

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

Curtis J. Bonk, Professor, Indiana University

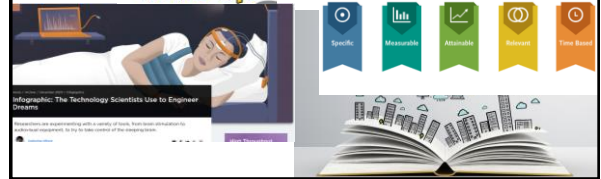
[cjbonk@indiana.edu](mailto:cjbonk@indiana.edu)  
<http://curtbonk.com/>



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

<https://theconversation.com/remote-learning-isnt-new-radio-instruction-in-the-1937-polio-epidemic-543792>



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>



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## 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

## June 25, 2021 Is this Smart Learning...?

SMART Learning Suite lets teachers deliver lessons, assess, collaborate and more all in one place

Luke Edwards

<https://www.techlearning.com/news/what-is-smart-learning-suite-best-tips-and-tricks>

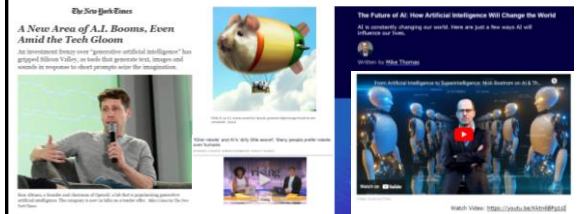


6

## January 7, 2023 (Notions of Smarter Learning Environments will Continue to Change with AI)

### AI in Business and Society News

<https://www.thequint.com/education/2023/01/07/look-better-student-global-south>



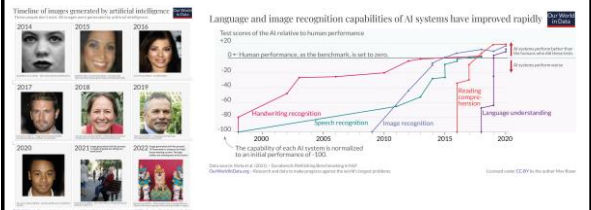
7

## December 6, 2022

### The brief history of artificial intelligence: The world has changed fast – what might be next?

#### Max Roser

<https://www.mindgarden.com/videos/gi-ai-demo>



8

## May 24, 2023 AI AI

### See why AI like ChatGPT has gotten so good, so fast

Pranshu Verma & Kevin Schaul, Washington Post

<https://www.washingtonpost.com/business/2023/05/24/artificial-intelligence-tech-rapid-advance/>



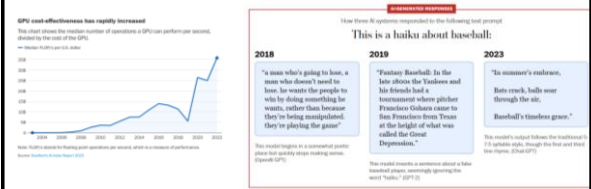
9

## May 24, 2023

### See why AI like ChatGPT has gotten so good, so fast (GPU speed increased)

#### Pranshu Verma & Kevin Schaul, Washington Post

<https://www.washingtonpost.com/business/2023/05/24/artificial-intelligence-tech-rapid-advance/>



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## November 17 (to November 22), 2023

### OpenAI Fires CEO Sam Altman, Citing Lack Of Confidence

Robin Grenoble, Huffington Post

[https://www.huffpost.com/entry/openai-fired-sam-altman\\_n\\_6557064e9065723e4bd3e48](https://www.huffpost.com/entry/openai-fired-sam-altman_n_6557064e9065723e4bd3e48)



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## May 17, 2023

### Workplace AI: How artificial intelligence will transform the workday

#### Casey Noenickx, BBC

<https://www.bbc.com/worklife/articles/2023/05/15-workplace-ai-how-artificial-intelligence-will-transform-the-workday>



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**September 15, 2023**  
**Harvard Business School Report**  
**GPT-4 boosted strategy consultants' performance and speed by 40% and 25%.**  
**The performance boost was higher for lower-skilled than higher-skilled consultants: ~43% versus 17%.**  
[https://www.hbs.edu/ris/Publication%20files/24-013\\_8f3583c2-2ed9-4379-9697-a93b6da84133.pdf](https://www.hbs.edu/ris/Publication%20files/24-013_8f3583c2-2ed9-4379-9697-a93b6da84133.pdf)

**New Research Suggests That GPT-4 Will Boost The Productivity Of Knowledge Workers Significantly**  
 By Frank Downing | @downingARK  
 Director of Research, Next Conversation Institute

A recent Harvard Business School study found that GPT-4 boosted strategy consultants' performance and speed by 40% and 25%. If quality and speed were considered equal measures of productivity, then GPT-4 increased the consultants' productivity 1.75x—or 75%—over the control group, which had no access to GPT-4. This 1.75x increase suggests that artificial intelligence (AI) is well on its way to becoming a productivity multiplier for knowledge workers.

