Impact of ChatGPT and Generative Artificial Intelligence (GenAI) Applications on Assessment

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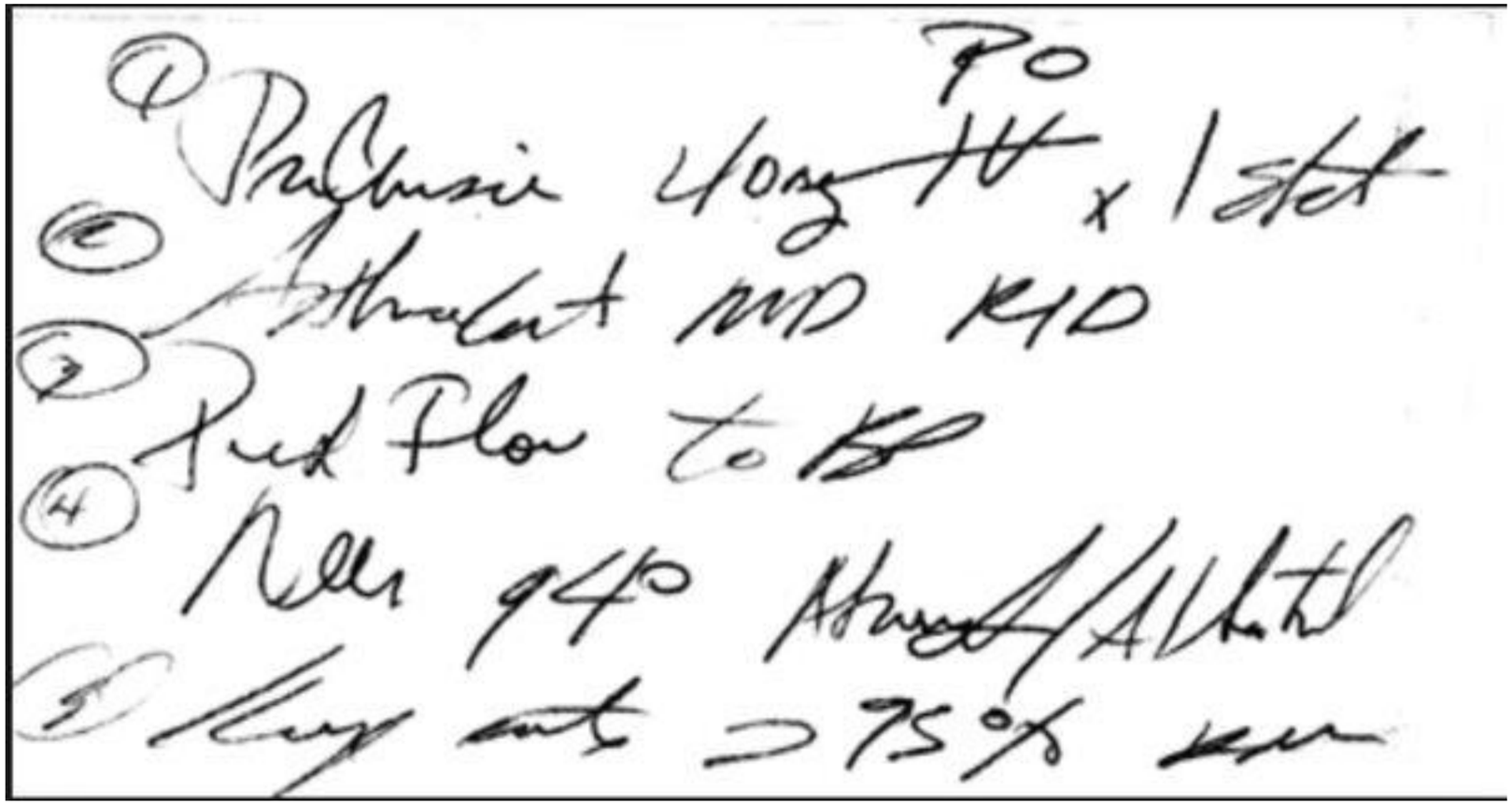
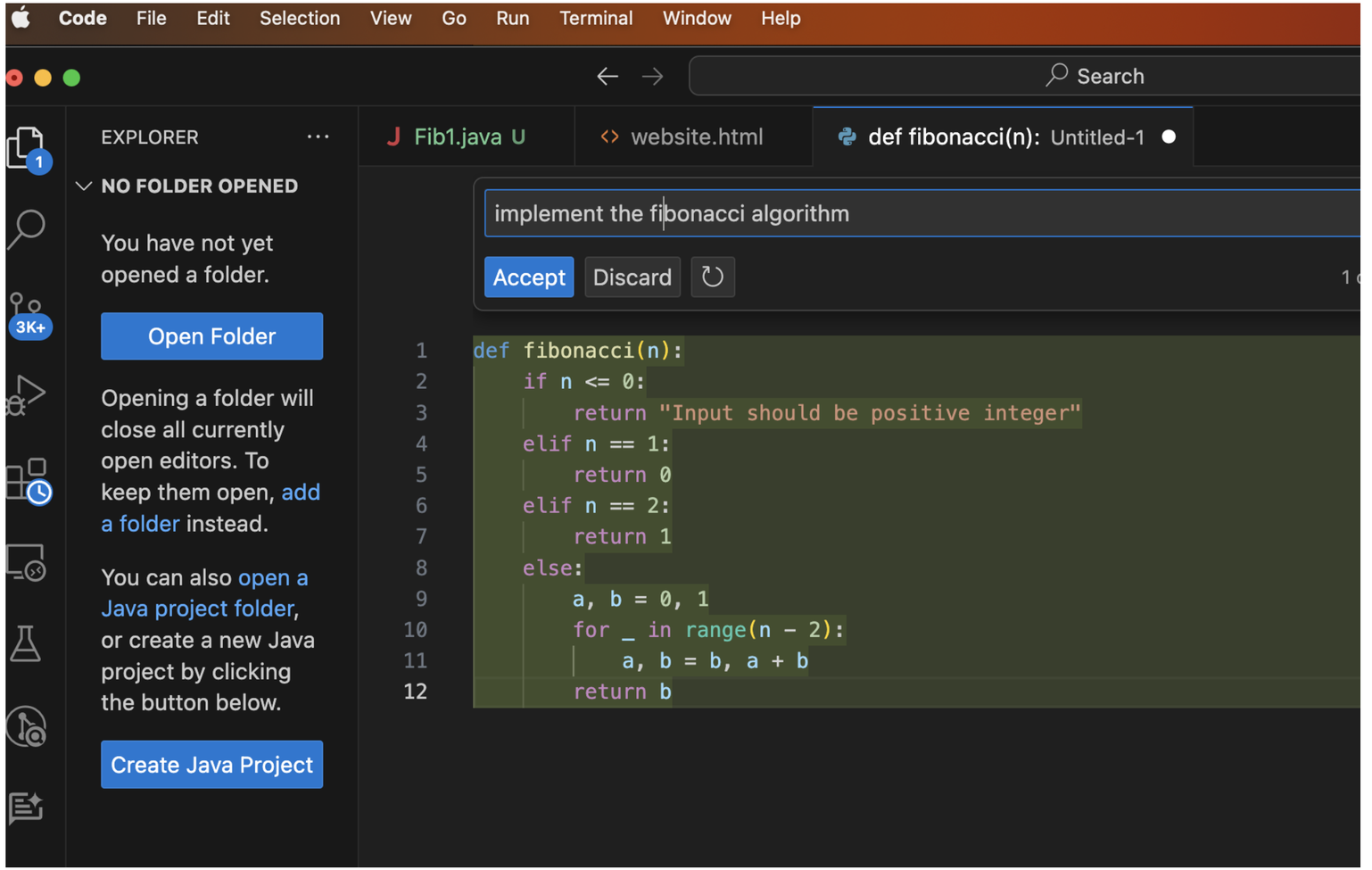


