

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

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<http://curtbonk.com/>



## April 30, 2017 Remember Education 1.0?

### Those Jobs Are Gone

Steve Kolowich, The Chronicle of Higher Education

<http://www.chronicle.com/article/White-collars-Down-10.22996>



## November 28, 2017 Automation could kill 73 million U.S. jobs by 2030

Paul Davidson, USA Today

<https://www.usatoday.com/story/news/2017/11/28/automation-kill-73-million-u-s-jobs-2030/999878001/>

Video (1:20): <http://curtbonk.com/automation.html>



## September 26, 2018 Remember Education 2.0?

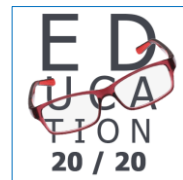
The rise and fall of the company behind 'Reader Rabbit' and all your favorite educational games

Abigail Cain, The Outline

<https://theoutline.com/post/5283/remember-reader-rabbit-the-legendary-educational-game-company-saved-us-all-3-16-1980s>



## Time for Education 3.0... Time for Education 20/20



"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))

[illegible]

## Now What is Education 4.0?

### “Innovation-producing education.”

Learn more in: Development of Individual Agency within a Collaborative, Creative Learning Community”

<http://www.iqi-global.com/dictionary/education-40/41755>

<https://thinc.in.th/engadmission/education4.html> (Chula Engineering)

The diagram illustrates the evolution of education through four stages, each with a corresponding image and a description of the underlying economy or society:

- 1.0: Dictation of Knowledge** (Image: A person at a desk with a typewriter)
- 2.0: E-Learning** (Image: A person at a computer with a globe)
- 3.0: Knowledge-Producing** (Image: A group of people in a meeting)
- 4.0: Innovation-Producing** (Image: A group of people in a meeting)

The large arrow in the center points from the bottom left to the top right, indicating the progression. It is labeled with the following stages and descriptions:

- 1.0: Dictation of Knowledge** (Image: A person at a desk with a typewriter)
- 2.0: E-Learning** (Image: A person at a computer with a globe)
- 3.0: Knowledge-Producing** (Image: A group of people in a meeting)
- 4.0: Innovation-Producing** (Image: A group of people in a meeting)

The inset image on the right shows a group of people in a meeting, with the text "Thailand Education 4.0" below it.

[illegible]

**July 24, 2018**

**The 100-Year Life:**

**Living and Working in an Age of Longevity**

**Lynda Gratton and Andrew Scott**

<http://www.100yearlife.com/>  
<https://www.amazon.com/100-Year-Life-Living-Working-Longevity/dp/1543626634>

The 100-Year Life: Living and Working in an Age of Longevity

THE 100-YEAR LIFE

LYNDA GRATTON & ANDREW SCOTT

THE 100-YEAR LIFE

Living and Working in the Age of Longevity

Lynda Gratton

# 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/>  
 (video), mobile supercomputing, artificially intelligent robots, self-driving cars, neuro-technical brain enhancements, genetic editing, etc.)

<http://www.writinginswitzerland.com/World-Industrial-revolution-video-clip-short-also>




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




# 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  
MIT OCW &  
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.

**July 11, 2017**  
**The Rise of the Phigital Learner**  
 Going 'phigital'? 4 things schools need to know about Generation Z, Todd Kominiak, TrustEd  
<http://trusteds12.com/phigital-digital-learning/>  
**May 15, 2017**  
 3 must know's about the rising "phigital" student-and why their impact is enormous, Maria Stansbury, eCampus News  
<https://www.ecampusnews.com/campus-administration/education-gen-z-shutout-student/>






**Clearly...  
 Learning is Changing!  
 Education 20/20**

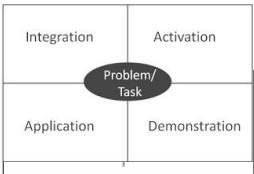
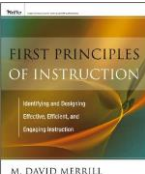




**20 New Roles of the Instructor**

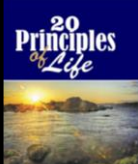


- Captain
- Course Ambassador
- Consumer Advocate
- Counselor
- Curator
- Change Catalyst
- Conductor
- Concierge
- Comedian
- Consultant
- Camping Trip Guide
- Coach
- Course Expedition Leader
- Collaborator
- Community Organizer
- Chemist
- Care Giver
- Cultivator
- Colleague


**Merrill's First Principles of Teaching/Instruction**  
<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>

**Bonk's Last Principles of Teaching/Instruction (Education 4.0?)**  
<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>  
<http://www.applc2020.com/articles/education-4-0/>

**Bonk's 20 "Last" Principles of Instruction**  
**(LAST = Learning Activation System Template)**  
<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>

Flexibility Support and Feedback Choice and Options  
 Convenience Spontaneity Nontraditional Learning  
 Collegiality Organization Passion and Inspiration  
 Cheerfulness and Optimism Relevance and Meaningfulness  
 High Expectations Purpose and Vision Expanded Resources  
 Empowerment and Autonomy Human Connectedness Cognitive Apprenticeship  
 Trial and Error (i.e., it is ok to fail)  
 #20 ???

