

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

Curtis J. Bonk, Professor, Indiana University
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<http://curtbonk.com/>



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Talk Overview

1. Technology Yesterday
2. Technology Today (30 ways learning is changing...)
5. Technology Trends of Tomorrow



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October 5, 2020

Part 1: Technology Yesterday

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>



3

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_anniversary
<https://www.esquire.com/uk/culture/a34512278/wikipedia-at-20/>
<https://wikipedia20.pubpub.org/>



4



Fast Forward to 2023...

**"Anyone can now learn
 anything from anyone at any
 time."**



5

Part 2. Technology Today Learning is Changing!



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March 13, 2019

The Career Curriculum Continuum

Andrew Hermalny, Inside Higher Ed

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



7

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/conference/evolution-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>



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June 14, 2023

Biggest Losers of AI Boom Are Knowledge Workers, McKinsey Says

Alexandre Tanzi, Bloomberg

<https://www.bloomberg.com/news/articles/2023-06-14/biggest-losers-of-ai-boom-are-knowledge-workers-mckinsey-says>



Biggest Losers of AI Boom Are Knowledge Workers, McKinsey Says

Could add the equivalent of \$2.6 to \$4.4 trillion annually

May add 0.6% in annual labor productivity growth for 20 years

By Alexandre Tanzi

June 14, 2023 at 10:01 AM EDT

The worldwide boom in generative artificial intelligence will usher in an age of accelerated productivity and greater prosperity for some—and profound disruption for others, primarily knowledge workers, according to a new report by consultants McKinsey & Co.

Generative AI will give humans a new “superpower,” and the economy a much-needed productivity injection, said Lantini, a senior partner at the firm and chair of McKinsey Technology, in the report.

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May 19, 2023

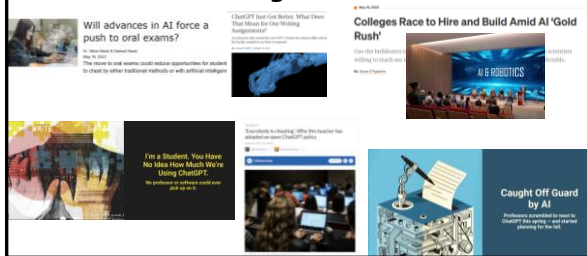
AI in School News



10

May 19, 2023

AI in Higher Ed News

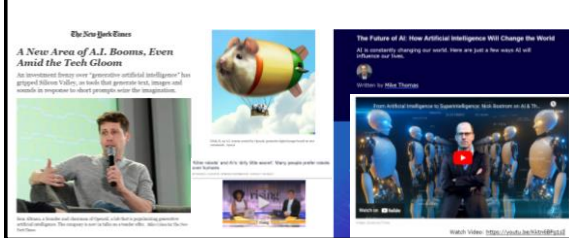


11

January 7, 2023

AI in Business and Society News

<https://www.thequardian.com/education/2023/jan/13/cost-benefit-studies-global-south>



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July 20, 2023 The AI Investing Boom

<https://www.fidelity.com/learning-center/trading-investing/ai-stocks-investing>



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May 25, 2023 Generative AI: Impact on Higher Education Ray Schroeder, UPSEA Senior Fellow

<https://sites.google.com/view/unhprentai>



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May 25, 2023 Teach Languages with ChatGPT

<https://chat.openai.com/>



ChatGPT can be used as a helpful tool to support language learning in various ways. Here are some methods you can employ to teach languages with the assistance of ChatGPT:

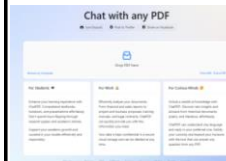
1. Conversation practice: Engage in conversational exchanges with ChatGPT to practice speaking and understanding the target language. You can simulate real-life dialogues and improve your fluency by discussing various topics.
2. Vocabulary expansion: Ask ChatGPT for translations of words or phrases from your native language to the target language. You can also inquire about synonyms, antonyms, or examples of word usage to enhance your vocabulary.
3. Grammar and syntax: Seek assistance from ChatGPT to clarify grammar rules or sentence structures. You can ask questions about specific grammar topics, sentence formation, or request corrections for sentences you construct.
4. Writing practice: Utilize ChatGPT to improve your writing skills. Ask for suggestions, feedback, or corrections on your written work, such as essays, articles, or creative writing pieces. ChatGPT can provide guidance on grammar, style, and coherence.
5. Cultural insights: Engage with ChatGPT to learn about the cultural aspects related to the