-High Level

Non-technical language in the session

Embracing vs. Denying AI's Impact in Education



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arXiv:2403.08299v1 [cs.SE] 13 Mar 2024

AutoDev: Automated AI-Driven Development

Michele Tufano

Microsoft Redmond USA

Anisha Agarwal

Microsoft Redmond USA

Jinu Jang

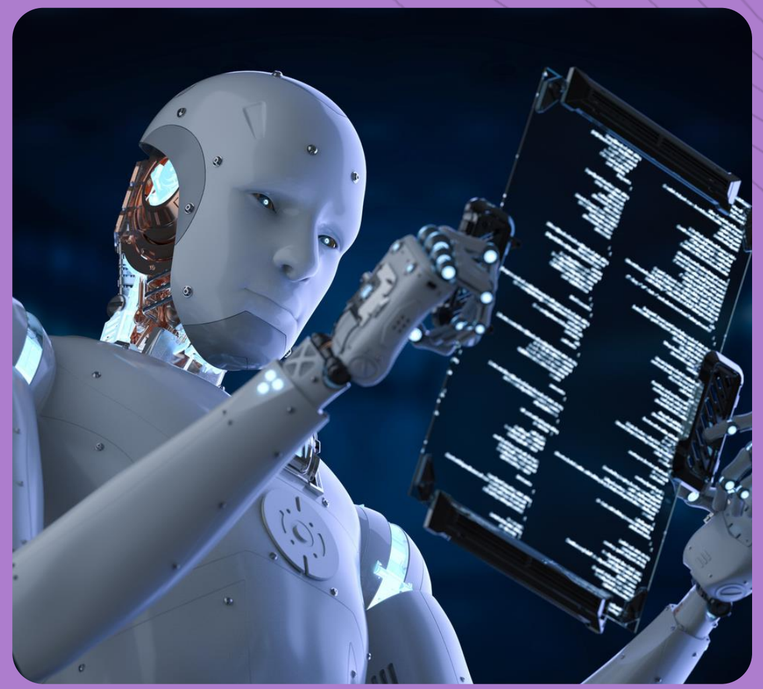
Microsoft Redmond USA

Roshanak Zilouchian Moghaddam

Microsoft Redmond USA

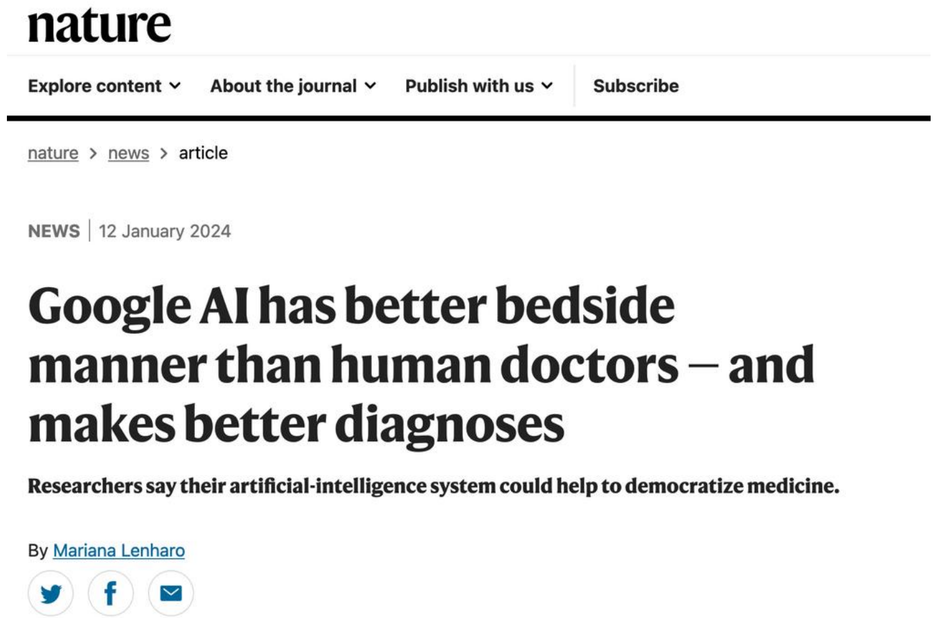
Neel Sundaresan

As the ascendancy of Artificial Intelligence becomes an undeniable reality, its profound influence on the educational landscape is poised to revolutionize not just teaching methodologies but also fundamentally transform the approach to assessment, ensuring a more subtle, efficient, and personalized evaluation process.



