

Technology Today, Technology Tomorrow: Might Learning Evolutions lead to Learning Revolutions?

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<http://curtbonk.com/>



1

Opening Activity #1:
Type Answer in the Chat Window: What
is your favorite type of learning
technology today...?



2

Opening Activity #2:
Type Answer in the Chat Window: What
is the technology that you think will most
impact learning 10 years from now...



3

Polling Question #1:
Are we in the midst of a:
A. Learning Evolution or
B. Learning Revolution...
C. Neither



4

Talk Overview

1. Pandemic Pondering
2. Technology Yesterday
3. Education 20/20
4. Technology Today
30 ways learning is changing...
5. Technology Trends of Tomorrow



5

July 30, 2020
Part 1: Pandemic Pondering
Disruptive Ecology:
The New Normal of Education in Post COVID-19



6

August 6, 2020**Millions of Americans Have Lost Jobs in the Pandemic—And Robots and AI Are Replacing Them Faster Than Ever**

Alana Semuels, Time

Millions of Americans Have Lost Jobs in the Pandemic—And Robots and AI Are Replacing Them Faster Than Ever



Jarvis the robotic butler on duty at the Grand Hotel in Sunnyvale, Calif., on July 30

7

October 27, 2020**U.S. Lost Over 60 Million Jobs—Now Robots, Tech And Artificial Intelligence Will Take Millions More**

Jack Kelly, Forbes

Video (1:20): <http://cartoon.com/automation.html>
 Video (1:20): <http://cartoon.com/automation2.html>

U.S. Lost Over 60 Million Jobs—Now Robots, Tech And Artificial Intelligence Will Take Millions More

Jack Kelly Senior Contributor @Cartoon
 I write automatable interviews, career and salary advice.



8

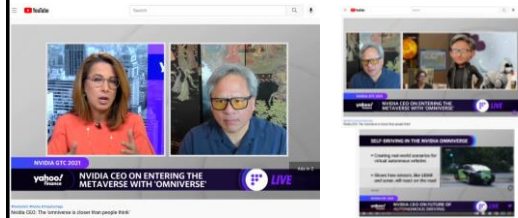
November 27, 2020**Robots on the rise as Americans experience record job losses amid pandemic**

Lauran Arantani, The Guardian

Robots on the rise as Americans experience record job losses amid pandemic



9

November 10, 2021**Nvidia CEO: The 'omniverse' is closer than people think', November 10, 2021**
<https://www.youtube.com/watch?v=fcl3EV9dUys>


10

November 9, 2021

GTC November 2021 Keynote with NVIDIA CEO Jensen Huang
https://www.youtube.com/watch?v=jhDialUL_RaM



11

March 26, 2021**100 million more children fail basic reading skills because of COVID-19**

UN News

<https://news.un.org/en/story/2021/03/1088392>


12

July 1, 2021

Online or in-person? Gen Z and millennials find digital life more memorable, study shows

Kate Mabus, USA Today

<https://www.usatoday.com/story/tech/2021/07/01/gen-z-millennials-digital-learning-study/77007002/>

Online or in-person? Gen Z and millennials find digital life more memorable, study shows



What happens when digital learning surpasses in-person learning?

Millennials prefer in-person classes, but Gen Z is more comfortable with digital learning. Preparing for the 2021 fall semester will still be a challenge with such high levels of uncertainty—digital learning will be critical.

If there is one thing the pandemic is teaching us, it's that deep human connections are essential for student and instructor wellbeing and for impactful education. **As we move into a hybrid future, technology should not (and cannot!) replace human relationships and communications—it should enhance, enable, and enrich them.**

13

June 2, 2021

A Pandemic Silver Lining? More People Are Talking About Teaching

Beckie Supiano, The Chronicle of Higher Education

<https://www.chronicle.com/article/a-pandemic-silver-lining-more-people-are-talking-about-teaching>

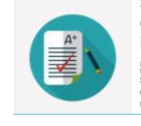
A Pandemic Silver Lining? More People Are Talking About Teaching



View Online: <https://www.eCampusNews.com/2021/06/02/77-students-give-passing-grades-to-pandemic-learning/>

eCAMPUS NEWS

Today's Innovations in Education



Students give passing grades to pandemic learning

Laura Passione
May 17, 2021
Survey results are promising and indicate that online learning was more successful than many in higher ed initially believed

14

February 26, 2021

Ever have 'Zoom fatigue?' These are the causes and how to fix them, researchers say

Brett Molina, USA Today

<https://www.usatoday.com/story/tech/2021/02/26/zoom-fatigue-causes-and-how-to-fix/76831580002/>



15

June 11, 2021

Why I Will Miss Zoom Teaching

Samuel Abrams, The Chronicle of Higher Education

<https://www.chronicle.com/article/why-i-will-miss-zoom-teaching>

Why I Will Miss Zoom Teaching

Professors have talked a lot about the downsides of online synchronous teaching, but it's had some benefits, too.

By Samuel J. Abrams | June 11, 2021



16

March 8, 2021

As Many Parents Fret Over Remote Learning, Some Find Their Kids Are Thriving

Eva Tedfaye, MindShift

<https://www.kqed.org/mindshift/51488/as-many-parents-fret-over-remote-learning-some-find-their-kids-are-thriving>



17

May 7, 2021

Why some black teens thrived with remote school

Shaylah Brown, USA Today

<https://www.usatoday.com/story/tech/2021/05/07/black-teens-thrived-remote-learning/71770862/>

Remote learning is helping some Black students affirm their identities and excel in school

Shaylah Brown | NorthJersey.com

USA TODAY



Watch Video: <https://youtu.be/000000000000>

Some Black students have thrived, educationally and emotionally, through remote learning

Because of the pandemic, many Black teens have found a sense of community and belonging through remote learning. This video explores why.

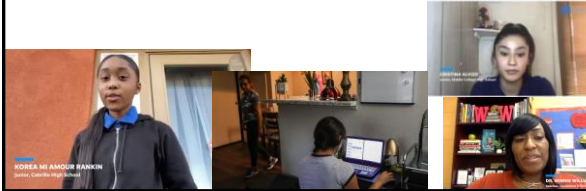
18

June 5, 2021

After a tough year, schools are axing virtual learning.
Some families want to stay online.

