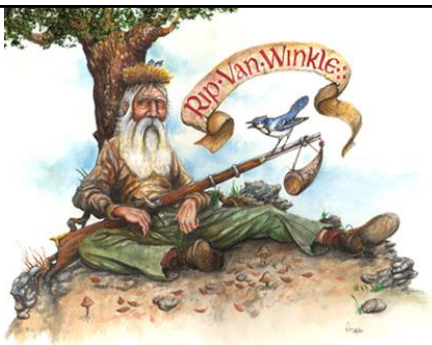
1. Education 20/20 and Education 3.0
2. Artificial Intelligence vs. Intelligence Augmentation
3. The Evolution of E-Learning
4. Megatrends of Learning: Engagement, Access, and Customization  
(30 ways that learning is changing...)
5. Future Trends and Ideas



(Circa Confucius 551–479 BCE)



**Academos**  
**Plato Circa 428–347 BCE**

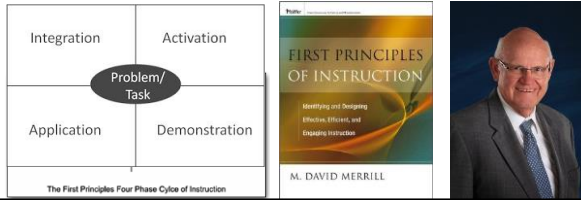


**What happens to  
sleeping students?**



## Bonk's Last Principles of Teaching/Instruction

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



## Education 20/20



## 1. The Principle of Flexibility

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



## 2. The Principle of Convenience

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



## 5. The Principle of High Expectations

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



## 6. The Principle of Choice and Options

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



## 8. The Principle of Support and Feedback

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



## 11. The Principle of Sharing

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



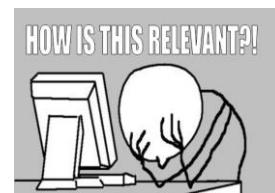
## 12. The Principle of Nontraditional Learning

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



## 14. The Principle of Relevance and Meaningfulness

<http://travelledman.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://travelinmedman.blogspot.com/2011/09/bonks-test-principles-of-instruction.html>



## 16. The Principle of Expanded Resources

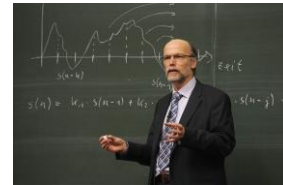
<http://travelinmedman.blogspot.com/2011/09/bonks-test-principles-of-instruction.html>



## Learning is Changing...



## 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](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/issue/index.nhn/tm/article/view/1625/1540>

#### 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 freerip educational resources for students within disciplines, 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 rooms for student creativity; social networking outside traditional boundaries of discipline, institution, nation

## 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, nano-technological brain enhancements, genetic editing, etc.)  
<http://www.trainingshare.com/fourth-industrial-revolution-what-it-means-and-how-to-respond.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



**May 19, 2016**

## Pepper the robot needs U.S. programmers, Marco della Carva, USA Today

<http://www.usatoday.com/story/tech/news/2016/05/18/people-calling-all-android-robot-programmers/8446172/>

Usual internal link: <http://trainingshare.com/usa2.html>

New download link: <https://www.dropbox.com/s/hxcuwqav20oiv/pepper-the-robot2.mp4?dl=0>

**February 16, 2017**

## AI is rewriting John Keynes equation of employment

Denis Sproten, LinkedIn Pulse

[https://www.linkedin.com/pulse/ai-rewriting-john-keynes-equation-employment-denis-sproten?rk=eml\\_email\\_feed\\_ecosystem\\_digest\\_01\\_hero-0-null&midToken=AQF97Kc6H6bPak&fromMail=fromEmail&ut=0ZNPED1mg7E1](https://www.linkedin.com/pulse/ai-rewriting-john-keynes-equation-employment-denis-sproten?rk=eml_email_feed_ecosystem_digest_01_hero-0-null&midToken=AQF97Kc6H6bPak&fromMail=fromEmail&ut=0ZNPED1mg7E1)



