



人工智能时代的高等教育变革 ——IIOE全球伙伴峰会

Transforming Higher Education in the Age of AI
INTERNATIONAL INSTITUTE OF ONLINE EDUCATION (IIOE)
Global Partners Summit

ORGANIZATION

Opportunity or Challenge: Higher Education in the Age of AI

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@dgasevic

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IIEO Summit
Shenzhen, China

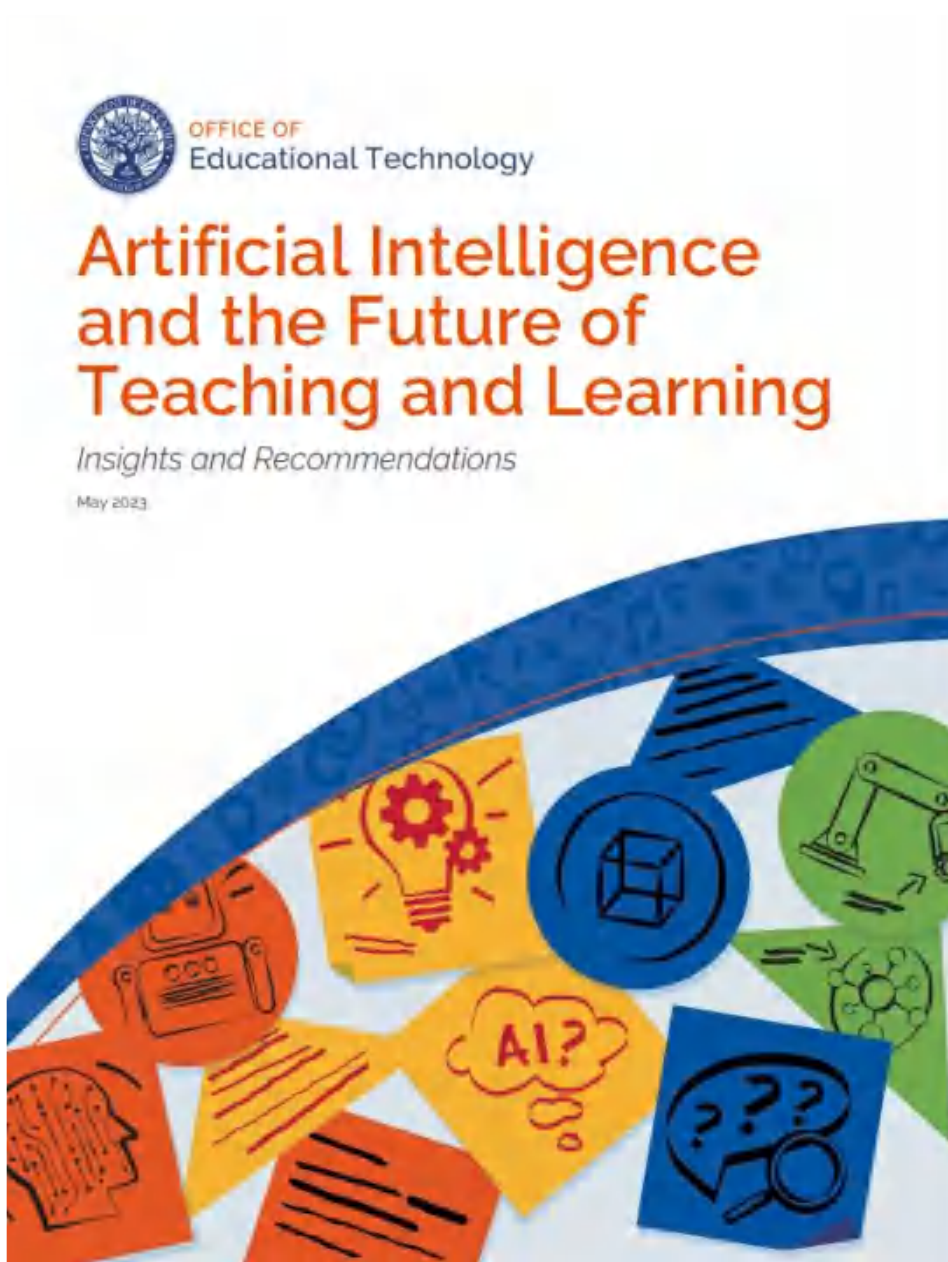
Generative artificial intelligence

Generating data*
in response to prompts

*text, image, video, program code

Generative artificial intelligence

Many debates to sensemake uncertainty
linked to generative AI



<https://tech.ed.gov/ai-future-of-teaching-and-learning/>



<https://tech.ed.gov/ai-future-of-teaching-and-learning/>

Today's talk

What are promises, concerns, and needs for education in the age of AI?

