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

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Talk Overview
1. Education 3.0
2. Education 20/20 and the Role of the Instructor
3. First and Last Principles of Instruction
4. Megatrends of Learning: Engagement, Access, and Customization (30 ways that learning is changing…)
5. Final Comments and Recap

Academos
Plato Circa 428–347 BCE

(Circa Confucius 551–479 BCE)

What happens to sleeping students?
Poll: Remember Education 1.0
1728: 1st correspondence course advertised Boston
(learn shorthand from Caleb Phillips thru weekly mailed lessons)
The First University Correspondence Course
(University of London, External Program, 1858)
1728-1990s – Generally postal system based

Poll: Fast Forward to the 1980s and 1990s...
Education 2.0...Teacher is a Guide on the side...

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

May 10, 2013
10 ed-tech tools of the 70s, 80s, and 90s
eSchool News, Meris Stansbury
http://www.eschoolnews.com/2013/05/10/10-ed-tech-tools-of-the-70s-80s-and-90s/print/
What skills do we need in the 21st Century?
http://21stcenturyskillsbook.com/
http://toped.svefoundation.org/2011/08/05/the-digital-natives-are-coming/

“In Education 3.0, classrooms would move away from lectures, such as this one, to having class time be spent on discussions and projects, using digital technology.”
(Per Wikipedia: https://en.wikipedia.org/wiki/Education_3.0)

Education 3.0
The Genesis and Emergence of Education 3.0 in Higher Education and its Potential for Africa
First Monday, by Derek Keats and J. Philipp Schmidt, March 2007

Education 1.0 to 3.0
Gilly Salmon, University of Liverpool, UK
http://www.gillysalmon.com/learningfutures.html

Now What is Education 4.0?
http://www.krukittin.info/?p=744

Now What is Education 4.0?
“Innovation-producing education. Learn more in:
Development of Individual Agency within a Collaborative, Creative Learning Community”
http://www.igi-global.com/dictionary/education-40/41755
https://thinc.in.th/engadmission/education4.html (Chula Engineering)
January 14, 2016
The Fourth Industrial Revolution:
What it means, how to respond
Klaus Schwab, Founder and Executive Chairman, World Economic Forum
https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/

April 13, 2016
The Fourth Industrial Revolution:
What it means, how to respond
Klaus Schwab, Founder and Executive Chairman, World Economic Forum
http://www.tubechop.com/watch/8280981

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."

The Creation of Effective Learning Environments

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

July 29, 2016
Reimagine Your Learning Space:
Starbucks Your Classroom!
Oskar Cymerman, Teaching Channel
https://www.teachingchannel.org/blog/2016/07/29/starbucks-your-classroom/

Sterile, industrial-era rows aren’t very attractive or motivating. Even more, I’ve become convinced that traditional educational settings dull the senses...I believe the “Starbucks” environment will promote that freedom and movement. Freedom is the key ingredient to social-emotional well-being and deeper learning. Rows and columns constrict. They hold and stifle. That is the truth. That is the reality in many U.S. classrooms today. But no longer in mine. Never again.
20 New Roles of the Instructor

- Captain
- Course Ambassador
- Curator
- Consumer Advocate
- Conductor
- Change Catalyst
- Concierge
- Coach
- Consultant
- Camping Trip Guide
- Collaborator
- Community Organizer
- Chemist
- Care Giver
- Colleague
- Cultivator

Merrill’s First Principles of Teaching/Instruction

1. The Principle of Flexibility

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

6. The Principle of Choice and Options
8. The Principle of Support and Feedback
https://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

9. The Principle of Spontaneity
https://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

11. The Principle of Sharing
https://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

12. The Principle of Nontraditional Learning
https://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html

15. The Principle of Trial and Error (i.e., it is ok to fail)
https://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html
16. The Principle of Expanded Resources

The World is Open: How Web Technology Is Revolutioning Education

17. The Principle of Human Connectedness

18. The Principle of Cognitive Apprenticeship

Bonk’s 20 “Last” Principles of Instruction (LAST = Learning Activation System Template)

Clearly... Learning is Changing!
Poll:
Read any good books lately?

Creative Living Beyond Fear
Elizabeth Gilbert
http://www.elizabethgilbert.com/

2. Originals (2016):
How Non-Conformists Move the World
Adam Grant
Podcast 2. Advice from Adam Grant: Look for “disagreeable givers”
(March 2, 2016)

3. Creativity, Inc. (2014)
Ed Catmull, President of Pixar Animation
and Disney Animation
http://www.creativityincbook.com/

4. Most Likely to Succeed (2015) and
5. Creating Innovators
Tony Wagner (2012)
http://creatinginnovators.com/
- Play
- Passion
- Purpose and life goals
- Open cultures of innovation and interdisciplinary problem solving
- Collaboration
- Intrinsic motivation

6. Makers:
The New Industrial Revolution (DIY Culture)
Chris Anderson (2012)
http://www.inventtolearn.com/
Keith Sawyer, Jossey-Bass  
https://www.amazon.com/Zig-Zag-Surprising-Greater-Creativity/dp/1118297709

8. *Creative Schools (2015): The Grassroots Revolution That’s Transforming Education*  
Sir Ken Robinson  
http://sirkenrobinson.com/creative-schools-the-grassroots-revolution-thats-transforming-education/

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**Poll:**  
What if you read these books?  
YOU SHALL PASS!