**Working Paper 24-013**  
**Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality**

Fabrizio Dell'Aquila  
 Edward McFarland III  
 Elhanan Melnick  
 Hala Lohani-Aouf  
 Katherine C. Reiff

Sami Rajendran  
 Lisa Kruger  
 François Candolin  
 Karen R. Lukman

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**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

Education Level	With generative AI	Without generative AI
Master's, PhD, or higher level of school attainment	51.0%	29.0%
Bachelor's degree (21%)	40.0%	22.0%
Some college (22%)	40.0%	22.0%
Some high school diploma or equivalent (24%)	34.0%	18.0%
No high school degree (29%)	18.0%	10.0%

**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 worldwide boom in generative artificial intelligence has accelerated productivity and growth in the economy, but it has also produced disruption for others, primarily in the knowledge worker sector, according to a new report by consultants McKinsey & Company.

Generative AI will give humans a new "super economy" a much needed productivity impact similar to the firm and the rise of the 19th century, the report says.

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**May 19, 2023**  
**AI in School News**

**Can GPT-4 and TikTok usher in a new learning frontier?**  
 By: [Name] | [Date]  
 From career development to personal enrichment, the integration of AI and Tech can help create a culture of continuous learning and growth.

**How schools can respond to ChatGPT with inquiry-based learning**  
 By: [Name] | [Date]  
 To make education relevant in an AI-dominated world, schools should look to existing pedagogical practices.

**The importance of teaching generative AI**  
 By: [Name] | [Date]  
 Many schools are not doing enough to prepare students for a future where AI will have an increasingly significant role in everyday life.

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**August 10, 2023**  
**Teachers are surprise AI champions**  
**Laura Ascione, eSchool News**  
<https://www.eschoolnews.com/digital-learning/2023/08/10/teachers-are-surprise-ai-champions/>

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

**Teachers are surprise AI champions**  
 By: [Name] | [Date]  
 A recent survey by eSchool News revealed that teachers use AI to assist in their work more than students do.

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**May 19, 2023**  
**AI in Higher Ed News**

**Will advances in AI force a push to oral exams?**  
 By: [Name] | [Date]  
 The threat of AI could reduce opportunities for students to be tested by other traditional methods or with artificial intelligence.

**Colleges Race to Hire and Build Amid AI 'Gold Rush'**  
 By: [Name] | [Date]  
 Can the technology industry's demand for AI talent be met by the education sector?

**Caught Off Guard by AI**  
 By: [Name] | [Date]  
 Professors credited to meet to discuss the impact of AI on their teaching and planning for the future.

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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.

By: [Name] | [Date]

Harvard University's Faculty Senate has approved a resolution that calls for the university to explore ways to adapt to the rise of AI in higher education. The resolution also calls for the university to explore ways to adapt to the rise of AI in higher education.

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## November 13, 2023

### Why You Should Rethink Your Resistance to ChatGPT

Flower Darby, Chronicle of Higher Education  
<https://www.chronicle.com/article/why-you-should-rethink-your-resistance-to-chatgpt>

#### Why You Should Rethink Your Resistance to ChatGPT

How to reach with AI tools in ways that meet faculty concerns about ethics and equity



EDUCOOP

Topics: Events Publications Videos Insights

#### ChatGPT is about as exciting as a Twinkie

High school teachers with ChatGPT before the education should be reimagining in their students' writing.

By Gabrielle Starr



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## May 25, 2023

### How Will Artificial Intelligence Change Higher Ed?

The Chronicle of Higher Education  
<https://www.chronicle.com/article/how-will-artificial-intelligence-change-higher-ed>

#### We're Asking the Wrong Questions

Our panicked reaction to AI is what needs examining.

BY DANAH BOYD

#### AI Can Enhance the Pleasures of Learning

It will contribute to the deeply human parts of us.

BY G. GABRIELLE STARR

#### An Optimistic View

AI will make the university more human.



How Will Artificial Intelligence Change Higher Ed? ChatGPT is just the beginning. 12 editors and commentators weigh in.

#### Don't Believe the Hype

Previous tech bubbles offer lessons for AI.