Key takeaway 1

Much promise for guiding, teaching support, and assessment/feedback

Key takeaway 2

Significant concerns about reliability,
bias, workload, and consent

Key takeaway 3

Transition from commentaries to
research to understand implications

PROMISE – CONCERN – NEED – FINAL REMARKS

1

Large language models for
guiding and tutoring

The New York Times

NATASHA SINGER

Hey Khanmigo

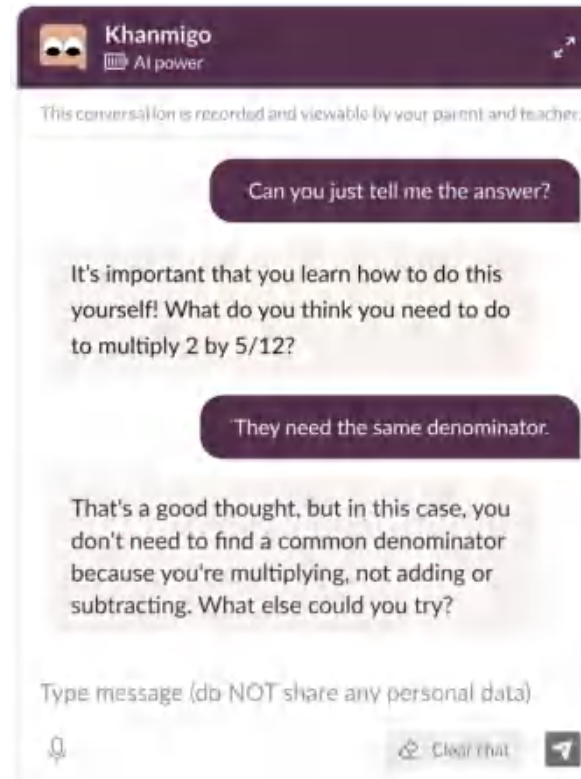
KHANMIGO

Hello! I'm here to help you learn and grow. Let's get started on your learning journey.

Not Just Math Quizzes: Khan Academy's Tutoring Bot Offers Playful Features

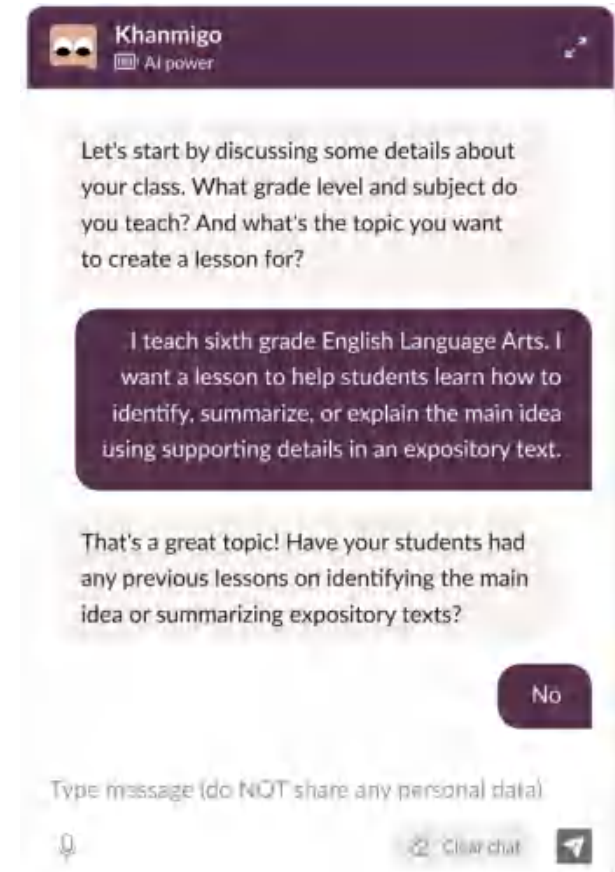
The new, A.I.-assisted Khanmigo allows students to chat with simulated historical figures or co-write stories with the software.

