

Time to Wake Up from Our Innovative Learning Dreams and Make Smarter Learning a Reality

Curtis J. Bonk, Professor, Indiana University

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<http://curtbonk.com/>



1

Dreams of Smarter Learning...

Center for the Advancement of Teaching
Temple University, Paul Blaschko



2

As technology got smarter...

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-543792>



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

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/>

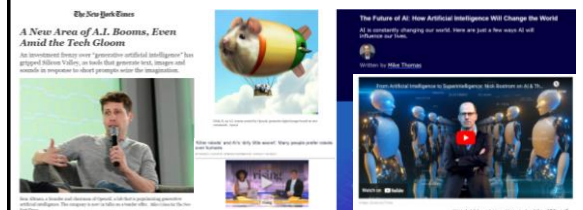


5

January 7, 2023

AI in Business and Society News

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



6

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

AI Will Increase Vulnerability of Most Educated Workforce
 Share of work that can be automated, by education level of employees

Education Level	With generative AI	Without generative AI
Master's PhD, or higher (10% of jobs)	10%	10%
Bachelor's degree (22%)	15%	10%
Associate's degree (15%)	20%	10%
Some college (22%)	25%	10%
High school diploma or equivalent (20%)	30%	10%
No high school degree (13%)	35%	10%

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 Alexander Tassi
 June 14, 2023 at 12:18 AM EDT

AI could replace equivalent of 300 million jobs – report

The worldwide boom in generative artificial intelligence is accelerating productivity and growth, but it also poses a profound disruption for others, primarily knowledge workers, according to a new report by consultants McKinsey.

Generative AI will give humans a new "super partner" at the firm and chair of McKinsey report.






7

May 19, 2023
AI in School News

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

How schools can respond to ChatGPT with inquiry-based learning
 Inquiry-based learning is a teaching method that encourages students to explore and discover knowledge through asking questions and investigating problems.

The importance of teaching generative AI
 Generative AI is a type of artificial intelligence that can create new content, such as text, images, and music, based on prompts or instructions.






8

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).

Teachers are surprise AI champions



9

May 19, 2023
AI in Higher Ed News

Will advances in AI force a push to oral exams?
 As AI advances, some universities are considering oral exams to ensure students have a deep understanding of the material.

Colleges Race to Hire and Build Amid AI 'Gold Rush'
 Colleges are competing to hire top AI talent and build their own AI capabilities to stay competitive in the market.

Caught Off Guard by AI
 Professors are struggling to keep up with the rapid pace of AI advancements and their impact on education.





10

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_AYg5kAaQ558ocKtZVgwv?registration

What is AI?



11

September 2023
Guidance for Generative AI in Education and Research
 Ms Stefania Giannini, UNESCO
 Fengchun Miao, Wayne Holmes
<https://unesdoc.unesco.org/ark:/48223/pf0000386693>

Guidance for generative AI in education and research




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



Five Steps to Leverage ChatGPT in Your Teaching

March 06, 2023



TEN FACTS ABOUT CHATGPT

1. ChatGPT is a conversational artificial intelligence (AI) system that can generate human-like text based on prompts. It is trained on a vast amount of data from the internet, books, and other sources.
2. ChatGPT can create content in seconds. It can generate text, images, and even code, making it a valuable tool for educators and students alike.
3. ChatGPT is currently free to use. It is available on the OpenAI website and through various third-party applications.
4. ChatGPT learns from its interactions with users. The more it is used, the more it improves its ability to understand and respond to prompts.
5. ChatGPT can assist with a wide range of tasks, from writing essays and creating lesson plans to providing feedback and answering questions.

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May 25, 2023

Generative AI: Impact on Higher Education

Ray Schroeder, UPCEA Senior Fellow

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



Generative AI
Impact on Higher Education
Ray Schroeder
UPCEA Senior Fellow

Let's ask ChatGPT: What are some creative uses of AI chatbots in education?

Impact of Generative AI

Let's ask ChatGPT: just what is generative AI?


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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.

Over the past year, with little to no notice, the use of generative AI has grown rapidly, and the impact on education is profound.

- 1. Harvard University's Harvard Business School (HBS) has announced that it will accept GPT-4 for its MBA program. This is a significant move, as it is the first time a top-tier business school has accepted GPT-4.
- 2. The Harvard Business School's decision to accept GPT-4 is a reflection of the school's commitment to innovation and its recognition of the potential of AI in education.
- 3. The Harvard Business School's decision to accept GPT-4 is also a reflection of the school's recognition of the need to adapt to the changing landscape of higher education.
- 4. The Harvard Business School's decision to accept GPT-4 is a reflection of the school's recognition of the need to adapt to the changing landscape of higher education.
- 5. The Harvard Business School's decision to accept GPT-4 is a reflection of the school's recognition of the need to adapt to the changing landscape of higher education.

