

## Awakening Dreams and Possibilities: Ushering in Education 5.0 with Generative AI

Curtis J. Bonk, Professor, Indiana University

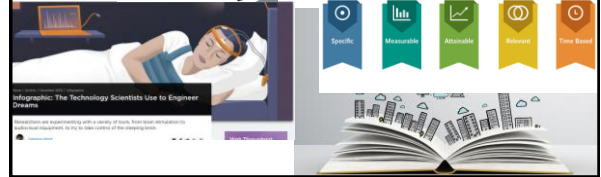
[cjbonk@indiana.edu](mailto:cjbonk@indiana.edu)  
<http://curtbonk.com/>



1

## Dreams of Smarter Learning...

It's Time To  
Wake Up



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/>

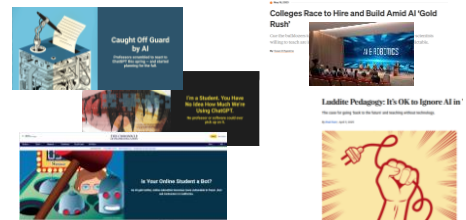


5

## November 2022 to May 2025:

AI, AI, AI, AI...

AI in Higher Education News



6

### Poll #1. Warm-up questions...

How often do you use ChatGPT, ChatPDF, Claude, Gemini, Microsoft Co-pilot or other Generative AI tools?

- Many times each day.
- Nearly every day.
- About once a week.
- About once a month.
- Just once or twice.
- Never. Never. Never.



7

April 8, 2024

Are You Ready for the AI University?  
Scott Latham, The Chronicle of Higher Education

<https://magazine.hms.harvard.edu/articles/how-generative-ai-transforming-medical-education>

<https://www.chronicle.com/article/are-you-ready-for-the-ai-university>

Are You Ready for the AI University?

Everything is about to change.



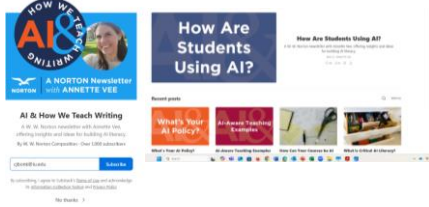
8

May 17, 2025

Annette Vee's

[AI and How We Teach Writing](https://aiandhowweteach.substack.com/)

<https://aiandhowweteach.substack.com/>



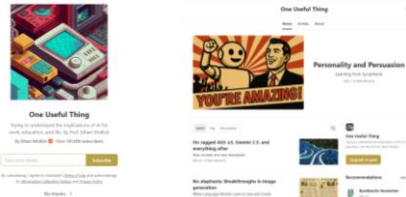
9

May 17, 2025

Educators are producing a growing number of free newsletters to keep you up to speed on AI:

Ethan Mollick's newsletter *One Useful Thing* offers insight into what new generative tools can do.

<https://www.oneusefulthing.org/>



10

November 30, 2023

Over 1,000 Sun Devils enroll in ASU's generative AI training course

<https://tech.asu.edu/features/ASUfacultysAIcourse>

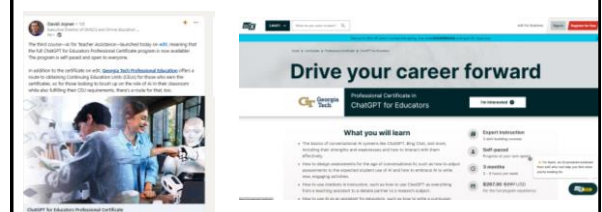


11

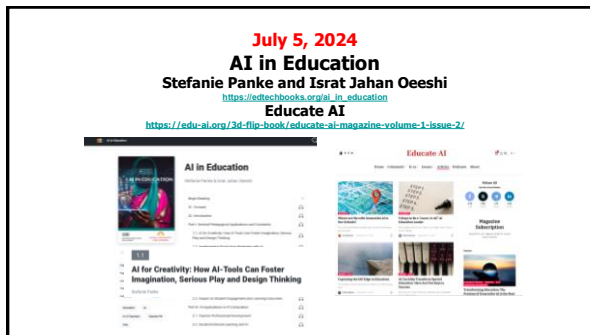
April 19, 2024

Professional Certificate in ChatGPT for Educators  
Georgia Tech

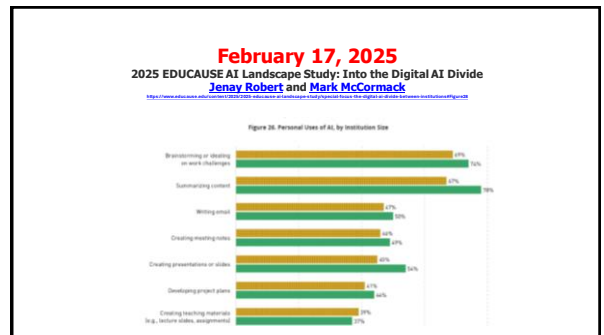
<https://www.edx.org/certificates/professional-certificate/gtc-chatgpt-for-educators>



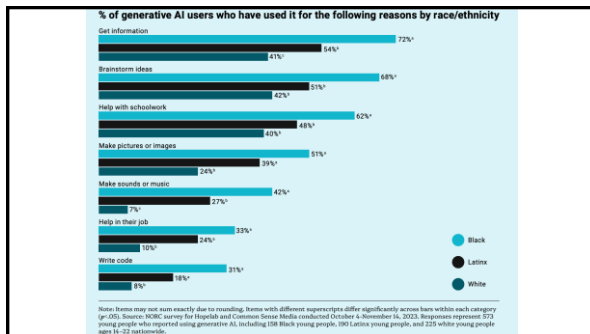
12



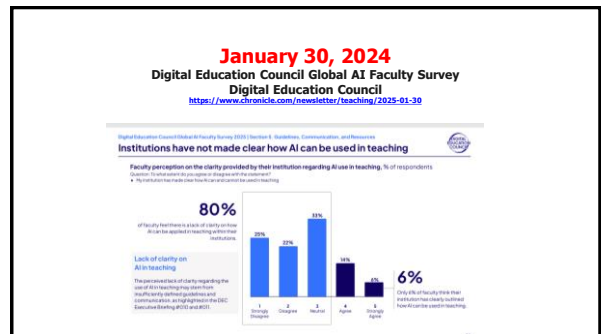
13



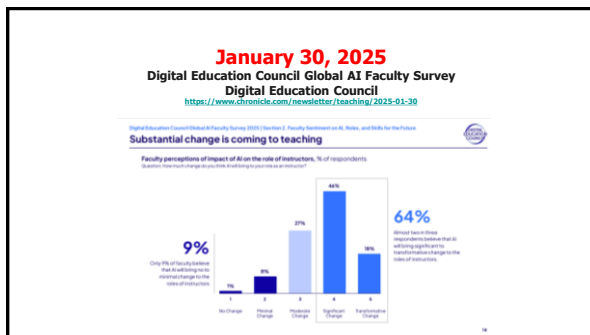
14



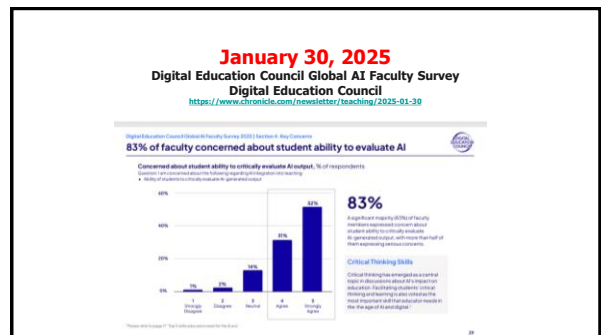
15



16



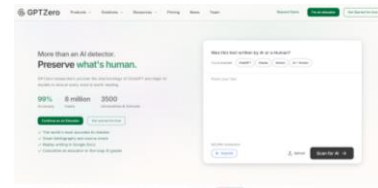
17



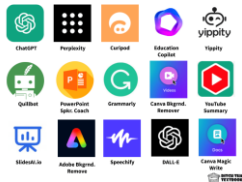
18

**June 13, 2024****Professors Ask: Are We Just Grading Robots**Beth McMurtrie, The Chronicle of Higher Education  
<https://www.chronicle.com/article/professors-ask-are-we-just-grading-robots>