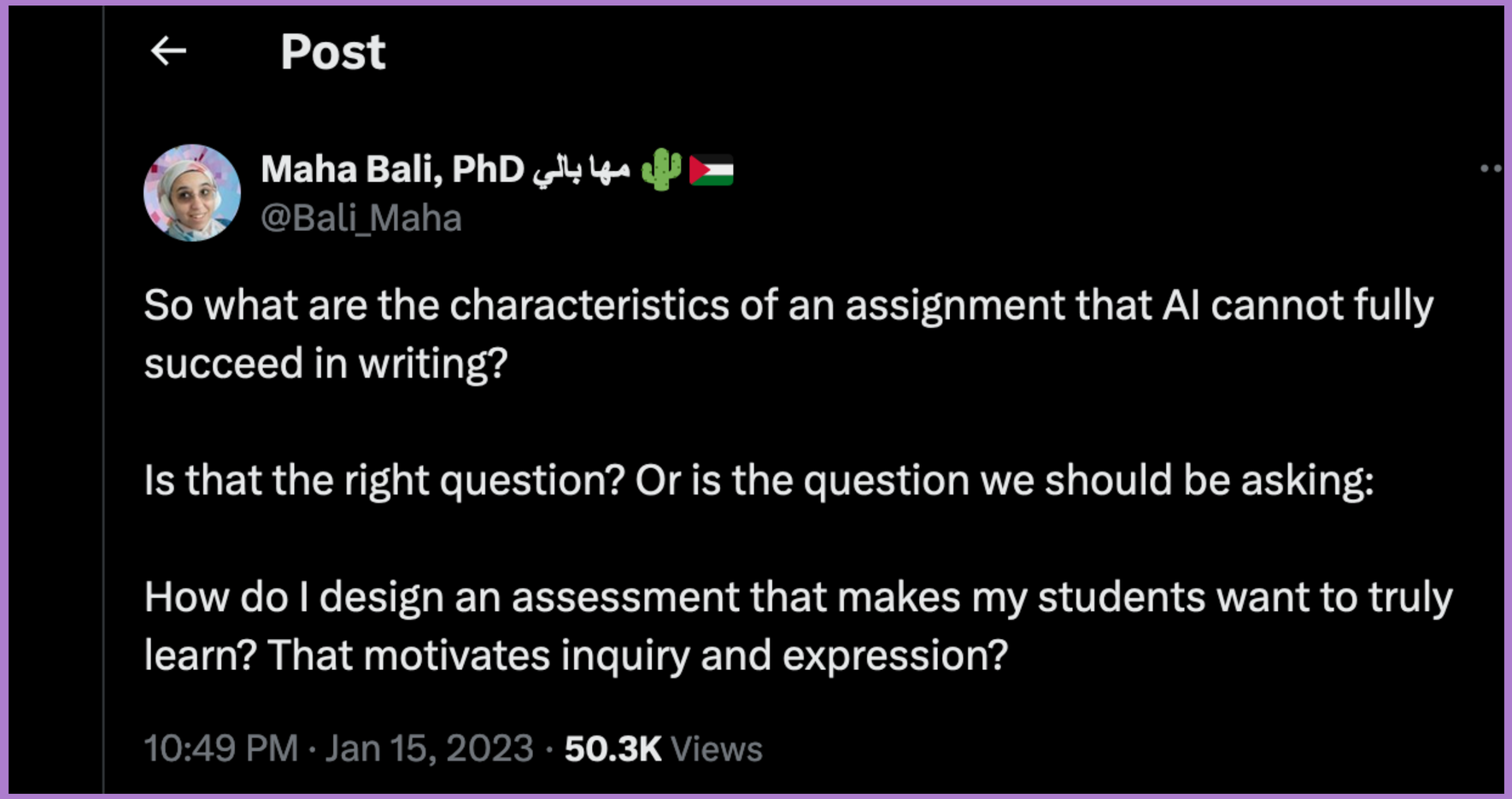
Delicate dance of surgery, where precision meets intuition, the question isn't whether to trust the hands of a robot or a human, but rather how to blend the infallible with the irreplaceable.