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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

Published on 08 September 2023




16

February 4, 2023

ChatGPT for language learning – All the prompts you need

Theodoris Karageorgakis, Educraft

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



ChatGPT for language learning – All the Prompts you need

BY THEODORIS KARAGEORGAKIS • OCT 2022 • 10 MINUTES

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May 25, 2023

Teach Languages with ChatGPT

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



Teaching languages with ChatGPT

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 language you are studying. You can ask questions about customs, traditions, and social norms.

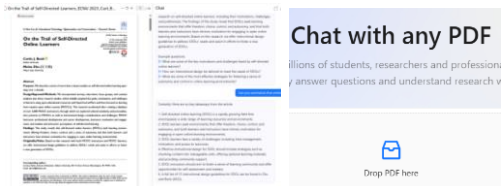
18

August 21, 2023

ChatPDF: Summarize assigned articles

https://courtsbook.com/R522_online_stylebias_Fall_2023.htm

Input one or more of the assigned articles and have ChatPDF generate questions on it or key points or both.

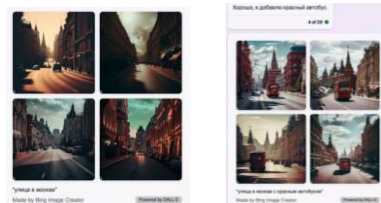


19

June 7, 2023

Learn new words through images by making suggestions for things to add or change

<https://fitmag.com/discovering-the-potential-of-bing-chat-for-language-learning/>



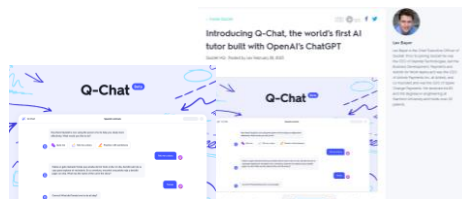
20

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>

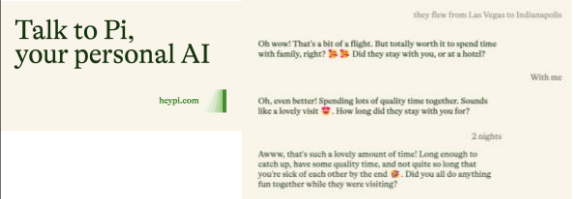


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May 25, 2023

Chat with heypi; especially good for social/emotional/burnout support

<https://heypi.com/talk>



22

May 24, 2023...AI AI AI

See why AI like ChatGPT has gotten so good, so fast (bigger and better datasets, GPU Speed)

Pranshu Verma & Kevin Schaul, Washington Post



23

April 22, 2023

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

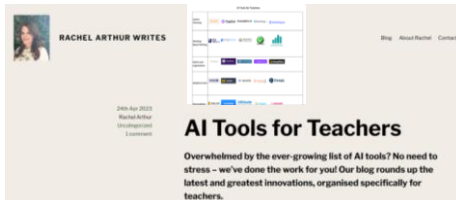
https://www.unesco.org/en/education/ai-education/ai-education-quick-start-guide_en_FINAL.pdf

Role ^a	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.
Secretary 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 helps 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 tutors 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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April 24, 2023 AI Tools for Teachers

Rachel Arthur
<https://rachelarthurwrites.com/2023/04/24/ai-tools-for-teachers/>



25

The Career Curriculum Continuum

Andrew Hermalyn, Inside Higher Ed

<https://www.insidehighered.com/digital-learning/article/2023/03/13/how-college-career-continuum-prepare-teachers-lives-option>



26

February 25, 2020

The 60 Year Curriculum:

Developing New Educational Models to Serve the Agile Labor Market

Chris Dede, Harvard University, The Evollution

<https://edutopia.com/news/chris-dede-harvard-university-the-evolution-of-the-60-year-curriculum/>

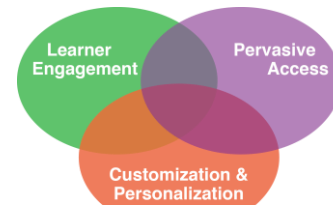
219: The 60-Year Curriculum with Rovy Branon

<https://edutopia.com/podcast/219-the-60-year-curriculum-with-rovy-branon/>



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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



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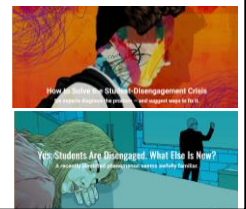
November 3, 2022 Still Struggling With Engagement? You're Not Alone

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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July 15, 2023

A Time for Learning Experience Designers, Niels Floor, The Netherlands

https://evolution.com/programming/program_planning/a-time-for-learning-experience-designers-2/

Episode 158 - Building Design Capacity for Online and Digital Education at Scale



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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-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.