19

**August 6, 2024****There's a Tool to Catch Students Cheating With ChatGPT. OpenAI Hasn't Released It.**Deepa Seetharamon and Matt Barnum, The New York Times  
<https://www.nytimes.com/2024/08/06/technology/openai-chatgpt-cheating.html>**May 23, 2025: GPTZero;** <https://gptzero.me/>

20

**May 15, 2025****Categorized AI Tools for Teaching and Learning**<https://docs.google.com/document/d/11h-wG0bm5C28yVfCpU0t7Ckx0l0Dwd40p0lwn1d0/edit#slide=id.g1>**15 AI tools to use in the classroom**

21

**August 20, 2024****Critical thinking in the digital age of AI: Information literacy is key**Marc Owen Jones, eCampus News  
<https://www.ecampusnews.com/teaching-learning/2024/08/20/critical-thinking-in-the-digital-age-of-ai/>**Critical thinking in the digital age of AI: Information literacy is key**

Dr. Marc Owen Jones, Northwestern University in Qatar

August 20, 2024

With the birth of AI, disinformation has entered a new era, rendering it critical that students possess strong information literacy skills

22

**June 7, 2024****AI and the Death of Student Writing**Lisa Lieberman, Chronicle of Higher Education  
<https://www.chronicle.com/article/ai-and-the-death-of-student-writing>

23

**January 11, 2024****The world's first AI powered course taught completely by AI teachers**Kevin Hogan, eCampus News  
<https://www.ecampusnews.com/teaching-learning/2024/01/11/the-worlds-first-ai-powered-course-taught-completely-by-ai-teachers/>

Innovation Institute

**The world's first AI-powered course taught completely by AI teachers?**Kevin Hogan  
January 11, 2024

Otermans Institute has taken a bold step in transforming the educational landscape as its AI-powered teachers are now teaching an entire 9-lesson course

24

**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>

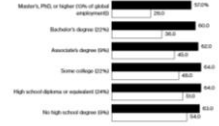
25

**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 employee

**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 Alexandra Tanti

June 14, 2023 at 12:01 AM EDT

The workplace boom in generative artificial intelligence is an age of accelerated productivity and greater efficiency, but it also brings 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 the board, report.



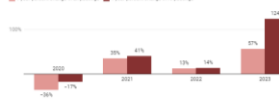
26

**February 26, 2024****AI Will Shake Up Higher Ed. Are Colleges Ready**

Taylor Swaak, The Chronicle of Higher Education

<https://www.chronicle.com/article/ai-will-shake-up-higher-ed-are-colleges-ready>**Job Postings at Colleges**

The number of AI-related postings on The Chronicle's jobs site soared in comparison with all job postings in 2023.



Note: Data limited to unique U.S. job postings on The Chronicle's jobs site that contained one or more of the following keywords in the title or description: "artificial intelligence," "AI," "machine learning," and "ML." All job types included. Duplicate postings were removed, and incomplete listings that did not include a country or state were not included. Data do not include self-posted openings.

Chart: Taylor Swaak. Source: WUOL authors. Visit the data. Created with Tableau.

27

**January 11, 2025****These are the fastest-growing job titles, according to LinkedIn users,**

By Auzineha Bacon, CNN

The top two jobs were **artificial intelligence engineer** and **artificial intelligence consultant**, respectively. Artificial intelligence has become the latest Silicon Valley buzzword, as companies like OpenAI have released chatbots that can do everything from hold conversations to suggest recipes to writing images — albeit with some occasional **glitchy results**. (Artificial intelligence researcher also ranked, the No. 12 spot.)

**These are the fastest-growing job titles, according to LinkedIn users**

LinkedIn users voted on the fastest-growing job titles in 2024. The top two jobs were artificial intelligence engineer and artificial intelligence consultant, respectively. Artificial intelligence has become the latest Silicon Valley buzzword, as companies like OpenAI have released chatbots that can do everything from hold conversations to suggest recipes to writing images — albeit with some occasional glitchy results. (Artificial intelligence researcher also ranked, the No. 12 spot.)



28

**April 29, 2025****Duolingo Adopts 'AI-First' Strategy, Will Eliminate All Contract Workers**

Jibin Joseph, MSN

Former Google CEO predicts AI will replace most programmers in a year  
Video (0:33): <https://curtbook.com/duolingo2025.html>



29

**Education 3.0...Education 20/20**

"In Education 3.0, classrooms would move away from lectures, such as this one, to having class time be spent on discussions and projects, using digital technology."  
(Per Wikipedia: [https://en.wikipedia.org/wiki/Education\\_3.0](https://en.wikipedia.org/wiki/Education_3.0))

30

### Education 3.0

#### The Genesis and Emergence of Education 3.0 in Higher Education and its Potential for Africa

First Monday, by Derek Keats and J. Philipp Schmidt, March 2007  
<http://firstmonday.org/ojs/index.php/fm/article/view/1625/1540>

#### EDUCATION 3.0

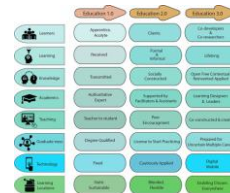
Characteristics	Education 1.0	Education 2.0	Education 3.0
Primary role of professor	Source of knowledge	Guide and source of knowledge	Orchestrator of collaborative knowledge creation
Source of knowledge	Traditional copyright materials	Copyright and freeware educational resources created and reused by students across multiple institutions, disciplines, nations, supplemented by original materials created for them	Freeware educational resources created and reused by students across multiple institutions, disciplines, nations, supplemented by original materials created for them
Content arrangements	Traditional, essays, assignments, tests, some groupwork within classroom	Traditional assignment approaches transferred to more open technologies; increasing collaboration in learning activities; still largely confined by institutional and classroom boundaries	Open, flexible learning activities that focus on creating room for student creativity; social networking outside traditional boundaries of discipline, institution, nation
Learning activities			

September 18, 2017

### Education 1.0 to 3.0

Gilly Salmon, University of Liverpool, UK

<http://www.gillysalmon.com/learning4future.html>



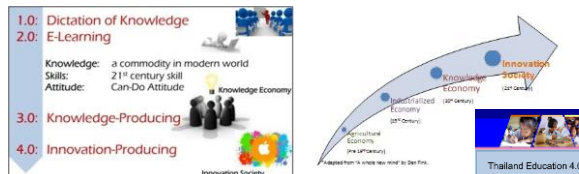
31

32

### Now What is Education 4.0?

"Innovation-producing education. Learn more in: Development of Individual Agency within a Collaborative, Creative Learning Community"

<http://www.igi-global.com/dictionary/education-40/41755>  
<https://thinc.in.th/engadmission/education4.html> (Chula Engineering)



33

### Is there an Education 5.0?

#### Education 5.0:

Collaboration and Creativity in Improving Students' Digital Intelligence  
<https://btqur.or.id/index.php/injosedu/article/view/202>

Education 5.0 is an innovative approach to education that integrates advanced technology and the latest learning methodologies to create a student-centred learning environment. The research method conducted in this study is literature. The results showed that students' digital intelligence, creativity, and collaborative skills improved. The implementation of Education 5.0, which embraces technology and innovative learning methodologies, facilitates a more dynamic and interactive learning environment, increasing student motivation and participation in the learning process.



34

### Education 5.0 (according to ChatGPT)

Education 5.0 is an evolving concept that reflects the integration of advanced technologies, digital tools, and modern pedagogical practices into the education system to prepare learners for the future of work and society. It draws inspiration from Industry 5.0 and focuses on human-centered learning, where technology supports both academic growth and the development of essential life skills.

Here are some key features of Education 5.0:

- 1. Learner-Centric:** The emphasis is on personalized learning, where students take an active role in their education, and learning pathways are tailored to individual needs, preferences, and learning styles.
- 2. Human-Technology Collaboration:** Education 5.0 harnesses the power of AI, machine learning, and other digital technologies to complement human teachers, making learning more efficient, accessible, and engaging. These technologies support, rather than replace, human educators.
- 3. Skills for the Future:** The focus is on developing critical skills such as creativity, problem-solving, emotional intelligence, and ethical reasoning. There is a strong emphasis on **soft skills** and **transversal skills** that help learners adapt to rapidly changing work environments.