AI is rewriting John Keynes equation of employment

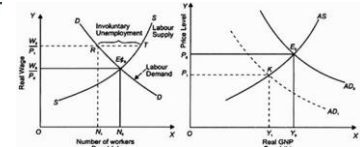


Fig. 11.2. Keynes' Rigid Money Wage and Flexible Price Model: The Emergence of Involuntary Unemployment

**January 30, 2017**

## A robotic barista is now serving — really fast

Jon Swartz, USA Today

<http://www.usatoday.com/story/tech/2017/01/30/robotic-barista-slow-serving-really-fast/95688780/>

**February 16, 2017**

## Bill Gates: If a robot takes a human job, it should be taxed

Mary Bowerman, USA Today

<http://www.usatoday.com/story/tech/nation-news/2017/02/17/bill-gates-if-robot-takes-human-job-should-be-taxed/98038674/>

**September 21, 2016**

## Udacity Unveils Nanodegree Program for Self-Driving Car Engineers

Sri Ravipati, Campus Technology

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



Udacity Unveils Nanodegree Program for Self-Driving Car Engineers

**April 13, 2016**

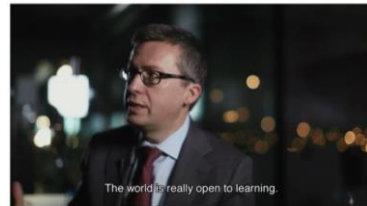
## The Fourth Industrial Revolution: What it means, how to respond

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.tubechop.com/watch/8280981>



The world is really open to learning.

**August 21, 2016**

### ST Future Economy Roundtable: Is Asia ready for the Fourth Industrial Revolution?

The Straits Times  
<http://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**

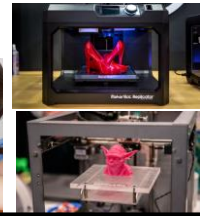
### Research: 3D Printing Market to Double by 2020

Joshua Bolkan, Campus Technology

<https://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 Bolkan 08/17/16



**June 7, 2016**

### Teaching refugees how to code, CNN Money

<http://money.cnn.com/videos/technology/2016/06/07/recorded-future-refugees-code.cnnmoney/index.html>

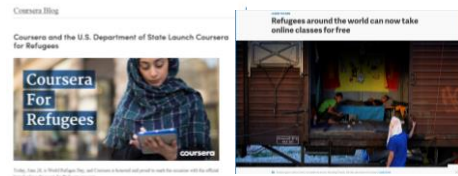


**June 20, 2016**

### Coursera on a Mission to Help Refugees

Lauren Camera, US News and World Report

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



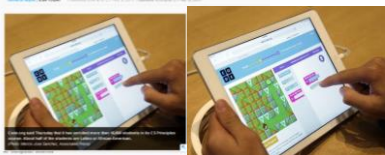
**February 9, 2017**

### 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 (2015):**  
**Creative Living Beyond Fear**  
 Elizabeth Gilbert

<http://www.elizabethgilbert.com/>  
<https://www.facebook.com/ElizabethGilbert/>

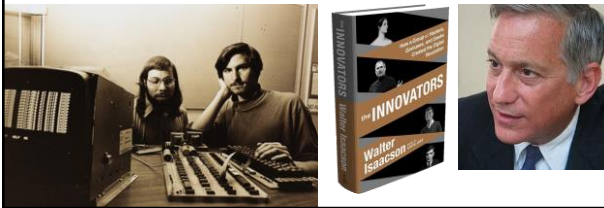


**The Innovators:**

How a group of hackers, geniuses, and geeks  
 created the digital revolution. New York: Simon  
 & Schuster.

