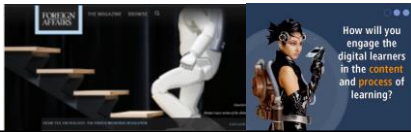


The Fourth Industrial Revolution Meets the Fourth E-Learning Revolution

Curtis J. Bonk, Professor, Indiana University

cjbonk@indiana.edu

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



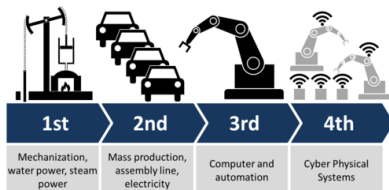
Talk Overview

1. Basics of the 4th Industrial Age
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. Research on the Personalization of MOOCs
6. Future Trends and Ideas

Just what is the Fourth Industrial Revolution?

Industry 4.0 (per Wikipedia)

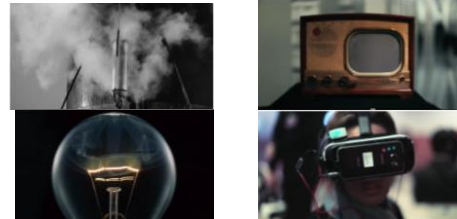
https://en.wikipedia.org/wiki/Industry_4.0



April 13, 2016

The Fourth Industrial Revolution

Klaus Schwab, Founder and Executive Chairman, World Economic Forum
(Ubiquitous, mobile supercomputing, artificially-intelligent robots, self-driving cars, neuro-technological brain enhancements, genetic editing, etc.)
<http://www.trainingshare.com/fourth-industrial-revolution-video-clip-short.php>



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/>

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

January 14, 2016

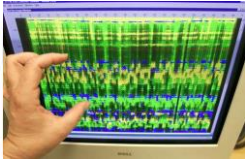
The Fourth Industrial Revolution: What it means, how to respond

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/>

The possibilities of billions of people connected by mobile devices, with unprecedented processing power, storage capacity, and access to knowledge, are unlimited. And these possibilities will be multiplied by emerging technology breakthroughs in fields such as artificial intelligence, robotics, the Internet of Things, autonomous vehicles, 3-D printing, nanotechnology, biotechnology, materials science, energy storage, and quantum computing.

July 23, 2016**Scientists work toward storing digital information in DNA**

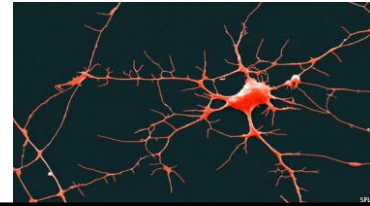
Malcolm Ritter, Phys.org

<http://phys.org/news/2016-07-scientists-digital-dna.html>

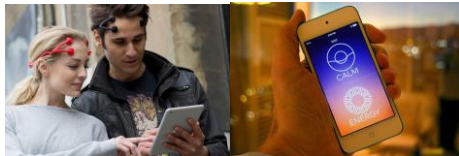
The Wednesday, April 20, 2016 photo shows a get image of the DNA of 40 human footprint on a computer monitor at the UC Davis memory genetics lab in Davis. (AP Photo) is an illustration showing scientists the genes passed from generation to generation.

**August 3, 2016****Researchers have built an artificial neuron:**

Narrowing the gap between biological brains and electronic ones

The Economist<https://www.economist.com/articles/2016/07/28/creating-artificial-neurons-which-mimic-those-in-brain-5>**July 15, 2015****Neuro-technological brain enhancements****Wearable Vibes**

A high-tech high: Wearable gives you good vibes, USA Today, John Shinal

<http://www.usatoday.com/story/tech/innovation/2015/07/14/thync-headset-culture/2877883/>

Thync device (\$300) (Photo: Thync, for USA TODAY)

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/>

We won't be able to really distinguish between

August 3, 2016**"New Wave of Collaborative Robots"**

Auto plant robots will interact with humans

USA Today, Brent Snively, Detroit Free Press

<http://www.usatoday.com/story/money/cars/2016/08/02/auto-plant-robots-interact-humans/87957648/>**March 22, 2016****Robots & Artificial Intelligence Will Kill 5 Million Jobs By 2020**

Carol Adl, Artificially-intelligent robots

<https://www.youtube.com/watch?v=Q8U6312W6Q><http://yournewswire.com/robots-artificial-intelligence-will-kill-5-million-jobs-by-2020/>

Labor Artificial intelligence: Sifts robot Humanoids, Androids 2016



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/2015/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>



August 18, 2016

1. Deploying Swarms of Drones with... 2. The Driverless Truck is Coming and...

(e.g., Ryan Peterson, Flexport News/Blog)

