

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

Curtis J. Bonk, Professor, Indiana University

cjbok@indiana.edu

<http://curtbonk.com/>



1

Talk Overview

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



2

Part 1: Technology Yesterday

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

Katherine A. Foss, The Conversation

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



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

Katherine A. Foss, The Conversation

3

August 31, 2023

How the pocket calculator paved the way for the digital age, The Economist

<https://www.economist.com/culture/2023/08/31/how-the-pocket-calculator-paved-the-way-for-the-digital-age>



4

And even smarter...

April 20, 2023

Learning to code isn't enough

Joy Lisi Rankin, MIT Technology Review

<https://www.technologyreview.com/2023/04/20/1073291/learn-to-code-legacy-new-projects-education/>



5

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/a3441278/wikipedia-at-20/>

<https://www.wikipedia20.pubpub.org/>



6



Fast Forward to 2023...

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

SKILLSHARE

Learn anything from anyone, anywhere.



Join our 30-day trial and discover online classes in your life.

7

Part 2. Technology Today Learning is Changing!



How Online Learning is Changing Classroom Design



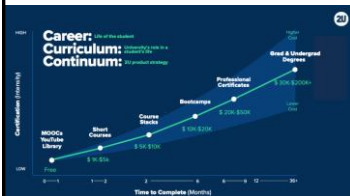
8

March 13, 2019

The Career Curriculum Continuum

Andrew Hermalyn, Inside Higher Ed

<https://www.insidehighered.com/digital-learning/stories/2019/03/13/how-universities-can-stay-center-business-future-economy>



9

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/news/education/professional-development/the-60-year-curriculum-developing-new-educational-models-to-serve-the-agile-labor-market/>

219: The 60-Year Curriculum with Rovy Branon

<https://theinfoinc.com/podcast/219>



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May 19, 2023 AI in School News



Can GPT-4 and TikTok usher in a new learning frontier?



How schools can respond to ChatGPT with inquiry-based learning

The importance of teaching generative AI


11

January 7, 2023 AI in Business and Society News



12

May 17, 2023
Workplace AI:
How artificial intelligence will transform the workday
 Casey Noenickx, BBC
<https://www.bbc.com/worklife/article/20230515-workplace-ai-how-artificial-intelligence-will-transform-the-workday>



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July 20, 2023
The AI Investing Boom
<https://www.fidelity.com/learning-center/trading-investing/ai-stocks-investing>



14

March 28, 2023
Workplace AI could replace equivalent of 300 million jobs – report
 Chris Vallance, BBC
<https://www.bbc.com/news/technology-65102150>

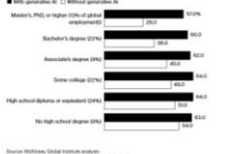
AI could replace equivalent of 300 million jobs - report



15

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>

AI Will Increase Vulnerability of Most Educated Workforce



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 4:08 AM EDT

The worldwide focus on 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 Larissa Tey, a senior partner at the firm and chair of McKinsey Technology, in the report.

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May 19, 2023
AI in Higher Ed News




Will advances in AI force a push to oral exams?

Colleges Race to Hire and Build Amid AI 'Gold Rush'

Caught Off Guard by AI

17

July 26, 2023
GPT-4 Can Already Pass Freshman Year at Harvard
 Maya Bodnick, The Chronicle of Higher Education
<https://www.chronicle.com/article/gpt-4-can-already-pass-freshman-year-at-harvard>



GPT-4 Can Already Pass Freshman Year at Harvard

Professors need to adapt to their students' new reality — fast.

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May 25, 2023

Generative AI: Impact on Higher Education

Ray Schroeder, UPECA Senior Fellow


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

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June 13, 2023


U.S. Department of Educational Technology Artificial Intelligence

<https://tech.ed.gov/ai/>
<https://tech.ed.gov/ai/future-of-teaching-and-learning/>
https://zoom.us/join/register?from_AIT&id=03580cd32f16gw®istration



**Artificial Intelligence
and the Future of
Teaching and Learning**

insights and recommendations




What is AI?

the machine-like ability of a computer (or an automated machine) to perform tasks that require human intelligence. This includes tasks such as learning, problem-solving, decision-making, and understanding natural language.