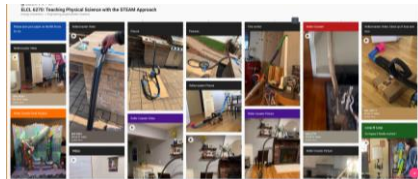


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March 21, 2021

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

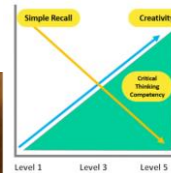


33

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/>



34

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>

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.

Source: 'Metaversities' Face Virtual Learning's Financial Realities

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Photo: iStockphoto.com

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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-are-boosting-student-engagement>

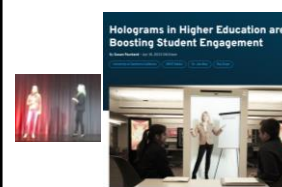


FIGURE 3. An example of a display studio.

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February 15, 2023
Learning is More Collaborative
Strong Schools, Afghani Women
Asian University of Women

<https://pressbooks.pub/schools/>
<https://www.coursera.org/learn/strong-schools>

37

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

38

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/2022-10-20-stanford-report-emergency-remote-instruction-led-to-shift-in-university-identity>

39

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

41

January 25, 2023
Learning is More Video-based...
YouTube-iversity, ASU
Susan D'Agostino, Inside Higher Ed

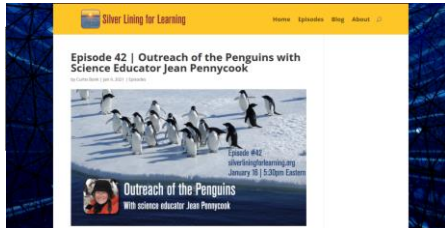
<https://www.insidehighered.com/news/2023/01/25/arizona-state-turns-youtube-reach-learners-margins>

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Learning is More Video-based...

Silver Lining for Learning

<https://silverliningforlearning.org/>
https://www.youtube.com/channel/UC9XEsh89qr1pmVWpQt_aA/live



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August 24, 2022

Learning is More Global

Online Does Not Mean Isolated

Maha Bali, George Station, & Mia Zamora, Inside Higher Ed
<https://www.insidehighered.com/views/2022/08/24/building-community-online-conferences-events-opinion>

Online Does Not Mean Isolated

And in person may not mean connected. Maha Bali, George Station, and Mia Zamora building community in an online conference or professional development.

By Maha Bali, George Station, and Mia Zamora Published August 24, 2022



44

August 10, 2023

Learning is More Immediate

300,000-year-old skull found in China unlike any early human seen before

Hafsa Khalil and Jack Guy, CNN

<https://www.cnn.com/2023/08/10/asia/ancient-skull-china-human-evolution-intl-sci-aca/index.html>

300,000-year-old skull found in China unlike any early human seen before



46,000-Year-Old Worm Possibly Revived from Siberian Permafrost

An international team of scientists says researchers found an 46,000-year-old worm of cold-adapted species revived in Siberia's permafrost.



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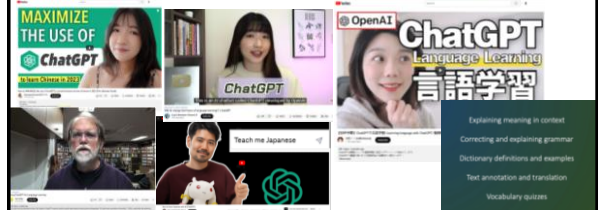
June 17, 2023, YouTubers using ChatGPT

Learning is Informal

Will AI change the future of language learning?

ShuoshuoChinese 说说中文

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



46

December 17, 2022

Learning is More 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>



47

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-colleges-115-million-oer-experiment>

<https://www.insidehighered.com/news/2022/02/04/california-colleges-115-million-oer-experiment>

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 \$42,812,628 in textbook costs resulting in an 85% 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 115 community colleges to create more open educational resource courses beginning next month.

By Suzanne Smalley Published February 4, 2022



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

The California Community College Chancellor's Office will award funds to the state's 115 community colleges to create more open educational resource courses beginning next month.