BY LEE VINSEL

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## May 25, 2023

### Generative AI: Impact on Higher Education

Ray Schroeder, UPCEA Senior Fellow  
<https://sites.google.com/view/unhprepresentai>



#### Impact of Generative AI

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

ChatGPT: Generating text, images, audio, and video using deep learning models trained on vast amounts of data.

Generative AI can be used to create content, such as essays, articles, and images, and can also be used to generate code and music.

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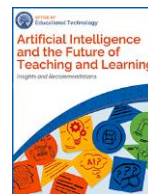
Generative AI can be used to create content, such as essays, articles, and images, and can also be used to generate code and music.

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## June 13, 2023

### U.S. Department of Educational Technology Artificial Intelligence

<https://tech.ed.gov/ai>  
<https://zoom.us/join/register?WNLAYgSkAdnQSS8pckJZVnq#/registration>



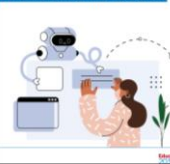
22

## 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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## April 22, 2023

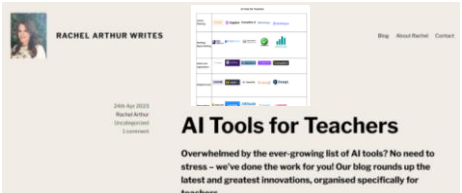
### In UNESCO "Quick Start Guide to ChatGPT and AI in Higher Education"

<https://www.unesco.org/en/quick-start-guide-to-chatgpt-and-ai-in-higher-education>

Role <sup>a</sup>	Description	Example of Implementation
Possibility engine	AI generates alternative ways of expressing an idea	Students write queries in ChatGPT and use the Regenerate response function to examine alternative responses.
Socratic opponent	AI acts as an opponent to develop and argument	Students enter prompts into ChatGPT following the structure of a conversation or debate. Teachers can ask students to use ChatGPT to prepare for discussions.
Collaboration coach	AI 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/>



**AI Tools for Teachers**  
 Overwhelmed by the ever-growing list of AI tools? No need to stress - we've done the work for you! Our blog rounds up the latest and greatest innovations, organized specifically for teachers.

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**Five Steps to Leverage ChatGPT in Your Teaching**  
 March 06, 2023

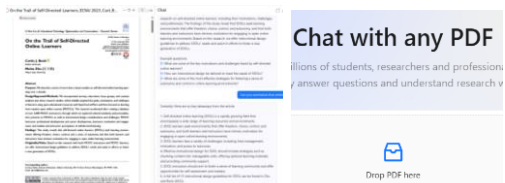


**TEN FACTS ABOUT CHATGPT**

- 01 ChatGPT can create content in seconds.
- 02 ChatGPT is one of a variety of AI-powered writing tools.
- 03 ChatGPT is currently free to use.
- 04 ChatGPT learns from its interactions with users.
- 05 ChatGPT and other systems will have a significant impact on programming and code development.

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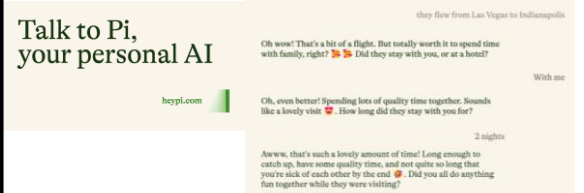
**August 21, 2023**  
**ChatPDF: Summarize assigned articles**  
<https://cartbook.com/8622-online-syllabus-fall-2023.htm>  
 Input one or more of the assigned articles and have ChatPDF generate questions on it or key points or both.



**Chat with any PDF**  
 Millions of students, researchers and professionals answer questions and understand research v

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**May 25, 2023**  
**Chat with heypi; especially good for social/emotional/burnout support**  
<https://heypi.com/talk>



**Talk to Pi, your personal AI**

they flew from Las Vegas to Indianapolis

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

With me

heypi.com

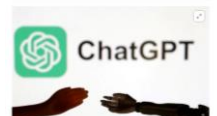
Oh, even better! Spending lots of quality time together. Sounds like a lovely visit. How long did they stay with you for?