Video (1:27): NYC Mayor promised a return to normal for school system
Erin Richards, USA Today

Video (1:33) Students discuss what surprised them most hybrid learnings
<http://curtbonk.com/usa4.html>
<http://curtbonk.com/usa3.html>
<https://www.usatoday.com/story/news/education/2021/06/05/covid-online-school-in-person/7523602002/>

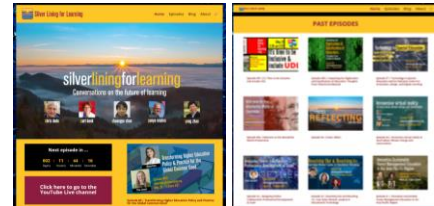


19

May 29, 2021

New Models of Education Emerging Silver Lining for Learning

<https://silverliningforlearning.org/>



20

Part 2: Technology Yesterday



21

October 5, 2020

Remote learning isn't new: Radio instruction in the 1937 polio epidemic

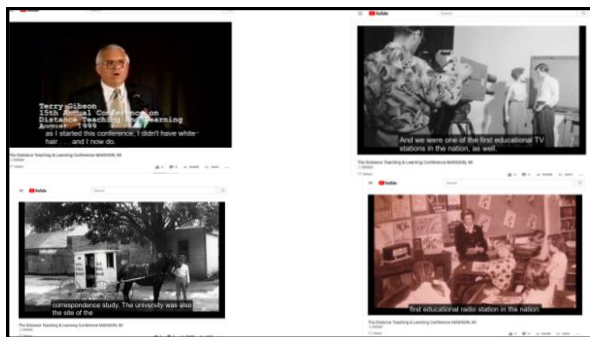
Katherine A. Foss, The Conversation

<https://theconversation.com/remote-learning-isnt-new-radio-instruction-in-the-1937-polio-epidemic-143792>



Remote learning isn't new: Radio instruction in the 1937 polio epidemic

22



23

June 3, 2017

How PLATO changed the World...in 1960

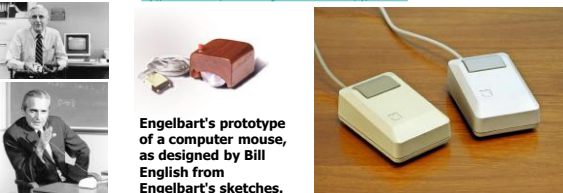
Cait Etherington, ElearningInside News

<https://www.youtube.com/watch?v=tTmWcGhXqA>
<https://news.elearninginside.com/how-plato-changed-the-world-in-1960/>
PLATO was the first generalist computer-assisted instruction system. Starting in 1960, it ran on the University of Illinois SILLIAC 1 computer. By the late 1970s, it supported several thousand graphics terminals distributed worldwide, running on nearly a dozen different networked mainframe computers. Many modern concepts in multi-user computing were originally developed on PLATO, including forums, message boards, online testing, e-mail, chat rooms, picture languages, instant messaging, remote screen sharing, and multiplayer games.



24

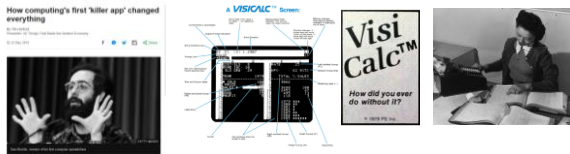
Intelligence Augmentation and Amplification
Douglas Engelbart's "The Mother of All Inventions" (1968)
Augmentation Research Center (ARC)
 (The live demonstration featured the introduction of the computer mouse, video conferencing, teleconferencing, hypertext, word processing, hypermedia, object addressing and dynamic file linking, bootstrapping, and a collaborative real-time editor.)
<http://www.aisel.com/Hackers/Living-Stack-Computer-Security-00/00020680/>



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

25


May 22, 2019
Who Remembers VisiCalc???
How computing's first 'killer app' changed everything
Tom Harford, BBC News
<https://www.bbc.com/news/business-47802280>



Dan Bricklin, inventor of the first computer spreadsheet

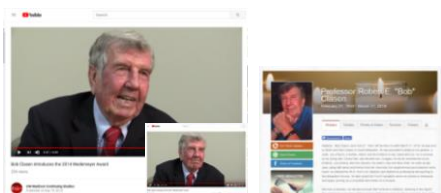
26

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/jarid/>



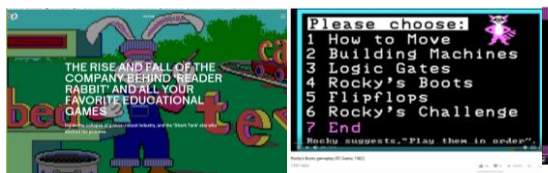
27

Bob Clasen, University of Wisconsin
https://www.youtube.com/watch?v=kCm1_MGagec&feature=youtu.be
February 27, 1934-March 17, 2018
<https://www.cressfuneralservice.com/obituary/249139/Robert-Clasen/>



28

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/520/remember-education-20-the-rise-and-fall-of-the-company-behind-reader-rabbit-and-all-your-favorite-educational-games>
 Rocky's Boots: <https://www.youtube.com/watch?v=a-NJH58b1Ik>
 Project YES (Curt Bonk): <https://youtu.be/bZD5mQH4ujs>





29

34 years ago...
Knowledge Navigator (1987)
Apple Computer
<http://www.youtube.com/watch?v=ha4429neEc>



30


August 6, 2021
The Web is now 30+!
<http://info.cern.ch/> (First website)
<http://money.cnn.com/2016/08/06/technology/world-wide-web-35-years-old/index.html?hpid=hp-stack-don>
<https://worldfoundation.org/about-us/our-history/history-of-the-web/>
<https://thoma.cern.ch/science/computing/birth-web/short-history-web>

THE WORLD WIDE WEB BEGINS ON MARCH 12, 1989

31

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.

32

January 15, 2021
Wikipedia is now 20+!
 Simon Garfield, Esquire: What We Know And Can Agree On: Wikipedia At 20
https://en.wikipedia.org/wiki/Wikipedia:20th_anniversaries
<https://www.esquire.com/uk/culture/a34412278/wikipedia-at-20/>
<https://wikipedia20.pubpub.org/>



WIKIPEDIA 20

33

April 4, 2021
MIT OpenCourseWare is now 20+!
<https://www.youtube.com/watch?v=DaeAmhJHUI>
<https://ocw.mit.edu/about/milestones/>
<https://news.mit.edu/2021/mit-courseware-educational-resource-to-millions-0406>




OCW 20

34

Fast Forward to 2021...
"Anyone can now learn anything from anyone at any time."



SKILLSHARE | JOIN | LOGIN

Learn anything from anyone, anywhere.

Join skillshare today and discover unique classes in your city.