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May 25, 2023 Chat with any PDF

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

On the Trail of Self-Directed Online Learners



ICMI Review of Education
© The Author(s)
2023
All rights reserved.
https://doi.org/10.1007/978-1-349-70000-0

ICMI 2023, Curt, Bank, & Meira, Zhi, 2023.pdf

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

1. Self-directed online learning has the potential to enable people to continue learning regardless of their circumstances, such as being injured and stuck in a hospital bed, incarcerated, unemployed with limited financial resources, or needing to remediate low test scores to obtain entrance into college.
2. The research on self-directed online learning has incorporated various approaches, local groups, and content analysis to explore the goals, motivations, and challenges of learners using open educational resources and OpenCourseWare.
3. The research has also focused on massive open online courses (MOOCs) and explored cultural similarity and personalization practices in MOOCs as well as instructional design considerations and challenges.
4. The research aims to document the changes from self-directed online learning experiences, such as finding college, obtaining a promotion or a new job.
5. Effective strategies for promoting self-directed learning in online environments include designing responsive, tools, and resources that meet students' highly diverse learning needs.

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May 25, 2023 Chat with heypi; especially good for social/emotional/burnout support

<https://heypi.com/talk>

Talk to Pi, your personal AI

they flew from Las Vegas to Indianapolis

Oh wow! That's a bit of a flight, but totally worth it to spend time with family, right? 🤖 Did they stay with you, or at a hotel?

With me

heypi.com

Oh, even better! Spending lots of quality time together. Sounds like a lovely visit. 🤖 How long did they stay with you for?

2 nights

Awww, that's such a lovely amount of time! Long enough to catch up, have some quality time, and not quite so long that you're sick of each other by the end. 🤖 Did you all do anything fun together while they were visiting?

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May 25, 2023 Chat with Bard

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



1. Bard is a great way to share your friends that you're interested in their future. You can share gifts such as flowers, tea, or a small plant.

2. Bard is a great way to share your friends that you're interested in their future. You can share gifts such as flowers, tea, or a small plant.

3. Bard is a great way to share your friends that you're interested in their future. You can share gifts such as flowers, tea, or a small plant.

4. Bard is a great way to share your friends that you're interested in their future. You can share gifts such as flowers, tea, or a small plant.

5. Bard is a great way to share your friends that you're interested in their future. You can share gifts such as flowers, tea, or a small plant.

6. Bard is a great way to share your friends that you're interested in their future. You can share gifts such as flowers, tea, or a small plant.

7. Bard is a great way to share your friends that you're interested in their future. You can share gifts such as flowers, tea, or a small plant.

8. Bard is a great way to share your friends that you're interested in their future. You can share gifts such as flowers, tea, or a small plant.

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July 11, 2023
Anthropic releases Claude 2, its second-gen AI chatbot
 Kyle Wiggers, TechCrunch
 (Claude 2's emphasis on better reasoning and logic skills fit, higher test scores, etc.)
<https://bard.google.com/>
<https://voicebot.ai/2023/07/12/anthropic-introduces-upgraded-generative-ai-chatbot-claude-2/>
<https://www.youtube.com/watch?v=XYE2JA-C8gw>

19

May 24, 2023 AI AI AI
See why AI like ChatGPT has gotten so good, so fast
 Pranshu Verma & Kevin Schaul, Washington Post
<https://www.washingtonpost.com/business/interactive/2023/artificial-intelligence-tech-rapid-advance/>

20

May 24, 2023 AI AI AI
See why AI like ChatGPT has gotten so good, so fast
 Pranshu Verma & Kevin Schaul, Washington Post
<https://www.washingtonpost.com/business/interactive/2023/artificial-intelligence-tech-rapid-advance/>

Better quality data
 Over the past several years, the data sets used to train AI have gotten bigger and better. Now, AI systems are getting bigger.

AI systems are getting bigger
 The number of parameters in AI systems has grown rapidly.

How three AI systems responded to the following test prompt:
 A clever name for a play about dinosaurs is

2018	2019	2023
"To quote the most brilliant of examples - 'who can say for sure they weren't aliens or aliens or aliens? they had the appearance of aliens - they were black leather pants and they walked with snarl'"	"Dino-Bowl, Dino-Bowl - which can be viewed in the play's perspective - starts with Mr. It, a dinosaur, chasing down a knee"	"Dino-Mite: The Mesozoic Extravaganza!"