**Thirty Ways Learning is Changing...**  
(i.e., it’s more informal, video-based, ubiquitous, collaborative, self-directed, global, mobile, open, massive, etc.)

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**30+ Ways Learning is Changing:**  
The Mega Trends

- Learner Engagement
- Pervasive Access
- Customization & Personalization

**How Learning is Changing:**  
Mega Trend #1. Learner Engagement
August 17, 2016
Learning is More Hands-On
Research: 3D Printing Market to Double by 2020
Joshua Bolkan, Campus Technology

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

May 31, 2017
Learning is More Digital and Resource Rich
Enticing Students to Read Again
Ellen McCracken, The Chronicle of Higher Education
http://www.chronicle.com/article/Enticing-Students-to-Read/144347

February 27, 2017 (Engagement)
Learning is More Immersive
Augmented and Virtual Reality Spending to Double in 2017, Sri Ravipati, THE Journal

July 19, 2017
HoloLens Assists in Live Surgery
Tommy Palladino, Next Reality
http://curtbonk.com/video/hololens.html

May 18, 2017
Learning is More Immersive
Google Cardboard
Google Expeditions Adds Augmented Reality for Classrooms
Sri Ravipati, THE Journal
https://thejournal.com/articles/2017/05/18/google-expeditions-adds-augmented-reality-for-classrooms.aspx
May 14, 2018 (Engagement)
Learning is More Adventurous
Aaron Doering, Chasing Seals, TEDx
http://chasingseals.com/
https://twitter.com/chasingseals

August 8, 2017
Learning is More Game-like
ShortSims
http://www.shortsims.com/
Clark Aldrich clark@clarkaldrichdesigns.com

March 21, 2018 (Engagement)
Learning is More Collaborative
Chatterbox
The overall winner in the competition was Chatterbox, an online language school powered by refugees
https://wearechatterbox.org/

February 17, 2016 (Engagement)
Learning is More Mobile
World’s Cheapest Smartphone at $3.67
Samsung is hoping to have 10,000 apps by the time the Gear S3 launches this fall.

May 9, 2017 (Access)
Learning is More Immediate…
Meet Zuul, the new dinosaur species named after ‘Ghostbusters’ demon
Traci Watson, USA Today
15 second: http://curtbonk.com/ghostbusters15.html
27 second: http://curtbonk.com/ghostbusters27.html

March 27, 2018
Learning is More Immediate…
Ancient Amazon: Discovery of 81 New Archaeological Sites Rewrites History of Americas Before Columbus
Katherine Hignett, Newsweek
Video (1:20)
November 19, 2015 (Access)
Learning is More Immediate...
New daddy longlegs named after 'Lord of the Rings' character Smeagol, Mary Bowerman, USA Today

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

August 1, 2016 (Access)
Learning is More Ubiquitous
363 by Idea Group; Study Café Meeting Place; Idea Space (Seoul, Korea)
http://363.co.kr/wp/?page_id=244
http://363.co.kr/wp/?bw_gallery=study-cafe_11

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

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

August 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
March 18, 2018 (Access)
Learning is Video-Based
EdTech is having a renaissance, powered by the emerging world
Mick Butcher, TechCrunch

March 20, 2018
Rachel Gunderson, Human Sexuality Class, VoiceThread
http://rachel-gunderson.strikingly.com/

February 19, 2018
Learning is More Online (Access)
Grade Increase:
Tracking Distance Education in the United States
Joshua Kim, Inside Higher Ed
http://onlinelearningsurvey.com/reports/gradeincrease.pdf
https://babson.qualtrics.com/jfe/form/SV_djbTFMIjZGYDNVB
http://www.onlinelearningsurvey.com/highered.html

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

May 7, 2014 (Access)
Learning is More Global
CNA - Speaking Exchange (video chats)
https://www.youtube.com/watch?v=5EfwpFOkFCB
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.