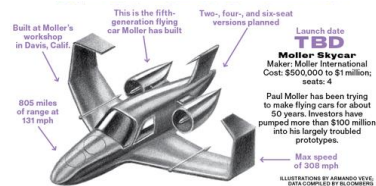
<https://www.flexport.com/blog/deploying-drones-self-driving-trucks/>
<https://www.flexport.com/blog/self-driving-truck-automation-of-million-jobs/>
<https://www.flexport.com/>



August 26, 2016

Welcome to Larry Page's Secret Flying-Car Factories:

With Zee.Aero and Kitty Hawk, the Google co-founder looks to the skies, Ashley Vance and Brad Stone, Bloomberg Businessweek
<http://www.bloomberg.com/news/articles/2016-08-26/welcome-to-larry-page-s-secret-flying-car-factories>



July 21, 2016

Facebook's Aquila drone completes first test flight

Jessica Gwynn, USA Today

<http://www.usatoday.com/story/tech/2016/07/21/facebook-aquila-completes-first-test-flight/97368918/>



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)

Question:

**What are the consequences for education
and e-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>

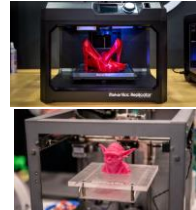


"It's quite clear that the established models of education have to change and adapt to the new environment."

August 15, 2016**The Maker Movement in Education:
A New Global Transformation****Paul Kim, ICT in Education, UNESCO**<http://www.unesco.org/education/ict/online-resources/databases/ict-in-education-database/item/article/the-maker-movement-in-education-a-new-global-transformation/>**August 17, 2016****Research: 3D Printing Market to Double by 2020****Joshua Bolkan, Campus Technology**<http://campustechnology.com/article/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

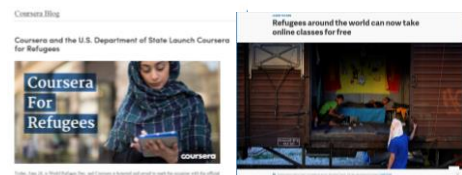
The 3D printing market will hit \$24 billion in 2020, according to a new report from research firm IDC. IDC's forecast is based on the research presented for this year and would contribute a 34.1 percent compound annual growth rate over the course of the period forecast.

**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/2016/03/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>

"We need cyberhackers and coders in this area, we need game design, interface design. Constantly updating is part of this lifelong learning that begins in your teenage years."

June 7, 2016**Teaching refugees how to code, CNN Money**<http://money.cnn.com/video/technology/2016/06/07/recoded-flatiron-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>

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/>



June 14, 2016
Microsoft to Acquire LinkedIn for \$26.2 Billion,
Jay Greene, CNN Money

<http://www.cnn.com/2016/06/14/tech/microsoft-linkedin/index.html>

Microsoft to Acquire LinkedIn for \$26.2 Billion

Read a full \$26.2 billion per LinkedIn share, a 100% premium to Friday's close

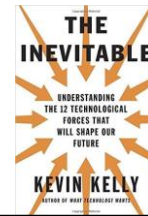


Poll:
Read any good books lately
detailing this shift?



The Inevitable (2016)
What Technology Wants (2010)
Kevin Kelly (co-founder of Wired)

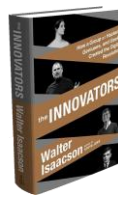
<https://www.amazon.com/What-Technology-Wants-Kevin-Kelly/dp/800436351W>

**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>

**The Third Wave:**

An Entrepreneur's Vision of the Future.
 New York: Simon & Schuster. Steve Case (2016)

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



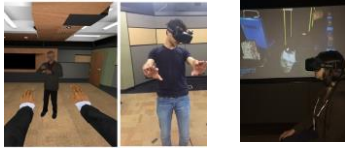
One of America's most successful entrepreneurs—upstart who made the Internet part of everyday life and envisioned the biggest change in the history of business—shares a roadmap for how we can rise to meet a world of rapidly changing technology.

AVAILABLE NOW

[BUY IT NOW](#)

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/news/2016/04/08/virtual-reality-tested-tool-confront-racism-sexism/8307486/>



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 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=ch3k4dP9e5c>



April 3, 2010
The iPad

<http://www.apple.com/pr/library/2010/03/09iPad-Available-in-US-on-April-3.html>



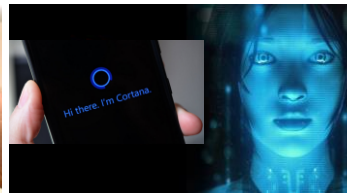
October 14, 2011
Siri (co-founder Tom Gruber)