2 nights

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

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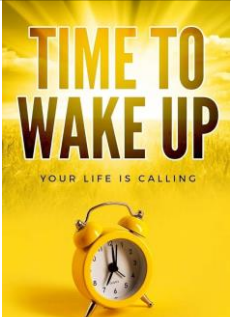
**November 16, 2023**  
**Exclusive: OpenAI explores how to get ChatGPT into classrooms**  
 Anna Tong, Reuters  
<https://www.reuters.com/technology/openai-explores-how-get-chatgpt-into-classrooms-2023-11-16/>



Exclusive: OpenAI explores how to get ChatGPT into classrooms  
 Anna Tong  
 November 16, 2023 10:00 AM EST Updated 11/16/2023

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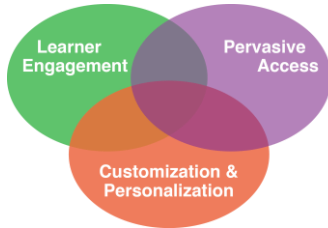
**TIME TO WAKE UP**  
 YOUR LIFE IS CALLING



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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



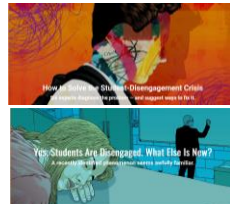
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## November 3, 2022 Still Struggling With Engagement? You're Not Alone

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/](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



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



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## August 27, 2023 Learning is More Social R511 Fall 2023 in Padlet: Introductions: Getting to Know One Another

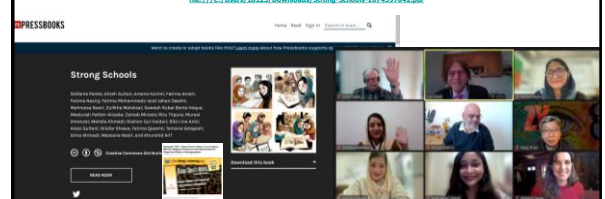
<https://padlet.com/melucimara/511-fall-2023-getting-to-know-one-another-wyhg9kxapfmuu>



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

<https://www.womenonline.com/strong-schools/>



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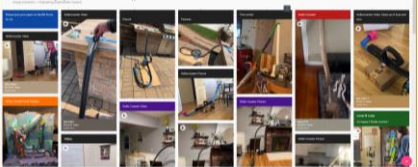
**June 15, 2022**  
**Learning is More Mobile**  
**Leaders & Legends of Online Learning,**  
**Dr. Mark Nichols' Podcast**

<https://onlinelearninglegends.com/podcast/062-dr-george-voletasianos/>  
 In this episode, Open Polytechnic of New Zealand Executive Director Dr. Mark Nichols chats with Dr. George Voletasianos, 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, Social-on: A Collaborative Maker Project Integrating Arts in a Synchronous Online Environment for Teachers**  
<https://link.springer.com/article/10.1007/s11528-022-00740-x>  
 Based on the Thinking, Making, Sharing, and Reflecting (TMSR) model



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**June 7, 2023**  
**Learning is More Visual**  
**Learn new words through images by making suggestions for things to add or change**

The image will be created with Microsoft Image Creator, which is powered by OpenAI's DALL-E. For example, if a teacher would like an image to use in their Spanish language class, the prompt could be something like "create an image of a llama wearing a tropical hat and drinking mango juice at the beach." You can then ask students to analyze what changed between the two sets of images, and infer the meaning of the original suggestion  
<https://fitmas.com/discovering-the-potential-of-bing-chat-for-language-learning/>



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**June 6, 2022**  
**Learning is More Game-based**  
**How teachers use Wordle—and other games—for next-level engagement**  
**Laura Ascione, eSchool News**  
<https://www.eschoolnews.com/2022/06/06/how-teachers-use-wordle-for-next-level-engagement/>



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**July 11, 2023**  
**Learning is More Immersive**  
**'Metaversities' Face Virtual Learning's Financial Realities**  
**Lauren Coffey, Inside Higher Ed**  
<https://www.insidehighered.com/news/tech-innovation/teaching-learning/2023/07/11/metaversities-face-virtual-learning-financial>

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



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**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=IvZUA8n-Prk>  
**Nick Riley [nriley@visiblebody.com](mailto:nriley@visiblebody.com)**  
<https://www.visiblebody.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/2023/04/18/holograms-higher-education-boosting-student-engagement>



Figure 3. An example of a display studio.