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

Learner Engagement Pervasive Access  
 Customization & Personalization

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

social  
 mobile hands-on  
 visual touch-sensored  
 game-based adventurous  
 digital & resource rich  
 immersive collaborative

**January 3, 2018**  
**Learning is More Mobile**  
**CES 2018: Your guide to the biggest consumer electronics show**  
**USA Today**

<https://www.usatoday.com/story/tech/news/2018/01/03/ces-2018-what-to-expect-when-you-arrive-at-the-show/280778001/>

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**

[https://www.huffpost.com/entry/scientist-pays-270-wikipedia-pages-in-a-year-so-female-scientists-get-noticed\\_us\\_30578ee640115a932c0d5](https://www.huffpost.com/entry/scientist-pays-270-wikipedia-pages-in-a-year-so-female-scientists-get-noticed_us_30578ee640115a932c0d5)

This Physicist Wants Female Scientists To Get Noticed. So She Wrote 270 Wikipedia Profiles.

**April 22, 2018**  
**Learning is More Visual**  
**Microsoft AI Commercial ft. Common**

Video 1:00: Microsoft AI Commercial ft. <https://www.youtube.com/watch?v=5uac72Jh9d4> (Feb 11, 2018)  
 Video 1:48: Microsoft AI: Amplifying Human Ingenuity: <https://www.youtube.com/watch?v=8Dmnu7Z5Wp0>  
 Video 1:00: Microsoft AI + Ecomart: Preserving History ft. Common: <https://www.youtube.com/watch?v=250Wd4AY1w> (April 22, 2018)  
 Video 0:44: Microsoft AI + The Yield: Taking the guesswork out of farming ft. Common: <https://www.youtube.com/watch?v=7zaufx6H84s> (April 22, 2018)





**October 4, 2018 (Engagement)**

**Learning is More Synchronous**

Shindig, Future Trends Forum, Bryan Alexander

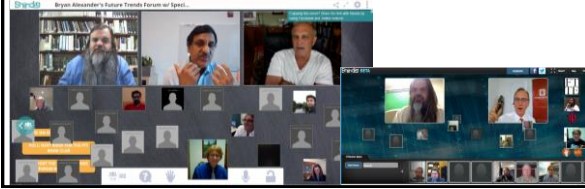
Anant Agarwal, CEO and founder of edX

<https://bryanalexander.org/the-future-trends-forum/>

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

<http://events.shindig.com/event/rtf-anniversary>

<https://shindig.com/client/client/?event=rtf-agarwal>



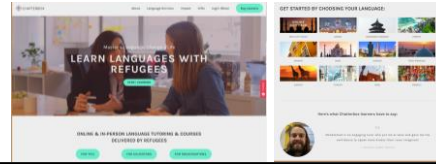
**March 21, 2018 (Engagement)**

**Learning is More Global**

**Chatterbox**

The overall winner in the competition was **Chatterbox**, an online language school powered by refugees

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

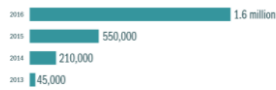


**June 7, 2018**

**Learning is More Free and Open**  
**Open Educational Resources**  
**The Chronicle of Higher Education**

[http://images.chronicle.com/Web/Uploads/2018/06/181625-Sum-425-88ek-1a-source\\_infographic\\_v4.pdf](http://images.chronicle.com/Web/Uploads/2018/06/181625-Sum-425-88ek-1a-source_infographic_v4.pdf)

More Students Are Using OER ...



... And They Have Concerns



But Professors Haven't Fully Embraced It ...