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
May 8, 2018
Free textbooks? Federal government is on track with a pilot program.
https://sparcopen.org/our-work/open-textbooks-fy18/

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

September 19, 2017
Learning is More Free and Open
Reasons to Open Source Your Syllabus
Anatasia Salter, The Chronicle of Higher Education
http://www.chronicle.com/blogs/profhacker/reasons-to-open-source-your-syllabus/64335
The Open Syllabus Project: https://opensyllabusproject.org/

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

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

August 9, 2017
Learning is More Free and Open
Modern State Education Alliance
https://modernstates.org/
May 3, 2017
Learning is More Free and Open
4 out of 5 Companies Have Hired a Coding Bootcamp Graduate
Sri Ravipati, Campus Technology

June 20, 2016 (Access)
Learning is More Direct from Experts (e.g., The Expert Café)
http://expertscafe.com/

March 21, 2018
Learning is More Direct from Experts
TeachMeNow
TeachMeNow is a gig-economy platform for teachers. This marketplace connects teachers, experts, and mentors to students. The technology combines scheduling, payments, and live virtual sessions that can connect on any device to offer live, expert connections to teachers to create their own online businesses, creating new models to succeed. The technology combines scheduling, payments, and live virtual sessions that can connect on any device to offer live, expert connections to teachers to create their own online businesses, with some earning over $100,000 last year. In addition, schools and companies including Microsoft use TeachMeNow software to create their own branded online learning communities.
https://teachmenow.com/

How Learning is Changing:
Mega Trend #3. Customization

February 22, 2017 (Access)
Learning is Self-Directed
Digital citizenship lessons from a 9-year-old with 18,000 Twitter followers, Alan November, eSchool News

June 13, 2016 (Access)
Learning is Self-Directed
Nine-Year-Old Anvitha Vijay is the Youngest Developer at WWDC (age 9) (Apple Worldwide Developers Conference), Gadgets
May 12, 2017 (Customization)
Learning is More Modifiable
The Future of Collaboration Spaces Encompasses Video
Interactive, Mobile, Julie Johnston, IU, Campus Technology

March 2, 2018
The Architecture of Ideal Learning Environments
Emelina Minero, Edutopia
https://www.edutopia.org/article/architecture-ideal-learning-environments

January 9, 2017
Learning is More On Demand
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 9, 2017 (Customization)
Amazon Echo Show brings chatty Alexa to a two-way, video touchscreen
Edward C. Baig and Elizabeth Weise, USA Today
https://www.usatoday.com/story/tech/reviews/2017/05/09/amazon-echo-show-touchscreen-video-alexa/101448844/

February 19, 2018
Learning is More on Demand
Battle of the Brains:
We asked Google, Alexa and Siri 150 questions to see who’s smartest
Jefferson Graham, USA Today

February 19, 2018
Learning is More on Demand
Erica, the humanoid robot, is chatty but still has a lot to learn
Jefferson Graham, USA Today
Video: http://curtbonk.com/erica.html
Audio: http://curtbonk.com/erica-audio.html
Poll: Who gets blended drinks at Starbucks?

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

March 23, 2017 (Customization)
Learning is More Personal
Arizona State U Launches Open, Adaptive Lessons on Space Exploration
Rhea Kelly, Campus Technology

May 20, 2016 (Customization)
Learning is More Massive
agMOOCs (India)
http://www.agmoocs.in/

April 20, 2015 (Customization)
Learning is More Massive
250 MOOCs and Counting: One Man’s Educational Journey, Chronicle of Higher Education
http://chronicle.com/article/250-MOOCsCounting-One/229397/?cid=at
If the MOOC movement has faded, nobody told Jima Ngei. Mr. Ngei, who lives in Port Harcourt, Nigeria, has completed and passed 250.

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

August 12, 2016 (Customization)
A Life of Happiness and Fulfillment
Indian School of Business, Rajagopal Raghanathan
October 1, 2017
Learning is More Massive
Introduction to Open Education
edX
https://www.edx.org/course/introduction-open-education-utarlingtonx-link-oex

June 15, 2017
Learning is More Massive
Massive List of MOOC Providers Around The World
K-MOOC / Korea
(Where to Find MOOCs: The Definitive Guide to MOOC Providers)
Class Central, Dhawal Shah

January 11 and August 23, 2017
Learning is More Massive
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

March 3, 2017 (Customization)
Learning is More on Modular
edX Expands MicroMasters Programs With Data Science (“nanodegrees”) and Digital Leadership and More
Sri Ravipati, Campus Technology

January 9, 2018
Learning is More on Modular
MIT launches MITx MicroMasters in Principles of Manufacturing
MIT Open Learning

July 1, 2015 (Customization)
Chapter 14: Creating a Temporary Spontaneous Mini-Ecosystem through a MOOC
Paul Kim and Charlie Chung, Stanford University
Figure 2. Twitter thread announcing the MOOC
June 14, 2016 (Customization)
Chapter 15: Learning About MOOCs by Talking to Students
Charles Severance, Univ. of Michigan
Anuar Lequerica, Class Central

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

MOOCs are Like Library Books...

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

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 HARMAN, UNIV. OF TORONTO
1987: HYPERCARD FIRST SHIPPED.
Final Poll: Who is now interested in Education 20/20...?

We are entering a jumping off point...
(South University of Science and Technology of China, Wednesday June 10, 2015)

Things are heating up...

Education 20/20 is coming within reach!

Remember for Education 20/20 to make an impact:
“I cannot do this alone.”
“Cannot do this alone.”
“Cannot do this alone.”

Any Questions or Comments?

Slides at: TrainingShare.com
Papers: PublicationShare.com
Free book: http://tec-variety.com/
Email: cjbonk@Indiana.edu