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



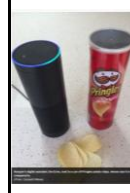
August 22, 2016
Microsoft acquires AI assistant
start-up Genee
 Marco della Cava, USA Today (Cortana)

<http://www.usatoday.com/story/tech/news/2016/08/22/microsoft-acquires-ai-assistant-startup-genee/9109952/>



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/news/2016/05/09/personal-digital-assistants-are-on-the-rise/8111144/>

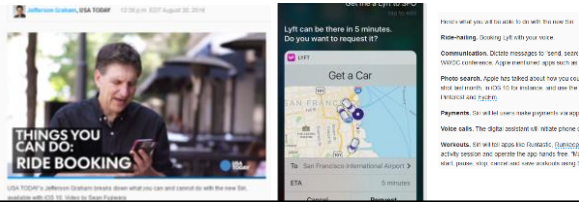


August 30, 2016

New Siri to work with apps in iOS 10, but not all

Jefferson Graham, USA Today

<http://www.usatoday.com/story/tech/news/2016/08/30/new-siri-work-apps-ios-10-but-not-all/9418952/>



Questions: How will PDA's work in education? Who builds them? And who decides the functions?



April 23, 2015

Are We Living In An eLearning Revolution?

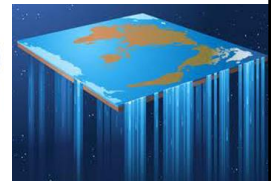
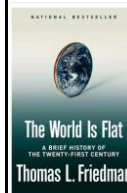
Beth Wisch eLearning Industry

<https://elearningindustry.com/living-elearning-revolution>



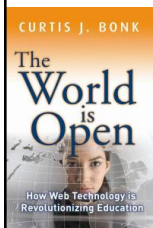
The World is Flat...

People, Playing Field, Horizontal Processes



The World is Open...

Piping, Pages, Participatory Learning Culture



The World is Open:

How Web Technology Is Revolutionizing Education

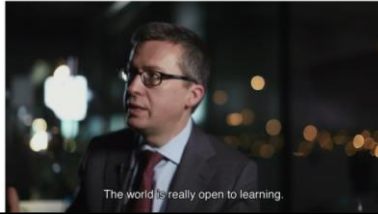


TEN OPENERS: (WE-ALL-LEARN)

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

April 13, 2016**The Fourth Industrial Revolution:****"The World is Really Open to Learning"**

<http://trainingshare.com/fourth-industrial-evolution-video-clip.php>
<http://trainingshare.com/twio-clip.php>

**August 5, 2015**
Shubham Jaglan (10 years old) Overwhelmed by "Dream" Return Home After Double World Championship

Disha Chopra, NDTV Sports

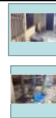
<http://sports.ndtv.com/golf/news/246351-shubham-jaglan-overwhelmed-by-dream-returns-home-after-double-world-championship>
<http://www.ndtv.com/video/story/news/india-a-golf-prodigy-shubham-jaglan-returns-home-to-hero-welcome-227541>

**April 20, 2015**
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.



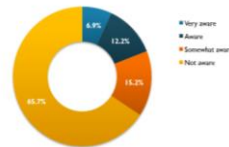
Jima Ngei: "I had this unrelenting fear that this miracle of free access might evaporate soon."

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

I. Elaine Allen and Jeff Seaman, Babson Survey Research Group

<http://www.asilibrary.org/awarereport/awarereport2015-16.pdf>

AWARENESS OF OPEN TEXTBOOKS: 2015-16



AWARENESS OF OPEN EDUCATIONAL RESOURCES AND CREATIVE COMMONS: 2015-16

**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

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



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

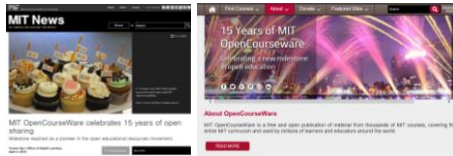
Wikipedia came into the world 15 years ago today -- and, man, what an ugly baby. The first snapshot of it in the Internet Archive is from late March of 2001, when Wikipedia was already 10 weeks old. At that point, it claimed to have more than 3,000 pages, with an expressed hope of reaching



WIKIPEDIA:15

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/hypertext/WWW/TheProject.html>

<http://money.cnn.com/2016/08/06/tech/web/25-years-wwf/index.html?hpid=stock-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/2016/03/07/36-lincolns-creator-modern-email-dies/8312451/>

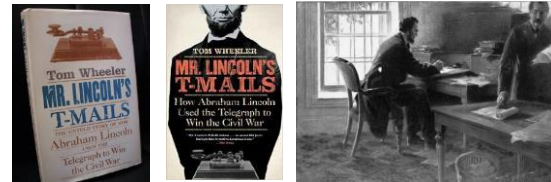
Raymond Tomlinson, inventor of modern email, dies



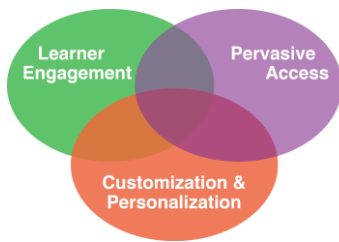
Invented: May 24, 1844 150 Years since Lincoln needed the Telegraph (T-Mail)

Mr. Lincoln's T-Mails: How Abraham Lincoln Used the Telegraph to Win the Civil War, Tom Wheeler (2008).