**March 19, 2018**

**Learning is More Free and Open**  
**Open Textbook Network**

Center for Open Education, University of Minnesota

<http://research.ohd.umn.edu/otn/>

OER Adoptions on the Rise



**Open Textbook Network**

WE ARE A COMMUNITY DEDICATED TO RESULTS

600+ Computers represented

\$8.5 Million Student savings by OTN members

45% of faculty who attend an OTN workshop adopt an open textbook

**August 2, 2018**

**Learning is More Free and Open**  
**OpenStax Infographic**

[https://cqb-us-st.wpmucloud.com/news-network\\_dico.edu/doi/c2/file/2018/07/infographic-2018\\_final-211d0m.pdf](https://cqb-us-st.wpmucloud.com/news-network_dico.edu/doi/c2/file/2018/07/infographic-2018_final-211d0m.pdf)



**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://www.chronicle.com/article/Can-a-Huge-Online-College-Solve-California's-Work-Force-Problems?cid=hp\\_hp-top-table-main-california-workforce-problems\\_246554](http://www.chronicle.com/article/Can-a-Huge-Online-College-Solve-California's-Work-Force-Problems?cid=hp_hp-top-table-main-california-workforce-problems_246554)

<http://curtbonk.com/link>

Can a Huge Online College Solve California's Work-Force Problems?



The new college is being created to help California's adults improve their job prospects in growing fields like IT support.





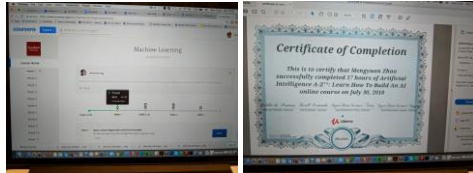


**August 1, 2018**

### 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-ai/>  
<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  
<https://www.achievethe.org/ai-dream/ai-dream-initiative-launching-oer-degree-pathways>  
 Griffiths, R., Gardner, S., Lundh, P., Shear, L., Ball, A., Mislevy, J., Wang, S., Desrochers, D., Staisloff, R. (2018). *Participant Experiences and Financial Impacts: Findings from Year 2 of Achieving the Dream's OER Degree Initiative*. Menlo Park, CA: SRI International.



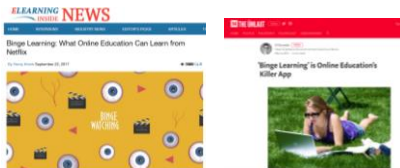
- Saving money with open-ed resources.
- A large-scale effort to encourage the use of open-education resources has helped students save money and bolstered their learning, according to a report released today, on the findings from the second year of Achieving the Dream's OER Degree Initiative. The study 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://theumblat.com/binge-learning-is-online-education-a-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

[https://www.theforummoon.com/52percent/52percent-Library\\_Alexandria.html](https://www.theforummoon.com/52percent/52percent-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.insidehighered.com/digital-learning/article/2018/09/26/ai-colleges-boost-graduate-use-at-higher-ed-machine-and-learning>  
<https://www.jhu.edu/news/research/2018/08/mandarin-language-ai/>  
<https://www.youtube.com/watch?v=7EvdTuiR2A117> <http://courtoom.com/mandarin.html>



**January 30, 2017**

### 7. Professor Einstein PDA's

<http://www.usatoday.com/story/tech/2017/01/28/robotic-bacata-nore-serving-sally-fest/2588878/>

When the Teaching Assistant Is a Robot



Twenty-Four Seven Tutoring

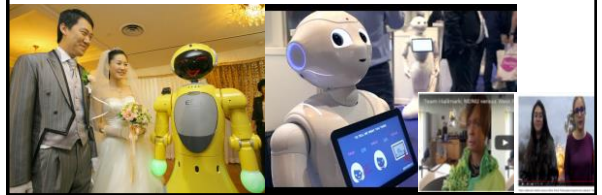


Professor Einstein, an educational Wi-Fi connected robot is on display at the Hanson Robot display during the opening day of Consumer Electronics Show 2017. (Photo: Robert Hanashiro, USA TODAY)  
<http://www.usatoday.com/story/tech/2017/01/30/robotic-bacata-nore-serving-sally-fest/2588878/>

**February 27, 2017**

### 8. Robot Collaborators/Partners

[http://www.theblingmoon.com/43ancients/02files/Library\\_Alexandria.html](http://www.theblingmoon.com/43ancients/02files/Library_Alexandria.html)



### 9. Café Classroom and Café Connectedness

**Starbucks Your Classroom!**

<https://www.bash3techworld.org/blog/2016/07/27/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 New and Improved Instructional Designer



**The Education 20/20 is coming within reach!**



**Remember...**  
**"I cannot do this alone."**

Slides at: [TrainingShare.com](http://TrainingShare.com)  
Papers: [PublicationShare.com](http://PublicationShare.com)  
Free book: <http://tec-variety.com/>  
Email: [cjbok@indiana.edu](mailto:cjbok@indiana.edu)