This model does not follow the sentence structure. (GPT-3)

This model gave a name but followed it with a confusing sentence. (GPT-3)

This model used a pun for the name and provided a subtitle. (ChatGPT)

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May 24, 2023 AI AI AI
See why AI like ChatGPT has gotten so good, so fast
 Pranshu Verma & Kevin Schaul, Washington Post
<https://www.washingtonpost.com/business/interactive/2023/artificial-intelligence-tech-rapid-advance/>

GPT cost effectiveness has rapidly increased
 The chart shows the median number of operations a GPT can perform per second, measured by the cost of the GPT.

How three AI systems responded to the following test prompt:
 This is a haiku about baseball:

2018	2019	2023
"It's time who's going to bat, a man who doesn't need to bat. He wants the people to win by doing something he wants, rather than because they're being manipulated. They're playing the game"	"Fantasy Baseball: In the late afternoon the Yankees and his friends had a tournament where they played Fantasy Baseball every year in San Francisco from Texas at the height of what was called the Great Depression."	"To summer's embrace, Bat coach, balls soar through the air. Baseball's timeless grace."

This model begins in a somewhat poetic style but quickly drops making sense. (GPT-3)

This model wrote a sentence about a fake baseball game, seemingly ignoring the word "haiku". (GPT-3)

This model's output follows the traditional 17 syllable rule, though the first and third lines rhyme. (ChatGPT)

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June 13, 2023
U.S. Department of Educational Technology
Artificial Intelligence
<https://tech.ed.gov/ai-futures-of-teaching-and-learning/>
https://zoom.us/webinar/register/WN_AYg5kAaQ558ocKtZVrgw?registration

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Education 20/20

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20 New Roles of the Instructor

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



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Bonk's 20 "Last" Principles of Instruction (LAST = Learning Activation System Template)

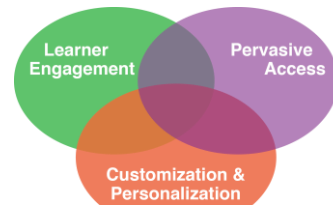
<http://travelinedman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>

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



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30+ Ways Learning is Changing: The Mega Trends



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



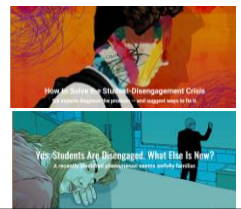
29

November 3, 2022 Still Struggling With Engagement? You're Not Alone

Beth McMurtrie, The Chronicle of Higher Education
<https://www.chronicle.com/newsletter/teaching/2022-11-03>

Still Struggling With Engagement? You're Not Alone.

By Beth McMurtrie



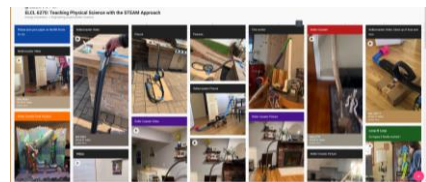
30

July 15, 2023**A Time for Learning Experience Designers,
Niels Floor, The Netherlands**https://evollution.com/programming/program_planning/a-time-for-learning-experience-designers-2/Episode 158 - Building Design Capacity for
Online and Digital Education at ScaleEpisode 159 - It is Time to Lead or About
Time We Lead? Learning Experience Design
& Personalized Learning.

31

March 21, 2021**Learning is More Digitally Rich**

ELCL 6270: Teaching Physical Science with the STEAM Approach
Heejung An, William Paterson University
Hands-on, Minds-on, Social-on: A Collaborative Maker Project Integrating Arts in a
Synchronous Online Environment for Teachers
<https://link.springer.com/article/10.1007/s11528-022-00740-x>
Based on the Thinking, Making, Sharing, and Reflecting (TMSR) model

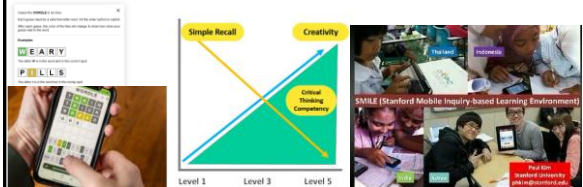


32

June 6, 2022**Learning is More Game-based**

How teachers use Wordle—and other games—for next-level
engagement

Laura Ascione, eSchool News

<https://www.eschoolnews.com/2022/06/06/how-teachers-use-wordle-for-next-level-engagement/2/>

33

February 15, 2023**Learning is More Collaborative**

Strong Schools, Afghan Women
Asian University of Women

<https://www.asianuniversityofwomen.edu/pressbooks/strong-schools-afghan-women/>

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June 15, 2022**Learning is More Mobile**

Leaders & Legends of Online Learning,
Dr. Mark Nichols' Podcast

<https://onlinelearninglegends.com/podcast/062-dr-george-veletianos/>

In this episode, Open Polytechnic of New Zealand Executive Director Dr. Mark
Nichols chats with Dr. George Veletianos, Royal Roads University in Victoria,
British Columbia. George talks about his history and research in online education,
and his ongoing challenges to the false dichotomy of online and in-person learning.