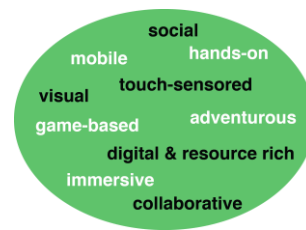
<http://www.amazon.com/Mr-Lincolns-T-Mails-Abraham-Telegraph/dp/0961112881>



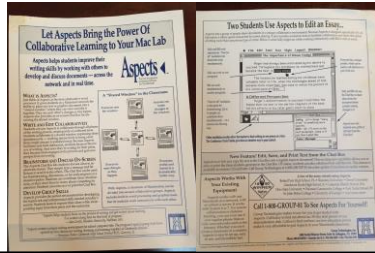
30+ Ways Learning is Changing: The Mega Trends



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



Decades of Online Collaboration (e.g., Aspects...circa 1991—25 years ago)



August 23, 2016 (Engagement) Reef Videoconferencing (Great Barrier Reef, Australia)

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



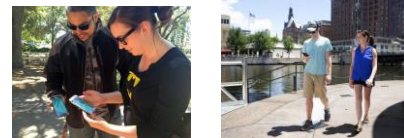
July 14, 2016 (Engagement) Shindig

<http://events.shindig.com/event/ftf-wheeler>



July 22, 2016 (Engagement) When Pokémon Goes to Campus: The Good, the Bad, and the Ugly

Gabriel Sandoval, Chronicle of Higher Education



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.

July 11, 2016 (Engagement) Smart Sparrow, Learning Design Studio

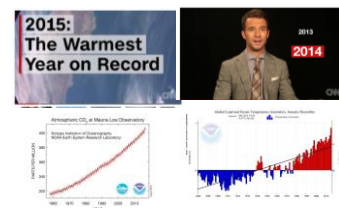
Virtual Patients: This suite of applications were developed at UNSW in exercise physiology that simulate real life medical procedures and tests including the taking of blood pressure and the monitoring of a patient's heart rate. These applications have interactive and engaging graphics as well as adaptive feedback.

<https://www.smartsparrow.com/case-studies/virtual-patients/>



August 24, 2016 (Engagement) Changing opinions on climate change, from a CNN meteorologist, Chad Meyers, CNN

<http://www.cnn.com/2016/08/24/opinion/chad-meyers-climate-change-scientist/index.html>



September 14, 2015 (Access)

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-Source-at-Kuhn_Medium.com

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

September 14, 2015

Credit for Watching a TED Talk?

A new platform aims to help employers track casual learning



"People are naturally interested in the world around them," said David Kelley, chief executive and a founder of the nonprofit TED Talks organization. "Now, that's a great idea for learning and growth."

By Jeffrey R. Young



Learn Anything Using the World's Best Resources

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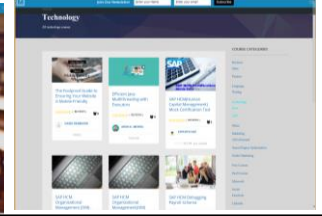
Learn Anything Using the World's Best Resources

Learn Anything Using the World's Best Resources

June 20, 2016 (Access)

The Expert Cafe

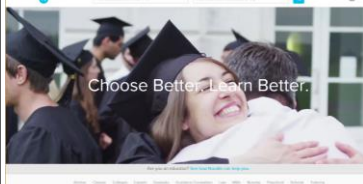
<http://expertscafe.com/>



June 20, 2016 (Access)

Noodle

<https://www.noodle.com/>



Choose Better. Learn Better.