35

July 24, 2018
The 100-Year Life: Living and Working in an Age of Longevity
 Lynda Gratton and Andrew Scott
<https://www.amazon.com/100-Year-Life-Living-Working-Longevity/dp/1543624634>
<http://www.100yearlife.com/>



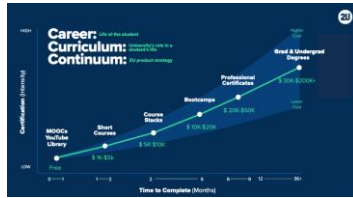
36

March 13, 2019

The Career Curriculum Continuum

Andrew Hermallyn, Inside Higher Ed

<https://www.insidehighered.com/digital-learning/article/2019/03/13/inside-highered-career-center-leadership-opinion>



37

February 25, 2020

The 60 Year Curriculum:

Developing New Educational Models to Serve the Agile Labor Market

Chris Dede, Harvard University, The Evollution

<https://confab.com/news/education/articles/development-the-60-year-curriculum-developing-new-educational-models-to-serve-the-agile-labor-market/>

219: The 60-Year Curriculum with Rovy Branon

<https://nhelive.com/postcard/219>



38

July 11, 2017

The Rise of the Phigital Learner

Going 'phigital'? 4 things schools need to know about

Generation Z, Todd Kaminick, TrustEd

<http://trustedk12.com/phigital-digital-learning/>

May 15, 2017

3 must know's about the rising "phigital" student-and why their impact is enormous, Merle Stambury, eCampus News

<https://www.ecampusnews.com/campus-administration/education-gen-z>



39



40

The World is very open!

(South University of Science and Technology of China, Wednesday June 10, 2015)



41

Clearly... Learning is Changing!



42

Part 4. Thirty Ways Learning is Changing...

(i.e., it's more informal, video-based, ubiquitous, collaborative, self-directed, global, mobile, open, massive, etc.)



43

November 11, 2020

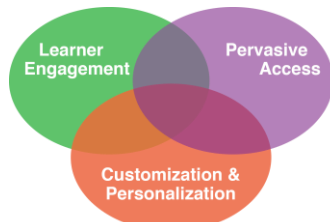
Educational technology is coming of age during the pandemic: Nowhere more so than in India

<https://www.economist.com/international/2020/11/11/educational-technology-is-coming-of-age-during-the-pandemic>



44

30+ Ways Learning is Changing: The Mega Trends



45

Polling Question #2:

Are we in the midst of a:
A. Learning Evolution or
B. Learning Revolution...
C. Neither



46

Polling Question #3:

Which is the most important trend?
a. Mega Trend #1. Learner Engagement
b. Mega Trend #2. Pervasive Access
c. Mega Trend #3. Customization



47

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



48

March 2021
Learning is More Mobile
Best small phone 2021: The top tiny, compact smartphone choices
James Rogerson, TechRadar
<https://www.techradar.com/news/best-smartphones/compact-smartphones>



compact smartphone choices
 The best small phones don't have to have lesser specs

The Octopus watch from Joy, an icon-based watch for kids to have good habits is on display during CES.

49

March 1, 2021
Learning is Hands-on
Student Designed Videos
M-Learning for K-12 Education

Terri and Terri <https://www.youtube.com/watch?v=6eaktpde--4g>
 Amy Page <https://www.youtube.com/watch?v=3-cv6jgdy8k>
 Q Li, Gangnam <https://www.youtube.com/watch?v=7Q423lqZaU8>
 Miguel Lara (Web 2.0 FREEDOM) <https://www.youtube.com/watch?v=8mCZW01W1>
 Kimberly Vincent-Layton https://www.youtube.com/watch?v=4ic39_rYLIk



50

July 2, 2021
Learning is Hands-on
Teaching coding and design can lead to tech literacy
Jean Sharp, eCampus News
<https://www.ecampusnews.com/2021/07/02/teaching-coding-and-design-can-lead-to-tech-literacy/>



Teaching coding and design can lead to tech literacy

Just What: C&D: Open Learning
 July 2, 2021
 Courses that help students build technology skills increase students' tech literacy and their ability to contribute to the workforce

Encouraging technology creators means engaging students in project-based technology courses that introduce them to coding, design, gaming, and animation. And as students complete projects such as developing an app, creating a 3D video game, or designing a collection, they gain relevant, hands-on experience using industry-standard tools professionals use. Students apply creativity, problem-solving, and critical thinking skills—competencies that are important in preparing students for the future and are applicable to any career, whether it's in technology or not.

51

June 27, 2020
Learning is Hands-on
Design Products (students created infographics, brochures, timelines)
Canva is an online design program that does not require much design skills. You can design professional looking brochures, infographics, PPTs, flyers, and syllabus for free.



The 30-year-old woman who designed a \$10m business

#StopTheSpread

Canva

DEFINITIONS

Instructional Technology	Educational Technology
1970: INSTRUCTIONAL TECHNOLOGY	1977: EDUCATIONAL TECHNOLOGY

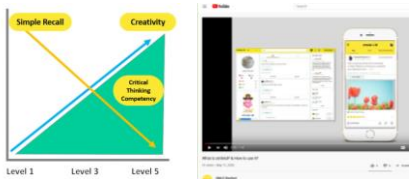
52

Learning is Hands-on
Video, Podcast Show, Documentary, Website, Animation, Song, etc.
<https://app.animaker.com/james/2d55096c9a0835a770a6d0c0e9572215b09c2p0UR5d4>




53

May 11, 2020
Learning is More Game-based
What is smileUP & How to use it?
SMILE, Paul Kim at Stanford
<https://www.youtube.com/watch?v=pblU8sSALWo>



54

October 15, 2021
Learning is More Digitally Rich
 How much for that textbook? Five ways students can
 save on course books, Craig Harris, USA Today

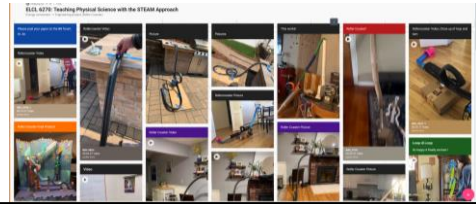
<https://www.usatoday.com/story/technology/personaltech/2021/10/15/ways-to-save-on-textbooks/9451008002/>



55

March 21, 2021
Learning is More Digitally Rich

ELCL 6270: Teaching Physical Science with the STEAM Approach
 Heejung An: ANH2@wpunj.edu, William Paterson University
<https://padlet.com/anh21/4haa7swcscfr77s>



56

April 11, 2021
Learning is More Collaborative
 Brainstorming in Jamboard or Miro

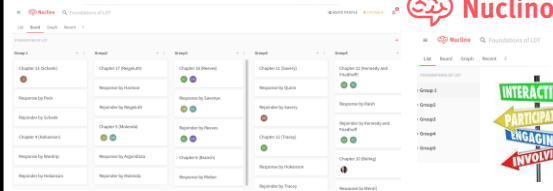
<https://jamboard.google.com/>



57

Fall 2019, R511
Learning is More Collaborative
 Team Article Debates
 Nuclino (like a wiki...may delete by mistake, trial version,
 limited)

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



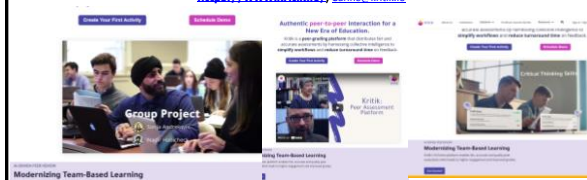
58

July 23, 2021
Learning is More Collaborative
 Kritik is a peer-grading platform

Authentic peer-to-peer interaction for a New Era of Education.