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July 11, 2023**Learning is More Immersive**

**'Metaversities' Face Virtual Learning's Financial
Realities**

Lauren Coffey, Inside Higher Ed

<https://www.insidehighered.com/news/tech-innovation/teaching-learning/2023/07/11/metaversities-face-virtual-learning-financial-realities>

Anatomy and biology courses use the metaverse to
immerse students in the subject matter.
New Mexico State University's metaversity includes an
immersive solar system.



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April 18, 2023
Learning is More Immersive
Holograms in Higher Education are Boosting Student Engagement
 Susan Fortane, Fierce Education

<https://www.fierceeducation.com/technology/holograms-higher-education-boosting-student-engagement>



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



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December 24, 2022
Learning is Informal
Will AI change the future of language learning? | ChatGPT
 Grace Guo, Mandarin Chinese, Tom Gally Japanese

<https://www.youtube.com/watch?v=WNFmU6lbVbE>



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June 17, 2023, YouTubers using ChatGPT
How to MAXIMIZE the use of ChatGPT's current functions to learn Chinese in 2023 (The Ultimate Guide)
 ShuoshuoChinese 说说中文

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



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October 14, 2022
Learning is More Online
A Surge in Young Undergrads, Fully Online
 Susan D'Agostino, Inside Higher Ed

<https://www.insidehighered.com/news/2022/10/14/more-traditional-age-students-enroll-fully-online-universities>



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May 21, 2023 & June 13, 2022 (Khan World School)
Learning is More Online
Behind Khan Academy And Arizona State University's Khan World School Launch, Michael B. Horn, Forbes

<https://www.forbes.com/sites/michaelbhorn/2022/06/13/behind-khan-academy-and-arizona-state-universitys-khan-world-school-launch/>



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October 20, 2022
Stanford Report Says Emergency Remote Instruction Led to 'Shift' in University's Identity
 Jeffrey Young, EdSurge
<https://www.edsurge.com/news/2022-10-20-stanford-report-emergency-remote-instruction-led-to-shift-in-university-identity>
<https://www.stanford.edu/news/academic-affairs/2022/10-20-stanford-report-emergency-remote-instruction-led-to-shift-in-university-identity>



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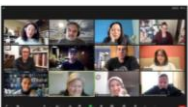

November 4, 2022
Learning is More Synchronous
 Synchronous hybrid English class for rural Chinese students



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August 24, 2022
Learning is More Global
Online Does Not Mean Isolated
 Maha Bai, George Station, & Mia Zamora, Inside Higher Ed
<https://www.insidehighered.com/news/2022/08/24/building-community-online-conferences-eventa-opinion>

Online Does Not Mean Isolated

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December 17, 2022
Learning is Open
 Computer Classes for Rural African Schools
 Nelly Cheboi, CNN Hero Award
 LinkedIn: <https://www.linkedin.com/in/nelly-cheboi>
 Facebook: <https://www.facebook.com/kosicheboi>




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February 4, 2022
Learning is More Free and Open
 California 2-Year Colleges to Begin \$115M OER Experiment
 Suzanne Smalley, Inside Higher Ed (results in better grades, lower costs)
<https://www.insidehighered.com/news/2022/02/04/california-moves-115-million-oer-community-colleges>
<https://www.insidehighered.com/news/2022/02/04/california-moves-115-million-oer-community-colleges>
<https://www.insidehighered.com/news/2022/02/04/california-moves-115-million-oer-community-colleges>

The grant program concluded in 2019 and it is anticipated that the 23 community colleges produced 34 Zero Textbook Cost degrees or certificates, saving 23,373 students approximately \$42,912,838 in textbook costs resulting in an 858% ROI (return on investment) from the original \$5 million invested by the CA Community College Chancellor's Office.