35

### Education 5.0 (according to ChatGPT)

- 4. Real-World Problem-Solving:** Project-based and experiential learning are central to the concept of Education 5.0, encouraging students to work on real-world challenges that require interdisciplinary knowledge and collaboration.
  - 5. Global and Digital Citizenship:** In line with the globalized world, Education 5.0 promotes the idea of global citizenship and digital literacy. Learners are trained to navigate complex socio-cultural and environmental challenges while being responsible digital citizens.
  - 6. Lifelong Learning:** Education 5.0 advocates for continuous learning beyond formal education, encouraging individuals to acquire new skills and knowledge throughout their lives to remain relevant in a rapidly evolving world.
  - 7. Sustainability and Ethical Focus:** Education 5.0 emphasizes the importance of sustainability and ethical responsibility. It integrates learning about environmental challenges and social justice, encouraging students to become change agents for a more sustainable future.
- It is seen as the next stage in the evolution of education, following previous models like Education 3.0 (digital and networked learning) and Education 4.0 (which emphasized technology-enhanced and adaptive learning).



36



### Education 5.0:

<https://uqualio.com/post/education-5-0-how-new-trends-are-shaping-the-future-of-education>

Education 5.0: How New Trends are Shaping the Future of Education



**Education 5.0 focuses on personalized, learner-centered education through digital technologies.** It enhances engagement, improves learning outcomes, and broadens access to education. Key features include personalized learning, interactive tools like gamification and VR, and greater accessibility through online platforms.

37

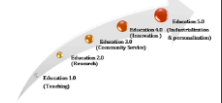
### Now What is Education 5.0?

#### Education 5.0:

<https://www.sydle.com/blog/education-5-0-61e71a99edf3b9259714e25a>

Education 5.0 is the outgrowth of this idea. It doesn't discard the proposals of Education 4.0, but it adds a more human perspective to learning, including social and emotional abilities in order to promote lesser environmental impact with greater health and safety.

- Collaborative work
- Better interpersonal relations, empathy, and tolerance of diversity
- Creativity
- Conflict management
- More fluid communication



38

### Now What is Education 5.0?

#### Education 5.0:

<https://www.sydle.com/blog/education-5-0-61e71a99edf3b9259714e25a>

**Education Enhances Society: Education 5.0 focuses on preparing individuals with the skills, mindset, and adaptability needed to thrive in a rapidly evolving world.** By nurturing critical thinking, creativity, and interdisciplinary problem-solving abilities, Education 5.0 contributes to the overall advancement of Society 5.0's goals, such as sustainable development and technological integration.



39

### 20 New Roles of the Instructor



40



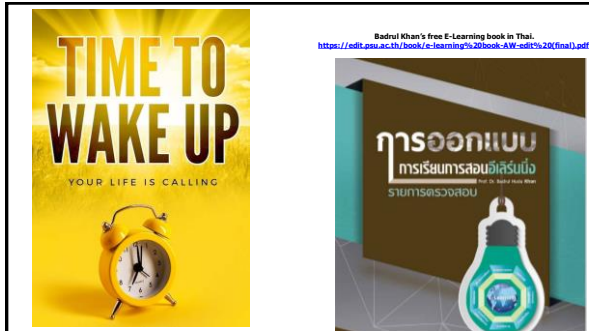
41

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

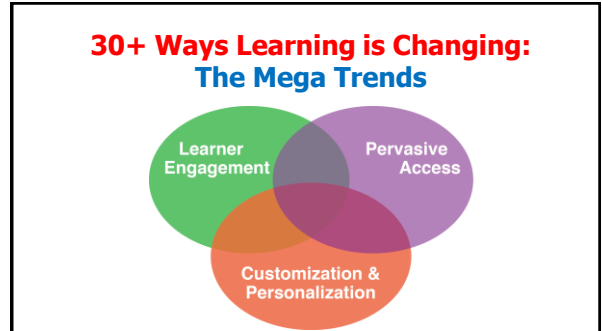
<http://travelinman.blogspot.com/2011/05/bonks-last-principles-of-instruction.html>

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

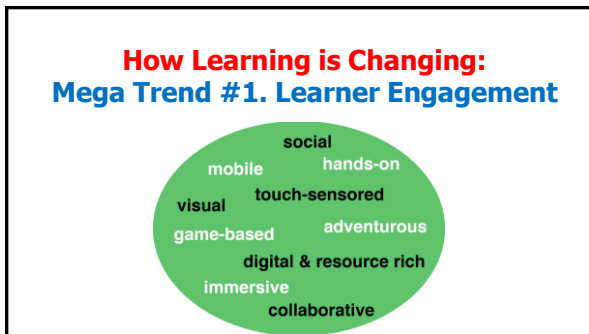
42



43



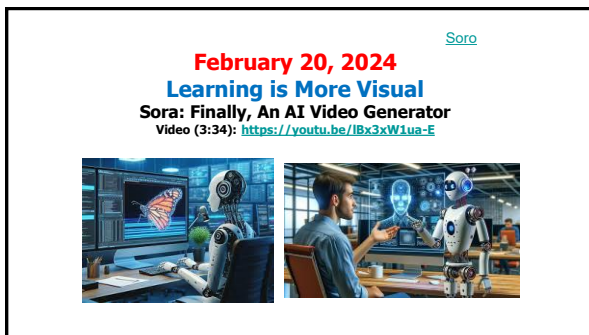
44



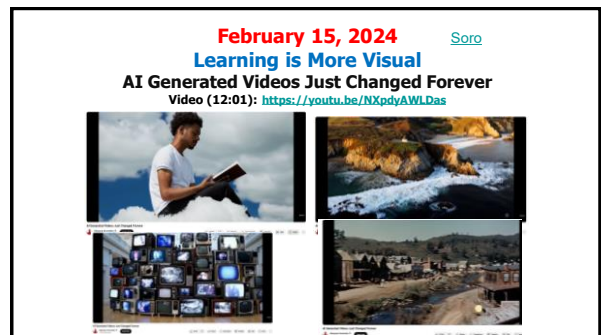
45



46



47



48




[Cats in Cathedral](#)

**February 16, 2024**  
**Learning is More Visual**  
**A video star is born:**  
**OpenAI's Sora stuns with AI act**

<https://www.animatedimes.in/tech/technology/a-video-star-is-born-openai-sora-stuns-with-ai-act/>  
<https://www.youtube.com/watch?v=1273526070>

"a giant cathedral is completely filled with cats, there are cats everywhere you look, a man enters the cathedral and bows before the giant cat king sitting on a throne." Video generated by Sora."



49

**February 16, 2024**  
**Display 3b. OpenAI's Video Generator Sora**  
**Is Stunning and Utterly Terrifying**  
 Tony Ho Tron, The Daily Beast

<https://www.thedailybeast.com/openai-video-generator-sora-is-stunning-and-utterly-terrifying>





Photo: Photorealistic depiction of two police dogs barking each other as they walk inside a bag of coffee.

50

**February 16, 2024**  
**Learning is More Visual**  
**OpenAI's Video Generator Sora Is Stunning**  
**and Utterly Terrifying**  
 Tony Ho Tron, The Daily Beast

<https://www.thedailybeast.com/openai-video-generator-sora-is-stunning-and-utterly-terrifying>



51

**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/learning-scenarios/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.