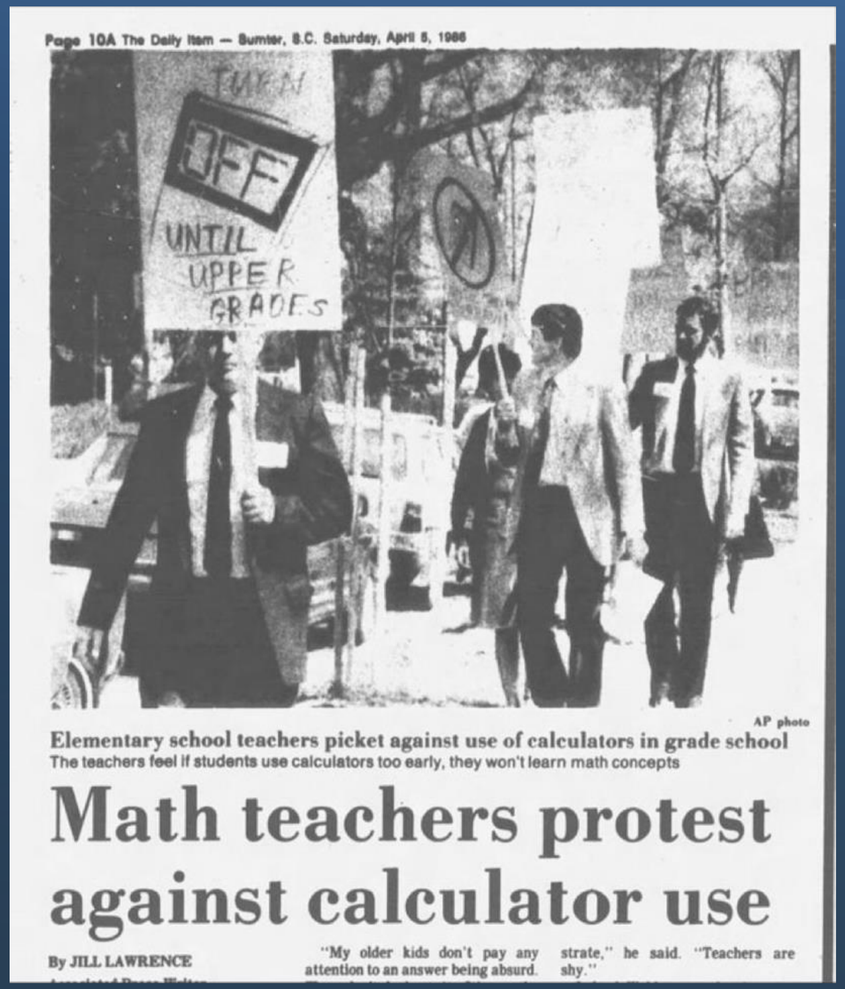
AI vs Human Doctors



- Generative AI tools, like ChatGPT, revolutionize our approach to education by transforming how we interact with information and construct knowledge.

