

Education 20/20 Meets Education 4.0: Visions of Our Changing Learning World!

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<http://curtbonk.com/>



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Talk Overview

1. Jobs are changing
2. Education 20/20 and the Role of the Instructor (First and Last Principles of Instruction)
3. Megatrends of Learning: Engagement, Access, and Customization (30 ways that learning is changing...)
4. Trends for tomorrow



2

Part I. June 3, 2017 How PLATO changed the World...in 1960 Cait Etherington, ElearningInside News

<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' ILLIAC I 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.



3

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/6323/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=3-NLH58b1Ik>
 Project YES (Curt Bonk): <https://youtu.be/bZD5mQH4Ug>



4

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



5

January 25, 2021 Dead Man Teaching Tom Bartlett, The Chronicle of Higher Education <https://www.futureme.org/>

Dead Man Teaching

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

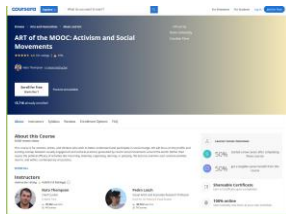
By Gene Roddenry | January 25, 2021



6

December 7, 2020
ART of the MOOC: Activism and Social Movements
 Nato Thompson, Pedro Lasch, Duke, Coursera

<https://www.coursera.org/learn/activism-social-movements>



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December 4, 2020
Mysterious monoliths are appearing across the world. Here's what we know.
 Constance Grady, Vox

<https://www.vox.com/culture/22662796/monoliths-utah-california-romania>

Mysterious monoliths are appearing across the world. Here's what we know.

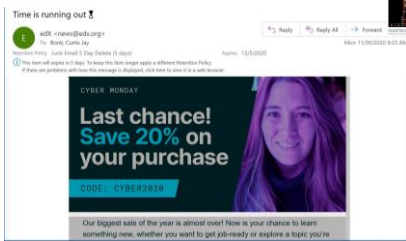
We don't know where the mysterious monoliths came from, but we do know they're not

from the future. (Source: Vox.com)



8

November 30, 2020
Cyber Monday



9

November 9, 2020
'It's the screams of the damned!' The eerie AI world of deepfake music
 Derek Robertson, The Guardian

Song: <http://curtbonk.com/sinatra.html>
<https://www.theguardian.com/music/2020/nov/09/deepfake-pop-music-artificial-intelligence-ai-frank-sinatra>



It's the screams of the damned! The eerie AI world of deepfake music

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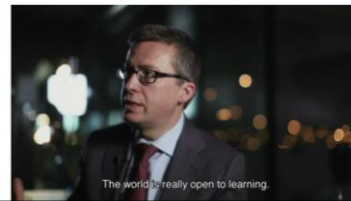
July 30, 2020
Disruptive Ecology:
The New Normal of Education in Post COVID-19



11

April 13, 2016
The Fourth Industrial Revolution:
What it means, how to respond

Klaus Schwab, Founder and Executive Chairman, World Economic Forum
<http://trainingshare.com/fourth-industrial-evolution-video-clip.php>
<http://www.tubechop.com/watch/9286981>

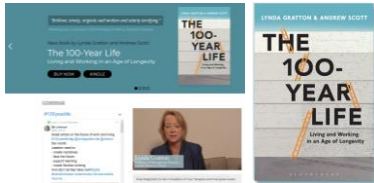


The world is really open to learning.

12

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/>



13

March 13, 2019
The Career Curriculum Continuum
 Andrew Hermalyn, Inside Higher Ed

<https://www.insidehighered.com/digital-learning/news/2019/3/13/inside-higher-ed-career-continuum-leaders-rove-optimis>



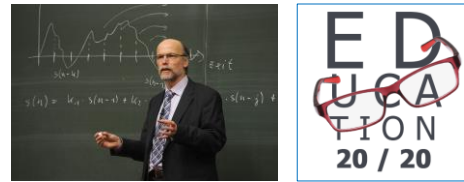
14

February 25, 2020
The 60 Year Curriculum:
Developing New Educational Models to Serve the Agile Labor Market
 Chris Dede, Harvard University, The Evollution
<https://evolution.com/revenue-streams/professional-development/the-60-year-curriculum-developing-new-educational-models-to-serve-the-agile-labor-market/>
2019: The 60-Year Curriculum with Rovy Branon
<https://talent.com/podcast/219>