52

**October 31, 2023**  
**Learning is More Immersive**  
 Visible Body Courseware | Interactive 3D Science Content Meets Course Management

Robb Kneebone [robb.kneebone@visiblebody.com](mailto:robb.kneebone@visiblebody.com)  
<https://www.youtube.com/watch?v=hVZUABn-PRk>  
 Nick Riley [nickriley@visiblebody.com](mailto:nickriley@visiblebody.com)  
<https://www.visiblebody.com/>

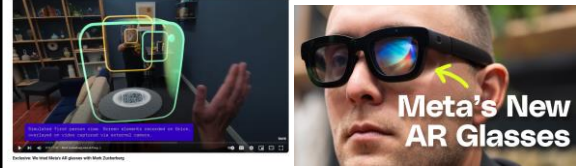


53

[AR Glasses Orion Meta](#)

**September 25, 2024**  
**Learning is More Immersive**  
 We tried Meta's AR glasses with Mark Zuckerberg

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



Meta's New AR Glasses

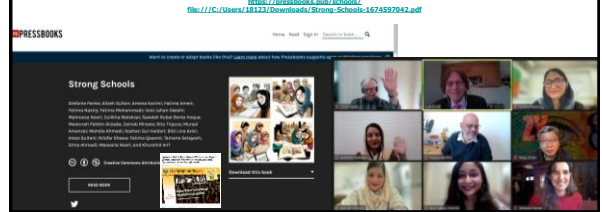
54

**August 27, 2023**  
**Learning is More Social**  
 e.g., R511 Fall 2023 in Padlet  
**Introductions: Getting to Know One Another**



55

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



56

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

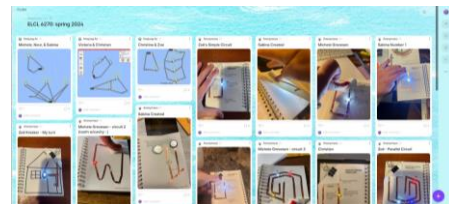
In this episode, Open Polytechnic of New Zealand Executive Director Dr. Mark Nichols chats with Dr. George Veletsianos, Royal Roads University in Victoria, British Columbia. George talks about his history and research in online education, and his ongoing challenges to the false dichotomy of online and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



57

**February 20, 2024**  
**Learning is More Digitally Rich**  
 Heejung An, ECL 6270: spring 2024  
**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/s11228-022-00740-x>  
 Based on the Thinking, Making, Sharing, and Reflecting (TMSR) model  
<https://padlet.com/wh321005-6270-spring-2024-7qj22wv0k3u0e>



58

**November 4, 2024**  
**NotebookLM**  
**Mark Brown, 'My Leukemia Story'**  
**Insights into Mark's experience of responding to treatment for Acute Myeloid Leukemia**

<https://on.soundcloud.com/ajekdJ6PXUoc2x88>

...we shouldn't dismiss how AI might in the future help to amplify our joy, success, failure, and disappointment, too, during these moments through new and improved ways of analyzing, interpreting, and understanding human performance. The real AI is already playing a big role in helping the science behind leukemia better analyze, predict, and suggest new and improved treatment plans. The signal to AI is deliberate. I want to finish this episode by sharing the conversation I generated using Google's new NotebookLM tool. As a bit of an experiment, I uploaded my 350,000-word journal to this tool to see what type of conversation it would automatically generate. The resulting discussion is a bit cringeworthy in places, but overall, it shows what's possible now and in the future through new generative AI tools—about opening a can of worms.



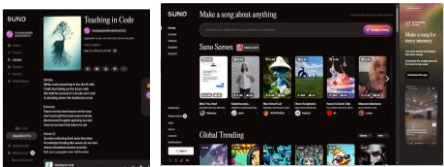
59

**December 6, 2024**  
**How Faculty Can Harness Generative AI for Enhanced Learning: Part 1: TEC-VARIETY and R2D2**  
 Curt Bonk, Student Learning Outcomes (SLO), COACHes Hub  
 Video (104:25): <https://www.youtube.com/watch?v=MQiC7be0IY>  
 Video (17:44): <https://rss.com/podcasts/friday-slo-talks/1790741/>  
 SLO: <https://www.youtube.com/channel/UCstudentlearningoutcomes-slo>  
 NotebookLM Podcast (20:45): <https://www.youtube.com/watch?v=3l1u5FSdsQ>  
 NotebookLM podcast (12:57): <https://youtu.be/nPr-p2Co-6I>




60

**May 15, 2025**  
**Learning is More Digitally Rich**  
**Suno: Makes a Song About Anything**  
 How About: The medical educators and AI song, indie rock  
<https://suno.com/>  
 The Future We Create: <https://suno.com/song/53436d7d-9bd4-4d01-89ab-0a4c4469f9c>  
 Teaching in Code: <https://suno.com/song/87094d6f-c5d1-5-4488-95eb-37863b0963ed>  
[https://suno.com/create?signup\\_source=splashpage&referral=5%2FHome&redirected\\_from=signup&uid=default](https://suno.com/create?signup_source=splashpage&referral=5%2FHome&redirected_from=signup&uid=default)



61

**February 26, 2024**  
**Tinkering, Making, Sharing, and Reflecting:**  
**A Model for Online Collaborative Project-Based Learning**  
**Heejung An and Woonhee Sung, EDUCAUSE Review**  
<https://er.educause.edu/articles/2024/2/thinking-making-sharing-and-reflecting-a-model-for-online-collaborative-project-based-learning>



62

**March 8, 2024**  
**Learning is More Game-based**  
 How teachers use Wordle—and other games—for next-level engagement  
**Laura Ascione, eSchool News**  
<https://www.eschoolnews.com/2022/06/08/how-teachers-use-wordle-for-next-level-engagement/>




63

**Ask SMILE**  
**Example of asking a Level 1 question (i.e., remembering) and system feedback in the Ask.SMILE system**

Ask a question  
 With the help of GPT-3.5, your question will be evaluated on a scale from Level 1 to Level 5 aligned to Bloom's Taxonomy.  
 What are all capital?

Level 1 question

This is a Level 1 question as it requires simple recall and comprehension of information. The question asks for a definition or description of what capital is, which can be answered by providing basic knowledge or information on the topic.




64

**It's Time to Wake Up!**





65

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






66

**August 3, 2024**  
**Learning is More Video-based...**  
 Preview: US History to 1865 | Study Hall  
 YouTube-iversity, ASU  
 Susan D'Agostino, Inside Higher Ed  
<https://www.insidehighered.com/news/2023/04/25/online-state-tune-youtube-reach-learners-margins>  
<https://www.youtube.com/@studyhall>  
[https://www.youtube.com/watch?v=ybckstbu3k8t&list=PL40581QeUmfCW\\_0216tExt\\_0dWb0z\\_A](https://www.youtube.com/watch?v=ybckstbu3k8t&list=PL40581QeUmfCW_0216tExt_0dWb0z_A)

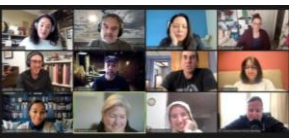
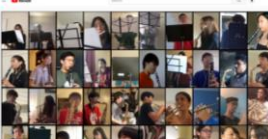
67

**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>

68

**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-a-healthy-online-conferences-event-opinion>


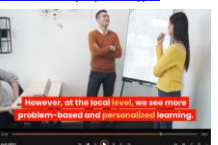
69

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




70

**November 12, 2023**  
**Learning is More Video-based...**  
**Pictory** (<https://app.pictory.ai/>)  
 In higher ed, online instructors might have lecture notes that they want to change to videos. Many times, it is hard for us to create videos by ourselves and lack time and skills. We can choose background images and voices (e.g., Female or male voices, different accents, etc.).  
 Some students do not want to read articles, etc. Instructors can turn them into audio files or videos to listen to. We can post both formats: articles and audio/videos like audiobooks. I think younger generations seem to like listening or watching over reading.  
<https://video.pictory.ai/1699816452918/20231112193620090yUha3NL7Z80pp0X>

71

**Episode 158 - Building Design Capacity for Online and Digital Education at Scale**  
 By Curtis Bueh | July 8, 2023 | Episode 1 | 1 comment




**Episode 139 | Is It Time to Lead or About Time We LED?: Learning Experience Design & Personalized Learning**



10. Ukrainian  
 11. Polish  
 13. Bulgarian

72

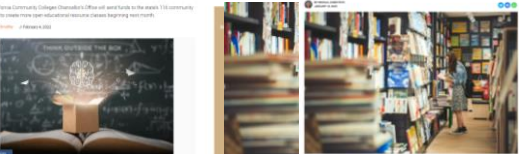




**February 4, 2022**  
**Learning is More Free and Open**  
 California 2-Year Colleges to Begin \$115M OER Experiment  
 Suzanne Smalley, Inside Higher Ed (results in better grades, lower costs)  
<https://www.insidehighered.com/digital-learning/article/2022/02/04/california-communities-college-zero-textbook-cost-degrees>  
<https://openstax.org/r/california-open-stax-workbook>  
<https://californiaopenstax.org/newsroom/2022/02/04/california-communities-college-zero-textbook-cost-degrees>  
 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 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 15 community colleges to create new open educational resources, thereby lowering costs.  
 © Suzanne Smalley / Inside Higher Ed