The Good Question





Page 10A The Daily Item — Sumter, S.C. Saturday, April 5, 1986

AP photo

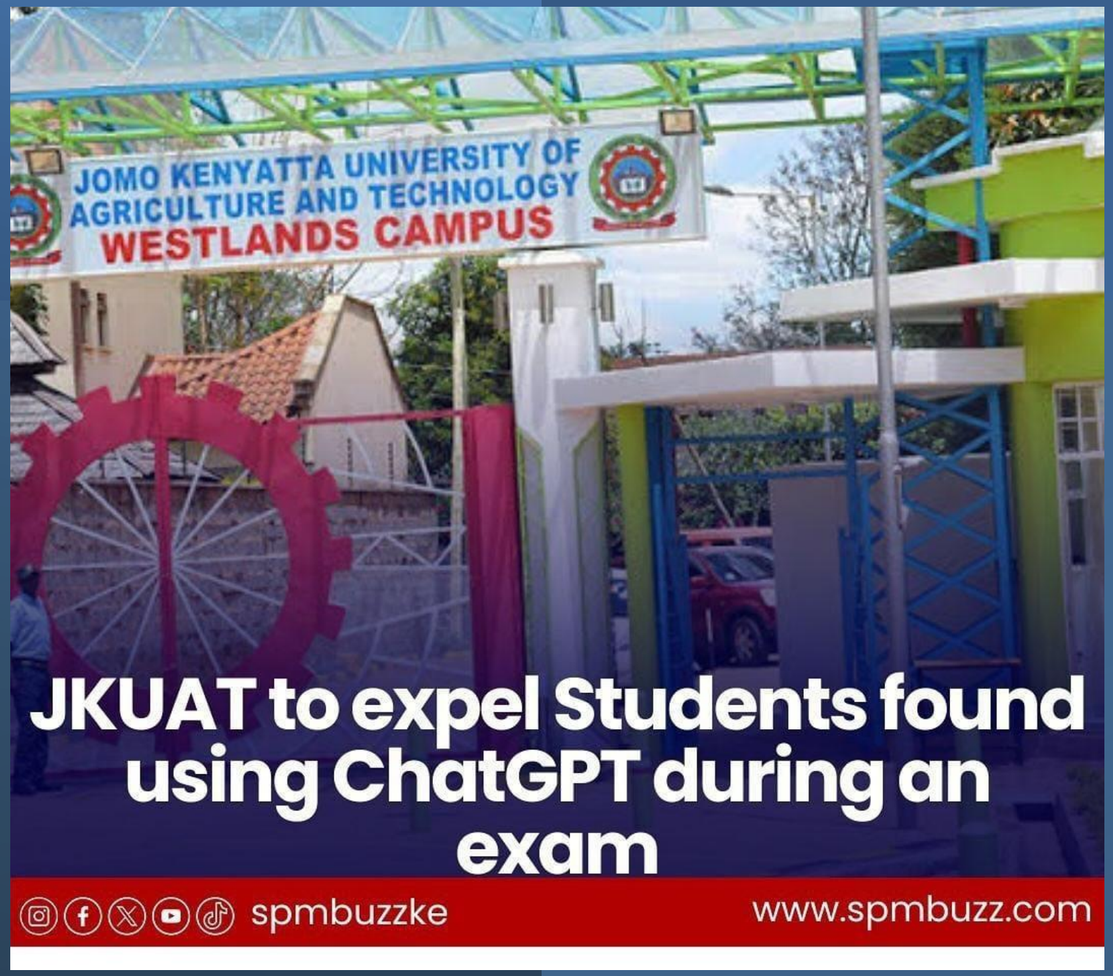
Elementary school teachers picket against use of calculators in grade school

The teachers feel if students use calculators too early, they won't learn math concepts

Math teachers protest against calculator use

By JILL LAWRENCE

"My older kids don't pay any attention to an answer being absurd. strate," he said. "Teachers are shy."



In the near (NOW) Future

Historical Context and Evolution

- 1970s: Introduction of calculators in classrooms, reshaping math instruction.
- 1990s: Arrival of spellcheck and autocorrect technologies.
- 2004: Google introduces autocomplete.
- 2006: Language teachers start utilizing Google Translate, sparking extensive research and recommendations on its effective use.

Generative AI

• November 2022: ChatGPT emerges, powered by the "Generative Pre-trained Transformer" technology. The watershed moment for ChatGPT was the public release of its API by OpenAI on March 2, 2023, a democratizing move that facilitated broader access to this technology

•

- Background: Utilizes neural network machine learning, analyzing extensive datasets (570GB from books, Wikipedia, articles, etc.) to generate text.

