Learning IS Changing:
Thirty Ways, Many More Visions!

Curtis J. Bonk, Professor, Indiana University
credonk@indiana.edu
http://curtbonk.com/

April 30, 2017
'Those Jobs Are Gone'
Steve Kolowich, The Chronicle of Higher Education
http://www.chronicle.com/article/Who%20%3B%20Who%20%3B%20Who%20%3B%20in%23239964

June 3, 2017
How PLATO changed the World...in 1960
Cait Etherington, ElearningInside News
(nearly 60 years ago)

Intelligence Augmentation and Amplification
Douglas Engelbart's "The Mother of All Inventions" (1968)
(50 years ago!)
"The live demonstration featured the introduction of the computer mouse, video conferencing, teleconferencing, hyperlink, word processing, hypertext, object addressing and dynamic linking, bundling, and a collaborative real-time editor."
http://www.amazon.com/Machines-Loving-Grace-Common/dp/0062266683

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

Poll #1: Do you remember the Apple II (40 years ago)

Knowledge Navigator (1987)
Apple Computer (30 years old!)
http://www.youtube.com/watch?v=hb4AzF6wEoc
Fast Forward 30+ More Years...
"Anyone can now learn anything from anyone at any time."

August 6, 2016
The Web at 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

January 15, 2016
Wikipedia at 15!
Scott McLemee, Inside Higher Ed

April 4, 2016
MIT OpenCourseWare at 15!
http://ocw.mit.edu/about/15-years/

The Evolution of E-Learning (All 7 year cycles)
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 HARRIS, U. OF TORONTO
1987: HYPERCARD FIRST SHIPPED.

The World is Open:
How Web Technology Is Revolutionizing Education
Education technology is a global opportunity
Emmanuel Nataf, TechCrunch
https://techcrunch.com/2018/01/19/education-technology-is-a-global-opportunity/

Topnotch online English teacher earns nearly $3 million a year,
Wu Yan, China Daily
http://www.chinadaily.com.cn/china/2017-01/11/content_27920747.htm

Woz U Has Made Some Big Promises. Can It Deliver?
Henry Kronk, ElearningInside News
https://news.elearninginside.com/woz-u-made-big-promises-can-deliver/

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

CES 2018: Your guide to the biggest consumer electronics show
USA Today

The Octopus watch from Joy, an icon-based watch for kids to have good habits is on display during CES.
January 3, 2018
CES 2018: Your guide to the biggest consumer electronics show
USA Today

A robot developed by Taiwan engineers moves chess pieces on a board against an opponent at the 2017 Consumer Electronic Show (CES) in Las Vegas, Nevada. (Photo: Rob Lever, AFP/Getty Images)

Clearly...
Learning is Changing!

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

July 17, 2017
Learning is More Collaborative
Buildings That Foster Collaboration,
Lawrence Biemiller, The Chronicle of Higher Education

Social spaces, like this one in an interdisciplinary-science building at Arizona State U., don't qualify for federal reimbursement of research-overhead costs. So now "we don't build any single-purpose space," says the university architect.
August 17, 2016
Learning is More Hands-on
Research: 3D Printing Market to Double by 2020, Joshua Bolkan, Campus Technology

January 12, 2017
Learning is More Hands-On
Pregnant Robots Give Birth to New Forms of Experiential Learning, Jenny Abamu, New Learning Times

July 19, 2017
Learning is More Virtual
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

July 19, 2017
Learning is More Virtual
Modern medicine breathes new life into virtual training

Videos
0:13: http://curtbonk.com/vr-medicine.html
0:37-0:56: http://curtbonk.com/vr-medicine2.html

February 7, 2017 (Engagement)
Learning is More Social
YouTube takes on Facebook with mobile live
Jefferson Graham, USA Today

October 16, 2017 (Engagement)
Learning is More Synchronous
Zoom Weekly Guests, Maria Solomou, Sept. 20, 2017
Personal Zoom link: https://IU.zoom.us/j/812322878
May 7, 2015 (Engagement)
Learning is More Adventurous
Aaron Doering, Chasing Seals, TEDx
http://chasingseals.com/
https://twitter.com/chasingseals

August 4, 2017
Learning is More Mobile
When our smartphones leave us out of touch
Brett Molina, USA Today

Learning is More Free
Want “FREE” engagement?
How about “Adding Some TEC-VARIETY”?
http://tec-variety.com/

August 9, 2017
Learning is More Immediate...
The biggest dinosaur in history: Archaeologists reveal 122ft long PATAGOTITAN
https://www.youtube.com/watch?v=4QohEL9_4_w