By Suzanne Smalley Published February 4, 2022



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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

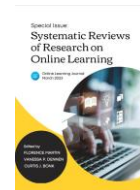


**Motivating and
Supporting Online**

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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: <http://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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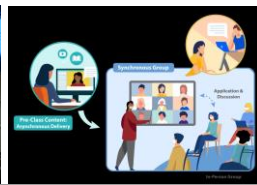
June 6, 2022

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>

56

Wanted:

Billions of Self-Directed Learners

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

57

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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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/2022/06/13/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 facilities where it isn't a public option, Khan said they will be able to offer the school for less than \$10,000.

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

Learning for everyone, everywhere

AI's Education Revolution
 Khan Academy is using ChatGPT to bring one-on-one teaching to scale.

WSJ OPINION

59

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>

Fipping the classroom increased performance and persistence. "Beckett Stiermer and I got an ovation at the end of the junior-level major's course, Evolution — Biology 245, 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%..."

60

December 12, 2021 Learning is More On Demand Cocohub: Bots, with a human touch

Chatting with Chatbots and Text Buddies
Lindsey McKenzie, Inside Higher Ed

<https://www.insidehighered.com/news/2019/09/04/expansion-chatbots-higher-ed>
<https://www.insidehighered.com/digital-learning/article/2021/11/09/cocohub-student-ai-chatbot-human-substitute>

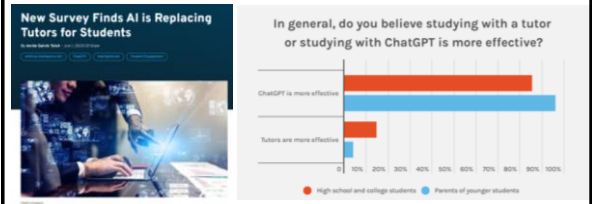


61

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/>

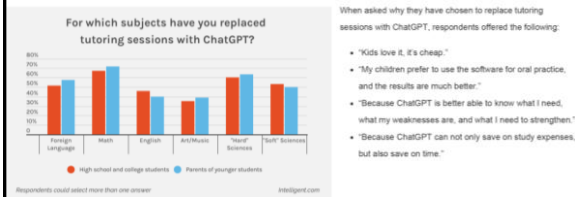


62

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/>

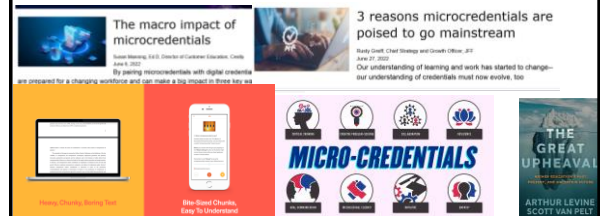


63

June 6 and 27, 2022 Microcredentials and Certificates

Susan Manning, Ed.D, Director of Customer Education, Credly, eSchool News

<https://www.eschoolnews.com/2022/06/27/the-micro-impact-of-microcredentials/>
<https://learn.goweb.com/about>

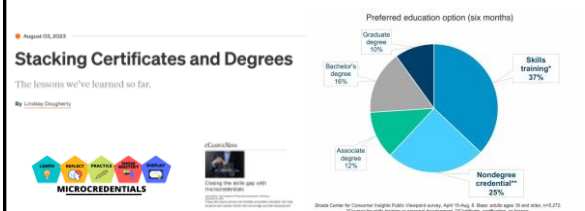


64

August 3, 2023 Stacking Certificates and Degrees

Lindsay Dougherty, Inside Higher Ed

<https://www.ecampusnews.com/2022/12/26/closing-the-skills-gap-with-microcredentials>

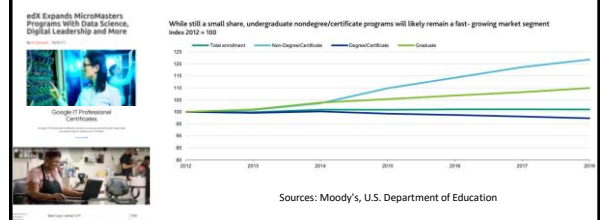


65

August 27, 2020 Alternative Credentials on the Rise

Paul Fain, Inside Higher Ed

<https://www.insidehighered.com/news/2020/08/27/context-solves-short-term-solves-credentials-will-it-be-sustained>



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67



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Participant #1(boy, grade 10)

