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)
**September 18, 2017**

**Education 1.0 to 3.0**

Gilly Salmon, University of Liverpool, UK

http://www.gillysalmon.com/learningfutures.html

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**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)

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**July 24, 2018**

**The 100-Year Life:**

Living and Working in an Age of Longevity

Lynda Gratton and Andrew Scott

http://www.100yearlife.com/


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**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, neurotechnological brain enhancements, genetic editing, etc.)


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**The Evolution of E-Learning (All 7 year cycles)**


Phase IV, 2015: THE AGE OF PERSONALIZATION.

Other prior significant e-learning dates:

1985: First Online Course, Linda Harasim, Univ. of Toronto

1997: Hypercard first shipped.
July 11, 2017
The Rise of the Phigital Learner
Going ‘phigital?’ 4 things schools need to know about
Generation Z, TrustEd
http://trustedk12.com/phigital-learning/
May 15, 2017
3 must know’s about the rising ‘phigital’ student-and why their impact is enormous,
Meris Stansbury, eCampus News
https://www.ecampusnews.com/campus-administration/education-gen-z-phigital-student/
20 New Roles of the Instructor
- Captain
- Counselor
- Conductor
- Consultant
- Curator
- Concierge
- Camping Trip Guide
- Community Organizer
- Cultivator
- Consumer Advocate
- Change Catalyst
- Chef
- Chemist
- Care Giver
- Coach
- Collaborator
- Comedian
- Collaborator
- Care Giver
Merrill’s First Principles of Teaching/Instruction
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html
Bonk’s Last Principles of Teaching/Instruction (Education 4.0?)
http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html
http://www.applicadthai.com/articles/education-4-0/
Bonk’s 20 “Last” Principles of Instruction (LAST = Learning Activation System Template)

- Flexibility
- Support and Feedback
- Choice and Options
- Nontraditional Learning
- Spontaneity
- Passion and Inspiration
- Collegiality
- Organization
- Relevance and Meaningfulness
- Cheerfulness and Optimism
- Sharing
- Trial and Error (i.e., it’s ok to fail)
- High Expectations
- Purpose and Vision
- Expanded Resources
- Empowerment and Autonomy
- Human Connectedness
- Cognitive Apprenticeship

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

- Social
- Hands-on
- Mobile
- Touch-sensed
- Visual
- Game-based
- Adventurous
- Digital & Resource Rich
- Immersive
- Collaborative

30+ Ways Learning is Changing: The Mega Trends

- Learner Engagement
- Pervasive Access
- Customization & Personalization

January 3, 2018
Learning is More Mobile
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.

July 24, 2018
Learning is More Digital and Resource Rich
This Physicist Wants Female Scientists To Get Noticed. So She Wrote 270 Wikipedia Profiles.
Jenna Amatulli, Huffington Post

April 22, 2018
Learning is More Visual
Microsoft AI Commercial ft. Common
Video 1:00: Microsoft AI Commercial ft: Common: https://www.youtube.com/watch?v=9tucY7Jhhs4 (Feb 11, 2018)
Video 1:48: Microsoft AI: Amplifying Human Ingenuity: https://www.youtube.com/watch?v=NDmu7Z5NPXo
Video 1:00: Microsoft AI: Empowering Innovators ft. Common: https://www.youtube.com/watch?v=Z5OWdqfAYfw (April 22, 2018)
Video: 1:00: Microsoft AI + Iconem: Preserving History ft. Common: https://www.youtube.com/watch?v=ZDZjaIhzMSM (April 22, 2018)
May 14, 2018 (Engagement)
Learning is More Adventurous
Aaron Doering, Chasing Seals, TEDx
[Links]

May 1, 2018
Learning is More Immersive
3 ways districts can use AR and AI
Justin Anglio, eSchool News
[Links]

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)
[Links]

July 29, 2018
Learning is More Collaborative
Why Silicon Valley is teaming up with San Quentin to train young people to code
Jessica Guynn and Megan Diskin, USA TODAY
[Links]

July 11, 2018
Learning is More Immediate...
Fossil of first giant dinosaur, dubbed Ingensia prima, found in Argentina
Brett Molina, USA Today
[Links]
October 4, 2018 (Engagement)  
Learning is More Synchronous  
Shindig, Future Trends Forum, Bryan Alexander  
Anant Agarwal, CEO and founder of edX  
https://bryanalexander.org/the-future-trends-forum/  
http://www.shindig.com/  
https://shindig.com/client/client/?event=ftf-agarwal

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

June 7, 2018  
Learning is More Free and Open  
Open Educational Resources  
The Chronicle of Higher Education  
http://images.results.chronicle.com/Web/TheChronicleofHigherEducation/%7B0cbd562d-5eee-4c74-88e4-4894148213e1%7D_2018_OpenEducationResources_Infographic_v4.pdf

March 19, 2018  
Learning is More Free and Open  
Open Textbook Network  
Center for Open Education, University of Minnesota  
http://research.cehd.umn.edu/otn/