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Education 3.0...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)

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Part II. Education 20/20



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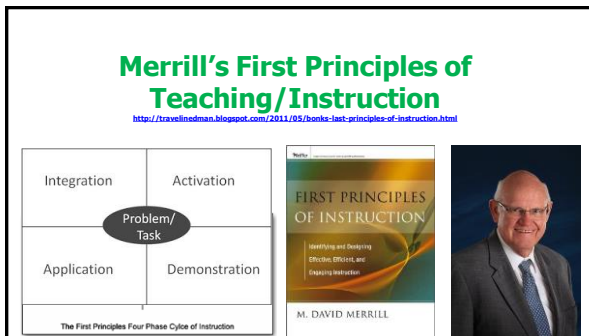
18



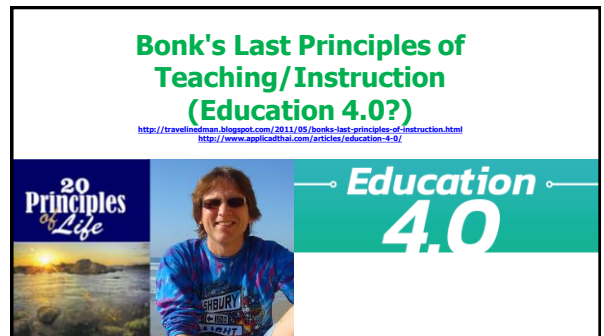
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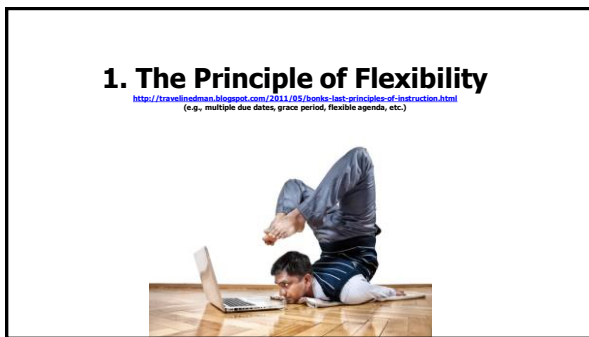
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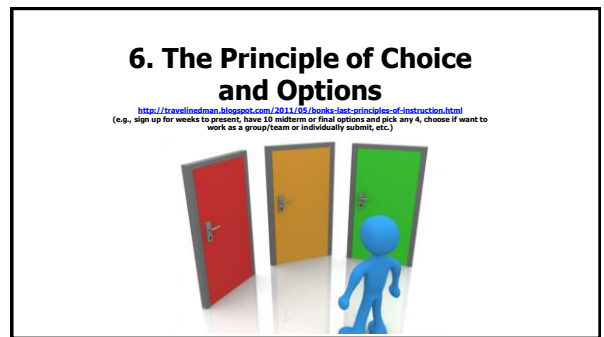
21



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8. The Principle of Support and Feedback

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>
(e.g., offer extensive feedback, assign critical friends for feedback, offer summary feedback for common questions, use job aids and scaffolds, etc.)



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11. The Principle of Sharing

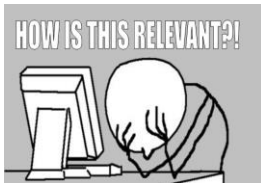
<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



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14. The Principle of Relevance and Meaningfulness

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



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16. The Principle of Expanded Resources

<http://travellinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>



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The World is Open: How Web Technology Is Revolutionizing Education



TEN OPENERS: (WE-ALL-LEARN)

1. Web Searching in the World of E-Books
2. E-Learning and Blended Learning
3. Availability of Open Source and Free Software
4. Leveraged Resources and OpenCourseWare
5. Learning Object Repositories and Portals
6. Learner Participation in Open Information Communities
7. Electronic Collaboration
8. Alternate Reality Learning
9. Real-Time Mobility and Portability
10. Networks of Personalized Learning



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

#20 ???