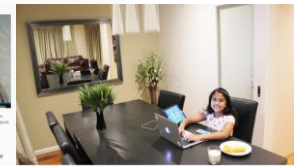


June 13, 2016 (Access)

Nine-Year-Old Anvitha Vijay is the Youngest Developer at WWDC (age 9)

(Apple Worldwide Developers Conference), Gadgets

<http://gadgets.ndtv.com/apps/news/nine-year-old-anvitha-vijay-is-the-youngest-developer-at-wwdc-2016-84841570>



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

Home News Global Opinion & More... Facts & Figures Blogs & Advice Pressroom

TECHNOLOGY

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

By Jeffrey R. Young | 4/21/16, 2016

PHOTOGRAPH BY JEFFREY R. YOUNG

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PHOTOGRAPH BY JEFFREY R. YOUNG

May 19, 2016 (Access)

From MOOC to bootcamp to MIT

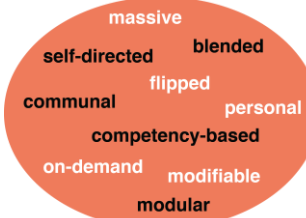
MIT News, Office of Digital Learning

(Jin Wu—from MITx to MIT Global Entrepreneurship Bootcamp to master's student)

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



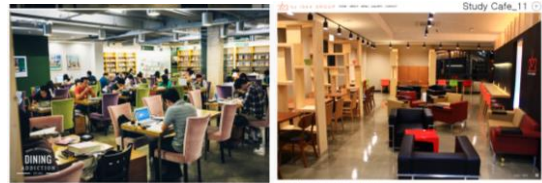
How Learning is Changing: Mega Trend #3. Customization



August 1, 2016 (Customization)

363by Idea Group: Study Café
Meeting Place: Idea Space

http://363by.com/363by/363by-study-cafe_11



May 20, 2016 (Customization) agMOOCs (India)

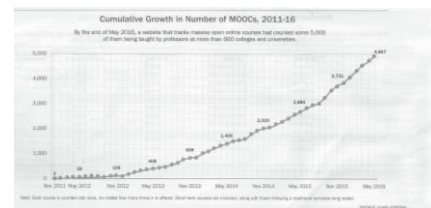
<http://www.agmoocs.in/>



August 14, 2016

Data From the 2016 Almanac (as of May 2016)
Chronicle of Higher Education

http://chronicle.com/interactives/almanac-2016/t4d-sep51-f6d-37_502



January 5, 2016 Use Of MOOCs And Online Education Is Exploding: Here's Why Josh Bersin, Forbes

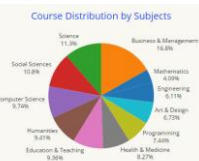
<http://www.forbes.com/sites/joshbersin/2016/01/05/use-of-moocs-and-online-education-is-exploding-heres-why/#2f20ac86a702>

Use Of MOOCs And Online Education Is
Exploding: Here's Why

Josh Bersin, Chief Learning Officer at Bersin & Associates

More than 20 million people have enrolled in online courses in the past few years, and this proliferation has led to a new effort to expand on-line and off-line learning programs in the U.S.

Today there are more than 2,000 MOOC courses available from leading universities and corporations. These courses are available from top universities like Harvard, MIT, Stanford, and others. These courses are available from leading corporations like Google, Microsoft, and others.

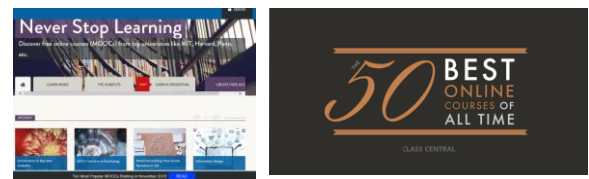


August 12, 2016 (Customization)

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."

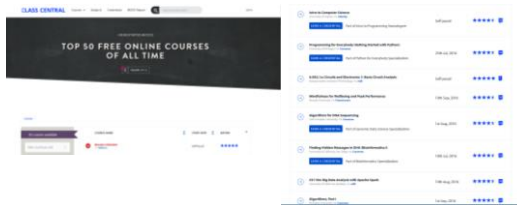
<https://www.class-central.com/report/top-moocs/>



July 27, 2016 (Customization)

Class Central

<https://www.class-central.com/collection/top-free-online-courses>

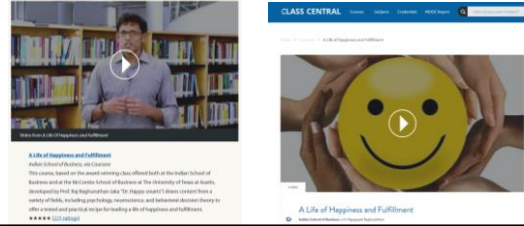


August 12, 2016 (Customization)

A Life of Happiness and Fulfillment

Indian School of Business, Rajagopal Raghathan

<https://www.class-central.com/mooc/2860/courses-a-life-of-happiness-and-fulfillment>



August 5, 2015 (Customization)