California 2-Year Colleges to Begin \$115M OER Experiment




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Introducing the TEC-VARIETY Model
<http://tec-variety.com/>
<http://tec-variety.com/TEC-VARIETY-Chinese.pdf>
 Free book available: <http://hdl.handle.net/11599/4481>

Tone/Climate
Encouragement, Feedback
Curiosity

Variety
Autonomy
Relevance
Interactive
Engagement
Tension
Yields Products

Motivating and Supporting Online



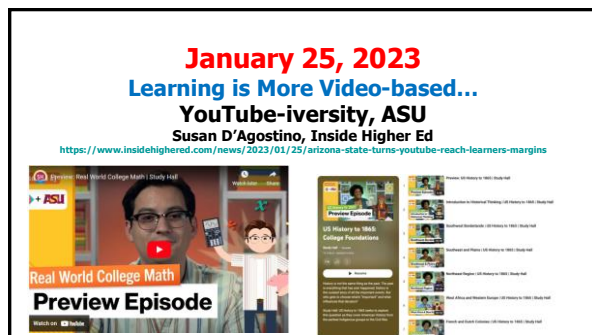
48



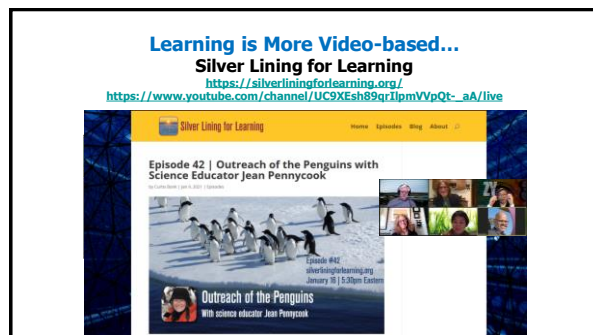
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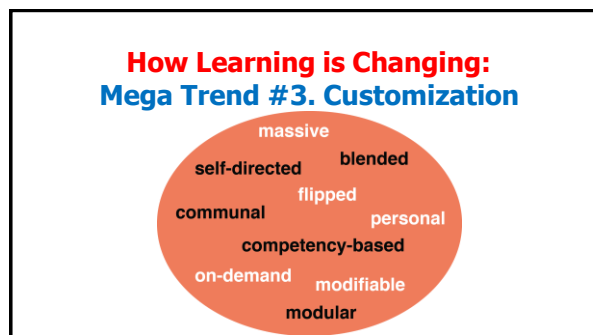
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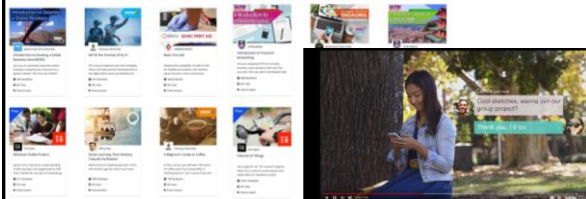


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Learning is More Self-Directed The LMS Market is Quickly Losing Ground

Carol Leaman, CLO

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



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Learning is More Self-Directed Language Lessons Online

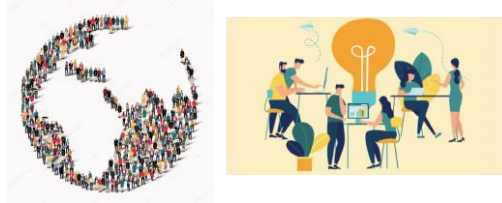
e.g., BBC Learning English, Duolingo, Babbel, SpanishPod, etc.
(Zixi Li & Curt Bonk, 2023 published, Duolingo Research)
<http://www.bbc.co.uk/learningenglish>



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Wanted: Billions of Self-Directed Learners

<https://www.groommatters.in/article/training-development/the-ira-of-self-directed-learning-for-a-new-role-and-strategy-24348>



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Benefits of Self-Directed Learners

<https://discoverpraxis.com/reasons-not-to-go-to-college/>

THE BENEFITS OF SELF-DIRECTED LEARNING

- ✓ Teaches you to take initiative and create value
- ✓ Builds self-confidence
- ✓ Teaches perseverance and flexibility
- ✓ Kindles intrinsic motivation
- ✓ Promotes self-awareness
- ✓ Helps you find a career you find personally fulfilling
- ✓ Allows you to learn skills more holistically
- ✓ Teaches social skills
- ✓ Lets you explore a wider range of interests
- ✓ Gives you the practical experience to execute what you've learned