June 7, 2017
Learning is More Immediate...
Oldest Fossils of Homo Sapiens Found in Morocco, Altering History of Our Species,
August 1, 2016 (Access)
Learning is More Ubiquitous
363 by Idea Group; Study Café
Meeting Place; Idea Space (Seoul, Korea)
http://363.co.kr/wp/?page_id=244
http://363.co.kr/wp/?bw_gallery=study-cafe_11

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

June 7, 2016
Learning is More Free
Teaching refugees how to code
CNN Money

August 5, 2015 (Access)
Learning is More Informal
Shubham Jaglan (10 years old) Overwhelmed by “Dream” Return Home After Double World Championship
Disha Chopra, NDTV Sports

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

December 19, 2017
Learning is More Free and Open
OER Adoptions on the Rise
Lindsay McKenzie, Inside Higher Ed
March 27, 2017 (Access)
Learning is More Free and Open
Beyond Free: Harnessing the resonant value in open and collaborative practices for the public good
David Porter, CEO, eCampus Ontario,
Open Education Ontario Summit
https://www.slideshare.net/David_Porter
https://www.ocls.ca/events/open-education-ontario-summit

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

January 9, 2017
Learning is More Direct from Experts
Jill Watson, Round Three
Georgia Tech course prepares for third semester with virtual teaching assistants
Jason Maderer, Georgia Tech News Center
http://www.news.gatech.edu/2017/01/09/jill-watson-round-three

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.

How Learning is Changing: Mega Trend #3. Customization
massive
self-directed
flipped
communal
personal
competency-based
on-demand
modifiable
modular
May 12, 2017 (Customization)
Learning is More Modifiable
The Future of Collaboration Spaces Encompasses Video Interactive, Mobile, Julie Johnston, IU Campus Technology

May 9, 2017 (Customization)
Learning is On-Demand
Amazon Echo Show brings chatty Alexa to a two-way, video touchscreen
Edward C. Baig and Elizabeth Weise, USA Today

April 17, 2017
Learning is More Blended
Facebook’s future will blend physical and digital worlds
Jessica Guynn, USA Today

January 20, 2016 (Customization)
Learning is More Blended
Universities tap growth of craft beer, offer classes, Chicago Tribune

October 13, 2017
Learning is More Massive
Udacity Official Declares MOOCs ‘Dead’ (Though the Company Still Offers Them)

August 12, 2016 (Customization)
A Life of Happiness and Fulfillment
Indian School of Business, Rajagopal Raghathanan
May 20, 2016 (Customization)
Learning is More Massive
agMOOCs (India)
http://www.agmoocs.in/

July 1, 2015 (Customization)
Learning is More Communal
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

MOOCs and Open Education
Around the World
http://routledge-ny.com/books/details/9781138807419/

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

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

Growth of MOOCs
**August 7, 2017**
**MOOCs for Credit**  
FutureLearn and Coventry University to Roll Out 50 Online Degrees

**Class Central, Dhawal Shah**


<table>
<thead>
<tr>
<th>Degree</th>
<th>Provider</th>
<th>University</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIS Computer Science</td>
<td>UCT</td>
<td>Georgia Tech</td>
<td>$6,980</td>
</tr>
<tr>
<td>MIS Analytics</td>
<td>UCT</td>
<td>Georgia Tech</td>
<td>$11,180</td>
</tr>
<tr>
<td>MBA</td>
<td>Coventry</td>
<td>University of South Africa</td>
<td>$26,000</td>
</tr>
<tr>
<td>MS C.斯 Data Science</td>
<td>Coventry</td>
<td>University of South Africa</td>
<td>$21,000</td>
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<tr>
<td>MS Accounting</td>
<td>Coventry</td>
<td>University of South Africa</td>
<td>$25,000</td>
</tr>
<tr>
<td>Masters in Innovation and Entrepreneurship</td>
<td>MIEE Paris</td>
<td>$6,200</td>
<td></td>
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<tr>
<td>Cyber Security Masters</td>
<td>PatonLearn/Deakin University</td>
<td>$2,950</td>
<td></td>
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<tr>
<td>Development and Humanitarian Action Masters</td>
<td>PatonLearn/Deakin University</td>
<td>$2,950</td>
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</tr>
<tr>
<td>Professional Practice Information Technology Masters</td>
<td>PatonLearn/Deakin University</td>
<td>$2,950</td>
<td></td>
</tr>
</tbody>
</table>

**December 25, 2016**
**Learning is More Massive**

**Class Central**

58M Students  
700+ Universities  
6850 Courses

**April 20, 2015 (Customization)**
**Learning is Self-Directed**

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 MOOCs.

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

**January 9, 2018 (Customization)**
**Learning is More Modular**

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


**30+ Ways Learning is Changing:**
**Recapping the Three Mega Trends:**

Engagement, Access, and Customization

Any Questions or Comments?

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