Walter Isaacson (2014)

<http://books.simonandschuster.com/The-Innovators/Walter-Isaacson/9781476708690>



**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/0062266983>



**Artificial Intelligence**  
**John McCarthy, Stanford AI Lab**

<http://www.amazon.com/Machines-Loving-Grace-Common-Ground/dp/0062266983>

**John  
 McCarthy**

- 1955: Develop the phrase "Artificial Intelligence"
- 1959: Programs with Common Sense
- 1960: First LISP implementation
- 1971: Turing Award Recipient



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

<https://www.chronicle.com/article/Behind-a-Computer-s-Surprise-Victory/234444>  
<http://www.wired.com/story/forget-the-robots-here-come-the-geniusbots/>



## 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/75c300xep3/dp/B005286883>



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/lets-see-an-ar-app-from-a-south-korean-consumer-to-scan-a-product-and-see-reviews-instantly-overlaid-over-top/3017061/>  
<http://www.usatoday.com/story/tech/2015/06/10/microsoft-hololens-see-through-the-world/3017061/>  
 Microsoft Hololens: <https://www.youtube.com/watch?v=aTHCpPysuA>



Letsee is an AR app from a South Korean consumer to scan a product and see reviews instantly overlaid over top.



## June 3, 2016

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

#### Elyse Wanshel, Huffington Post

<http://ht.ly/bSpe300XEPJ>

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



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

<http://www.usatoday.com/story/tech/2016/04/10/nfl-vr-diversity-demo-places-user-in-the-body-of-an-african-american-woman-as-a-white-male-avatar-gets-aggressive-mere-feet-away/8262406/>



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 it's 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=chb4A2F6wEc>



## October 14, 2011

### Siri (co-founder Tom Gruber)

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



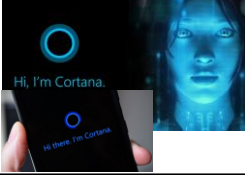


**May 9, 2016**

**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

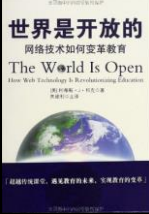
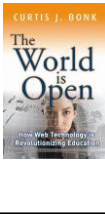
<http://www.usatoday.com/story/tech/columnists/baig/2016/05/09/who-wants-to-talk-they-have-voice/8412134/>  
<http://www.usatoday.com/story/tech/news/2016/05/12/personal-digital-assistants-voice-voice-voice/8412134/>

**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

**February 22, 2017**

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

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






**August 5, 2015**

Shubham Jaglan (10 years old) Overwhelmed by "Dream" Return Home After Double World Championship

Disha Chopra, NDTV Sports


<http://www.ndtv.com/sports/240551/shubham-jaglan-overwhelmed-by-dream-returns-home-after-double-world-championship>  
<http://www.ndtv.com/sports/240551/shubham-jaglan-overwhelmed-by-dream-returns-home-after-double-world-championship>

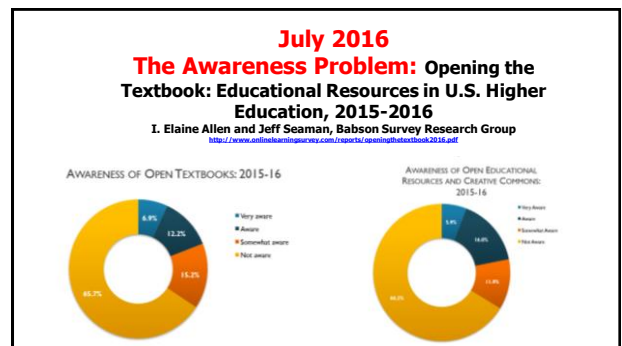
**April 20, 2015**

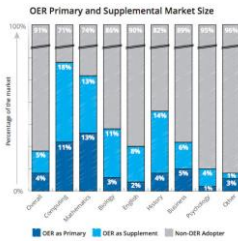
250 MOOCs and Counting: One Man's Educational Journey, Chronicle of Higher Education

<http://chronicle.com/article/250-MOOCs-Counting-One/229397?cid=at>  
<http://chronicle.com/article/250-MOOCs-Counting-One/229397?cid=at>  
<http://chronicle.com/article/250-MOOCs-Counting-One/229397?cid=at>  
<http://chronicle.com/article/250-MOOCs-Counting-One/229397?cid=at>  
<http://chronicle.com/article/250-MOOCs-Counting-One/229397?cid=at>