Carine Marette

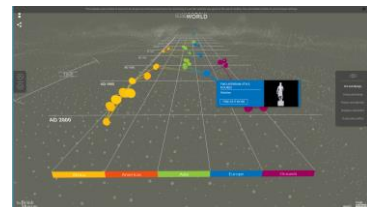
<https://www.linkedin.com/in/carinemarette/>
<https://www.kritik.io/>, carine@kritik.io



59

October 20, 2020
Learning is More Visual
 The British Museum

<https://britishmuseum.withgoogle.com/>



60

61

62

63

64

65

66

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



When a teacher glances around her classroom, Lumilo allows her to see real-time analytics (in the form of icons) floating directly above each student's head. The teacher can glance directly at a student or "click" on a student's icon to see more detailed information about where and how that student might be struggling.

67

June 24, 2021
Learning is More Immersive

This Week In XR: VR Ad Excitement, Tencent Invests \$50M In Ultraleap, The LinkedIn Of VR
 Charlie Fink, Forbes

<https://apple.news/A0dVCTuPtQsu0YdrQcchb6A>

A New World Awaits – Varjo's Special Event on June 24, 2021

Metaverse explained (22:50): <https://www.youtube.com/watch?v=MHDfNv0MNeK>

<http://curtbonk.com/vr3.html>

Mixed Reality Hand Tracking with Varjo XR-1 and Ultraleap (solar system/Earth):

Video (1:20): <http://curtbonk.com/vr1.html>



68

August 20, 2021
Learning is More Immersive
How virtual reality can help to recruit and train staff
By Bernd Debusmann Jr, BBC
<https://www.bbc.com/news/business-57805993>

How virtual reality can help to recruit and train staff



Companies with workers in remote locations can benefit from VR says Tom Symonds



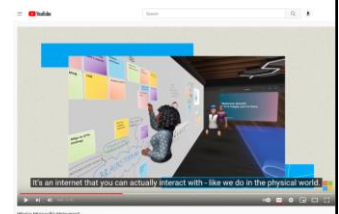
69

November 3, 2021

What is Microsoft's Metaverse?

The metaverse is here, and in our increasingly digital world, we continue to focus on bringing humanity to every digital interaction. That's why we announced Mesh for Microsoft Teams at Ignite 2021, our gateway to the metaverse and a way to make online meetings more personal, engaging and fun. You can think of the metaverse as a new version – or a new vision – of the internet, one where people gather to communicate, collaborate, and share with a personal virtual presence on any device. Read the article here: <https://www.microsoft.com/innovation...> Learn more: <https://www.microsoft.com/en-us/mesh>

Video (2:19): <https://www.microsoft.com/en-us/mesh>



70

April 23, 2021

From Minecraft to Zoom calls, we've all spent much of the pandemic on our screens. But are we ready for the metaverse? Mike Snider, USA Today

<http://curtbonk.com/metaverse.html>

MetaHuman Creator: High-Fidelity Digital Humans Made Easy | Unreal Engine

<https://www.youtube.com/watch?v=S3F1vZyPH8c>

<https://www.usatoday.com/in-depth/tech/2021/04/21/minecraft-roblox-fortnite-nft-creating-metaverse/7900381002>



71

Poll #3: Any light bulbs going off in you head so far?

- Yes definitely...many of them...pop...pop...pop!
- Yes, several times.
- Yes maybe!
- Not yet (but hopefully soon...)
- Nope. Darn it my brain is not working today.
- There's no hope with this idiot presenting.



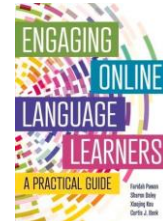
72

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



73

January 2022 Learning is More Online...



74

June 17, 2021 Outschool (low cost online) Learning is More Online... <https://outschool.com/>



75

July 12, 2021 Learning is More Online Indiana suing virtual charter schools accused of defrauding the state for more than \$150M Arika Herron, Indianapolis Star <https://www.indystar.com/news/education/2021/07/12/indiana-virtual-charter-schools-state-suing-more-than-150-million/7938215002/>



76

April 21, 2021 Learning is More Open Why Open Access Is a Game Changer Britt Glaunsinger, Inside Higher Ed <https://www.insidehighered.com/digital-learning/article/2021/04/21/open-access-benefits-reducing-inequality-improving-through-open-access-solution>



77

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



78

Learning is More Free and Open Introducing the TEC-VARIETY Model

<http://tec-variety.com/>
<http://tec-variety.com/TEC-VARIETY-Chinese.pdf>



79

June 23, 2020

Learning is More Synchronous Turns Out You Can Build Community in a Zoom Classroom

Rachel Toor, The Chronicle of Higher Education

<https://www.chronicle.com/article/Turns-Out-You-Can-Build/249038>

Turns Out You Can Build Community in a Zoom Classroom

A professor both the personal and the professional is building community in a synchronous virtual classroom.

By Rachel Toor | June 23, 2020



Zoom Boom

Synchronous education is making its way up a steep decline in the effort and experience of students in a synchronous virtual classroom.

By Rachel Toor | June 23, 2020



80

November 10, 2020

Learning is More Synchronous 'Telepresence' robots are making virtual school feel a little more like real school

Jennifer Davis, The Washington Post
<https://www.washingtonpost.com/technology/2020/11/11/educational-technology-is-coming-of-age-during-the-pandemic/>



81

June 18, 2021

Learning is More Synchronous

I am writing to send a screenshot of the synchronous hybrid English class for rural Chinese students. I also have a short video clip (though not in high quality), if you are interested.



82

September 2, 2021 Thailand Cyber University



83

September 2, 2021

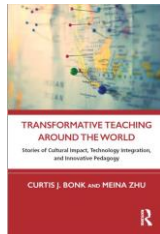
Thailand Cyber University

One fine day... #tcuec2021 has ended with success today with over 4,000 registrations and over 1,000 active participants throughout the day. It's our 12th TEC and it has broken all the records completely.