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**Clearly...
Learning is Changing!**

How Online Learning is Changing Classroom Design

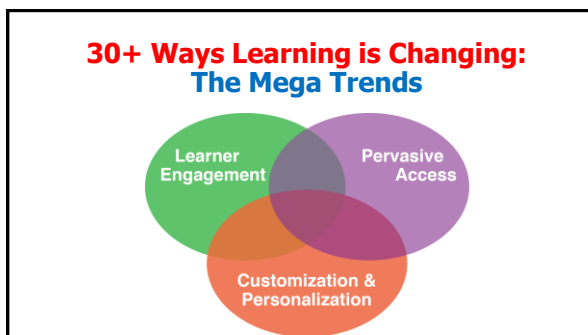
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Part III. Thirty Ways Learning is Changing...
(i.e., it's more informal, video-based, ubiquitous, collaborative, self-directed, global, mobile, open, massive, etc.)

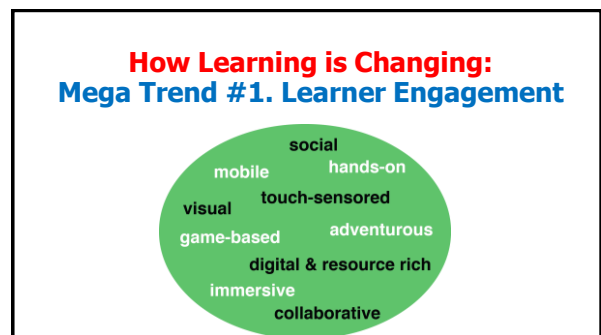
33

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>

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July 26, 2020
Learning is Digitally Rich
EDUCATING ALL LEARNERS DURING THE COVID-19 DISASTER
 An alliance dedicated to equity for complex learners
<https://www.educationallearners.org/>
Resources and Guidance for Educators
<https://www.educationallearners.org/for-educators>
<https://www.educationallearners.org/>

Resources and Guidance

REOURCES AND GUIDANCE FOR EDUCATORS

EDUCATING ALL LEARNERS DURING THE COVID-19 DISASTER

Featured Resources

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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=9taCY7jhhs4/> (Feb 11, 2018)
 Video 1:48: Microsoft AI: Amplifying Human Ingenuity: <https://www.youtube.com/watch?v=NDmu722N9Ks>
 Video 1:00: Microsoft AI: Empowering Innovators ft. Common: <https://www.youtube.com/watch?v=520V6d4nT7w> (April 22, 2018)
 Video: 1:00 Microsoft AI + Iconem: Preserving History ft. Common: <https://www.youtube.com/watch?v=2DZ2tUtuH5H> (April 22, 2018)
 Video: 0:44: Microsoft AI + The Yield: Taking the guesswork out of farming ft. Common: <https://www.youtube.com/watch?v=7zaufx10H4e> (April 22, 2018)

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October 20, 2020
Learning is More Visual
The British Museum
<https://britishmuseum.withgoogle.com/>

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May 1, 2018
Learning is More Immersive
3 ways districts can use AR and AI
Justin Anglio, eSchool News
<https://www.eschoolnews.com/2018/05/01/3-ways-districts-can-use-ar-ai/>

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.

40

July 17, 2017
Learning is More Immersive
Learning Chemistry in Virtual Reality,
Sarah Hardman, New Learning Times
<https://www.newlearningtimes.com/2017/07/17/learning-chemistry-in-virtual-reality/>
 1:58 video: <https://www.youtube.com/watch?v=283377>
 All: <http://joutthink.com/chemistry-vr-3d/>
 01:43: <http://joutthink.com/chemistry-vr-3d/>
 01:58: <http://joutthink.com/chemistry-vr-3d/>
 1:04: <http://joutthink.com/chemistry-vr-3d/>

Learning Chemistry in Virtual Reality

Learning Chemistry in Virtual Reality

Your next chemistry class could be in VR

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

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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 finds that personal stories are surprisingly effective in building relationships in a synchronous virtual classroom.

Zoom Boom
 Synchronous education is trending, but experts say a common misconception of that and asynchronous is because it's easier for teachers to do.