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

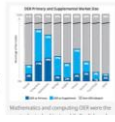


**November 7, 2016****OER Use to Triple Over Next 5 Years, Campus Technology**  
<https://campustechnology.com/article/2016/09/07/see-the-triple-over-with-3-predictions>**OER Use to Triple Over Next 5 Years**By *St. Raphael* / 09/07/16

Open educational resources (OER) are replacing primary coursework in higher education, with the potential to triple in use over the next five years — from 4 percent to 12 percent of the primary coursework market. The use of OER for supplemental learning materials is expected to quadruple in size as well, jumping from 5 percent to 19 percent.

These findings and more were published in a new report from *Campustechnology* titled "Open Educational Resources and the Evolving Higher Education Landscape," in which the education company surveyed more than 500 teaching faculty, industry experts and OER primary adopters, supplemental adopters and non-adopters.

Consider that one in five college

**January 3, 2017****College is Over**

Roger Schank, LinkedIn

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

College is Over

Published on Jan 3, 2017

Roger Schank

Professor and Director of the Center for the Study of Learning and Cognition

**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 &amp; 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

<https://www.insidehighered.com/digital-learning/article/2016/01/15/celebrating-wikipedia-15-years>

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 5,000 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!

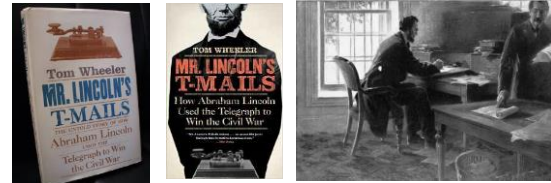
Erica Fink and Jonathan Tortora, CNN Money (Tech)

<http://info.cern.ch/> (First website)<http://info.cern.ch/hypertext/WWW/TheProject.html>**THE WORLD WIDE WEB BEGINS ON MARCH 12, 1989**

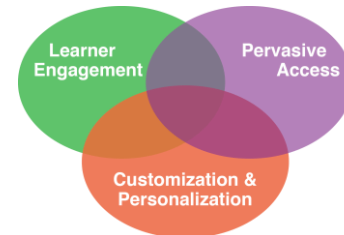
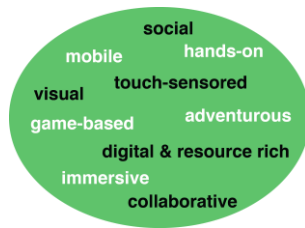
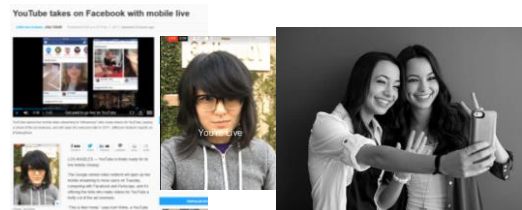
Twenty-five years ago, the first public website went live.

**1971****Email is 35 years old!****Raymond Tomlinson, inventor of modern email, dies, USA Today (March 7, 2016)**

Raymond Tomlinson, inventor of modern email, dies

**Invented: May 24, 1844****150 Years since Lincoln needed the Telegraph (T-Mail)****Mr. Lincoln's T-Mails: How Abraham Lincoln Used the Telegraph to Win the Civil War, Tom Wheeler (2008).**<http://www.amazon.com/Mr-Lincolns-T-Mails-Abraham-Lincoln/dp/0061112025>**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****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/9756653/>

## August 23, 2016 (Engagement) Learning is More Visual

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

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



## 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

<http://chronicle.com/article/When-Pokemon-Goes-to-Campus-The-Good-the-Bad-and-the-Ugly/235152>



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/columnists/edward-baig/2015/04/02/samsung-s6-s6-edge-review/23272752/>