How Nanodegrees Are Disrupting Higher Education

John Waters, Campus Technology

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

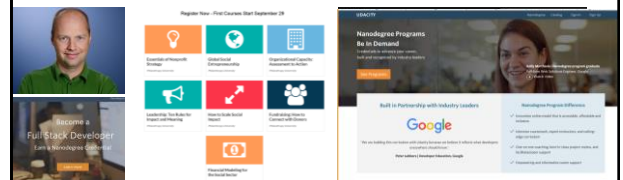


January 13, 2016 (Customization)

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>



January 20, 2016 (Customization)

Coursera Specializations

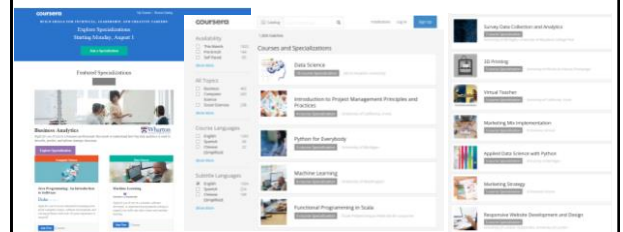
https://www.coursera.org/3courses?utm_source=social&utm_medium=social&utm_campaign=AMBA&utm_term=Specializations



July 28, 2016 (Customization)

Coursera Specializations email

Starting Monday August 1st: 9 Top Specializations



July 28, 2016 (Customization)

Udemy: "Get cozy with a class"

<https://www.udemy.com/>



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

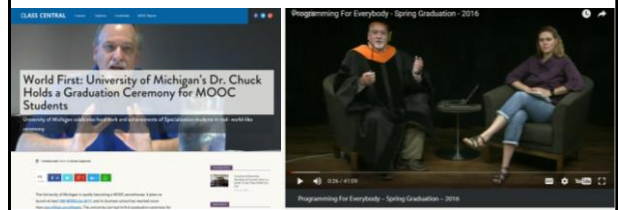
Paul Kim and Charlie Chung, Stanford University
Figure 2. Twitter thread announcing the MOOC



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/>



March, 2016

MOOCWatch March 2016: Learning with MOOCs III

Anuar Andres Lequerica is Class Central's analyst
<https://www.class-central.com/report/moocwatch-march-2016/>

- Coursera announced it has reached 18 million learners and 3.6+ million course completions.
- The University Of Michigan plans to launch at least 200 MOOCs by 2017, and its b-school has reached more than one million.
- The University of Pennsylvania's Wharton School is close to reaching three million enrollments.
- The number of South Korean MOOCs is expected to surpass 100 this year.
- Only 18% of adults are familiar with MOOCs.

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/>



July 21, 2016

The Scope of edX

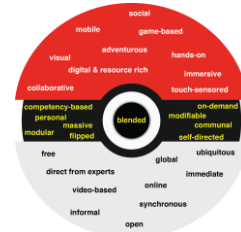
Joshua Kim, Inside Higher Ed

https://www.insidehighered.com/digital-learning/article/2016/07/21/edx-scope

Some edX numbers that blew my mind:

- 8.3 million (unique) learners on the edX platform.
- Between 2012, when edX started, and today - there have been 27 million course enrollments.
- Over 1,000 courses have been offered.
- Over 2,300 faculty and staff have taught on edX.
- Over 840,000 certificates earned by edX learners.

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



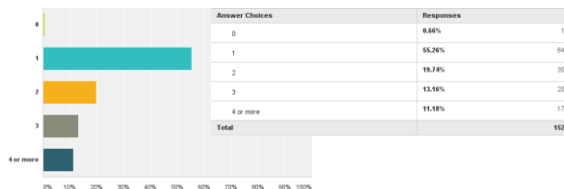
Question: How to personalize--artificial intelligence or intelligence augmentation?



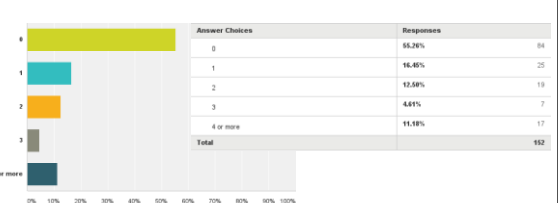
MOOC Personalization Survey Results



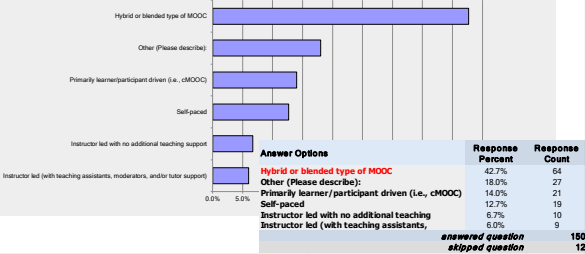
1. How many MOOCs have you taught? (N = 152)