By [Natasha Singer](#)



Student tutoring

Creativity support



<https://www.khanacademy.org/khan-labs>

2

Large language models for
content generation and teaching support

Support content developers and learning designers

A I would like you to act as a grammar language subject matter expert that also has learning designer skills and knowledge of markdown. You know about the grammatical errors that first year university students make. You also know how to design online modules, you can break up the content into chunks, write quizzes to test the knowledge of students and come up with active learning strategies to use in a face-to-face zoom virtual lecture. Could you please come up with the sections for an online module on Grammar for first year university students in Markdown format (i.e. using # and ## to indicate headings) in the code editor so that I can copy the Markdown?



Sure, here is an example of what the sections of an online module on grammar for first year university students in Markdown format could look like:

```
# Module: Grammar for First Year University Students

## Introduction
- Explanation of the importance of grammar in university-level writing
- Overview of the module's goals and objectives

## Section 1: Parts of Speech
- Explanation of the different parts of speech (noun, verb, adjective, etc.)
- Examples of how to identify and use each part of speech in sentences
- Practice exercises to test understanding
```

3

Large language models for
automated feedback

Pormise

Large language models provide
feedback on written products

LMMs (classification) for writing analytics

The screenshot displays the FLoRA web application interface. At the top, navigation links include 'FLoRA Home', 'My courses', and 'Site administration'. A sidebar on the left contains a menu with sections like 'Instructions', 'General Instructions', 'Rubric', and numbered topics under '1: Artificial Intelligence I...', '2: Differentiation in Educ...', and '3: Scaffolding in Education'. The main content area is titled 'General Instructions' and contains text about writing a vision essay on the future of education. Below this, an 'Essay Writing' section shows a text editor with a 222-word essay. To the right, a 'Checklist Tool' is open, displaying a table of analysis results for the essay. The table has columns for 'Basic', 'Academic', 'Originality', and 'Integration and elaboration'. The analysis results are categorized by 'Essay Sentence' and 'Integration Level'. At the bottom of the checklist tool, a message states 'This analysis may take around 5-10 min to process.' and an 'Analyse' button is visible.

FLoRA Home My courses Site administration

3: Future Learning / General Instructions

General Instructions

In this learning session, the goal is to write a vision essay that describes the future of education. Please describe, in 200 to 400 words, how you envision learning in a school in 2035.

Please consult the materials in this [learning](#) environment that provide information about three important topics for envisioning the future of education in 2035.

Essay Writing 222 words

Normal B I U x₂ x² | | | |

Nowadays, the role of AI in education is limited in some tangible educational products. More and more data are needed to make AI work better. And the scaffolding is that the work is shared alone between the learner and some more knowledgeable other or agent. In addition, it also enables learning from the experience. Scaffolding to optimize learning needs to acquire more knowledge. Besides, as we all know, differentiation is a combination of careful progress monitoring and adapting instruction in response. By this, students or learners could be divided into different groups by their teacher according to their competence degree. In these groups, students can learn knowledge that they don't understand and make progress belonging to themselves. Differentiation practices in the classroom will help students in their group process.