August 2, 2018  
Learning is More Free and Open  
OpenStax Infographic  

July 29, 2018  
Learning is More Online  
Can a Huge Online College Solve California’s Work Force Problems?  
Karin Fischer, The Chronicle of Higher Education  
http://curtbonk.com/link  
The new college is being created to help California’s adults improve their job prospects in growing fields like IT support.
August 9, 2017  
Learning is More Free and Open and Online  
Modern State Education Alliance
https://modernstates.org/

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 enables scheduling, payments, and live virtual sessions that can connect to any device. Massive numbers of teachers, far more than ever before, have the ability to set their own schedule and earn more than $100,000 last year. In addition, schools and companies including TeachMeNow’s software to create their own branded online learning communities.
https://teachmenow.com/

How Learning is Changing:  
Mega Trend #3. Customization

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 enables scheduling, payments, and live virtual sessions that can connect to any device. Massive numbers of teachers, far more than ever before, have the ability to set their own schedule and earn more than $100,000 last year. In addition, schools and companies including TeachMeNow’s software to create their own branded online learning communities.
https://teachmenow.com/

March 2, 2018  
Learning is More Modifiable  
The Architecture of Ideal Learning Environments  
Emelina Minero, Edutopia

The Future of Collaboration Spaces Encompasses Video Interactive Mobile  
Julie Johnston, IU, Campus Technology
https://www.edutopia.org/article/architecture-ideal-learning-environments

January 2, 2018  
Learning is More Personalized  
5G to AR: Here are 7 technologies to watch in 2018, Edward C. Baig, USA Today
(e.g., Augmented hearing)

October 14, 2017  
Learning is More Customized  
China wants to bring artificial intelligence to its classrooms to boost its education system
How the take off of AI-enabled education will affect the interaction between China’s 14 million teachers and 188 million pupils
Meng Jing, South China Morning Post
http://curtbonk.com/chinese-ai.html
August 2, 2018
Learning is More Technology Assisted
Hey, Alexa, Should We Bring Virtual Assistants to Campus? These Colleges Gave Them a Shot
Lindsey Ellis, The Chronicle of Higher Education
https://www.chronicle.com/article/Hey-Alexa-Should-We-Bring/244129
44 Seconds: http://curtbonk.com/jetsons44.html

May 9, 2018
Learning is More Intelligently Assisted
Google Duplex Demo from Google IO 2018
Video (4:11): https://www.youtube.com/watch?v=bd1mEm2Fy08
Video (2:05): http://curtbonk.com/google40245.html

April 14, 2018
Learning is More On Demand
Google's astounding new search tool will answer any question by reading thousands of books
Anne Quito, Quartz

October 12, 2018
Learning is More Massive and Modular
EdX: From MicroMasters to Online Master's Degrees
Lindsey McKenzie, Inside Higher Ed

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

WHAT'S NEXT
Prepare For Future Learning
August 1, 2018
1. Independent Studies Via MOOCs
MOOC: AI A-Z: Learning How to Build an AI Online Course and Machine Learning
Mengyuan Zhao
https://www.udemy.com/artificial-intelligence/
https://www.coursera.org/learn/machine-learning

October 12, 2018
2. OER-Based Courses
The Chronicle of Higher Education
Launching OER Degree Pathways: An Early Snapshot of Achieving the Dream's OER Degree Initiative and Emerging Lessons

Learning money with open-ed resources. A large-scale effort to encourage the use of open education resources has helped students save money and bolstered their learning, according to a report, released today, on the findings from the second year of Achieving the Dream's OER Degree Initiative. The study found that:
• Students saved between $66 and $121 per course.
• Over 60 percent of students reported that the overall quality of their learning experience in an OER course was higher in comparison to a typical, non-OER course.
• The number of OER courses at participating institutions jumped from 13 in 2016 to 385 in the spring of 2018; the number of students enrolled in OER courses went from 3,404 in 2016 to 37,398 in 2017.

September 22, 2017
3. Binge Learning Experiences
What Online Education Can Learn from Netflix
Henry Kronk, e-learning Inside News
https://theumlaut.com/binge-learning-is-online-education-s-killer-app-84da18f8ae76

March 6, 2018
4. Rise of Super E-Mentors and Coaches
By connecting Chinese pupils with North American teachers, Beijing-based platform is building cultural bridges, one online English class at a time.
Most Innovative Companies, Fast Company
Interview with VIPKid CEO Cindy Mi
https://www.fastcompany.com/company/vipkid

February 27, 2017
5. Web Conferencing Walls
Global Learning Partner or PBL Team Selection Walls
http://www.thelivingmoon.com/43ancients/02files/Library_Alexandria.html

September 26, 2018
6. Interactive Agents and Tutors
Pushing the Boundaries of Learning With AI
Lindsay McKenzie, Inside Higher Ed
https://www.youtube.com/watch?time_continue=4&v=7EuSTu1iR2A
http://curtbonk.com/mandarin.html
January 30, 2017
7. Professor Einstein PDA's
http://www.scribd.com/document/366929935/Professor-Einstein-PDA's

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.scribd.com/document/366929935/Professor-Einstein-PDA's

February 27, 2017
8. Robot Collaborators/Partners

9. Café Classroom and Café Connectedness
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....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.

10. Instructional Designer Morphs into Learning Environment Engineer

The Education 20/20 is coming within reach!

Remember...
“I cannot do this alone.”

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

ANY questions?