AI is a broad term that encompasses a wide range of technologies and applications, from simple rule-based systems to complex neural networks. It is used in a variety of fields, including healthcare, finance, manufacturing, and education.

Figure 1: Components, types and subfields of AI based on Rogers et al. (2018)



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September 2023

Guidance for Generative AI in Education and Research
Ms Stefania Giannini, UNESCO
Fengchun Miao, Wayne Holmes

<https://unesdoc.unesco.org/ark:/48223/pf00000386693>

**Guidance for generative AI
in education and research**



Education

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April 22, 2023

In UNESCO "Quick Start Guide to ChatGPT and AI in Higher Education"

https://www.unesco.org/en/sites/default/files/2023/04/quick-start-guide-to-ai-in-higher-education-quick-start-guide_en_7f96a.pdf

Role*	Description	Example of implementation
Possibility engine	AI generates alternative ways of expressing an idea	Students write queries in ChatGPT and use the Regenerate response function to examine alternative responses.
Socratic opponent	AI acts as an opponent to develop and argument	Students enter prompts into ChatGPT following the structure of a conversation or debate. Teachers can ask students to use ChatGPT to prepare for discussions.
Collaboration coach	AI help groups to research and solve problems together	Working in groups, students use ChatGPT to find out information to complete tasks and assignments.
Guide on the side	AI acts as a guide to navigate physical and conceptual spaces	Teachers use ChatGPT to generate content for classes/courses (e.g., discussion questions) and advice on how to support students in learning specific concepts.
Personal tutor	AI tutor each student and gives immediate feedback on progress	ChatGPT provides personalized feedback to students based on information provided by students or teachers (e.g., test scores).

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TEN FACTS ABOUT CHATGPT

by Christopher

View Online: <https://teachonline.ca/tools-trends/five-steps-leverage-chatgpt-your-teaching>



TEN FACTS ABOUT CHATGPT

by Christopher



01 ChatGPT can create content in seconds.

02 ChatGPT is one of a variety of generative writing tools.

03 ChatGPT is normally free to use.

04 ChatGPT has been used by international schools for its educational value.

05 ChatGPT used content generated by AI can have significant impact on learning and skills.

Five Steps to Leverage ChatGPT in Your Teaching

March 06, 2023



23

[illegible]

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September 8, 2023
ChatGPT: Your new academic mentor
Niamh Ancell, Cyber News

<https://cybernews.com/academy/news/chatgpt-your-new-academic-mentor/>

ChatGPT: Your new academic mentor

Updated on September 8th, 2023



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February 4, 2023
ChatGPT for language learning –
All the prompts you need
Theodosios Karageorgakis, Educraft

<https://educraft.tech/chatgpt-in-the-language-learning/>



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August 10, 2023
Teachers are surprise AI champions
Laura Ascione, eSchool News

<https://www.eschoolnews.com/digital-learning/2023/08/10/teachers-are-surprise-ai-champions/>



AI in Education
Teachers are surprise
AI champions

Laura Ascione

August 10, 2023

Survey reveals that teachers outpace students in use of, and sentiment toward, AI in education

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August 10, 2023
Teachers are surprise AI champions
Laura Ascione, eSchool News

<https://www.eschoolnews.com/digital-learning/2023/08/10/teachers-are-surprise-ai-champions/>

- **62 percent** of all respondents have **used AI technologies**.
- **Teachers use AI for:**
 - Research (44 percent).
 - Generating lesson plans (38 percent).
 - Summarizing or synthesizing information (38 percent).
 - Generating classroom materials like tests and assignments (37 percent).
- **Students agree that:**
 - AI technologies help them better understand material (73 percent).
 - AI helps them study faster or more efficiently (67 percent).