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




79

**Introducing the TEC-VARIETY Model**  
<http://tec-variety.com/>  
<http://tec-variety.com/TEC-VARIETY-Chinese.pdf>  
 Free book available: <http://hdl.handle.net/11559/4481>

**Tone/Climate**  
**Encouragement, Feedback**  
**Curiosity**


**Variety**  
**Autonomy**  
**Relevance**  
**Interactive**  
**Engagement**  
**Tension**  
**Yields Products**



80

**September 23, 2022**  
 Khoo, E., & Bonk, C. J. (2022). Motivating and Supporting Online Learners  
<https://colcommons.org/my-course>  
 free course available: <https://colcommons.org/welcome/coursedetails/8>;  
<https://www.colvue.org/>

Motivating and Supporting Online Learners



81

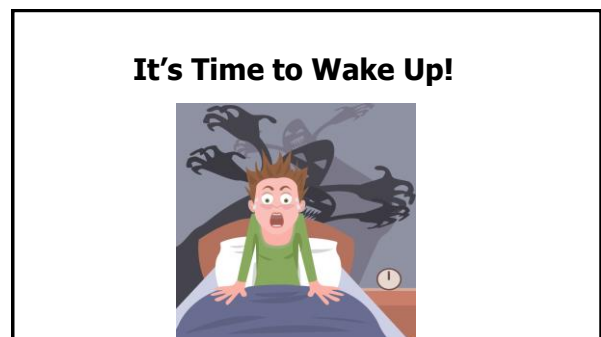
**Special Issue on Online Learning Research**  
 Martin, F., Dennen, V. P., & Bonk, C. J. (Eds.). (2023). **Special Issue: Systematic Reviews of Research on Online Learning.**  
*Online Learning Journal*, 27(1). DOI: <http://dx.doi.org/10.24059/olj.v27i1.3887>  
 Entire issue with cover: <http://www.publicationshare.com/24>  
 EdTechBooks: DOI: [10.24059/olj.v27i1.3887](https://doi.org/10.24059/olj.v27i1.3887)



82



83



84



## How Learning is Changing: Mega Trend #3. Customization

massive  
self-directed    blended  
communal    flipped    personal  
competency-based  
on-demand    modifiable  
modular

85

June 26, 2024  
Learning is More On Demand

### Hologram in this hospital allows doctors to 'teleport' to meet patients

A newly installed holographic display in Crescent Regional Hospital in Lancaster, Texas, is allowing doctors to meet with patients in real-time and helping them reduce travel time. CNN affiliate WFAA has more.

<https://www.cnn.com/2024/06/26/us/video/hologram-ortho-doctors-outpatients-texas-hospital-ortho-ortho-career-digital/index.html>



86

## Learning is More On Demand AI Tutor Pro, Contact North <https://www.aitutorpro.ca/>



87

## Learning is More On-Demand



88

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



89

## 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>



90

**September 8, 2023**  
**Learning is More On-Demand**  
**ChatGPT: Your new academic mentor**  
**Niamh Ancell, Cyber News**  
<https://cybernews.com/academy/news/chatgpt-your-new-academic-mentor/>

ChatGPT: Your new academic mentor



**ChatGPT for language learning – All the Prompts you need**



91

**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 challenge with a fully, asynchronous remote school. 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

92

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

Flipping the classroom increased performance and persistence. "Rockett Starmer 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 develops world's first adaptive-learning biology degree**

School of Life Sciences leads effort to transform undergraduate science education



93

**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=YaBaSP01Mk>  
 Video downloaded: <http://curtbonk.com/abvoice2.html>  
 Audio (4 examples): <http://curtbonk.com/abvoice.html>



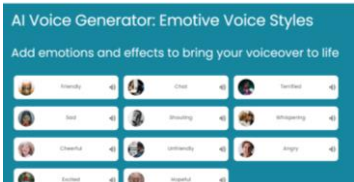
**AI voice actors sound more human than ever—and they're ready to hire**

94

**September 15, 2023**  
**Learning is More Personalized**  
**AI Voice Generator For Commercial Use**  
**Natural Reader**  
<https://www.naturalreaders.com/>

AI Voice Generator: Emotive Voice Styles

Add emotions and effects to bring your voiceover to life



95

**June 6 and 27, 2022**  
**Learning is More Modular**  
**Microcredentials and Certificates**  
 Susan Manning, Ed.D., Director of Customer Education, Credly, eSchool News  
<https://learn.gonowbe.com/about>

The macro impact of microcredentials

3 reasons microcredentials are poised to go mainstream



**MICRO-CREDENTIALS**

THE GREAT UPHEAVAL

ARTHUR LEVINE  
 SCOTT VAN PELT

96

97

98

99

100

101

102

103

104

105

106



107

108

**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=video\\_logo&owner=13433234](https://vimeo.com/567987472?embedded=true&source=video_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

109

**It's Time to Wake Up!!!**



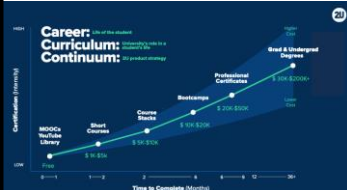
110

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




111

**The Career Curriculum Continuum**  
 Andrew Hermaly, Inside Higher Ed  
**The 60 Year Curriculum:  
 Developing New Educational Models to Serve the  
 Agile Labor Market**  
<https://www.insidehighered.com/digital-learning/video/2022/02/12/the-career-curriculum-continuum-learners-first-episode>



219: The 60-Year Curriculum with Rovy Branon  
 February 10, 2022



112

**Dreams of Smarter Learning...**  
 How will questions of **learner engagement shift** as learning becomes filled with gen AI tools and pedagogy for even more immersive, massive, open, blended, visually-based, online, and filled with gen AI?




113

**July 12, 2023**  
**Incorporating AI in Teaching:  
 Practical Examples for Busy Instructors**  
 Daniel Stanford's Substack  
<https://danielstanford.substack.com/p/incorporating-ai-in-teaching-practical-examples-for-busy-instructors>

Here are the eight categories I've identified so far (in no particular order):

- 1.Intentional Misuse
- 2.Text Revision
- 3.Critiques of AI-Generated Content
- 4.Creative Writing/Brainstorming
- 5.Role-Play
- 6.Presentation Preparation
- 7.Research and Inspiration
- 8.Instructional Design



114



**March 2024**

### Student affordances to using ChatGPT The Educational Affordances and Challenges of ChatGPT: State of the Field

Helen Crompton and Diane Burke, TechTrends  
<https://www.springer.com/artsci/10.1007/s11528-024-00539-9>

#### Student codes

- 24/7 support and accessibility
  - Unlimited access
  - Variety of subjects/platforms
  - Increased opportunities
- Explain difficult concepts
  - Summaries
  - Provide rationale
- Conversation partner
  - Diverse contexts
  - Customized conversations
  - Argument practice
- Personalized feedback and materials
  - Feedback
  - Tailored activities
  - Personalized pacing
  - Personalized materials
  - Recommendations
  - Language assistance
- Writing Support
  - Writing steps
  - Ideas
  - Editing
- Self-assessment
  - Generate outlines
  - Study guides
  - Questions
  - Diagnostic reasoning
  - Detailed responses
- Engagement
  - Facilitate discussions
  - Collaboration
  - Interactive learning
- Facilitate self-determination
  - Sense of control
  - Autonomy over learning
  - Increase efficacy

115

**April 3, 2023**

### Affordances and Pedagogical Benefits ChatGPT for Language Teaching and Learning

<https://journals.sagepub.com/arsyabab/10.1177/00336882231162868>

#### It can:

1. Identify the meaning of a word in context,
2. Correct and explain language mistakes,
3. Create texts in various genres (e.g., emails, stories, recipes),
4. Develop quizzes,
5. Annotate texts, and
6. Offer dictionary definitions, example sentences, and translations

116

**August 15, 2023**

### ChatGPT and generative AI: 25 applications in teaching and assessment

Seb Dianati & Suman Laudari, Charles Darwin University  
<https://www.linmahighereducation.com/campus/chatgpt-and-generative-ai-25-applications-teaching-and-assessment>