43

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



'Telepresence' robots are making virtual school feel a little more like real school





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June 5, 2018
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://wearechatterbox.org/>
 Mursal Hedayat, London
<https://www.youtube.com/watch?v=3K3YexUpo0>

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January 27, 2021
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/news/nation/2021/01/27/holy-grail-dinosaur-fossils-egypt/7344444002/>
 'Siberian unicorn' once walked among early humans, Tara John, CNN
<https://edition.cnn.com/2021/01/27/science/siberian-unicorn-humans-early/index.html>
 'Crazy beast' lived among last of dinosaurs
<https://www.foxnews.com/science/2021/01/27/crazy-beast-lived-among-last-dinosaurs/>
 Was This Dinosaur More Subaquatic Killer or Giant Wading Bird?
<https://www.foxnews.com/science/2021/01/27/was-this-dinosaur-more-subaquatic-killer-or-giant-wading-bird/>



Video: 53 seconds






46

April 11, 2020
Learning is More Video-based...
 (e.g., Flipgrid)
 Ed Tech with Adam: <https://www.youtube.com/watch?v=hysv0PwqFs>
<https://thechronicle.com/2018/06/18/microsoft-acquires-social-learning-platform-flipgrid/>

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July 25, 2020
Learning is More Video-based...
Silver Lining for Learning
<https://silverliningforlearning.org/>
https://www.youtube.com/channel/UC9XEshB9qrIpmVYpQt_aA/live







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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/>

OER Adoptions on the Rise



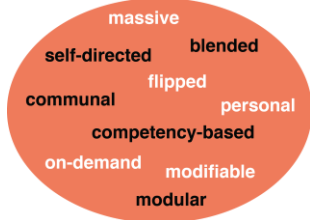
OpenStax Saved 1 Million Students \$70 Million

Open Textbook Network
 WE ARE A COMMUNITY DEDICATED TO RESULTS

- 600+ Campuses represented
- \$8.5 Million Student savings by OTN members
- 45% of faculty who attend an OTN workshop adopt an open textbook

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How Learning is Changing:
Mega Trend #3. Customization



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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-prepping-fall-virtual-learning/5525480002/>

Khan Academy aims to give 'strategic supplement'




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

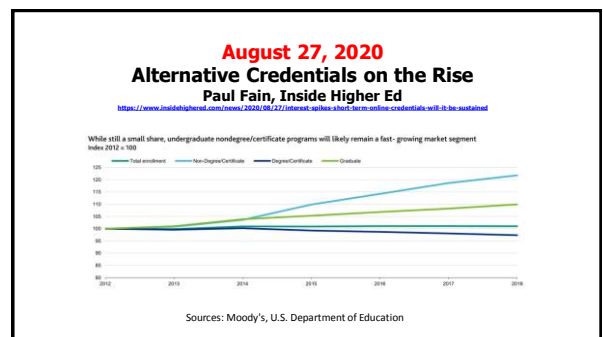


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May/June 2020
Learning is More On Demand
Chatting with Chatbots and Text Buddies
 Lindsey McKenzie, Inside Higher Ed
<https://www.insidehighered.com/news/2020/05/19/ai-assistant-chatbots-higher-ed>
<https://www.usatoday.com/story/tech/2019/11/05/alexa-google-assistant-ai-robots-become-substitute-friends/4057885002/>



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Professional Certificates
October 3, 2019
Google IT Professional Certificates
Coursera Blog

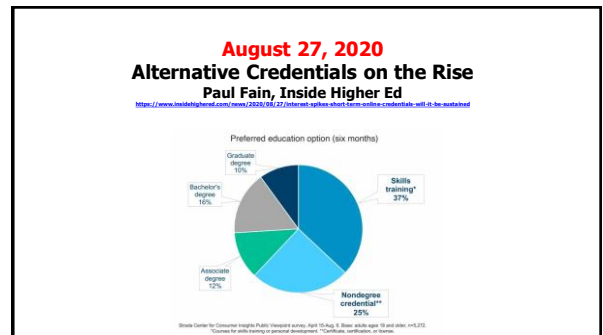
<https://arxiv.google/programs/it-support/?id=worksource=am&sourceId=61203>
 Video: Melinda Williams Aspiring IT Support Specialist (2:57)
https://www.youtube.com/watch?time_continue=102&v=hvPKZWfWms&feature=emb_logo