Integration of three topics is very essential and all three are indispensable. In the future education, the three should complement each other. Respectively, there are great expectations for AI in education to help students and teachers work better. To facilitate our independent and appropriate use in education in the future, we should learn more on how the scaffolding component skills work and so on. Furthermore, differentiation should be paid more attention in education. Beyond that, the three should continue to innovate, so as to better serve the education and other industries in the future.

Save Essay

Checklist Tool

Basic Academic Originality Integration and elaboration

Essay Sentence: Nowadays, the role of AI in education is limited in some tangible educational products. Integration Level: Remember and understanding
Essay Sentence: More and more data are needed to make AI work better. Integration Level: Evaluate and create
Essay Sentence: And the scaffolding is that the work is shared alone between the learner and some more knowledgeable other or agent. Integration Level: Evaluate and create
Essay Sentence: In addition, it also enables learning from the experience. Integration Level: Apply and analyse
Essay Sentence: Scaffolding to optimize learning needs to acquire more knowledge. Integration Level: Remember and understanding

This analysis may take around 5-10 min to process. Analyse

All this is
based on
GPT4

LMMs (classification) for writing analytics

The screenshot displays the FloRA web application interface. The top navigation bar includes links for Home, My courses, and Site administration. The sidebar on the left contains a navigation menu with sections like Instructions, Rubric, and various topics under Artificial Intelligence and Scaffolding in Education. The main content area shows a 'General Instructions' page with a text editor. The text in the editor discusses AI in education, mentioning concepts like scaffolding, differentiation, and integration. The 'Checklist Tool' on the right provides a structured analysis of the text, categorized by Basic, Academic, Originality, and Integration. The Checklist Tool includes sections for Essay Sentence and Integration Level, with specific feedback for each. A large black oval highlights the text editor and the Checklist Tool. A speech bubble points to the Checklist Tool with the text 'All this is based on'.

3: Future Learning / General Instructions

General Instructions

Page Settings

3: Future Learning / General Instructions

Page Settings

Checklist Tool

Basic Academic Originality Integration

Essay Sentence: Nowadays, the role of AI in education is limited in some educational products.
Integration Level: Remember and understanding

Essay Sentence: More and more data are needed to make AI work better.
Integration Level: Evaluate and create

Essay Sentence: And the scaffolding is that the work is shared alone between the learner and some more knowledgeable other or agent.
Integration Level: Evaluate and create

Essay Sentence: In addition, it also enables learning from the experience.
Integration Level: Apply and analyse