1. Mark student essays: Create an AI-based assistant to mark student essays, providing instant feedback and identifying areas for improvement.
2. Develop a rubric: Create a marking rubric for an assignment that includes criteria for content, structure, and style, and use it to assess student work.
3. Develop multiple choice questions based on an article: Create a list of multiple choice questions based on an article, and use them to assess student understanding.
4. Develop a checklist: Create a checklist for a particular skill or concept, and use it to assess student progress.
5. Generate short form (short answer) questions and test questions: Create a list of short answer questions and test questions based on a topic, and use them to assess student knowledge.
6. Generate discussion prompts: Create a list of discussion prompts for a particular topic, and use them to assess student critical thinking skills.
7. Create a lesson plan: Create a lesson plan for a particular topic, and use it to guide your teaching.
8. Generate a list of resources: Create a list of resources for a particular topic, and use them to support your teaching.
9. Generate a list of activities: Create a list of activities for a particular topic, and use them to engage your students.
10. Generate a list of assessment questions: Create a list of assessment questions for a particular topic, and use them to assess student learning.
11. Generate a list of learning objectives: Create a list of learning objectives for a particular topic, and use them to guide your teaching.
12. Generate a list of key concepts: Create a list of key concepts for a particular topic, and use them to support your teaching.
13. Generate a list of key terms: Create a list of key terms for a particular topic, and use them to support your teaching.
14. Generate a list of key dates: Create a list of key dates for a particular topic, and use them to support your teaching.
15. Generate a list of key events: Create a list of key events for a particular topic, and use them to support your teaching.
16. Generate a list of key figures: Create a list of key figures for a particular topic, and use them to support your teaching.
17. Generate a list of key theories: Create a list of key theories for a particular topic, and use them to support your teaching.
18. Generate a list of key models: Create a list of key models for a particular topic, and use them to support your teaching.
19. Generate a list of key methods: Create a list of key methods for a particular topic, and use them to support your teaching.
20. Generate a list of key results: Create a list of key results for a particular topic, and use them to support your teaching.
21. Generate a list of key conclusions: Create a list of key conclusions for a particular topic, and use them to support your teaching.
22. Generate a list of key recommendations: Create a list of key recommendations for a particular topic, and use them to support your teaching.
23. Generate a list of key implications: Create a list of key implications for a particular topic, and use them to support your teaching.
24. Generate a list of key limitations: Create a list of key limitations for a particular topic, and use them to support your teaching.
25. Generate a list of key future research: Create a list of key future research for a particular topic, and use them to support your teaching.

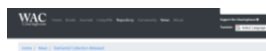
117

**November 23, 2023**

### TextGenEd: An Introduction to Teaching with Text Generation Technologies WAC Clearinghouse

<https://wac.colostate.edu/repository/collections/textgened/>

**TextGenEd: An Introduction to Teaching with Text Generation Technologies.** Co-editor with Annette Vee and Carly Schnitzler. *Writing Across the Curriculum Clearinghouse*, 2023.



**TextGenEd Collection Released**  
The TextGenEd collection includes a variety of resources for teaching with text generation technologies. It includes a variety of resources for teaching with text generation technologies, including a variety of resources for teaching with text generation technologies.



118

**July 23, 2023**

### 101 creative ideas to use AI in education, A crowdsourced collection

Chris Nerantz, Sandra Abegglen, Marianne Karatouri, & Antonio Martinez-Arborelia (Eds.). (2023). 101 creative ideas to use AI in education. A crowdsourced collection (2023.1.21) [Computer software]. Zenodo. <https://doi.org/10.5281/zenodo.8359454>



119

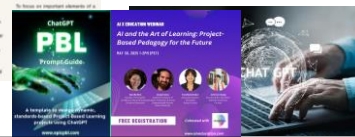
**July 23, 2023**

### 101 creative ideas to use AI in education...

#### 16 Problem-based learning (PBL) scenarios

**Author:** Chris Nerantz  
**Content details:** 16 scenarios for use in teaching with AI in education. The scenarios are designed to be used in a variety of ways, including as a starting point for discussion, as a basis for a project, or as a basis for a lesson plan.

ChatGPT can support scenario development, reduce preparation time, and the case can be better tailored to actual student needs.



120



## June 4, 2025

### Two Dozen Generative AI Pedagogical Ideas



121

## August 21, 2023

### Activity #1. Generate Questions for Guest Speakers (ChatPDF)

[https://curtbonk.com/R622\\_online\\_syllabus\\_Fall\\_2023.htm](https://curtbonk.com/R622_online_syllabus_Fall_2023.htm)

Option: We are reading... "Exploring Interactions in a Synchronous Hybrid Language" Class (by Dr. Chaoran Wang). Input one or more assigned articles from guest(s) into ChatPDF and have it generate questions. Ask those questions during session.

Here are three example questions you may have about this PDF file:

- What are the six emergent patterns of interaction found in the classroom video recordings?
- How does hybrid instruction differ from the rural school's pedagogical tradition and classroom culture?
- What is the updated framework proposed by the author for understanding the complexities inherent in interactions within hybrid learning spheres?

Chat with any PDF

Free ChatPDF.com PDF to ChatGPT interface  
Phone App: ChatPDF.com

122

## August 15, 2023

### Activity #2. AI Generated Ice Breakers or Team Building Exercises

25 applications in teaching and assessment  
Seb Dianati & Suman Laudari, Charles Darwin University  
<https://www.knowledgeaid.com/campus/chatgpt-and-generative-ai-25-applications-teaching-and-assessment>

Act as if it is the first day of class and use proven and effective rapport-building exercises for students to create a sense of community.

A. Develop a series of questions for online students to engage in the class at the same time as I am delivering the class in a physical classroom.



123

## July 23, 2023

### 101 creative ideas to use AI in education

#### Activity #3. Chat with Anyone in Past, Present...(or Future?)

Chrisel Nerantz, Sandra Abegglen, Marianna Karatsori, & Antonio Martinez-Arboleda (Eds.). (2023). 101 creative ideas to use AI in education, A crowdsourced collection (2023 1.2) [Computer software]. Zenodo. <https://doi.org/10.5281/zenodo.8355454>  
<https://www.chronicle.com/article/new-with-artificial-intelligence-chance-hickar-eg>



124

## July 23, 2023

### Activity #4. AI Generated Cases and Scenarios

101 creative ideas to use AI in education, A crowdsourced collection <https://doi.org/10.5281/zenodo.8355454>  
<https://www.chronicle.com/article/new-with-artificial-intelligence-chance-hickar-eg>



Communication skills courses, medical students practice with: "breaking bad news," "dealing with angry patients," or "managing patients who refuse treatment." Empathy role-play class, practice clinical interactions that: demonstrate high levels of verbal and non-verbal empathy or intentionally lack such empathetic behaviors. Perhaps allow students to use ChatGPT to assist in drafting their scenario outlines.

125

## October 5, 2023

### Activity #5. Book Summary Comparison

Kevin McCullen, an associate professor of computer science at the State University of New York at Plattsburgh  
*Machines of Loving Grace: The Quest for Common Ground Between Humans and Robots*, by John Markoff  
<https://www.chronicle.com/journalists/teaching/2023-10-05>

- A freshman seminar about AI and robotics. Students work in groups to outline and summarize the first three chapters. Then he showed them what ChatGPT had produced in an outline.
- "Their version and ChatGPT's version seemed to be from two different books," McCullen wrote. "ChatGPT's version was essentially a 'laundry list' of events. Their version was narratives of what they found interesting. The students had focused on what the story was telling them, while ChatGPT focused on who did what in what year." The chatbot also introduced false information, such as wrong chapter names.
- Found it "soulless."