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




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



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**October 14, 2022**  
**Learning is More Online**  
**A Surge in Young Undergrads, Fully Online**  
**Susan D'Agostino, Inside Higher Ed**  
<https://www.insidehighered.com/news/2022/10/14/more-traditional-age-students-enroll-fully-online-universities>



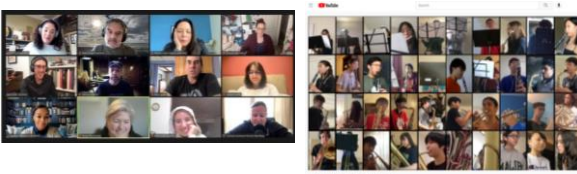
46

**October 20, 2022**  
**Learning is More Online**  
**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>



47

**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>



48



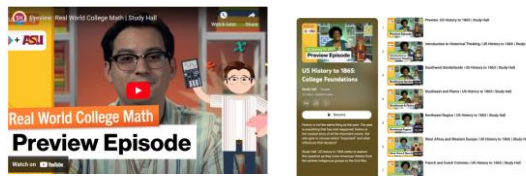
**November 4, 2022**  
**Learning is More Synchronous**  
 Synchronous hybrid English class for rural Chinese students



49

**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>



50

**November 12, 2023**  
**Pictory (<https://app.pictory.ai/>)**

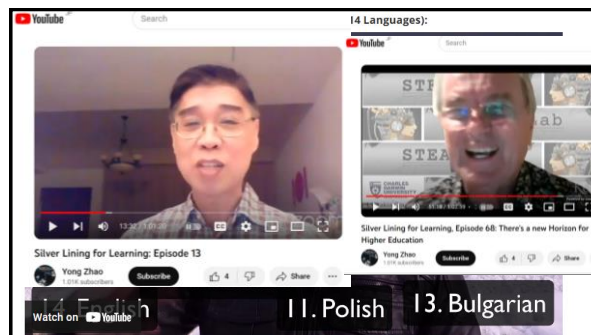
In higher ed, online instructors might have lecture notes that they want to change to videos. Many times, it is hard for us to create videos by ourselves and lack time and skills. We can choose background images and voices (e.g., Female or male voices, different accents, etc.).

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/1699816452918/2023111219362009yUhg3NLYZR0p0X>



51

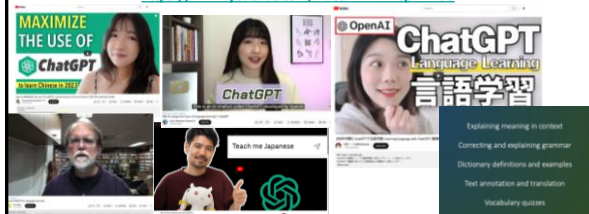


52

**June 17, 2023, YouTubers using ChatGPT**  
**Learning is Informal and Video-based**  
 Will AI change the future of language learning?

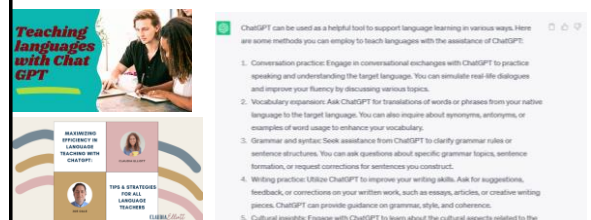
ShuoshuoChinese 说说中文

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



53

**May 25, 2023**  
**Learning is Informal and Video-based**  
**Teach Languages with ChatGPT**  
<https://chat.openai.com/>



54

**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/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 a nematode found in Siberian permafrost was 46,000 years old and revived using techniques similar to those of a zombie-like zombie.

55

**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>

56

**November 17, 2023**  
**Learning is More Open**  
 Your Gateway to Open Access in Asia  
<https://openaccessasia.org/>

Benefits

- Open access journals are available to all researchers and students, regardless of their institutional affiliation.
- Open access journals are often peer-reviewed, ensuring the quality of the research.
- Open access journals are often free to read, making them accessible to a wider range of researchers.
- Open access journals are often available in multiple languages, making them accessible to a wider range of researchers.

964 4259 37

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**February 4, 2022**  
**Learning is More Free and Open**  
 California 2-Year Colleges to Begin \$115M OER Experiment  
 Suzanne Smalley, Inside Higher Ed (results in better grades, lower costs)  
<https://www.insidehighered.com/news/tech-innovation/2022/02/04/california-newsroom-115-million-built-open-stemcommunity-colleges>  
<https://www.insidehighered.com/news/tech-innovation/2022/02/04/california-newsroom-115-million-built-open-stemcommunity-colleges>  
 The grant program concluded in 2019 and it is anticipated that the 23 community colleges produced 34 Zero Textbook Cost degrees or certificates, saving 23,373 students approximately \$42,912,828 in textbook costs resulting in an 858% ROI (return on investment) from the original \$5 million invested by the CA Community College Chancellor's Office.

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

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

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

58

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

More Professors Aware of, and Using, Open Educational Resources

A study finds increasing interest in open educational resources (OER) among faculty and administrators.