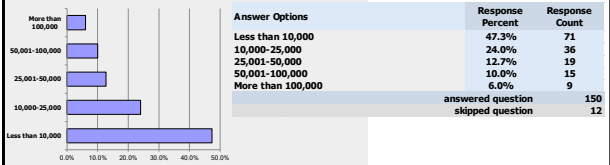
3. How many MOOCs have you completed as a learner (N = 152)



7. What is the delivery format of your most recent MOOC?



8. How many people signed up for your most recent MOOC? (N = 150)



13. How do you address students' varying competencies and needs?[Check all that apply]

Answer Options	Response Percent	Response Count
Establish learner-based discussion forums	81.0%	115
Embed supplementary course materials (e.g., readings, Post timely course announcements and emails	78.2%	111
Record video tutorials or walkthroughs (e.g., Screencasts, YouTube	63.4%	90
Emphasize project-based learning over exams	40.8%	58
Using preexisting online videos (e.g., Lynda.com, TED talks, YouTube, Other (Please describe):	34.5%	49
Hold asynchronous lectures, meetings, and events (e.g., Skype, Google	32.4%	46
Establish study groups	26.1%	37
Establish learner reflection journals or blogs	23.9%	34
Schedule virtual office hours and meetings	19.0%	27
Offer face-to-face meet-up opportunities	16.2%	23
	14.1%	20
	7.0%	10

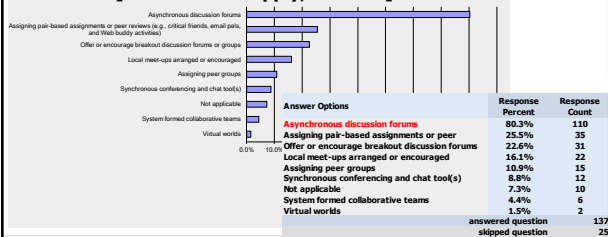
answered question 142
skipped question 20

14. What types of learning resources can participants select from in your most recent MOOC?[Check all that apply]

Answer Options	Response Percent	Response Count
Discussion forums or threads	61.5%	130
Video lectures and tutorials	76.8%	109
Readings (including textbooks, literature, scientific & tech reports)	76.1%	108
Practice quizzes and exams	57.7%	82
Interactive assessments	50.7%	72
Expert interviews	50.0%	71
PowerPoint and other presentation slides	47.0%	68
Instructor lecture notes	44.4%	63
Animations and other types of animated or interactive contents	43.0%	61
Visuals (e.g., concept maps, diagrams, flowcharts, timelines, etc.)	42.3%	60
Video examples (e.g., TED talks, YouTube, etc.)	39.4%	56
Social media (e.g., Facebook, Instagram, Snapchat, Twitter, Pinterest, etc.)	28.9%	41
Popular media (e.g., news stories and videos)	28.2%	40
Wiki-style documents	18.3%	26
Podcasts	15.5%	22
Instructor blogs	14.8%	21
Simulations and games	14.1%	20
Job aids and study guides	12.0%	17
Mobile applications	12.0%	17
Learner blogs	9.9%	14
Other (fill in the blank - optional):	8.9%	14
Virtual conferences and summits	4.9%	7

answered question 142
skipped question 20

16. In what ways is peer interaction encouraged in your MOOC? [Check all that apply; N = 137]



17. How did you design your course to be suitable for students from different cultures and/or linguistic backgrounds?[Check all that apply]

Answer Options	Response Percent	Response Count
Offer transcripts of video or audio content	66.2%	88
Add subtitles to video content	63.9%	85
Be careful with language use and hand gestures	51.9%	69
Simplify the language used	42.1%	56
Slow the pace of speech	36.8%	49
Simplify the course content and navigation	27.1%	36
Limit text by relying more on pictures	19.5%	26
Encourage participants to translate and localize content	18.0%	24
Other (Please describe):	15.8%	21
Translate the content to different languages	11.3%	15

answered question 133
skipped question 29

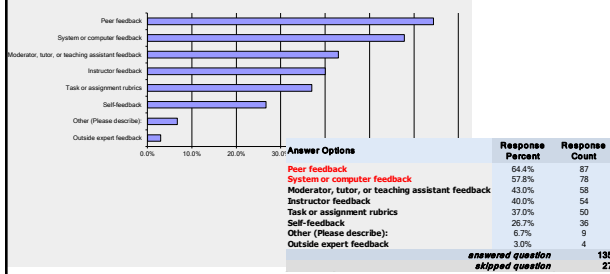
18. Does the structure of your most recent or current MOOC provide any of the following?
[Check all that apply; N = 126]