- Functionality: Generates text based on user prompts without a guarantee of factuality, demonstrating pattern recognition over factual accuracy.

• ChatGPT's educational role evolution marks a transition from a conventional instructional tool to an intelligent facilitator and onwards to an active participant in the learning process, denoting a profound metamorphosis in function.

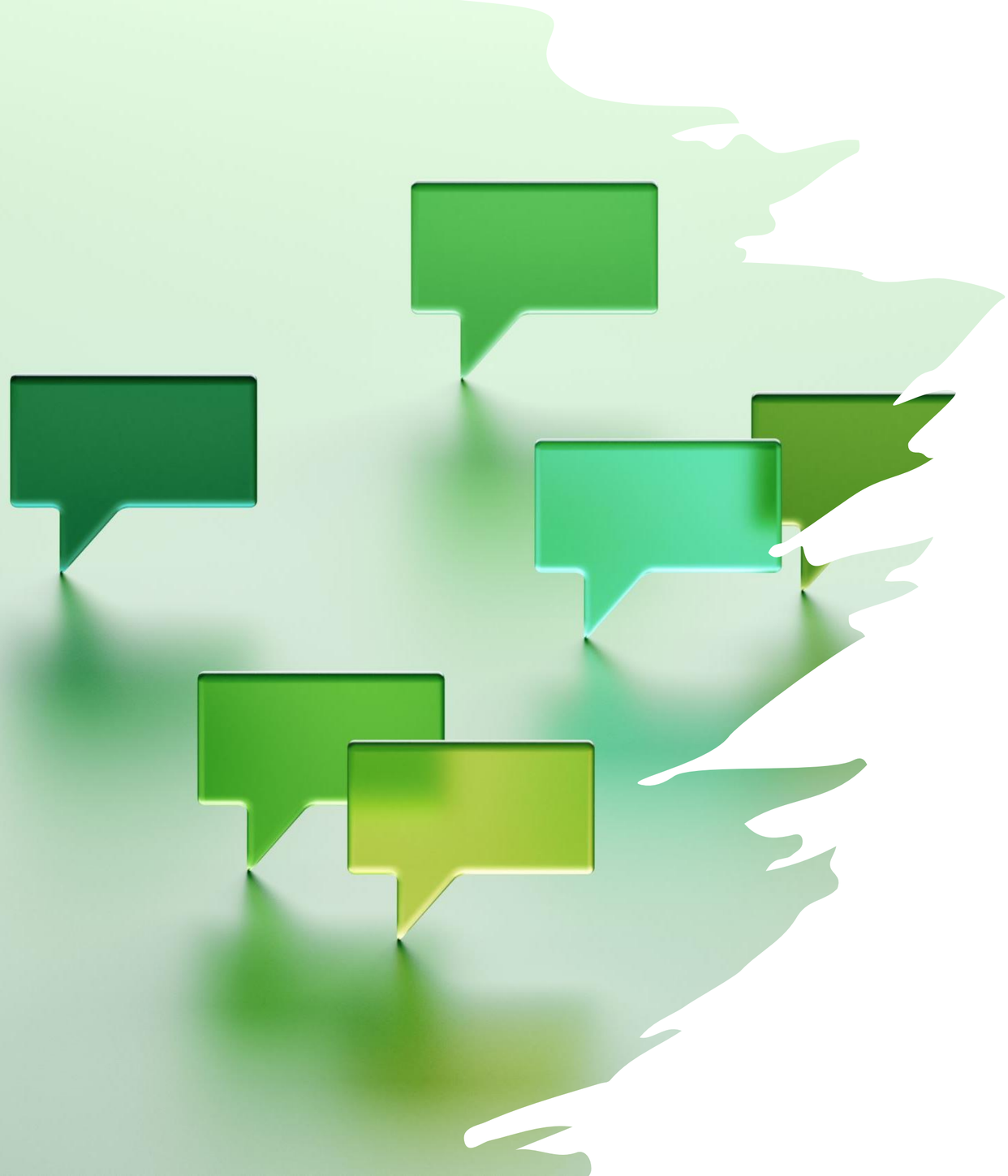
Characteristics and Implications of Generative AI

Unpredictability: The same prompt can yield different results, highlighting the non-deterministic nature of Generative AI.