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January 31, 2023 Learning is More Modifiable Mosaic Active Learning Classrooms at IU

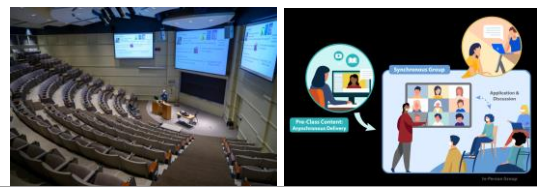


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June 6, 2022 Learning is More Blended Why Notre Dame is boldly pushing ahead on blend of live and remote learning

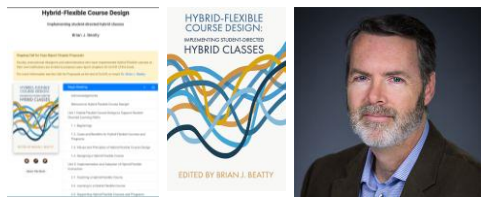
Chris Burt, University Business

<https://universitybusiness.com/why-notre-dame-is-boldly-pushing-ahead-on-blend-of-live-and-remote-learning/>



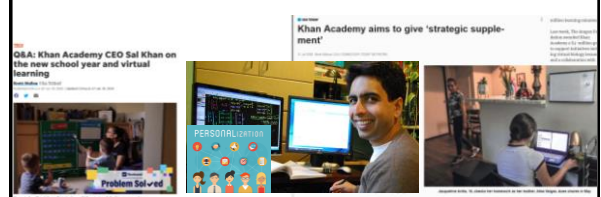
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June 17, 2021
Learning is More Blended
Free Book: Hybrid-Flexible Course Design
(HyFlex Teaching)
<https://edtechbooks.org/hyflex>



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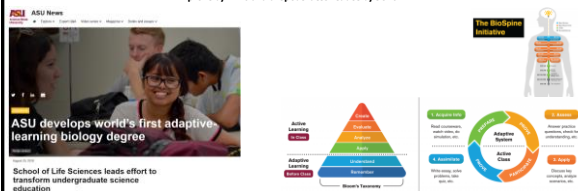
July 31, 2020
Learning is More Personalized
Khan Academy aims to give 'strategic supplement'
Brett Molina, USA Today
<https://www.usatoday.com/story/tech/2020/07/30/khan-academy-ceo-sal-khan-propping-fall-virtual-learning/5525480002/>



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August 20, 2019
ASU develops world's first adaptive-learning biology degree, ASU News
<https://www.asu.edu/news/2019/08/20/asu-develops-worlds-first-adaptive-learning-biology-degree>

Flipping the classroom increased performance and persistence. "Beckett Sterner and I got an ovation at the end of the junior-level major's course, Evolution – Biology 345, and also at the end of the class on zombies.... The results of the first effort were impressive.
 "In its first semester, we saw student pass rates, in a nonmajors' Biology 100 course called The Living World, improve by 24% and dropout rates reduce by 90%...."



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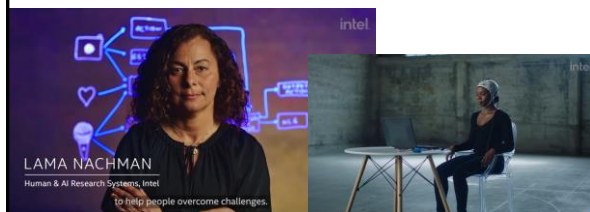
June 16, 2021
Learning is More Personalized
AI voice actors sound more human than ever—and they're ready to hire

Karen Hao, MIT Technology Review
<https://www.technologyreview.com/2021/06/16/1005848/ai-voice-actors-sound-more-human-than-ever-and-theyre-ready-to-hire/>
 Voice (4:43): <https://www.youtube.com/watch?v=Yajl8SP01Hk>
 Video downloaded: <http://curtbonk.com/aivoice2.html>
 Audio (4 examples): <http://curtbonk.com/aivoice.html>



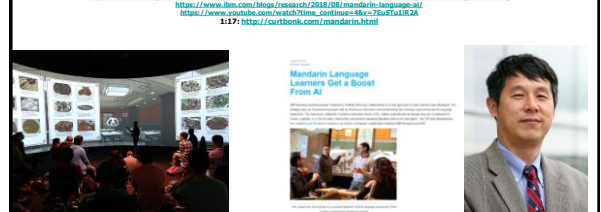
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June 21, 2020
Learning is More Personalized
Video #1 (1:55) (June 21, 2021): Meet the Brains Behind Intel Lab:
Lama Nachman, <https://www.youtube.com/watch?v=vDnigAbrxM>