84

January 2022
Learning is More Global



85

May 26, 2021

Learning is More Global

Chatterbox: Master a Language, Change a Life
The overall winner in the competition was [Chatterbox](#), an online language school powered by refugees

<https://www.chatterbox.io/>
Mursal Hedavat, London

<https://www.youtube.com/watch?v=3K3VexuIpe0>



86

June 15, 2020
Learning is More Globally Collaborative

Lewis F. Cole Middle School Virtual Band Concert
9:13: https://www.youtube.com/watch?v=yqP15zsu_C4



87

July 7, 2020
Learning is More Immediate...
Science in the News

"Holy Grail" of dinosaur fossils discovered in Egyptian desert, Doyle Rice, USA Today
<https://www.usatoday.com/story/tech/science/2018/01/28/holy-grail-dinosaur-fossil-discovered-egyptian-desert/1075419001/>
"Siberian unicorn" once walked among early humans, Tara Jahn, CNN
<https://edition.cnn.com/2018/11/27/europe/siberian-unicorn-humans-scientist/index.html>
<https://www.usatoday.com/story/sci/na/nc/sci/2018/07/07/europe-siberian-unicorn-dinosaur-scientist-say-had-furry-skin/51099751001/>

Video: 53 seconds

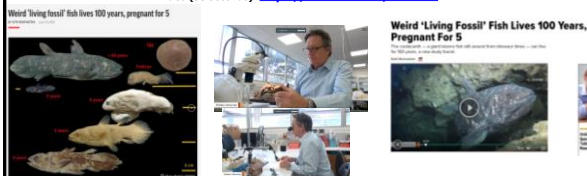


88

June 18, 2021
Weird 'living fossil' fish lives 100 years, pregnant for 5
Seth Borenstein, AP News
[Learning is More Immediate...](#)
[Science in the News](#)

Video (55 seconds): <https://curtbonk.com/fish.html>

Video (55 seconds): <https://curtbonk.com/fish.html>



89

December 2, 2021
Learning is More Immediate...
Science in the News

New dinosaur species from Chile had a unique slashing tail, scientists say

NBC News, Science News
<https://www.nbcnews.com/science/science-news/new-dinosaur-species-chile-unique-slashing-tail-scientists-say-rcna7447>



90

April 11, 2020 Learning is More Video-based...

(e.g., Flipgrid)
Ed Tech with Adam: <https://www.youtube.com/watch?v=hxy0PwqsFs>
<https://techcrunch.com/2018/02/18/microsoft-acquires-social-learning-platform-flipgrid/>



91

Spring 2021 Learning is More Video-based...

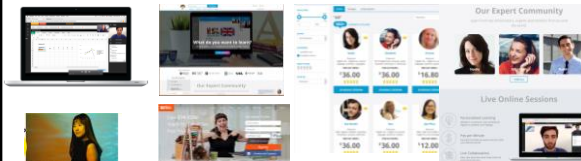
Silver Lining for Learning
<https://silverliningforlearning.org/>
<https://www.youtube.com/channel/UC9XEsh89qzIpmVpQr-aa/live>



92

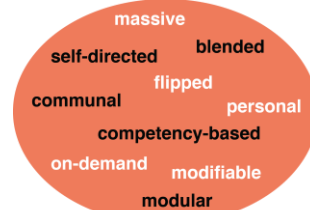
March 21, 2018 Learning is More Direct from Experts TeachMeNow and VIPKid

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. Allows tens of thousands of 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/>



93

How Learning is Changing: Mega Trend #3. Customization



94

Poll #4: Have you ever taught a blended (face-to-face and online) course?

- Yes many.
- Yes, just a couple.
- No, but I taught one or more technology enhanced ones.
- No but I am willing to try.
- No and I like it that way.



95

Poll #5: Have you ever taught a fully online course?

- Yes, many.
- Yes, just a couple.
- No, but I taught one or more blended ones.
- No but I am willing to try.
- No and I like it that way.



96

July 12, 2021**Learning is More Blended**

How to Prepare for the Next Phase of Hybrid Teaching
Jenae Cohn, The Chronicle of Higher Education

<https://www.chronicle.com/article/how-to-prepare-for-the-next-phase-of-hybrid-teaching>

How to Prepare for the Next Phase of Hybrid Teaching
 How faculty members will continue to blend online and hybrid courses this fall, here's what they'll need.
 By Jenae Cohn | July 12, 2021



97

June 17, 2021**Free Book:****Hybrid-Flexible Course Design**

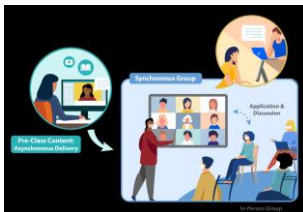
<https://edtechbooks.org/hyflex>



98

Fall 2021**Hybrid Modality: HyFlex Teaching**

<https://instructionalcontinuity.paceupenn.edu/pedagogy-and-strategies/hybrid-hyflex-teaching/>
 HyFlex (a term coined by Brian Beatty) stands for a combination of "hybrid," meaning alternating between face-to-face meetings and remote interactions, and "flexible," meaning students move between these participation options.



99

Fall 2021**Hybrid Modality: HyFlex Teaching**

<https://instructionalcontinuity.paceupenn.edu/pedagogy-and-strategies/hybrid-hyflex-teaching/>
 In a HyFlex course, courses are delivered both in person and online at the same time by the same faculty member. For any given class meeting, some students might participate in person, while others might participate at the same time online, made possible by a combination of cameras, microphones, displays, and other technology in the classroom.



Some considerations for Concurrent or HyFlex Teaching and Learning

The above image captures one of many options for how to implement HyFlex in the classroom. HyFlex is a flexible model that can be adapted to various classroom settings and needs.

100

June 17, 2021

How can higher ed move blended learning forward?
Planning for a Blended Future: A Research-Driven Guide for Educators

<https://www.everylearnereverywhere.org/resources/planning-for-a-blended-future/>

Jessica Rowland Williams, eCampus News
<https://www.ecampusnews.com/2021/06/17/how-can-higher-ed-move-blended-learning-forward/>



How can higher ed move blended learning forward?
 Blended learning is the future of higher education. A new research report can help higher education faculty optimize blended learning strategies and options.

Planning for a Blended Future
 A Research-Driven Guide for Educators

101

June 17, 2021

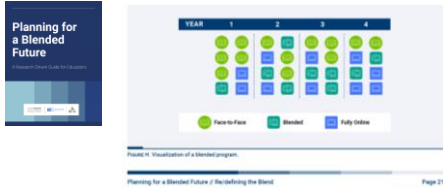
Planning for a Blended Future:
A Research-Driven Guide for Educators

<https://www.everylearnereverywhere.org/resources/planning-for-a-blended-future/>



102

June 17, 2021
Planning for a Blended Future:
A Research-Driven Guide for Educators
<https://www.yesweblearn everywhere.org/resources/planning-for-a-blended-future/>



Planning for a Blended Future
 Research-Driven Guide for Educators

Visuals in: Visualization of a blended program.