Google IT Professional Certificates

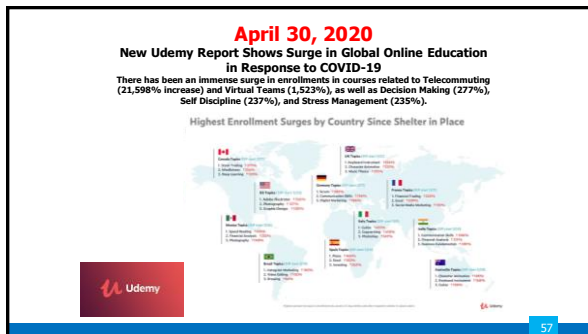


Start your course now

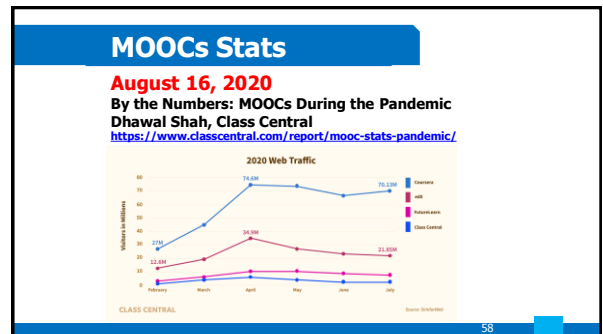
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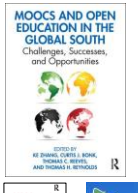






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MOOCs book (2020)

MOOCs and OPEN EDUCATION IN THE GLOBAL SOUTH
 Challenges, Successes, and Opportunities

EDITED BY
 KE DUNN, CYNTHIA KONG,
 THOMAS C. MERRIS,
 AND THOMAS C. MERRIS










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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.

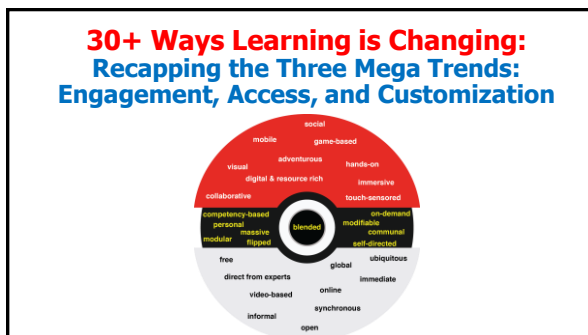
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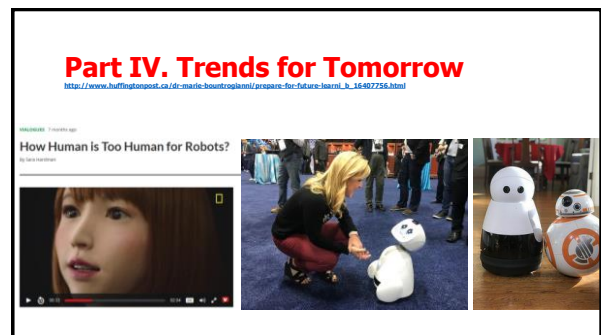
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66

September 26, 2018 3. 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-tutors-expand-use-at-higher-ed-teaching-and-learning>
<https://www.bbc.com/news/technology-46725133>
<https://www.youtube.com/watch?v=7Fu5TulR2A>
<https://www.insidehighered.com/digital-learning/article/2018/09/26/ai-tutors-expand-use-at-higher-ed-teaching-and-learning>
<https://www.insidehighered.com/digital-learning/article/2018/09/26/ai-tutors-expand-use-at-higher-ed-teaching-and-learning>



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June 15, 2019 4. 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.



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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."

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We are entering a jumping off point...

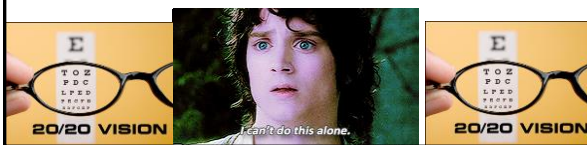
(South University of Science and Technology of China, Wednesday June 10, 2015)



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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](https://www.TrainingShare.com)
 Papers: [PublicationShare.com](https://www.PublicationShare.com)
 Free book: <http://tec-variety.com/>
 Email: cjbonk@indiana.edu



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