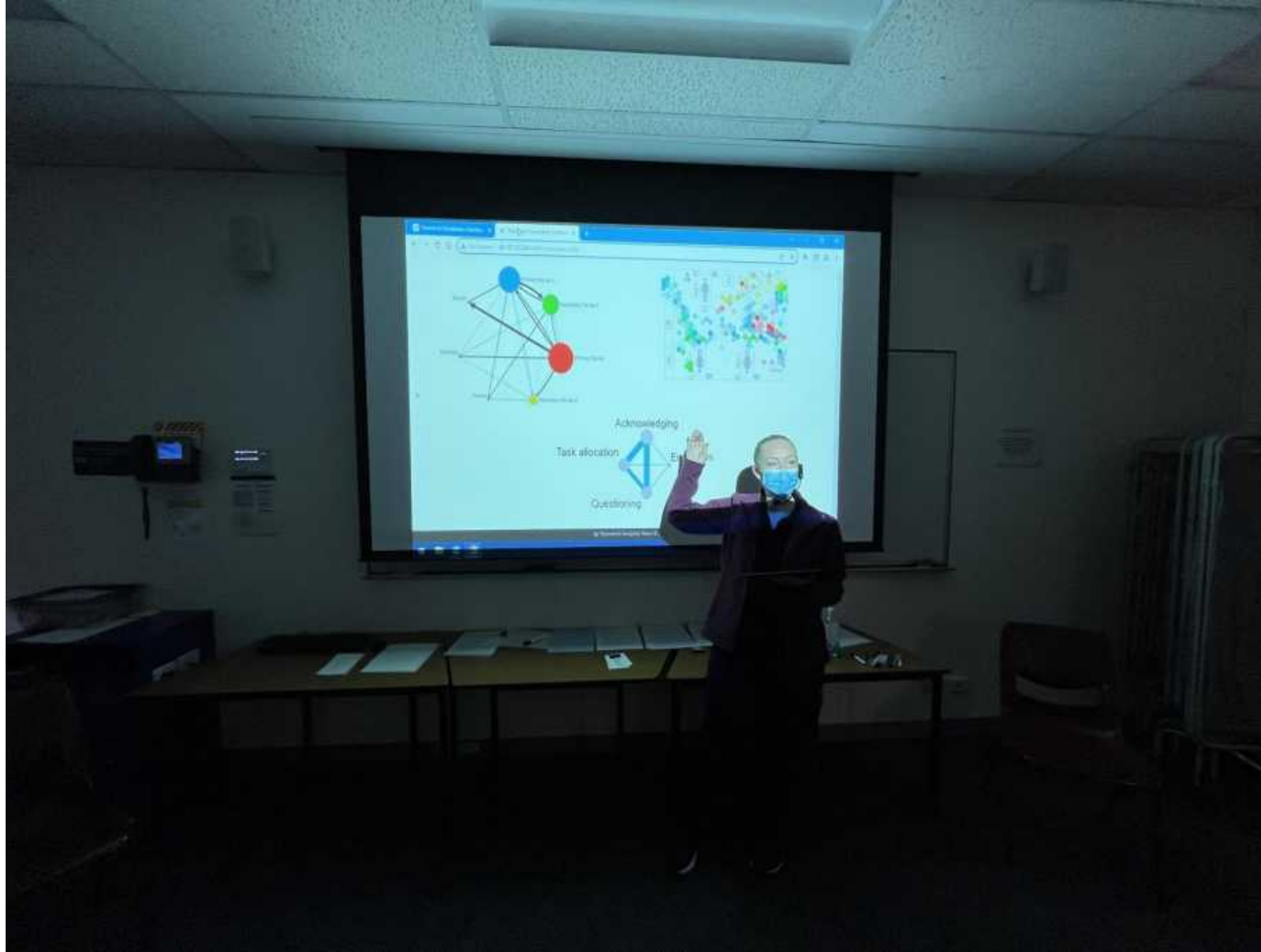
Essay Sentence: Scaffolding to optimize learning needs to acquire more knowledge.
Integration Level: Apply and analyse

This analysis may take around 5 minutes

Multimodal sensing technologies for teamwork



Teacher led use of analytics



Generative AI for data comics

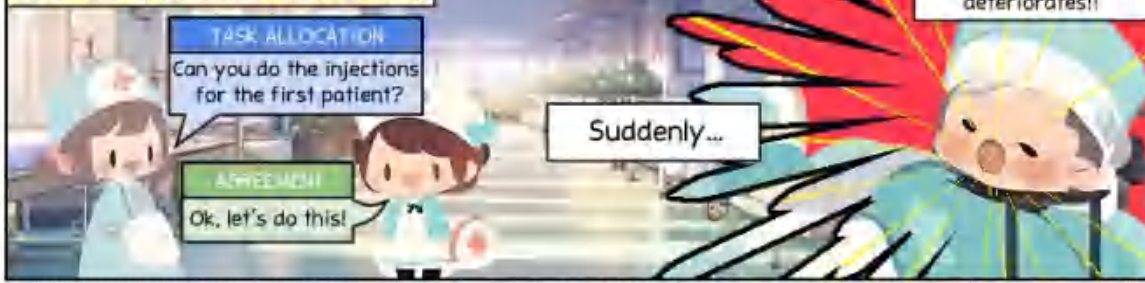
THE LEARNING SCENARIO

METS: Multimodal Learning Analytics of Embodied Teamwork Learning

Phase 1 (Initial Handover)