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

Group	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Administrators	8%	24%	40%	17%	8%
Faculty	10%	20%	40%	12%	18%

59

**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**

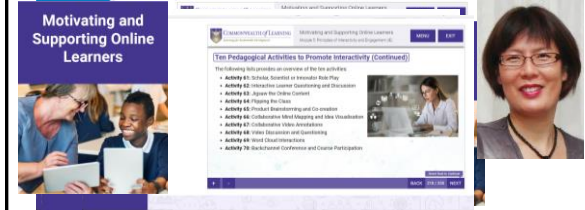
**Variety**  
**Autonomy**  
**Relevance**  
**Interactive**  
**Engagement**  
**Tension**  
**Yields Products**

60

**September 23, 2022**

**Khoo, E., & Bonk, C. J. (2022). Motivating and Supporting Online Learners**

free course available: <https://colcommons.org/my-course>  
<https://www.cobee.org/>



61

**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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63

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



64

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



65

**June 17, 2021**

**Learning is More Blended**

**Free Book: Hybrid-Flexible Course Design**

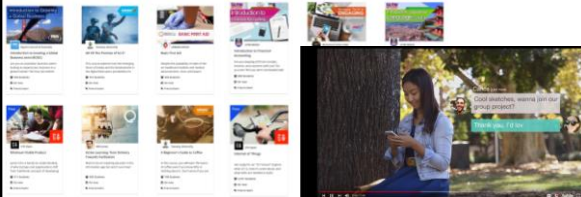
**(HyFlex Teaching)**

<https://edtechbooks.org/hyflex>



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**Learning is More Self-Directed**  
**The LMS Market is Quickly Losing Ground**  
 Carol Leaman, CLO  
<https://www.openlearning.com/>  
<https://www.openlearning.com/>




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**Learning is More Self-Directed**  
**Language Lessons Online**  
 e.g., BBC Learning English, Duolingo, Babbel, SpanishPod, etc.  
 (Zixi Li & Curt Bonk, 2023 published, Duolingo Research)  
<http://www.bbc.co.uk/learningenglish>



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**December 12, 2021**  
**Learning is More On Demand**  
**Cocohub: Bots, with a human touch**  
<https://cocohub.com/>  
**Chatting with Chatbots and Text Buddies**  
 Lindsey McKenzie, Inside Higher Ed  
<https://www.insidehighered.com/news/2021/12/09/cocohub-ai-chatbots-higher-ed>  
<https://www.amsinstitute.com/news/2021/12/09/cocohub-ai-chatbots-higher-ed>



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**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**

70


**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/michaelbhorn/2022/06/14/behind-khan-academy-and-arizona-state-universitys-khan-world-school-launch/>  
 At present, the Khan World School is drawing interest from students around the world. The school will be free for students in Arizona by taking advantage of ASU's charter school. But for those locations where it isn't a public option, Khan said that they will be able to offer the school for less than \$10,000.  
 The Khan World School is aiming to tackle that stereotype with a daily, synchronous mentor-advice 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.

By Andy Chen  
 May 21, 2023 1:12 pm ET

WSJ OPINION



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**August 20, 2019**  
**Learning is More Personalized**  
**ASU develops world's first adaptive-learning biology degree, ASU News**  
<https://news.asu.edu/en/124338>  
 Flipping the classroom increased performance and persistence. "Beckett Sterner and I got an ovation at the end of the junior-level major's course, Evolution — Biology 345, and also at the end of the class on zombies.... The results of the first effort were impressive."  
 "In its first semester, we saw student pass rates, in a nonmajors' Biology 100 course called The Living World, improve by 24% and dropout rates reduce by 90%..."



ASU News

ASU develops world's first adaptive learning biology degree

School of Life Sciences leads effort to transform undergraduate science education

**The Adaptive Learning**

Adaptive Learning: A process that uses algorithms to tailor educational content to individual learners' needs, pace, and learning styles.


Adaptive Learning: A process that uses algorithms to tailor educational content to individual learners' needs, pace, and learning styles.

Adaptive Learning: A process that uses algorithms to tailor educational content to individual learners' needs, pace, and learning styles.

72

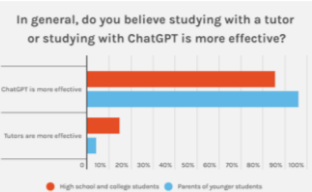


**June 1, 2023**  
**Learning is More Personalized**  
**New survey Finds AI is Replacing Tutors for Students**  
 Annie Galvin Telch, Fierce Education  
<https://www.fierceeducation.com/technology/ai-replacing-human-tutors-for-students/>



**New Survey Finds AI is Replacing Tutors for Students**

In general, do you believe studying with a tutor or studying with ChatGPT is more effective?