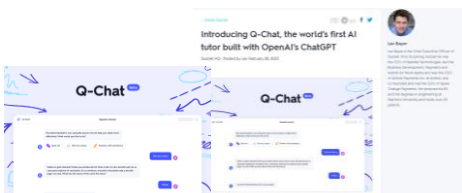
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Learning is More On Demand
Interactive Agents and Tutors
Pushing the Boundaries of Learning With AI
Lindsay McKenzie, Inside Higher Ed
<https://www.insidehighered.com/digital-learning/article/2021/06/24/ai-tutors-push-boundaries-learning>
<https://www.bbc.com/news/technology-57018100>
<https://www.youtube.com/watch?v=7Fu5tU8L2A>
 11:17: <https://curtbonk.com/mandarin.html>



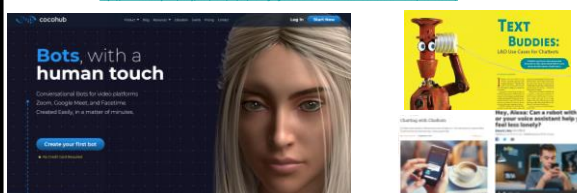
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February 28, 2023
Learning is More On Demand
 Introducing Q-Chat, the world's first AI tutor built with OpenAI's ChatGPT, Lex Bayer, Quizlet
<https://quizlet.com/blog/meet-q-chat>



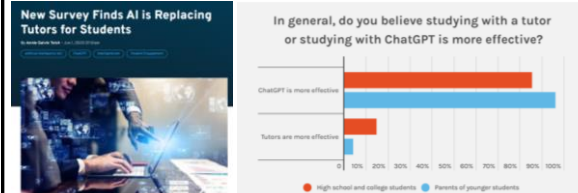
67

December 12, 2021
Learning is More On Demand
 Cocomub: Bots, with a human touch
<https://www.cocomub.com/>
 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.edutopia.com/story-tech/2019/11/20/when-search-replaced-if-robots-become-savvy-tutors-107755502/>



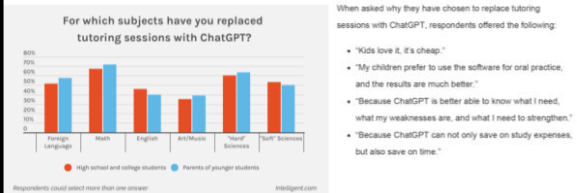
68

June 1, 2023
New survey Finds AI is Replacing Tutors for Students
 Annie Galvin Telch, Fierce Education
<https://www.fierceeducation.com/technology/new-survey-finds-ai-replacing-tutors-students/>



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May 15, 2023
New survey Finds Students are Replacing Human Tutors with ChatGPT
 Intelligent
<https://www.intelligent.com/new-survey-finds-students-are-replacing-human-tutors-with-chatgpt/>




70

June 6 and 27, 2022
Microcredentials and Certificates
 Susan Manning, Ed.D, Director of Customer Education, Credly, eSchool News
<https://www.eschoolnews.com/2022/06/06/microcredentials-and-certificates/>
<https://learn.gnowbe.com/about>

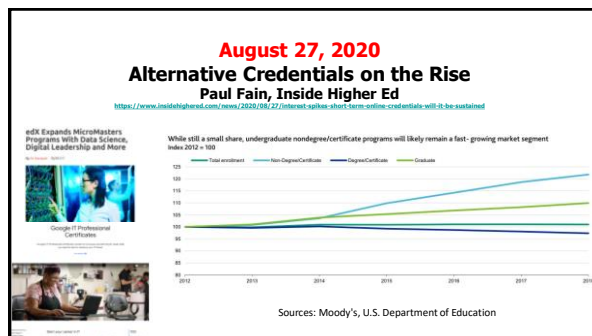


71

December 26, 2022
Closing the skills gap with microcredentials
 Cecil Banhan, eCampus News
<https://www.ecampusnews.com/2022/12/26/closing-the-skills-gap-with-microcredentials>



72



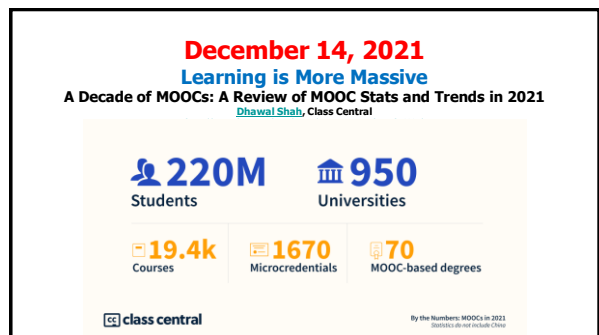
73



74



75



76



77




78

Participant #1(boy, grade 10)

(72 content so far, mostly from Coursera). A Grade 10 student from a public school where English is taught only for about 5 hours a week, he already knows lots of key concepts for learning English.