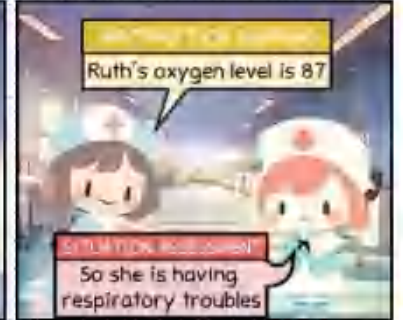
Phase 2 (Initial Assessment)



Phase 3 (Resolving Emergency)



Two nurses enter...



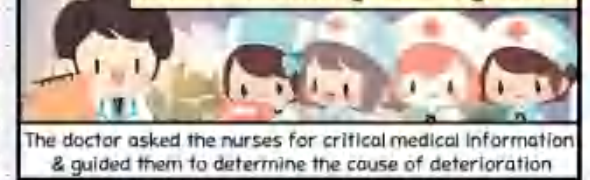
Primary Task



Secondary Tasks



Phase 4 (Emergent Diagnosis)



The nurses were able to resolve the situation.

Assessment in the age of artificial intelligence

Opportunities provided by AI



onerous



discrete



uniform



inauthentic



antiquated



feasible

continuous

adaptive

authentic

modern

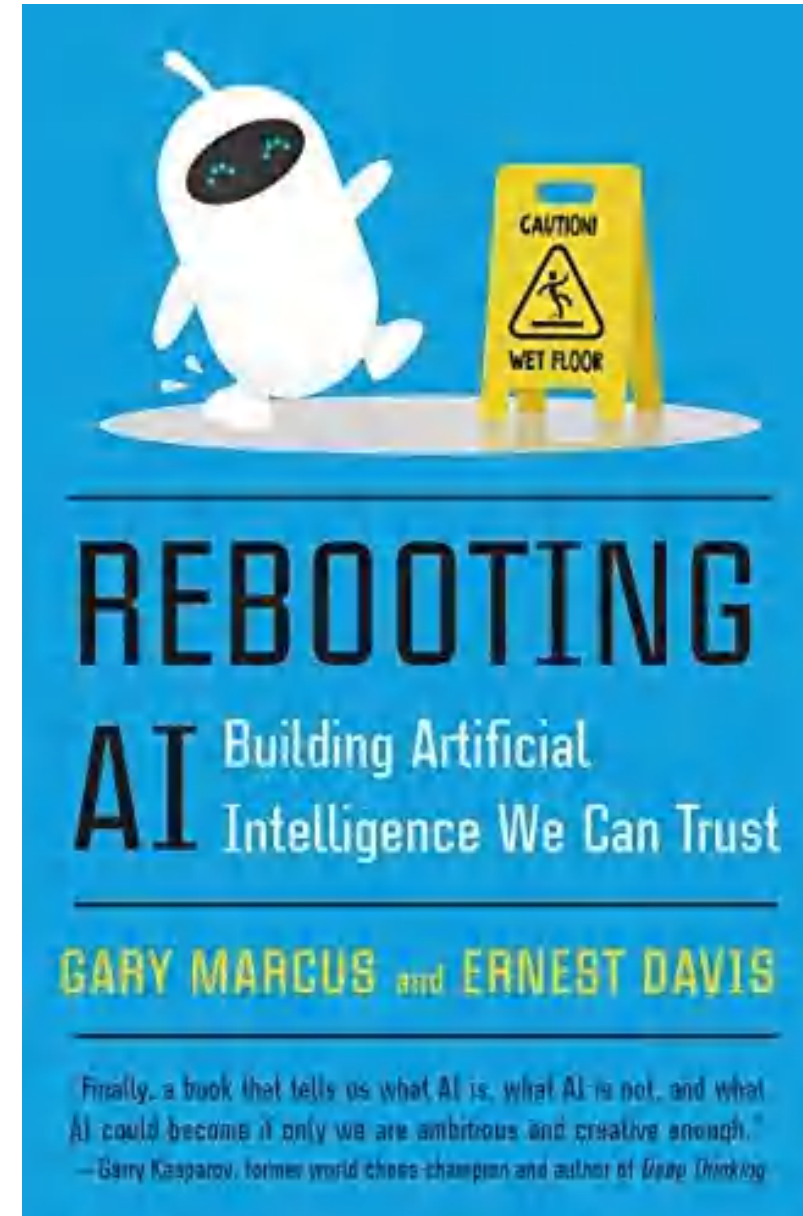
PROMISE – **CONCERN** – NEED – FINAL REMARKS