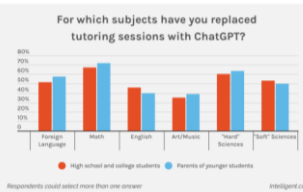


Group	ChatGPT is more effective	Tutors are more effective
High school and college students	~85%	~15%
Parents of younger students	~95%	~5%

73

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

For which subjects have you replaced tutoring sessions with ChatGPT?




Subject	High school and college students	Parents of younger students
Foreign language	~45%	~55%
Math	~65%	~60%
English	~45%	~40%
Art/Music	~40%	~45%
Hard Sciences	~55%	~50%
Soft Sciences	~50%	~45%

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

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

74

**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=YajBaSPQ1Hk>  
 Video downloaded: <http://curtbonk.com/aivoice2.html>  
 Audio (4 examples): <http://curtbonk.com/aivoice.html>



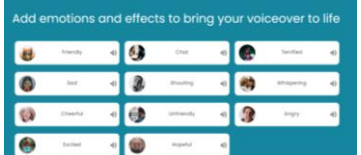
AI voice actors sound more human than ever—and they're ready to hire

75

**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



Emotion/Style	Intensity
Happy	45
Calm	45
Serious	45
Excited	45
Shouting	45
Whispering	45
Crying	45
Angry	45
Disgusted	45
Surprised	45

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

The macro impact of microcredentials

3 reasons microcredentials are poised to go mainstream



**MICRO-CREDENTIALS**

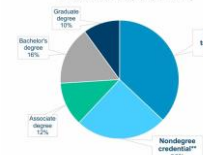
THE GREAT UPHEAVAL

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**August 3, 2023**  
**Learning is More Modular**  
**Stacking Certificates and Degrees**  
 Lindsay Dougherty, Inside Higher Ed  
<https://www.ecampusnews.com/2023/12/26/closing-the-skills-gap-with-microcredentials>

Stacking Certificates and Degrees

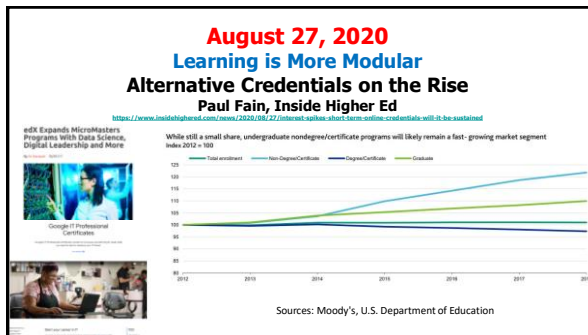
The lessons we've learned so far.



Education Option	Percentage
Nondegree credential**	37%
Associate degree	12%
Bachelor's degree	16%
Graduate degree	10%
Skills training*	31%

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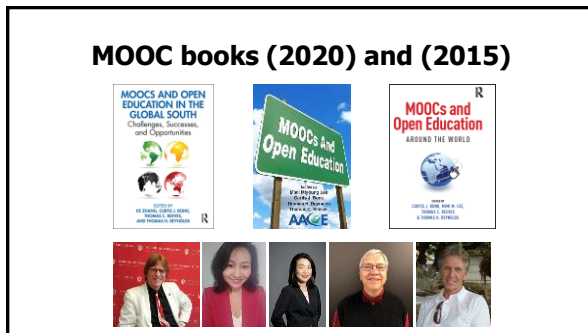




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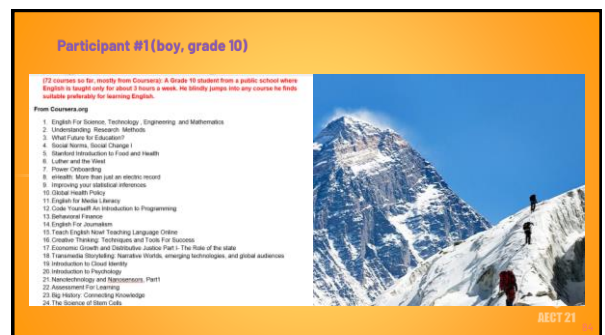
81



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84

**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/2023/06/22/tenous-stanford-coding-course-free-online/>  
 Alcino Donadel, University Business  
<https://universitybusiness.com/how-to-democratize-education-stanford-free-online-course-gains-30000-students-in-3-years/>

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


By Michaela Russell June 22

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

As prestigious and exclusive as degrees from Stanford may be, that hasn't stopped two professors from creating Code in Place, an online program free of charge and open to the public to learn the basics of programming. While the program itself offers students an unusual experience, it serves as a college credit, the second best option.