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May 25, 2023
Teach Languages with ChatGPT
<https://chat.openai.com/>

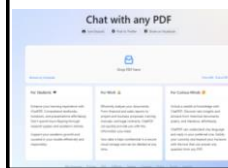


- ChatGPT can be used as a helpful tool to support language learning in various ways. Here are some methods you can employ to teach languages with the assistance of ChatGPT:
1. **Conversation practice:** Engage in conversational exchanges with ChatGPT to practice speaking and understanding the target language. You can simulate real-life dialogue 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

29

May 25, 2023
Chat with any PDF
<https://www.chatpdf.com/>

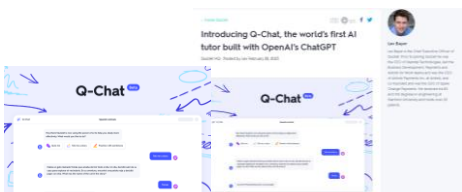
On the Trail of Self-Directed
Online Learners



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 interviews, focus groups, and content analyses 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 sensitivity 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 endeavors, such as finishing college, obtaining a promotion or a new job.
5. Effective strategies for promoting self-directed learning in online environments include designing resources, tools, and courses that meet students' highly diverse learning needs.

30

February 28, 2023
Intelligent Assessment and Tutoring
 Introducing Q-Chat, the world's first AI tutor built with OpenAI's ChatGPT, Lex Bayer, Quizlet
<https://quizlet.com/blog/meet-q-chat>



31

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

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?


32

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://hard.google.com/>
<https://voicebot.ai/2023/07/12/anthropic-introduces-upgraded-generative-ai-chatbot-claude-2/>
<https://www.youtube.com/watch?v=XYE2JA-C8gw>




33

May 24, 2023 AI AI AI
See why AI like ChatGPT has gotten so good, so fast (GPU speed increased)
 Pranshu Verma & Kevin Schaul, Washington Post
<https://www.washingtonpost.com/business/2023/05/24/artificial-intelligence-tech-rapid-advances/>




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May 24, 2023 AI AI AI
See why AI like ChatGPT has gotten so good, so fast (bigger and better datasets)
 Pranshu Verma & Kevin Schaul, Washington Post
<https://www.washingtonpost.com/business/2023/05/24/artificial-intelligence-tech-rapid-advances/>



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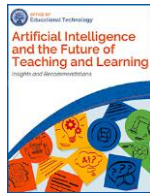
May 24, 2023 AI AI AI
See why AI like ChatGPT has gotten so good, so fast
 Pranshu Verma & Kevin Schaul, Washington Post
<https://www.washingtonpost.com/business/2023/05/24/artificial-intelligence-tech-rapid-advances/>



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June 13, 2023 U.S. Department of Educational Technology Artificial Intelligence

<https://tech.ed.gov/ai/>
https://zoom.us/joiner/register/WB_AYs3ADwQSS8pKUZVgw#?registration



What is AI?

The professional definition of AI is sometimes hard to understand or explain. However, we can define it in a way that is more accessible to educators. AI is a technology that can perform tasks that would normally require human intelligence, such as understanding natural language, recognizing images, and solving problems.

AI can be used in many ways in education, from personalizing learning to automating administrative tasks. It can also be used to create new educational experiences, such as virtual reality simulations and adaptive learning environments.

AI is not a magic wand that can solve all of our educational problems. It is a tool that can be used in many ways, and its effectiveness will depend on how it is used. We need to be thoughtful and intentional about how we use AI in education, and we need to ensure that it is used in ways that are equitable and effective for all students.

Figure 1: Examples of AI in education. (Source: U.S. Department of Education)



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Education 20/20



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20 New Roles of the Instructor

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



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

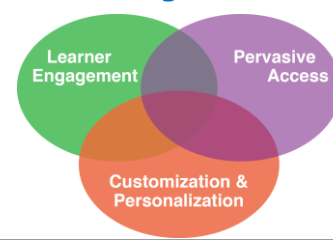
<http://travelinman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>

Flexibility Support and Feedback Choice and Options
Convenience Spontaneity Nontraditional Learning
Collegiality Organization Passion and Inspiration
Cheerfulness and Optimism Relevance and Meaningfulness
High Expectations Sharing Trial and Error (i.e., it is ok to fail)
Empowerment and Autonomy Purpose and Vision 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