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/rf-anniversary>



## February 17, 2016 (Engagement) Learning is More Mobile

World's Cheapest Smartphone at \$3.67

[https://ja.facebook.com/haishag/launched?refid=528...&\\_e=%26](https://ja.facebook.com/haishag/launched?refid=528...&_e=%26)  
[https://ja.facebook.com/story.php?story\\_fbid=1015356061215798&id=1025270280737](https://ja.facebook.com/story.php?story_fbid=1015356061215798&id=1025270280737)  
<http://gadgeta.info.com/videos/trendon-251-launches-as-world-s-cheapest-smartphone-at-3-251-404082>



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 Apps - Personalized Interfaces for Performance

Elliott Masie's Learning TRENDS; [trends@masie.com](mailto: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. Interestivity: 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

informal  
free  
open  
synchronous  
online  
immediate  
global  
video-based  
ubiquitous  
direct from experts

## July 21, 2016 Facebook's Aquila drone completes first test flight Jessica Gynn, USA Today

<http://www.usatoday.com/story/tech/news/2016/07/21/facebook-aquila-drone-completes-first-test-flight/87368918/>



An aerial view of Aquila, a 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 (Customization) Learning is More Ubiquitous 363 by Idea Group; Study Café Meeting Place; Idea Space (Seoul, Korea)

[http://363.co.kr/en/?page\\_id=244](http://363.co.kr/en/?page_id=244)  
[http://363.co.kr/en/?page\\_id=244](http://363.co.kr/en/?page_id=244)



## September 28, 2016 (Customization) Learning is More Free Bookshare, An accessibility online library for people with disabilities

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

### Nonprofit Delivers 10 Million Accessible E-Books

By Siri Kasper | 9/22/16

A California-based nonprofit has reached a significant milestone: delivering more than 10 million accessible e-books worldwide.



## May 4, 2016 (Access) Learning is More Video-Based What I Learned at the ASU GSV Summit

Kenneth Green, Inside Higher Ed

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

ASU GSV Summit



33 Interactive Thought Leader Interviews from the ASU GSV  
Innovation Summit

Featured Interview Series

ASU GSV Summit, Dr. Michael Crow, President, Arizona State University

ASU GSV Summit, Dr. Michael Crow, President, Arizona State University



## 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-123075708-at&utm\\_source=eduteam\\_medium=en](http://chronicle.com/article/Credit-for-Watching-a-TED-Talk-123075708-at&utm_source=eduteam_medium=en)

Degreed: <https://degreed.com/>

September 14, 2015  
Credit for Watching a TED Talk?

A new platform aims to help employers track casual learning



Learn Anything  
Using the World's Best Resources



## May 14, 2016 (Access) Learning is More Immediate... Mastodon bones offer clues of earliest humans in North America, Faith Karim, CNN

Abstract: <http://advances.sciencemag.org/content/2/5/e1600375.full>  
Full Article: <http://advances.sciencemag.org/content/2/5/e1600375.full>  
Supplemental materials (PDF): <http://advances.sciencemag.org/content/suppl/2016/05/10/2.5.e1600375.DC1>  
PDF: [http://advances.sciencemag.org/content/suppl/2016/05/10/2.5.e1600375.DC1/1600375\\_S1M.pdf](http://advances.sciencemag.org/content/suppl/2016/05/10/2.5.e1600375.DC1/1600375_S1M.pdf)

Mastodon bones offer clues of  
earliest humans in North America

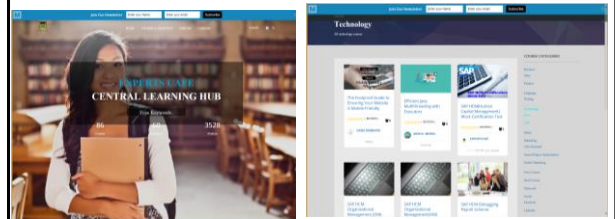
By Faith Karim, CNN

7/11/2016 10:00 AM EDT | 10:00 AM EDT



## June 20, 2016 (Access) Learning is More Direct from Experts (e.g., The Expert Café)

<http://expertscafe.com/>



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

<http://apple.com/apple-worldwide-developers-conference/2016/06/13/anvitha-vijay>



## May 4, 2016 (Access) This Mongolian Teenager Aced a MOOC Now He Wants to Widen Their Impact

(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-Now-He-Wants-to-Widen-Their-Impact-236362>

THE CHRONICLE OF HIGHER EDUCATION

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TECHNOLOGY

This Mongolian Teenager Aced a MOOC. Now He Wants to Widen Their Impact.