Between Stanford's coding course needs to expand access to more students of online learning.

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




85

**January 20, 2022**  
**Arizona State University Announces Effort To Educate 100 Million Learners Worldwide**  
 Michael T. Nietzel, Forbes  
<https://www.forbes.com/sites/michael-nietzel/2022/01/20/arizona-state-university-announces-effort-to-educate-100-million-learners-worldwide/>  
 Video (2:07): [https://vimeo.com/657987472?embedded=true&source=video\\_jogin&owner=13433234](https://vimeo.com/657987472?embedded=true&source=video_jogin&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




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



87

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

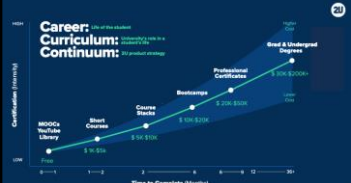


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**The Career Curriculum Continuum**  
 Andrew Hermalyn, Inside Higher Ed  
<https://www.insidehighered.com/digital-learning/news/2019/05/13/how-universities-can-stay-center-learning-focus-opinion>

Career Curriculum Continuum

From 1900 to 2020, the career curriculum has evolved from a focus on basic skills to a focus on professional competencies. The continuum shows the progression from basic skills to professional competencies, with a focus on the career curriculum.




89

**February 25, 2020**  
**The 60 Year Curriculum:**  
**Developing New Educational Models to Serve the Agile Labor Market**  
 Chris Dede, Harvard University, The Evollution  
<https://www.edutopia.org/article/developing-new-educational-models-to-serve-the-agile-labor-market/>  
 Podcast 219: The 60-Year Curriculum with Rovy Branon  
<https://podcast219.com/podcast/219>

The 60 Year Curriculum: Developing New Educational Models to Serve the Agile Labor Market

Learning for a Lifetime

219: The 60-Year Curriculum with Rovy Branon



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## Ten Questions for Smart Learning Environment Educators and Researchers...



91

## Dreams of Smarter Learning...

1. 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?



92

## Dreams of Smarter Learning...

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



93

## Dreams of Smarter Learning...

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



94

## Dreams of Smarter Learning...

4. What new 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?



95

## 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?



96

### 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?



97

### 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?



98

### 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?



99

### Dreams of Smarter Learning...

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



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### Dreams of Smarter Learning...

10. **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?



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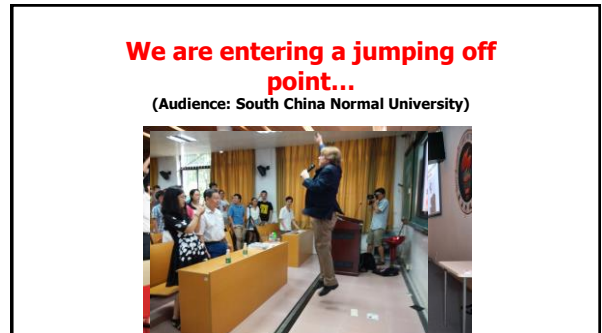
## Are we getting smarter...?



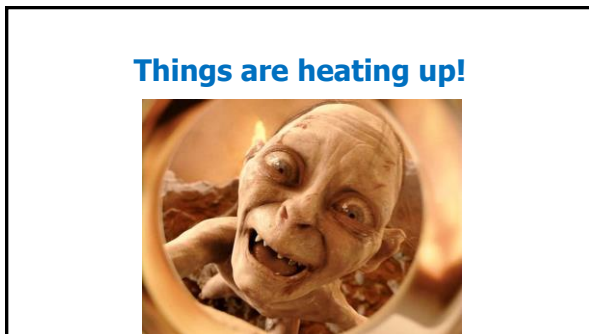
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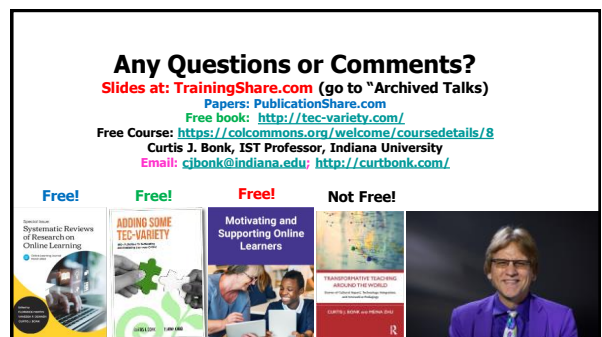
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