Planning for a Blended Future 2: Defining the Blend Page 21

103


June 17, 2021
Planning for a Blended Future:
A Research-Driven Guide for Educators
<https://www.yesweblearn everywhere.org/resources/planning-for-a-blended-future/>



Visuals in: The pedagogical shift from instructor-led to student-centered.


104

April 25, 2020
(SuperTravelinEdMan)
STARLINK programs on Online and Blended Learning and the Web 2.0
October 2008-January 2010
<https://www.youtube.com/playlist?list=PLHcR8uW2ix0xK7YXjy3y40ZVcd0eY>



105

June 14, 2021
Learning is More Blended
Combining Online Courses With In-Person Supports,
'Hybrid Colleges' Unite
Rebecca Koenig, Ed Surge
<https://www.edsurge.com/news/2021-06-14-combining-online-courses-with-in-person-supports-hybrid-colleges-unite>



106

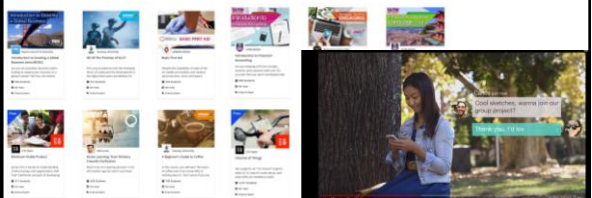
October 22, 2021
Wanted:
Billions of Self-Directed Learners



107

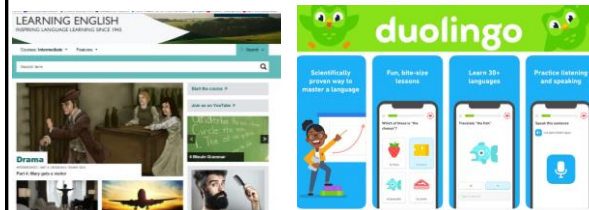
107

Learning is More Self-Directed
The LMS Market is Quickly Losing Ground
Carol Leaman, CLO
<https://www.openlearning.com/>
<https://www.openlearning.com/>



108

Learning is More Self-Directed
Language Lessons Online
 BBC Learning English, Duolingo, etc.
<http://www.bbc.co.uk/learningenglish>



109

March 20, 2021

These online classes can help you earn money from home: Digital marketing, video production, coding
 Jennifer Jolly, USA Today



110

February 1, 2021

Yale is offering its highly popular 'happiness' course to high school students for free

By Marika Gerken, CNN
<https://www.cnn.com/2021/02/01/us/yale-happi-class-trnd-wellness/index.html>
 (3.4 million enrolled, 28,500 reviews)

Yale is offering its highly popular 'happiness' course to high school students for free

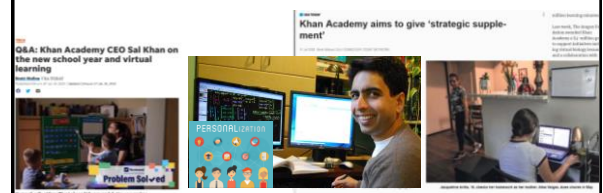


111

July 31, 2020

Learning is More Personal

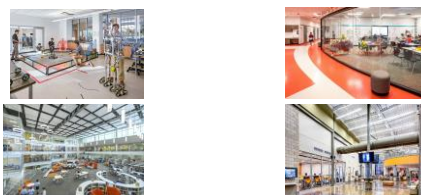
Khan Academy aims to give 'strategic supplement'
 Brett Molina, USA Today
<https://www.usatoday.com/story/tech/2020/07/30/khan-academy-ceo-sal-khan-grapping-fall-virtual-learning/5525480002/>



112

March 2, 2018

Learning is More Modifiable
The Architecture of Ideal Learning Environments
 Emelina Minero, Edutopia
<https://www.edutopia.org/article/architecture-ideal-learning-environments>



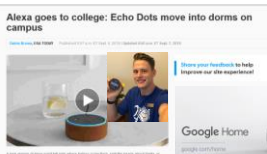

113

Mosaic Active Learning Classrooms
ALC for Pre-service Teachers' CSCL






114

August 2, 2018
Learning is More On Demand
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-248123>

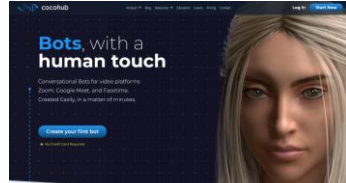
115

May/June 2020
Learning is More On Demand
Chatting with Chatbots and Text Buddies
 Lindsey McKenzie, Inside Higher Ed
<https://www.insidehighered.com/news/2019/09/06/expansion-chatbots-higher-ed>
<https://www.usatoday.com/story/tech/2019/11/08/alexa-google-assistant-ai-robots-become-substitute-friends/4057885002/>

116

December 12, 2021
Learning is More On Demand
Cocohub: Bots, with a human touch
<https://about.cocohub.ai/>
 Evan Soroka, cocohub-1.com



117

May 9, 2018
Learning is More On Demand
Conversation with Technology
Google Duplex Demo from Google IO 2018
 Video (4:11): <https://www.youtube.com/watch?v=bd1mEm2Fy08>
 Video (2:05): <http://curtbnk.com/google40-245.html>
 Donal Clark, Plan B
<http://donalclarktech.blogspot.in/2018/05/google-duplex-demonstrated-at-google-io-2018.html>





118

June 21, 2020
Learning is More Personalized
 Video #1 (1:55) (June 21, 2021): Meet the Brains Behind Intel Lab:
 Lama Nachma, <https://www.youtube.com/watch?v=vDnigAbrbxM>



119

June 21, 2020
Learning is More Personalized
 Video #1 (1:55) (June 21, 2021): Meet the Brains Behind Intel Lab:
 Lama Nachma, <https://www.youtube.com/watch?v=vDnigAbrbxM>



120

June 16, 2021
Learning is More Personalized
 AI voice actors sound more human than ever—and they're ready to hire
Karen Hao, MIT Technology Review
<https://www.mitretechreview.com/2021/06/16/ai-voice-actors-sound-more-human-than-ever-and-theyre-ready-to-hire/>
 Voice (4:43): <https://www.youtube.com/watch?v=y8BaSPQ1u8k>
 Video downloaded: <http://curtbonk.com/aivoice2.html>
 Audio (4 examples): <http://curtbonk.com/aivoice.html>

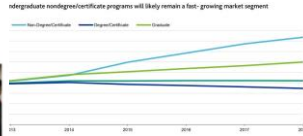


AI voice actors sound more human than ever—and they're ready to hire

121

August 27, 2020
Alternative Credentials on the Rise
Paul Fain, Inside Higher Ed
<https://www.insidehighered.com/news/2020/08/27/alternative-credentials-what-non-degree-credentials-will-it-be-sustained>