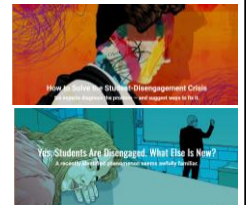
43

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



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June 15, 2022 Learning is More Mobile Leaders & Legends of Online Learning, Dr. Mark Nichols' Podcast

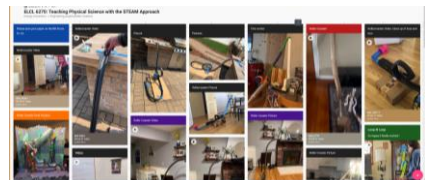
<https://onlinelearninglegends.com/podcast/562-dr-george-veletsianos/>
In this episode, Open Polytechnic of New Zealand Executive Director Dr. Mark Nichols chats with Dr. George Veletsianos, Royal Roads University in Victoria, British Columbia. George talks about his history and research in online education, and his ongoing challenges to the false dichotomy of online and in-person learning.



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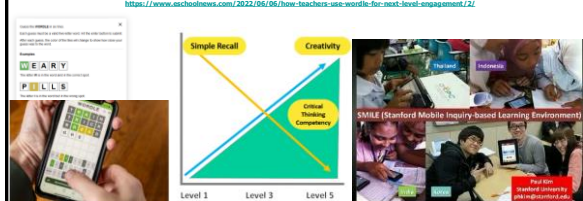
March 21, 2021 Learning is More Digitally Rich

ELCL 6270: Teaching Physical Science with the STEAM Approach
Heejung An, William Paterson University
Hands-on, Minds-on, Hearts-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



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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/>



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July 11, 2023 Learning is More Immersive 'Metaversities' Face Virtual Learning's Financial Realities

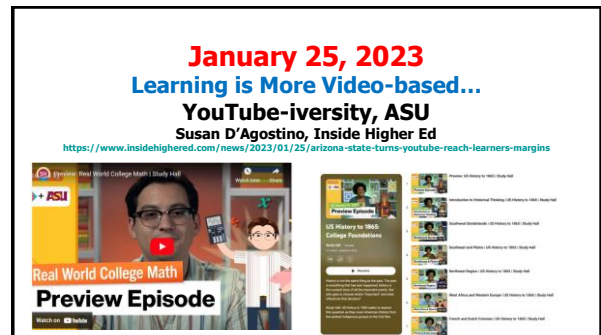
Lauren Coffey, Inside Higher Ed
<https://www.insidehighered.com/news/tech-innovation/teaching-learning/2023/07/11/metaversities-face-virtual-learning-financial-realities>



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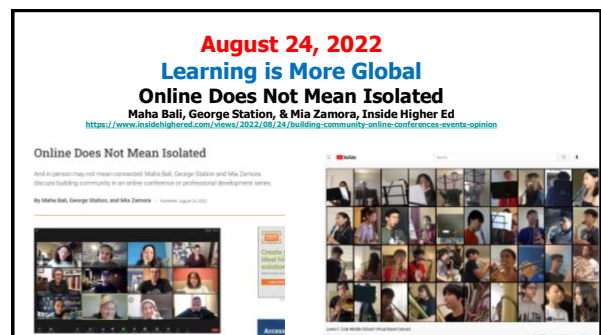
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July 27, 2023
Learning is More Immediate ...Science in the News
46,000-Year-Old Worm Possibly Revived from Siberian Permafrost
Meghan Bartels, Scientific American
<https://www.scientificamerican.com/article/46-000-year-old-worm-possibly-revived-from-siberian-permafrost/>
46,000-Year-Old Worm Possibly Revived from Siberian Permafrost
 An international team of scientists says researchers found in Siberian permafrost an 46,000 years old and revived using techniques similar to those of a zombie lab. (Source: Scientific American)




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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=WNfmU6ibVbE>