272 courses for free, mostly from Coursera. A Grade 10 student from a public school where English is taught only for about 3 hours a week, the student jumps into any courses he finds suitable preferably 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 Networks, Social Change!
5. Statistical Introduction to Food and Health
6. Labor and the World
7. Power Outcasting
8. Climate: More than just an electric record
9. Improving your statistical inferences
10. Global Health Policy
11. English for Media & Literacy
12. Code Yourself: An Introduction to Programming
13. Behavioral Finance
14. English For Journalists
15. French English New Teaching Language Online
16. Creative Writing: Techniques and Tools For Success
17. Economic Growth and Distribution Justice Part 1: The Role of the state
18. Transmedia Storytelling: Narrative, rhetoric, emerging technologies, and global audiences
19. Introduction to Cloud Identity
20. Introduction to Psychology
21. Nanotechnology and Nanocomposites, Part I
22. Assessment For Learning
23. Big History: Connecting Knowledge
24. The Science of New Cells

RECT 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/famous-stanford-coding-course-free-online/>
 Alcino Donadel, University Business
<https://universitybusiness.com/how-to-democratize-education-stanfords-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 tech-savvy student can own. Specifically, a computer science degree from Stanford is the most sought-after high-gear, according to the HBS Group and College Scorecard.

As prestigious and exclusive as degrees from Stanford may be, Part II's featured professors from creating 'Code in Place' are collaborating to make it open to the public to share the benefits of programming. While the program doesn't offer teachers any financial incentives or salaries, any college could be a member of the group.

Stanford's Standard coding course needs to respond to the needs of a more diverse student body.

(Clockwise from left) Stanford faculty Chris Paeh and Mehrez Sahami and senior lecturer Julie Doherty will teach 'Code in Place'. A free online entry to coding course that is being offered for the second time since the coronavirus pandemic began. (Image credit: Andrew Brubaker)

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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/asu-announces-effort-to-educate-100-million-students-worldwide/?sh=5a48282a>
 Video (2:07): https://vimeo.com/667987472?embedded=true&source=vimeo_logo&owner=13433234
<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

100 Million Learners

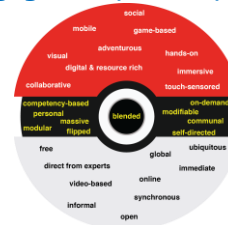
72

MOOC books (2020) and (2015)



73

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



74

A Dozen Questions for Smart Learning Environment Educators and Researchers...



75

Dreams of Smarter Learning...

1. What professional development opportunities are available for teachers to effectively utilize the smart learning environment?



76

Dreams of Smarter Learning...

2. What types of data are collected and analyzed within the smart learning environment to inform instructional decisions?



77

Dreams of Smarter Learning...

3. How will questions of learner engagement shift as learning becomes more immersive, massive, open, blended, visually-based, and online?



78

Dreams of Smarter Learning...

4. What means of automatic translation will exist in a decade? How much will you rely on it each day to function with international collaborators and documents in other languages?



79

Dreams of Smarter Learning...

5. How can educational agents and chatbots, OER, robots, immersive worlds, etc., effectively be embedded in society to continue to foster learning as people increasingly live to age 80 or 90 or 100 or beyond?



80

Dreams of Smarter Learning...

6. What will the definition of "smart" be in 5 or 10 years? How about 20 years? 50 years? 100 years? Beyond?



81

Dreams of Smarter Learning...

7. How much data is too much data? Will instructors have information filtering and restriction devices embedded in their learner information dashboards? And, if so, will they be allowed to use them?



82

Dreams of Smarter Learning...

8. How will we know or recognize when we have arrived at a smarter stage in the evolution of learning environments? What will each signal tell us and what will be the signals at each stage?



83

Dreams of Smarter Learning...

9. Is machine centered pedagogy now being cloaked under the disguise of personalizing learning?



84

Dreams of Smarter Learning...

10. Will teacher training programs need to be revamped to teach teachers how to adjust their strategies and approaches based on vast as well as minute individual differences?



85

Dreams of Smarter Learning...

11. How smart must a learner be to take advantage of SLEs? Is there a threshold level of metacognitive skill required? Who will research and fashion SLEs for learners at different developmental levels or stages?



86

Dreams of Smarter Learning...

12. What will this conference look like and emphasize in 5, 10, 20, or 50 years? i.e., Where will this field of SLEs make the greatest contributions to society?



87

Are we getting smarter...?



88



89

We are entering a jumping off point...

(Audience: South China Normal University)



90

Things are heating up!



91

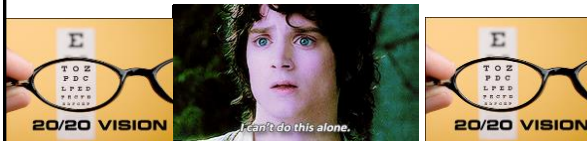
The Learning Revolution is coming within reach!



92

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) (go to "Archived Talks")

Papers: [PublicationShare.com](https://www.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: cjbok@indiana.edu; <http://curtbonk.com/>



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