1

Limitations

Generative AI techniques
are not flawless

No reasoning and planning,
no sense of truthfulness,
no temporal and spatial awareness,
no casual inference,
no common sense,
no comprehension



A Categorical Archive of ChatGPT Failures

Ali Borji
Quintic AI
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April 5, 2023

Abstract

Large language models have been demonstrated to be valuable in different fields. ChatGPT, developed by OpenAI, has been trained using massive amounts of data and simulates human conversation by comprehending context and generating appropriate responses. It has garnered significant attention due to its ability to effectively answer a broad range of human inquiries, with fluent and comprehensive answers surpassing prior public chatbots in both security and usefulness. However, a comprehensive analysis of ChatGPT's failures is lacking, which is the focus of this study. Eleven categories of failures, including reasoning, factual errors, math, coding, and bias, are presented and discussed. The risks, limitations, and societal implications of ChatGPT are also highlighted. The goal of this study is to assist researchers and developers in enhancing future language models and chatbots. Please refer to [here](#) for the list of questions.

2

Workload implications of artificial intelligence in education

Aspiration

AI will increase productivity to focus
on things that matter the most

TECHNOLOGY

ChatGPT Is About to Dump More Work on Everyone

Productivity \neq Workload

How do we deal with
increased complexity of working and learning with AI?

Workload

Productivity \neq Workload

Automatic feedback is not associated with decreased teaching load

3

Ethical implications of artificial intelligence in education

Consent

Hard to *unlearn* something once private data are used for training LLMs

Training datasets for large language models

Nationality



The greatest number, or **plurality**, of editors (20%) reside in the **United States**, followed by **Germany** (12%) and **Russia** (7%). The only country not in **Europe** or **North America** in the top 10 is **India** (3%).

Gender

84 / 100

A horizontal bar chart showing the gender distribution of Wikipedia editors. The bar is divided into two segments: a long blue segment representing 84% (males) and a shorter red segment representing 16% (females).

The 2013 study **The Wikipedia Gender Gap Revisited** [measured](#) gender bias in survey completion and estimated that as of 2008, 84% of English Wikipedia editors were male. In the worldwide **Wikipedia Editor Survey 2011** of all the Wikipedias, 91% of respondents were male.

Bias

Midjourney v4

Prompt:
patriotic, dog, superhero.



Equity

Global accessibility of
generative artificial intelligence

PROMISE – CONCERN – **NEED** – FINAL REMARKS

1

Developing and measuring skills for the age of AI

WORKING PAPER

GPTs are GPTs: An Early Look at the Labor Market Impact Potential of Large Language Models

Tyna Eloundou¹, Sam Manning^{1,2}, Pamela Mishkin^{*1}, and Daniel Rock³

¹OpenAI

²OpenResearch

³University of Pennsylvania

March 27, 2023

Need for AI literacy

The New York Times

Here's What Happens When Your Lawyer Uses ChatGPT

A lawyer representing a man who sued an airline relied on artificial intelligence to help prepare a court filing. It did not go well.