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



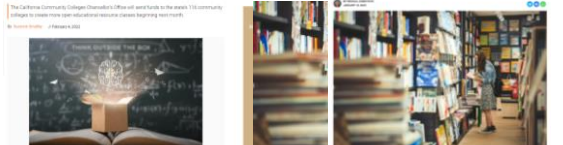
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February 4, 2022
Learning is More Free and Open
California 2-Year Colleges to Begin \$115M OER Experiment
Suzanne Smalley, Inside Higher Ed (results in better grades, lower costs)
<https://www.insidehighered.com/news/2022/02/04/california-moves-to-115-million-0er-experiment>
<https://opennews.org/news/california-proposes-zero-textbook-cost-degree-program>
 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 \$42,912,828 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

The California Community College Chancellor's Office will award funds to the state's 116 community colleges to create more open educational resource courses beginning soon.

Newsom calls textbooks "racket," proposes money to create free ones



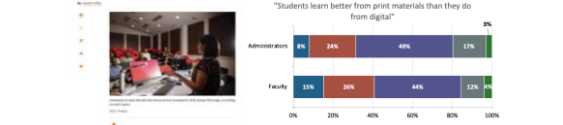
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September 7, 2023
More Professors Aware of, and Using, Open Educational Resources
Lauren Coffey, Inside Higher Ed
<https://www.insidehighered.com/news/tech-innovation/learning-teaching/2023/09/07/more-faculty-use-open-and-using-open-educational-resources>

More Professors Aware of, and Using, Open Educational Resources

A study finds increasing levels of faculty open resource use, but questions on OER adoption persist.

"Students learn better from print materials than they do from digital"



Category	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Administration	8%	24%	60%	17%	0%
Faculty	11%	30%	48%	12%	0%

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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

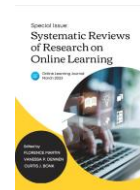


**Motivating and
Supporting Online**

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Special Issue on Online Learning Research

Martin, F., Dennen, V. P., & Bonk, C. J. (Eds.) (2023). **Special Issue:
Systematic Reviews of Research on Online Learning.**
Online Learning Journal, 27(1). DOI: <https://dx.doi.org/10.24059/olj.v27i1.3887>
 Entire issue with cover: <http://www.publicationshare.com/34>
 EdTechBooks: DOI: [10.24059/olj.v27i1.3887](https://doi.org/10.24059/olj.v27i1.3887)



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How Learning is Changing: Mega Trend #3. Customization



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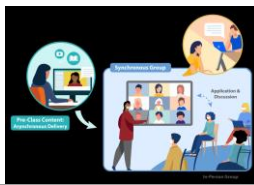
June 6, 2022

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>

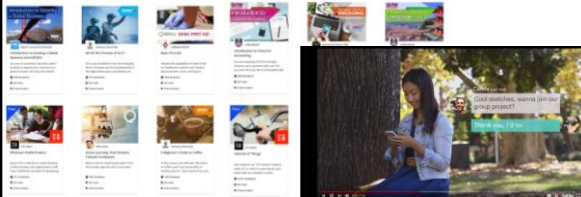


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Learning is More Self-Directed

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>

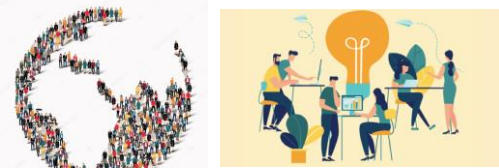


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Wanted:

Billions of Self-Directed Learners

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



75

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

 PRAXIS

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January 31, 2023

Learning is More Modifiable

Mosaic Active Learning Classrooms at IU



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May 21, 2023 & June 13, 2022 (Khan World School)

Learning is More Personalized

Behind Khan Academy And Arizona State University's Khan World School Launch, Michael B. Horn, Forbes

<https://www.forbes.com/sites/michaelhorn/2022/05/21/behind-khan-academy-and-arizona-state-universitys-khan-world-school-launch/>


At present, the Khan World School is drawing interest from students around the world. The school will be free for students in Arizona by taking advantage of ASU's charter school. But for those locations where it isn't a public option, Khan said, that they will be able to offer the school for less than \$10,000.

The Khan World School is aiming to tackle that stereotype with a daily, synchronous seminar where students debate topics that often aren't discussed in schools—things like "Will the Fed be able to control inflation?"