By Jeffrey R. Young | MAY 4, 2016



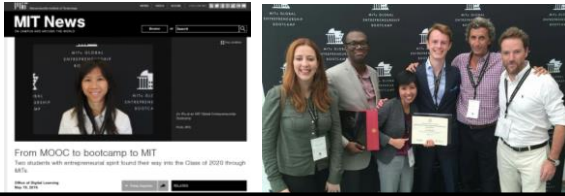
This is the latest episode of our new podcast series on the future of higher education. You can subscribe in iTunes to get price and future episodes.



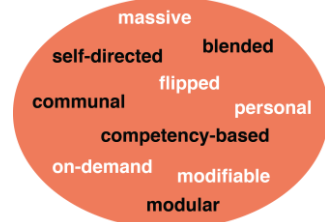
**May 19, 2016 (Access)**

**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>



**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://www.campus-technology.com/articles/2016/09/07/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**

**Learning is More Communal**

**Building Global Community, Marc Zuckerberg, Facebook**  
<https://www.facebook.com/memo/mark-zuckerberg/building-global-community/1610359821158471/>



**February 16, 2017**

**Zuckerberg: Bonds between strangers can help in divisive times**

Jessica Guynn, USA Today

<http://www.usatoday.com/story/tech/news/2017/02/16/mark-zuckerberg-facebook-group-community/101231788/>



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

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



## September 15, 2015 Customization GROOCs are MOOCs for Social Impact

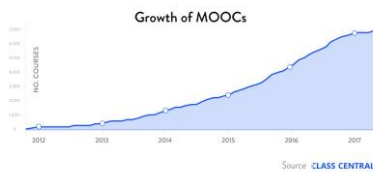
Social Learning for Social Impact, edX  
Join the world's first GROOC – a MOOC for groups – to collaborate with others globally and create social change.

<https://www.edx.org/course/social-learning-social-impact-impact-grooc>  
<https://www.youtube.com/watch?v=3d4xw977p34>



## 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

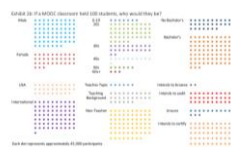
[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2889438](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2889438)

Substit 2: Course participation and demographics

Number of the size and number of a typical Harvard and MITx open online course	290
Courses (including separate and modules)	244,705
Certificate (free and paid)	739,389
Enrollment (across >50% content)	4,449,034
Participants (across content)	509
Certificate variants per course	1,517
Enrollment per course	7,802
Participants per course	2,076
Percentage of female participants	73%
Percentage of bachelor's degree holders	29%
Median age	29%
Percentage from the United States	

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

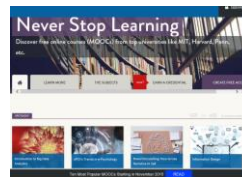
- The typical Harvard/MITx course or module certifies 500 participants.
- Around 1,500 will explore half or more of course content.
- Around 1,500 will access the course content.