Answer Options	Response Percent	Response Count
Optional readings, videos, or other materials	74.6%	94
Learner selected incentives (e.g., certificates, badges, course credit, etc.)	64.3%	81
Options with course tasks and assignments	38.1%	48
Learner discussion and negotiation of content	36.5%	46
Two or more media elements to learn the same content	31.7%	40
Learner determined or contributed content	30.2%	38
Learner selected learning pathways (i.e., different routes to learn the	19.0%	24
Learner portfolios of course accomplishments	16.7%	21
Choice in team or collaborative partners (i.e., self-formed teams)	12.7%	16
answered question		126
skipped question		36

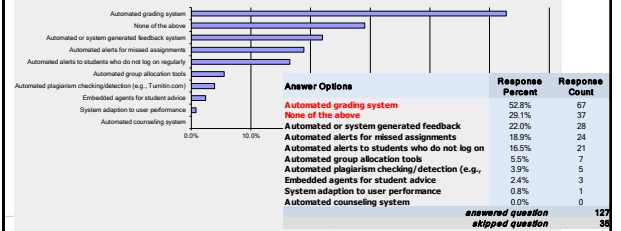
19. How is student progress/participation monitored or tracked? [Check all that apply; N = 137]

Answer Options	Response Percent	Response Count
Self-monitoring and self-evaluation	42.3%	58
Modular or unit based progress	34.3%	47
Weekly or daily reports offered by learning analytics	24.8%	34
Moderator, tutor, or teaching assistants feedback	23.4%	32
Not applicable (learner progress is not monitored or tracked in this MOOC)	14.6%	20
Hybrid system of two or more of the above	13.9%	19
Peer or group member reports	13.1%	18
Other (Please describe):	11.7%	16
Personal tracking from tutors, moderators, and teaching assistants	9.5%	13
Personal tracking from instructor	7.3%	10
answered question		137
skipped question		25

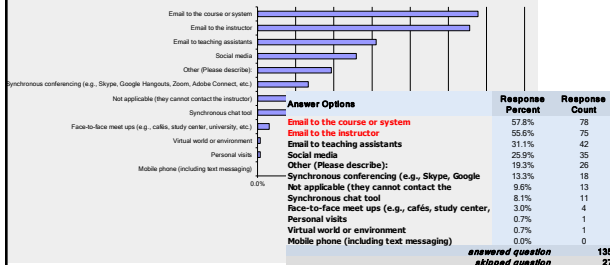
20. In what ways do students get feedback in the course?[Check all that apply; N = 135]



21. Does your most recent (or current) MOOC utilize any of the following?
[Check all that apply; N = 127]



22. How do participants in your MOOC contact you if they have questions, concerns, or suggestions?
[Check all that apply; N = 135]

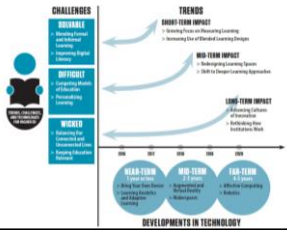


WHAT'S NEXT

February 2016

NMC Horizon Report > 2016 Higher Ed Edition
<http://www.nmc.org/publication/nmc-horizon-report-2016-higher-edition/>
<http://cdn.nmc.org/media/2016-nmc-horizon-report-he-EN.pdf>

Topics from the NMC Horizon Report > 2016 Higher Education Edition



September 15, 2015

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-edx>
<https://www.youtube.com/watch?v=3d8kxW9p5L4&list=PL437d4d4d4d4d4d4d>



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-evolution_b_7209906.html



August 31, 2016

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-ticks-forward-new-gear-s3-smartwatches/8964266/>



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 2, 2016

Humans, the Latest MOOC Feature

Introduction to Philosophy: God, Knowledge and Consciousness
 (\$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>



September 7, 2016

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>





September 21, 2016
What happens when the Fourth Industrial Age
meets the Fourth E-Learning Age?
...Welcome to "The Learning Century"

- Where will learning reside or be stored? (watches?)
- How will we treat artificial agents and PDAs?
- Will they be learning guides and tutors or teachers?
- Will nanodegrees become highly accepted and expected?
- What will your resume/CV look like in the year 2030?

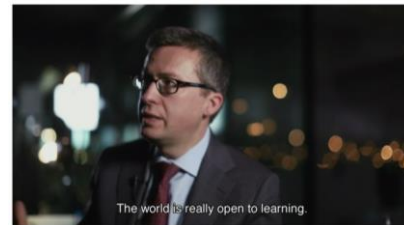
Talk Reminder

1. Basics of the 4th Industrial Age
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. Research on the Personalization of MOOCs
6. Future Trends and Ideas

Remember: "The world is really open to learning"

The Fourth Industrial Revolution

<http://trainingshare.com/twic-clip.php>



Any Questions or Comments?

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