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August 20, 2019
ASU develops world's first adaptive-learning biology degree, ASU News
<https://www.asunews.com/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%...."



ASU News
 School of Life Sciences leads effort to transform undergraduate science education

The Biodesign Initiative

Active Learning
 Adaptive Learning
 Traditional Learning

1. Personalized
 2. Adaptive
 3. Personalized
 4. Adaptive
 5. Personalized
 6. Adaptive
 7. Personalized
 8. Adaptive
 9. Personalized
 10. Adaptive

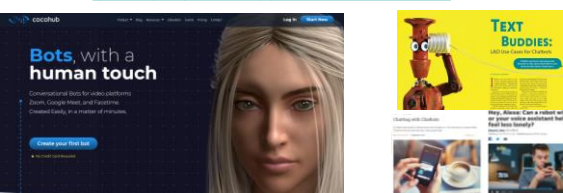
79

August 14, 2023
AI Can Make Education More Personal (Yes, Really)
Jing Liu, Dora Demszky, & Heather C. Hill, Education Week
<https://www.edweek.org/leadership/ai-can-make-education-more-personal-yet/health/2023/08>



80

December 12, 2021
Learning is More On Demand
Cocohub: Bots, with a human touch
<https://www.insidehighered.com/news/2021/12/12/cocohub-bots-with-a-human-touch>
Chatting with Chatbots and Text Buddies
Lindsey McKenzie, Inside Higher Ed
<https://www.insidehighered.com/news/2021/12/12/cocohub-bots-with-a-human-touch>



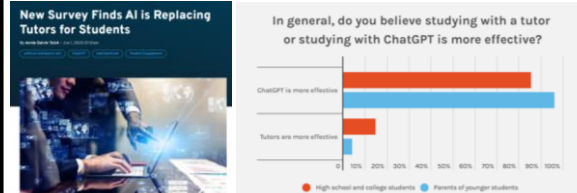
Bots, with a human touch
 Conversational bots for video platforms
 Design, design, design, and design
 Created today, in a matter of minutes.
[Create your first bot](#)

TEXT BUDDIES:
 Let your students learn on their own terms.

Hey, AI. Can a robot with AI be your robot without being your first best friend?

81

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-/>



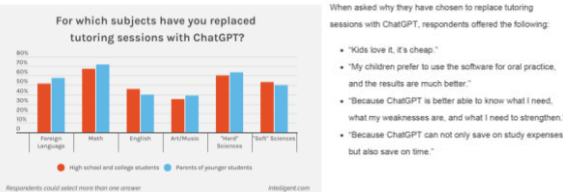
New Survey Finds AI is Replacing Tutors for Students
 In general, do you believe studying with a tutor or studying with ChatGPT is more effective?

ChatGPT is more effective
 Tutors are more effective

High school and college students
 Parents of younger 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/>



For which subjects have you replaced tutoring sessions with ChatGPT?

Foreign Language
 Math
 English
 Art/Music
 Health Sciences
 Self Sciences

High school and college students
 Parents of younger students

When asked why they have chosen to replace tutoring sessions with ChatGPT, respondents offered the following:

- "Kids love it. It's cheap."
- "My children prefer to use the software for oral practice, and the results are much better."
- "Because ChatGPT is better able to know what I need, what my weaknesses are, and what I need to strengthen."
- "Because ChatGPT can not only save on study expenses, but also save on time."

83

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/the-macro-impact-of-microcredentials/>
<https://news.growwle.com/about>



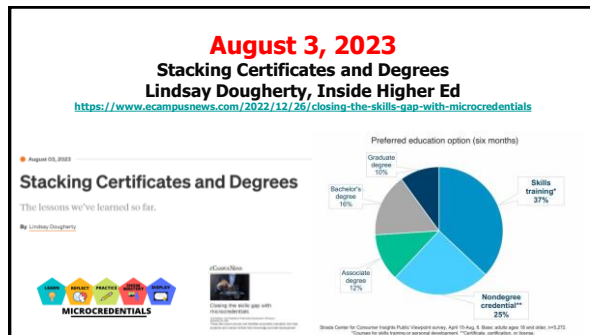
The macro impact of microcredentials
 Susan Manning, Ed.D, Director of Customer Education, Credly, June 6, 2022
 By issuing microcredentials with digital credentials are prepared for a changing workforce and can make a big impact in three key ways