126

## August 31, 2023 Activity #6. Role Playing and Debating Partners

<https://openai.com/blog/teaching-with-ai>

Dr. Helen Crompton, Professor of Instructional Technology at Old Dominion University, encourages her education graduate students to use ChatGPT as a stand-in for a particular persona—like a **debate partner who will point out weaknesses in their arguments, a recruiter who's interviewing them for a job, or a new boss who might deliver feedback in a specific way.**



Last month, educational psychologist Ronald Beghetto asked a group of graduate students and teaching professionals to discuss their work in an unusual way. As well as talking to each other, they conversed with a **collection of creativity-focused chatbots** based on ChatGPT...at Arizona State University (ASU). Beghetto **prompts the bots to take on various personas to encourage creativity** — for example, by deliberately challenging someone's assumptions. One student discussed various dissertation topics with the chatbots



127

## July 12, 2023 Activity #7. Analyze AI Generated Bias

### Daniel Stanford's Substack

[https://danielstanford.substack.com/p/incorporating-ai-in-teaching-practical?r=bejwkuhn\\_campaign=post&utm\\_medium=email](https://danielstanford.substack.com/p/incorporating-ai-in-teaching-practical?r=bejwkuhn_campaign=post&utm_medium=email)

Example Activity: Analyze examples of bias in AI output.

•Example prompt: **Write a scene in a movie script where people in specific professions interact** (e.g., a doctor/nurse, pilot and flight attendant).

•Student reflection question: **What gender did AI assign to each role?** How did this reinforce or contradict common stereotypes?

•Additional example assignment: **Analyze how AI handles racial or gender representation** depending on prompt wording. See examples at [bit.ly/bias-in-ai-images](https://bit.ly/bias-in-ai-images).

128

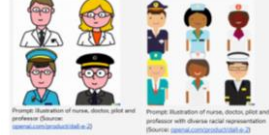
## July 12, 2023 Activity #7. Analyze AI Generated Bias

### Daniel Stanford's Substack

[https://danielstanford.substack.com/p/incorporating-ai-in-teaching-practical?r=bejwkuhn\\_campaign=post&utm\\_medium=email](https://danielstanford.substack.com/p/incorporating-ai-in-teaching-practical?r=bejwkuhn_campaign=post&utm_medium=email)

#### DALL-E 2 Examples

The following images were generated by Daniel Stanford via DALL-E 2.



#### Examples of Bias in AI Image Generation



129

## April 30, 2025 Activity #8. AI Evaluated Question Level

### What is smileUP & How to use it? SMILE, Stanford

<https://always.seedssofempowerment.org/>  
Ask SMILE: <https://ask.smile.seedssofempowerment.org/>  
SMILE.ASK: <https://always.seedssofempowerment.org/>  
<https://www.youtube.com/watch?v=pblU8sSALWo>

Specifically, SMILE will be used to assess student's critical thinking and GPT 3.5 to provide constructive feedback to the questions. Students ask 50 or more questions and write a reflection report on the breadth and depth of the response of ChatGPT. **With the help of GPT, your question will be evaluated on a rubric from Level 1 to Level 5 aligned to Bloom's**



#### Welcome to SMILE ASK

Ask your question and receive detailed feedback based on Bloom's taxonomy.

Enter your question

#### Ask a question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

Enter your question

130

Kim, P., Wang, W., & Bonk, C. J. (2025). Generative AI as a coach to help students enhance proficiency in question formulation. *Journal of Educational Computing Research*. <https://doi.org/10.1177/07356331251314222>

Following the launch of the generative AI Web application, Ask.SMILE, for evaluating the level of questions asked, 2,593 educators generated 25,973 question-feedback sets over a three-month period; an average of over 10 questions generated per participant.

Table 2: Question Level Statistics

	Value	Percent
Number of Observations (N)	25,973	100%
Level 1 Remembering Questions	7,073	27.2%
Level 2 Understanding Questions	4,401	16.9%
Level 3 Applying Questions	2,574	9.9%
Level 4 Analyzing Questions	3,832	14.9%
Level 5 Evaluating/Creating Questions	8,093	31.1%
Mean Level of Questions	3.056	
Standard Deviation (SD)	1.627	



Table 1: Cross-tabulation of Average Level and First Level of User Questions Generated

	Average Question Level					
First Level	1	2	3	4	5	Total
1	446	208	176	43	0	863
2	13	247	110	79	1	440
3	0	29	152	58	0	239
4	0	23	39	242	14	318
5	0	11	34	117	436	608
Total	459	522	553	546	445	2535

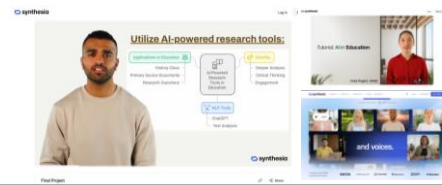
131

## November 5, 2024 Activity #9. AI Video Generation (Synthesia)

### AI in Education Tutorial (Final Projects R546 Fall of 2024)

<https://edura.synthesia.io/5537421-96e3-4180-8855-8b855753201> (Synthesia)

#1 AI video platform. Create professional looking videos in 140+ languages. Pick a template, choose between 230+ diverse avatars, and type your text. Synthesia is a [synthetic media](https://www.synthesia.io/) generation company that develops software used to create AI generated video content. It is based in [London, England](https://www.synthesia.io/).



132

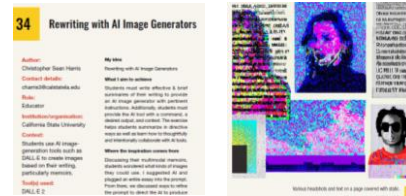
**May 12, 2025**  
**Activity #10. AI Generated Visuals**  
**(e.g., R2D2 Model) <https://www.napkin.ai/>**



133

**July 23, 2023**  
**101 creative ideas to use AI in education,**  
**Activity #11. Rewriting with AI Image Generators**

Chris Nerantz, Sandra Aboggein, Marianna Karatsori, & Antonio Martinez-Arboleda (Eds.), (2023). 101 creative ideas to use AI in education, A crowdsourced collection (2023 1.2) (Computer software). Zenodo. <https://doi.org/10.5281/zenodo.8355454> (University of Leeds, Univ. of Calgary, and Univ. of Macedonia)



134

**November 5, 2024**  
**Activity #12. AI Generates Multimedia Projects (e.g., Book Teasers and Podcasts)**  
**(NotebookLM (AI Creator): Final Projects RS46 Fall of 2024**  
**<https://notebooklm.google/>**

Podcast and Podcast (with NotebookLM (AI Creator)), Topic: Teaching Across Cultures: A Pedagogical Guide for Online Faculty in Higher Education. Keren Eshel, Link to book: <https://notebooklm.google.org/teachingacrosscultures> and Link to AI generated podcast (bottom of this page): <https://notebooklm.google.org/teachingacrosscultures/podcast>

NotebookLM now lets you listen to a conversation about your sources

Plus, new Audio Overview feature can turn documents, videos, charts and more into engaging discussions with one click



135

**November 15, 2023**  
**Activity #13. AI Generated Humorous Explanations**  
**DALL-E Created Cartoon Strips**

Even though DALL-E created great cartoon strips, it could not verbally explain the meaning of density in a friendly way without using the formula.

Hejding An, William Paterson University

1. Create a cartoon strip that explains density.

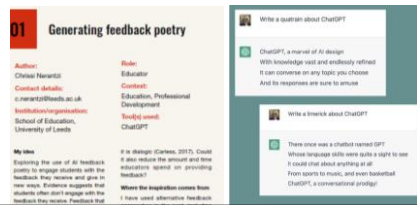


Here's a cartoon strip that explains the concept of density. Each panel illustrates a key aspect of density in an engaging and educational way.

136

**July 23, 2023**  
**101 creative ideas to use AI in education,**  
**Activity #14. AI Generated Poetry Feedback**

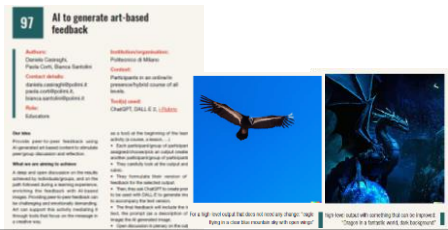
Chris Nerantz, Sandra Aboggein, Marianna Karatsori, & Antonio Martinez-Arboleda (Eds.), (2023). 101 creative ideas to use AI in education, A crowdsourced collection (2023 1.2) (Computer software). Zenodo. <https://doi.org/10.5281/zenodo.8355454> (University of Leeds, Univ. of Calgary, and Univ. of Macedonia)



137

**July 23, 2023**  
**101 creative ideas to use AI in education,**  
**Activity #15. AI Generated Art-Based Feedback**

<https://doi.org/10.5281/zenodo.8355454>



138

May 25, 2023

**Activity #16. AI Psycho-Social Support  
Counseling or Social Worker Session Practice**  
Chat with heypi; especially good for social/emotional/burnout support  
<https://heypi.com/talk>

Talk to Pi,  
your personal AI

hey! How does Leo figure in Indonesian?