Google IT Professional Certificates



nondegree certificate programs will likely remain a fast-growing market segment

Sources: Moody's, U.S. Department of Education

122

July 22, 2021
Shifting Paradigms: Understanding Institutional Perspectives on Microcredentialing
<https://www.moderncampus.com/2021/07/22/shifting-paradigms-understanding-institutional-perspectives-on-microcredentialing/>



UPCEA

Shifting Paradigms: Understanding Institutional Perspectives on Microcredentialing

Figure 1: Enrollment in non-degree, microdegree programs

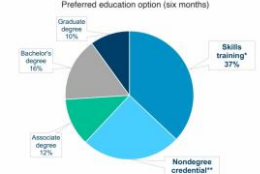
Year	Enrollment
2017	27%
2018	23%
2019	26%
2020	13%
2021	12%

Figure 2: Institutional perspectives on microcredentialing

Category	Strongly Oppose	Oppose	Neutral	Support	Strongly Support
Microcredentialing	10%	15%	25%	35%	15%
Non-degree certificate	5%	10%	20%	40%	25%
Microdegree	5%	10%	20%	40%	25%

123

August 27, 2020
Alternative Credentials on the Rise
Paul Fain, Inside Higher Ed
<https://www.insidehighered.com/news/2020/08/27/alternative-credentials-what-non-degree-credentials-will-it-be-sustained>




Preferred education option (six months)

Option	Percentage
Skills training*	37%
Nondegree credential**	25%
Associate degree	12%
Bachelor's degree	10%
Graduate degree	10%

Source: Center for Consumer Insights Public Opinion survey, April 15-Aug. 6. Base: adults ages 18 and older, n=6,272. *Options for skills training or personal development. **Certificate, microdegree, or diploma.

124

April 30, 2020
New Udemy Report Shows Surge in Global Online Education in Response to COVID-19
 There has been an immense surge in enrollments in courses related to Telecommuting (21,598% increase) and Virtual Teams (1,523%), as well as Decision Making (277%), Self Discipline (237%), and Stress Management (235%).



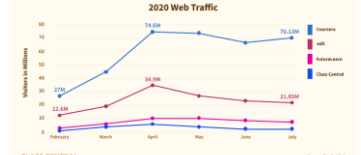
Highest Enrollment Surges by Country Since Shelter in Place

Udemy

125

MOOCs Stats

August 16, 2020
By the Numbers: MOOCs During the Pandemic
Dhawal Shah, Class Central
<https://www.classcentral.com/report/mooc-stats-pandemic/>



2020 Web Traffic

Month	Class Central	Coursera	edX	FutureLearn	FutureLearn
February	12,000	20,000	10,000	5,000	5,000
March	20,000	30,000	15,000	10,000	10,000
April	30,000	40,000	20,000	15,000	15,000
May	35,000	45,000	25,000	20,000	20,000
June	30,000	40,000	20,000	15,000	15,000
July	25,000	35,000	15,000	10,000	10,000


Source: Statista

126

November 26, 2019
Chapter 1. MOOCs and Open Education in the Global South: Successes and Challenges
Ke Zhang, Curtis J. Bonk, Thomas C. Reeves, and Thomas H. Reynolds

TABLE 1.1 List of Countries Discussed in the Book

Region	Countries and Chapters
Africa	1. Egypt (Chapters 4, 10) 2. Kenya (Chapters 24, 26) 3. Senegal (Chapter 26) 4. South Africa (Chapters 15, 16) 5. Tanzania (Chapter 26) 6. Uganda (Chapter 26) 7. Zambia (Chapter 26)
Asia	8. Zimbabwe (Chapters 14, 24) 9. China (Chapter 5, 14) 10. India (Chapter 20) 11. Indonesia (Chapters 6, 17) 12. Malaysia (Chapters 17, 20) 13. Nepal (Chapter 9) 14. North Korea (Chapter 2) 15. Philippines (Chapter 17, 20) 16. Sri Lanka (Chapter 7) 17. South Korea (Chapter 2) 18. Thailand (Chapters 11, 17) 19. Vietnam (Chapter 17)





133

November 26, 2019
Chapter 14. Capacity Building of Teachers: A Case Study of the Technology-Enabled Learning (TEL) Massive Open Online Courses
Sanjaya Mishra, Martha Cleveland-Innes, and Nathaniel Ostashevski

The name of the Himalayan peak is Mt. Nilgiri with 7061 Meters height.

Bishwa Raj Gautam, Program Specialist, Regional English Language Office (RELO), U.S. Embassy, Nepal.

With Baman Kumar Ghimire, Motherland Secondary School, Pokhara, Nepal





134

November 9, 2019
Greetings from Nepal,
Baman Kumar Ghimire
Teacher, Motherland Secondary School, Pokhara

I held a workshop in a school about 70 students of age 13-15. I was excited to learn that in less than 8 months 78 students of age 10-15 from that school completed at least a MOOC.

Likewise, lately reported that, a school whose head teacher and a few students I mentored in 2017 has about 350 students completing at least a MOOC. Acknowledging the benefits of MOOCing and the growing interest of the students and guardians, the school administration has made at least a MOOC compulsory for the students age 11-14 in its school.




135

November 26, 2019
Chapter 14. Capacity Building of Teachers: A Case Study of the Technology-Enabled Learning (TEL) Massive Open Online Courses
Sanjaya Mishra, Martha Cleveland-Innes, and Nathaniel Ostashevski

Week 1: Models of Technology-Enabled Learning
 1.1: Community of Inquiry
 1.2: Two Models: TPAC and TIM
 1.3: On Teaching Presence

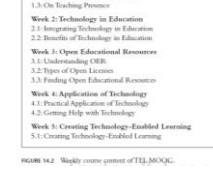

Week 2: Technology in Education
 2.1: Integrating Technology in Education
 2.2: Benefits of Technology in Education

Week 3: Open Educational Resources
 3.1: Understanding OERs
 3.2: Types of Open Licenses
 3.3: Finding Open Educational Resources

Week 4: Application of Technology
 4.1: Practical Application of Technology
 4.2: Getting Help with Technology

Week 5: Creating Technology-Enabled Learning
 5.1: Creating Technology-Enabled Learning

FIGURE 14.2 Weekly course content of TEL-MOOC.