3 reasons microcredentials are poised to go mainstream
 Randy Gault, Chief Strategy and Growth Officer, e3 June 27, 2022
 Our understanding of learning and work has started to change—our understanding of credentials must now evolve, too

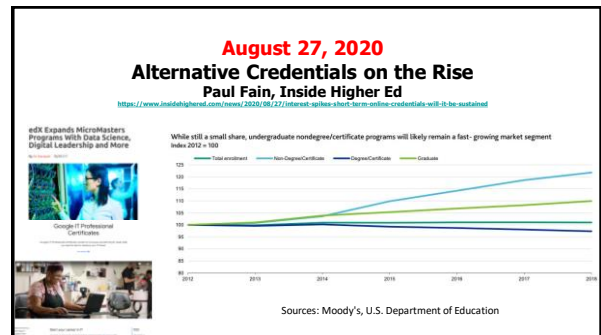
MICRO-CREDENTIALS

THE GREAT UPHEAVAL
 ARTHUR LEVINE
 SCOTT VAN PELT

84



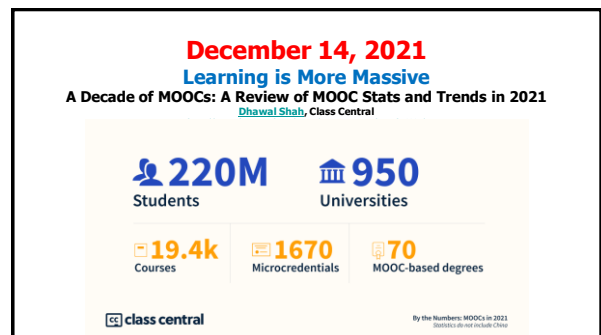
85



86



87



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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 from his website probably for learning English.

Free Coursera

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, Collaborating
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 (Code in Place)

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/2023/03/22/democratize-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

Stanford University's free online course, 'How to Democratize Education', has gained 30,000 students in 3 years, according to a new report from the university's Center for Innovation and Entrepreneurship.

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 Sloan and College Scorecard.

As technology and inclusion in 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 course itself goes beyond that.

Remove Stanford's online course needs to impact millions of students around the world.



(Clockwise from left) Stanford faculty Chris Pesh and Mehman Sahami and senior lecturer Julie Zelenka 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 Beaudoin)

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January 20, 2022


Arizona State University Announces Effort To Educate 100 Million Learners Worldwide

Michael T. Nietzel, Forbes

Video (2:07): https://vimeo.com/567987472?embedded=true&source=vimeo_logo&owner=13453234
<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



93

MOOC books (2020) and (2015)

94



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




95

Part 3. Technology Tomorrow
http://www.huffpost.ca/a/malic-boutrogami/prepares-for-future-learn_3_16407756.html

How Human is Too Human for Robots?

96

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 Scale



Episode 159 - It's Time to Lead or About
Time We Lead: Learning Experience Design
& Personalized Learning



97

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-are-boosting-student-engagement>



ure 3. An example of a display studio.

98

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

Voice (4:43): <https://www.youtube.com/watch?v=YaBa5PO1Hk>

Video download: <http://curtbonk.com/aivoice2.html>

Audio (4 examples): <http://curtbonk.com/aivoice.html>



99

Poll:

Is this an Evolution or Revolution?



100

We are entering a jumping off point...

(South China Normal University)



101

Things are heating up!



102

The Learning Revolution is coming within reach!



103

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 (go to "Archived Talks")

Papers: PublicationShare.com

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

Free Course: <https://colcommons.org/welcome/course/details/8>

Curtis J. Bonk, IST Professor, Indiana University

Email: cjbonk@indiana.edu; <http://curtbonk.com/>

Free!

Free!

Free!

Not Free!



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