Give this article    1.1K



By Benjamin Weiser

May 27, 2023

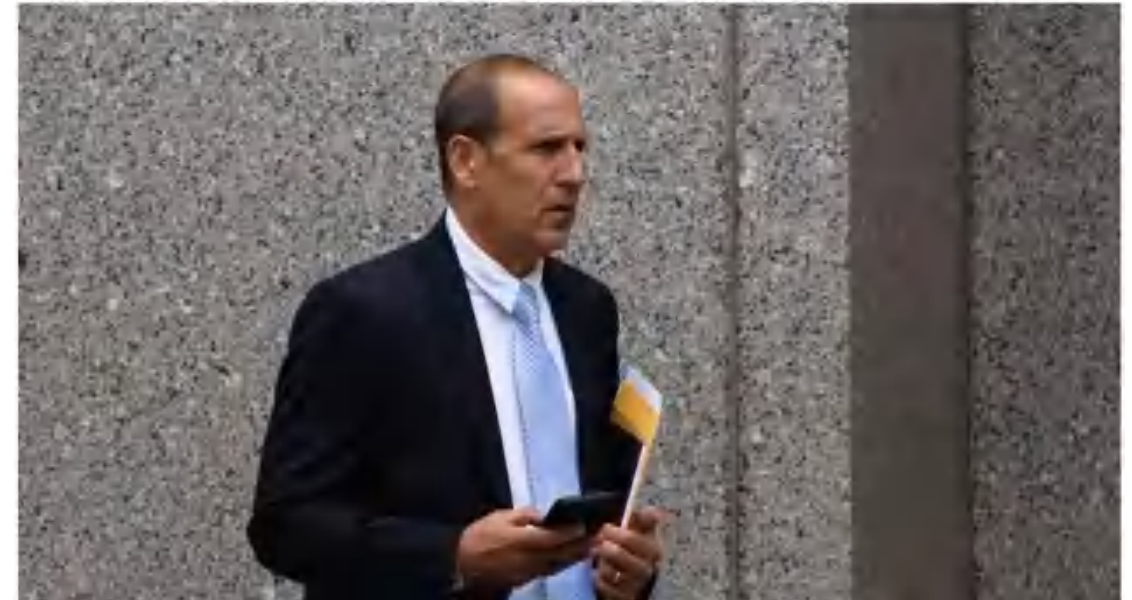
The lawsuit began like so many others: A man named Roberto Mata sued the airline Avianca, saying he was injured when a metal serving cart struck his knee during a flight to Kennedy International Airport in New York.

Weiser, B. (2023). Here's What Happens When Your Lawyer Uses ChatGP. <https://www.nytimes.com/2023/05/27/nyregion/avianca-airline-lawsuit-chatgpt.html>

This US lawyer used ChatGPT to research a legal brief with embarrassing results. We could all learn from his error

ABC RN / By Damien Carrick and Sophie Kesteven for the Law Report, with additional reporting from Reuters.

Posted Sat 24 Jun 2023 at 11:15am



Carrick, D., & Kesteven, S. (2023, June 24). 'Use with caution': How ChatGPT landed this US lawyer and his firm in hot water. *ABC News*. <https://www.abc.net.au/news/2023-06-24/us-lawyer-uses-chatgpt-to-research-case-with-embarrassing-result/102490068>

2

Challenge

Understanding impact on learning

Challenge

Fluence is not a bliss for learning

How do we deal with fluency bias and ‘lazy’ metacognition?

Inadvertent deception of ChatGPT

Inaccurate and verbose, but
users prefer ChatGPT responses

Challenge

Writing is an important learning tool

What happens when much of that tool is offloaded to
generative AI?

Challenge

Asking quality questions is
critical for effective learning

How do we promote development skills for question asking?

FINAL REMARKS

Need to broaden understanding of
learning *with, about, and despite* gen AI

AI is unlikely to go away and
we need to lead the change

www.graile.ai

**Interested in participating in
shaping further developments in AI in Education?**



GRAILE

Global Research Alliance for AI in Learning and Education

www.graile.ai



unesco



unesco



AI x Education

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شكر

谢谢

Thanks

Merci

Спасибо

Gracias