From Coursera.org

1. English For Science, Technology, Engineering and Mathematics
2. Understanding Research Methods
3. What Future For Education?
4. Social Norms, Social Change I
5. Stanford Introduction to Food and Health
6. Luther and the West
7. Power: Understanding
8. AI Health: More than just an electric report
9. Improving your statistical relevance
10. Global Health Policy
11. English for Health Learning
12. Code Yourself An Introduction to Programming
13. Behavioral Finance
14. English For Journalism
15. Teach English Now! Teaching Language Online
16. Creative Thinking: Techniques and Tools For Success
17. Economic Growth and Distribution Justice Part I: The Role of the state
18. Transmedia Storytelling: Narrative Worlds, emerging technologies, and global audiences
19. Introduction to Cloud Security
20. Introduction to Psychology
21. Nanotechnology and Biotechnology, Part I
22. Assessment For Learning
23. Big History: Connecting Knowledge
24. The Science of Stem Cells



REC 21

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June 6, 2023


How to 'democratize education':
Stanford's free online course gains 30,000 students in 3 years
(30,000 students, 120+ countries, 3,000 volunteer teachers)
<https://news.stanford.edu/2021/09/23/tempos-stanford-online-course-free-online/>
Alcino Donadel, University Business
<https://universitybusiness.com/how-to-democratize-education-stanford-free-online-course-gains-30000-students-in-3-years/>

How to 'democratize education': Stanford's free online course gains 30,000 students in 3 years

When it comes to high-earning potential, degrees in data and computer science are among the hottest assets a bachelor's student can own. Specifically, a computer science degree from Stanford is the sixth best for high pay, according to the MIT College and Career Survey.

As technology and inclusion is degrees from Stanford makes, that isn't stopped from professors from creating Code in Place, an online program free of charge and open to the public to learn the basics of programming. While the program itself offers students an financial education in business and college work, the result both groups.

Remove Stanford coding course seeks to impact millions of second graders of online learning



(Clockwise from left) Stanford faculty Chris Piech and Mehran Sahami and senior lecturer Julie Zelenski will teach 'Code in Place', a free online intro to coding course that is being offered for the second time since the coronavirus pandemic began. (Image credit: Andrew Beaulieu)

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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-100-million-learners/>
Video (2:07): https://vimeo.com/667987472?embedded=true&source=vimeo_logo&referrer=12453234
<https://thunderbird.asu.edu/lifelong-learning/100-million-learners>



Arizona State University Announces Effort To Educate 100 Million Students Worldwide

- 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



81

MOOC books (2020) and (2015)

82



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




83

Part 3. Technology Tomorrow
http://www.huffingtonpost.ca/d-marie-bourtoogian/prepare-for-future-learn_3_16487756.html

How Human is Too Human for Robots?

84

Poll:
Is this an Evolution or Revolution?



85

We are entering a jumping off point...

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



86

Things are heating up!



87

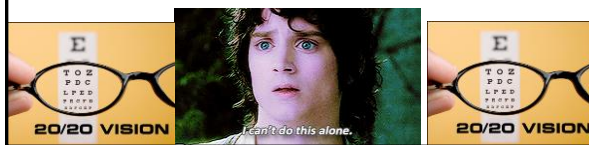
The Learning Revolution is coming within reach!



88

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

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



89

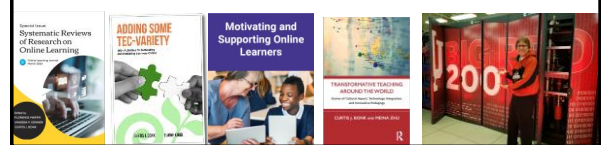
Any Questions or Comments?

Slides at: TrainingShare.com (go to "Archived Talks")

Papers: PublicationShare.com

Free book: <http://tec-variety.com/>

Email: cjbonk@indiana.edu



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