136

November 26, 2019
Chapter 16: Courses for a Cause:
MOOC Contributions to a "Better Place for All"
(Marianne Krasny et al., 2020)



137

November 26, 2019
Chapter 25. Responsive Innovations in MOOCs for Development: A Case Study of AgMOOCs in India 300
Balaji Venkataraman and Tadinada V. Prabhakar
(agMOOCs in India)
<http://www.agmoocs.in/>




138

March 22, 2021

Famous Stanford coding course seeks to repeat success of novel model of online learning (10,000 students, 120 countries, 900 volunteer teachers)

<https://news.stanford.edu/2021/03/22/famous-stanford-coding-course-free-online/>



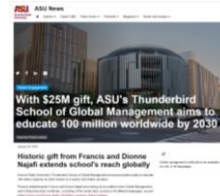
139

January 20, 2022

With \$25M gift, ASU's Thunderbird School of Global Management aims to educate 100 million worldwide by 2030

ASU News

<https://news.asu.edu/2022/01/20/global-education-100m-gift-100-million-learners-100>



140

January 20, 2022

Arizona State University Announces Effort To Educate 100 Million Students Worldwide, Michael T. Nietzel, Forbes

<https://www.forbes.com/sites/michaelnietzel/2022/01/20/arizona-state-university-announces-effort-to-educate-100-million-students-worldwide/?sh=6d1b1b1b>



- Global Leadership in the Fourth Industrial Revolution
- Customer Experience and Digital Marketing in a Global World
- Global Entrepreneurship and Sustainable Business
- Data Analytics and Digital Transformation in a Global World
- Global Financial Accounting

141

January 20, 2022

Francis and Dionne Najafi 100 Million Learners Global Initiative.

Video (2:07):

https://vimeo.com/667987472?embedded=1&source=vimeo_logo&owner=13423224

<https://thunderbird.asu.edu/lifelong-learning/100-million-learners>



142

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



143

Polling Question #6:

- Which is the most important trend?
- Mega Trend #1. Learner Engagement
 - Mega Trend #2. Pervasive Access
 - Mega Trend #3. Customization



144

June 8, 2019

**The second half of humanity is joining the internet:
They will change it, and it will change them**
The Economist

<https://www.economist.com/Chinees/2019/06/08/the-second-half-of-humanity-is-joining-the-internet>

The second half of humanity is joining the internet
They will change it, and it will change them

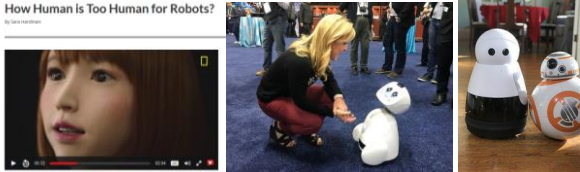


145

Part 5. Tech Trends of Tomorrow

http://www.huffpostpost.ca/0/-marie-bourcogianmi/prepare-for-future-learnl_0_16407756.html

How Human is Too Human for Robots?



146



147

1. Robot Collaborators/Partners

http://www.thevintageman.com/52sceneto/2019/Library_Alexandria.html



148

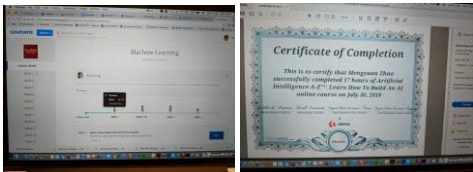
August 1, 2018

2. 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>



149

September 22, 2017

3. Binge Learning Experiences

What Online Education Can Learn from Netflix

Henry Kronk, E-learning Inside News

<https://theulaut.com/binge-learning-is-online-education-a-killer-app-84da18f8ae76>



150

4. Rise of Super E-Mentors and AI Coaches



151

September 26, 2018 5. 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/academy-push-expand-use-ai-higher-ed-teaching-and-learning>
<https://www.tam.com/story/news/2018/09/26/mandarin-language-ai/>
https://www.youtube.com/watch?time_continue=4&v=7F6sTuiR2A
 1:17 <http://curtbook.com/mandarin.html>



152

January 30, 2017 6. Professor Einstein PDA's

<http://www.usatoday.com/story/tech/2017/01/30/robotic-bulldozer-see-serving-roboty-fun/298887802/>



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-bulldozer-see-serving-roboty-fun/298887802/>

153

June 15, 2019 7. University of the Third Age, London, UK

<https://www.u3a.org.uk/>

U3A (The University of the Third Age) is a UK-wide movement which brings together people in their 'third age' to develop their interests and continue their learning in a friendly and informal environment.
 If you're wondering what we mean by the third age - it is a time after you have finished working full-time or raising your family and have time to pursue your interests or just try something new.



154

April 23, 2021 8. Duplicate Selves in Virtual Worlds

From Minecraft to Zoom calls, we've all spent much of the pandemic on our screens. But are we ready for the metaverse?

Mike Snider, USA Today

<http://curtbook.com/metaverse.html>

Metaverse Creator, High-Fidelity Digital Immersive Media, Easy, Universal Engine

<https://www.youtube.com/watch?v=32P7C7P8g8c>

<https://www.usatoday.com/story/tech/2021/04/23/minecraft-online-forzile-ift-creating-metaverse/7900381002/>



155

9. World Knowledge Refreshment Stations

http://www.thebigmoon.com/55ancients/928ee/Library_Alexandria.html






156

January 25, 2021
10. AI Generated Teachers
 Tom Bartlett, The Chronicle of Higher Education
<https://www.futureme.org/>





Dead Man Teaching
 What's it like to find out your favorite new professor has been dead for almost two years? It's a weird, weird.

By Tom Bartlett | JANUARY 25, 2021

157

June 10, 2020
Learning in 2050
 Edward J. Mahoney and Joshua Kim, Inside Higher Ed
<https://www.insidehighered.com/digital-learning/blogs/learning-innovation/learning-2050>







Per Kim and Mahoney: "Where might we be in 2050? As we said, a lot can happen. We might see changes in how we use technology, and how students use technology engage in both curricular and co-curricular activities."

158

Poll #7: How many ideas did you get from this talk?

1. 0 if I am lucky.
2. Just 1.
3. 2, yes, 2...just 2!
4. Do I hear 3? 3!!!!
5. 4-5.
6. 5-10.
7. More than 10.



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Poll #8: Is this an Evolution or Revolution?



160

Chat Window Sharing:
Three Words from this Session...?
 e.g., "I am happy!" and...
 "minions are happy!"





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



162

June 13, 2019
Paul Kim flies plane

https://www.dropbox.com/s/79a1a0buisic3U/20190613_1064208-9



163

January 23, 2022
Paul Kim

<https://www.facebook.com/photo/?fbid=10227436239756260&set=a.1085457101235>



164

Things are heating up!



165

**The Learning Revolution is
 coming within reach!**



166

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

"I cannot do this alone."
 "I cannot do this alone."
 "I cannot do this alone."



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Any Questions or Comments?

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



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