## 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."

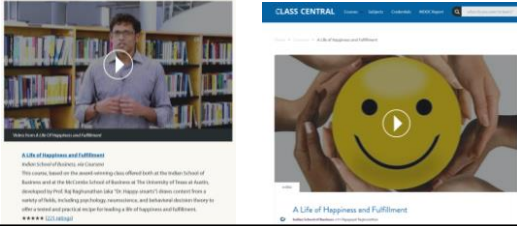
<https://www.class-central.com/report/top-moocs/>



**August 12, 2016 (Customization)**

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

<https://www.class-central.com/mooc/2860/coursera-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-adopts-325646/>



**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>

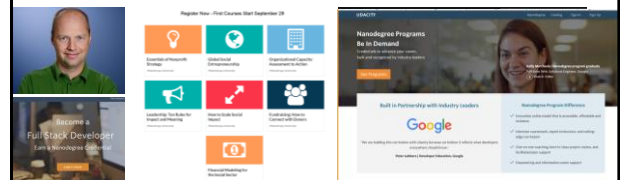


**January 13, 2016 (Customization)**

**Degree gets you a tech job — or your money back**

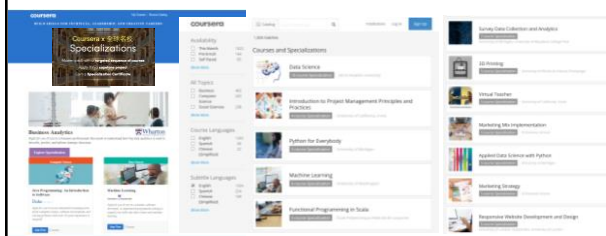
**Marco della Cava, USA Today**

<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/>



## 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)

### World First: University of Michigan's Dr. Chuck Holds a Graduation Ceremony for MOOC Students

Anuar Lequerica, Class Central  
<https://www.class-central.com/report/dr-chuck-graduate-ceremony-python-specialization/>



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.publicationshare.com/3>

## 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/>



## May 4, 2016

### MOOC 4.0: The Next Revolution in Learning & Leadership

Otto Scharmer, Huffington Post  
[http://www.huffpost.com/otto-scharmer/mooc-40-the-next-revolution\\_7209604.html](http://www.huffpost.com/otto-scharmer/mooc-40-the-next-revolution_7209604.html)



## 30+ Ways Learning is Changing:

### Recapping the Three Mega Trends: Engagement, Access, and Customization



# WHAT'S? NEXT

**September 2, 2016**

## Humans, the Latest MOOC Feature

[Introduction to Philosophy: God, Knowledge and Consciousness](https://www.insidehighered.com/news/2016/09/02/massachusetts-institute-technology-experiments-instructor-grading-massive-open)  
(\$300 USD for an identity-verified certificate)

Carl Straumsheim, Inside Higher Ed

<https://www.insidehighered.com/news/2016/09/02/massachusetts-institute-technology-experiments-instructor-grading-massive-open>



### Humans, the Latest MOOC Feature

MIT experiments with instructor grading in massive open online courses as a way to expand teaching and learning opportunities for students and instructors.



September 2, 2016

By Carl Straumsheim

One of the Massachusetts Institute of Technology's most popular massive open online courses is adding a feature not seen in any of its other humanities MOOCs: instructors grading essays.

International Insight, Commentary and

**October 23, 2016**  
**Ben Gose, The Chronicle of Higher Education**  
<http://www.chronicle.com/article/When-the-Teaching-Assistant-Is/238114>

### When the Teaching Assistant Is a Robot

Fordham members experiment with artificial intelligence in the classroom



**January 30, 2017**

## Personal Professor Albert Einstein

<http://www.usatoday.com/story/tech/2017/01/30/robotic-barista-now-serving-really-hot/55888786/>



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-hot/55888786/>

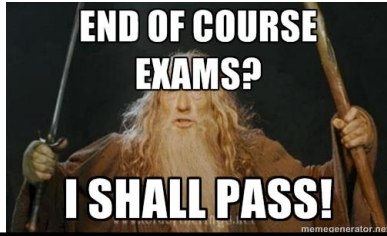
**Things are heating up!**



**Education 3.0 is coming within reach!**



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



**Remember for Education 20/20  
 to meet Education 3.0:**  
**"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](http://TrainingShare.com)  
**Papers:** [PublicationShare.com](http://PublicationShare.com)  
**Free book:** <http://tec-variety.com/>  
**Email:** [curt@worldisopen.com](mailto:curt@worldisopen.com)