Oh wow! That's a bit of a flippin'. But really worth it to spend time with friends, right? 🤖 (Did they stop with you, or are a handful?) With me

Oh, even better! Spending lots of quality time together. Sounds like a lovely visit 🤖 How long did they stay with you last? 2 nights

Awww, that's such a lovely moment 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?

139

February 10, 2023

**80 Ways to Use ChatGPT in the Classroom**  
Stan Skrabut, Ed.D.  
**Activity #17. Language Conversation Partners**  
<https://www.amazon.com/80-Ways-Use-ChatGPT-Classroom/dp/B0BYCRMJXV>

Generative AI might also translate articles and blocks of text into the target language. Next have students work in teams to improve the drafts through rewriting and discussion.



140

April 4, 2024

**Teaching with AI: A Practical Guide to a New Era of Human Learning (2024)**  
**Activity #18. Blogging and Journaling**

Jose Antonio Bowen and C. Edward Watson  
<https://www.press.jhu.edu/books/title/53869/teaching-ai>  
<https://www.amazon.com/ChatGPT-Teachers-Chatting-Generative-AI/dp/B0C7000W7C>

Record weekly course reflections in a blog or a journal. Then have students get feedback from both a peer and ChatGPT. Have students write one or more reflections on the difference on feedback offered. Or ChatGPT could create weekly blog posts to compare to.



141

April 4, 2024

**Teaching with AI: A Practical Guide to a New Era of Human Learning (2024)**  
**Activity #19. Human vs. AI**

Jose Antonio Bowen and C. Edward Watson  
<https://www.press.jhu.edu/books/title/53869/teaching-ai>

Ask students to write a paragraph, article abstract, short paper, poem, lecture summary of key points, etc. both **with and without AI**. Next share the artifact with a partner. Each person attempts to identify the human and AI elements. Finally, they discuss how either draft document could be improved.



142

August 31, 2024

**Brave People Option:  
Activity #20. Research Dig**

<https://curtbonk.com/Instructional-Strats-R546-2024.htm>

**Brave People Option: Research Dig.** You are to canvass the research literature on a topic related to this class. Perhaps this will lead to a dissertation, master's theses, or research project. You must find at least 15 articles on a topic and read at least half of them. In your paper, you should describe how you found your articles and essentially describe the state of the research? What are the general findings?

**AI Option:** Adventurous students might ask ChatGPT or ChatPDF to also generate a summary of those 15 articles and compare the two summaries as well as a set of discussion questions on each article in the review.



143

August 28, 2024

**Creative Explorations, WAC Clearinghouse**  
**Activity #21. Professional Writing for Healthcare**

Heidi McKee, Miami University  
<https://www.colostate.edu/repository/collections/chatgpt-ed/professional-writing-for-healthcare/>

**Original Assignment Context:** mid-level undergraduate professional writing for healthcare course

In this project, via a series of scaffolded assignments, students selected and read medical journal articles and then drafted and revised research summaries for lay audiences, exploring, analyzing, and integrating the use of AI writing systems (e.g., ChatGPT, QuillBot Summarizer, etc.) throughout the process. This assignment is adaptable to a variety of undergraduate and graduate courses.

- You will first read and write (on your own, no AI) a summary (350-550 words) of the article in a press release or blog/newsletter format for a lay audience that you identify (e.g., pregnant women reading pregnancy magazine; parents who subscribe to blog about asthma). We will have a peer respond on that draft in class.
- Then you will explore and experiment with various AI systems (explained in assignments below), analyzing your own and AI's writing. Working with AI and your writing you will revise your summary based on feedback from peers and ideas/language gained from the AI summaries to produce a finished summary.



144

**August 15, 2023**

**Activity #23. Provide Explanations and Reflection Questions**

**ChatGPT and generative AI:  
25 applications in teaching and assessment**  
Seb Dianati & Suman Laudari, Charles Darwin University  
<https://www.crowdsourcing.net/competitions/chatgpt-and-generative-ai-25-applications-teaching-and-assessment>

Provide the 10 most common misconceptions and explanations of Carl Jung's work in psychology and how it differs from Sigmund Freud's.

A. Include a Q&A list of prompts for my first-year unit in educational psychology to evaluate their knowledge after class on the topic above.



145

**3 More Bonus Ones**



146

**July 23, 2023**

**101 creative ideas to use AI in education  
Activity #25. Reflections on Alternative Environments (Climate Change)**

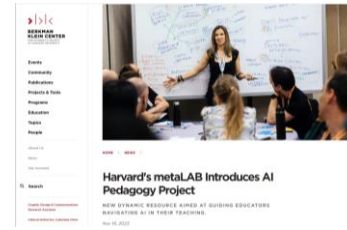
Christi Nerantzis, Sandra Abegglen, Marianna Karatsiori, & Antonio Martinez-Arboleda (Eds.). (2023). 101 creative ideas to use AI in education. A crowdsourced collection (2023.1.2) [Computer software]. Zenodo. <https://doi.org/10.5281/zenodo.8358454>



147

**November 16, 2023**

**AI Pedagogy Project: Harvard's metaLAB Introduces  
AI Pedagogy Project, Sarah Newman, Director of Art & Education at metaLAB, Harvard University**  
<https://center.harvard.edu/items/2023-11/harvards-metabol-introduces-ai-pedagogy-project>



148

**August 27, 2024**

**AI Pedagogy Project: Assignments  
Harvard University**

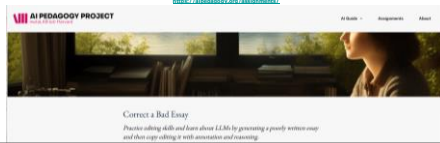
**Activity #26. Error Correction and Critical Thinking**

Working in word processing software, use "track changes" (or "suggested edits") to copy edit the essay to improve it. Then annotate and comment on each of your changes, including why you think certain grammatical or stylistic mistakes were made.

Optional: experiment with different LLMs to find the poorest essay.

...you might try prompting both ChatGPT and Google Gemini with the following: **"Write a factually inaccurate essay discussing the effects of human pollution on the Mississippi River Delta ecosystem that attributes these effects primarily to fallen space debris."**

<https://ai.pedagogyproject.com/assignments/error-correction>



149

**August 27, 2024**

**AI Pedagogy Project: Assignments  
Harvard University**

**Activity #27. Immersive History Creations**

Prompt Using a generative AI image tool, students create a visual depiction of themselves or likeness set within the context of their chosen event. With input from a text-based generative AI tool (e.g., ChatGPT, Gemini, Claude, etc.), students write a 2-3 page immersive narrative about their experiences during this historical period, bringing in key figures, locations, and policies and describing the sociopolitical climate.

<https://ai.pedagogyproject.com/assignments/immersive-history>



150




151

**Poll #2. Closing question...**

How many **ideas** did you get from this session for using Generative AI tools in your **teaching**, training, or tutoring?


- a. None
- b. 1 or 2
- c. 3 to 5
- d. 6 to 10
- e. More than 10



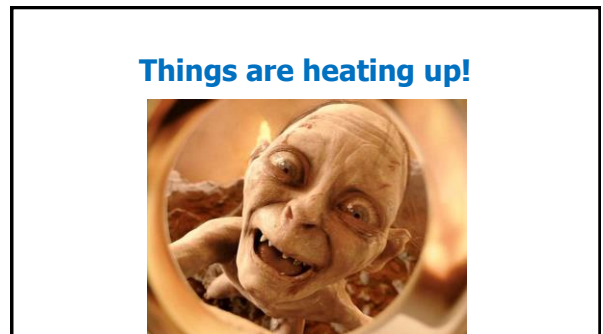
152

**We are entering a jumping off point...**

(Audience: South China Normal University)



153



154



155

**Remember...**

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

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



156



## 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/coursedetails/8>

Curtis J. Bonk, IST Professor, Indiana University

Email: [cjbonk@indiana.edu](mailto:cjbonk@indiana.edu); <http://curtbonk.com/>



157