Cross-tool Variability: Using the same prompt across different AI tools results in varied outputs, underlining the unique generative capabilities of each tool.

- Educational Impact: Represents a significant addition to technological tools in higher education, without inducing panic among faculty.

Some: AI Tools for Text Generation



- ChatGPT
- Provider: OpenAI
- Features:
- Free access to a model trained on data through 2021.
- Paid subscription (ChatGPT Plus) for GPT-4 access, faster responses, and priority for new features, including Code Interpreter plugin.

- Bing Chat (search with GPT-4)
- Provider: Microsoft and OpenAI collaboration
- Features:
- Integrates with Bing for up-to-date search information.
- Offers tone adjustment options: More Creative, More Balanced, More Precise.

- Google Bard - Now Gemini
- Provider: Google
- Features:
- Provides three output versions for review, with variations in tone or content.
- Part of Google's AI offerings, including integration into Google Drive as Duet AI.

- Claude
- Provider: Anthropic AI
- Features:
- Promotes a cautious approach to text generation.
- Allows file uploads for prompts without premium charges.

More - Generative AI Tools

Writing

Enhance your writing with tools for creation, editing, and style refinement

1

Write For Me

Write tailored, engaging content with a focus on quality, relevance and precise word count.

By puzzle.today

2

Humanizer Pro

#1 Humanizer in the market. This tool humanizes your content with a 100% human result, maintaining content meanin...

By charlyaisolutions.com

3

Text to Video Maker

The Assistant helps you create high-quality video prompts by easily utilizing InVideo technology By Mr Sora

By Sora

4

AI Humanizer Pro

Best AI humanizer to help you get 100% human score. Humanize your AI-generated content to bypass AI detection. Use our...

By bypassgpt.ai

5

Essay Writer 😎

🚀 Your AI Essay Writer 📝: Top-notch, plagiarism-free essays with a click. Say goodbye to writer's block and hello to...

By essaypro.com

6

Book Creator Guide

A writing assistant specializing in book creation, web research, and format recommendations.

By Choi Yong

Education

Explore new ideas, revisit existing skills

1

math

The worlds most powerful math tool.

By pulsr.co.uk

2

Universal Primer

The fastest way to learn anything.

By runway.com

3

Math Solver

Your advanced math solver and AI Tutor, offers step-by-step answers, and helps you learn math and even all subjects, at any...

By studyx.ai

4

Tutor Me

Your personal AI tutor by Khan Academy! I'm Khanmigo Lite - here to help you with math, science, and humanities questions. I...

By khanacademy.org

5

Voxscript

Quick YouTube, US equity data, and web page summarization with vector transcript search -- no logins needed.

By Allwire Technologies, LLC

6

Question Maker

Creates a range of academic questions from PDFs.

By GOURISHETTY

GPTs created by the ChatGPT team

1

DALL·E
Let me turn your imagination into imagery.

By ChatGPT

2

Data Analyst
Drop in any files and I can help analyze and visualize your data.

By ChatGPT

3

Hot Mods
Let's modify your image into something really wild. Upload an image and let's go!

By ChatGPT

4

Creative Writing Coach
I'm eager to read your work and give you feedback to improve your skills.

By ChatGPT

5

Coloring Book Hero
Take any idea and turn it into whimsical coloring book pages.

By ChatGPT

6

Planty
I'm Planty, your fun and friendly plant care assistant! Ask me how to best take care of your plants.

By ChatGPT

Timeline of Gen AI Assessment Impact

Milestone 1: 2015

Chatbots used for customer support

Milestone 2: 2016

Chatbots used for language learning

Milestone 3: 2018

Generative AI used for writing assistance

Milestone 4: 2020

Generative AI used for content creation

Gen AI Impact

Impact of Gen AI on assessments

AI-based Assessment

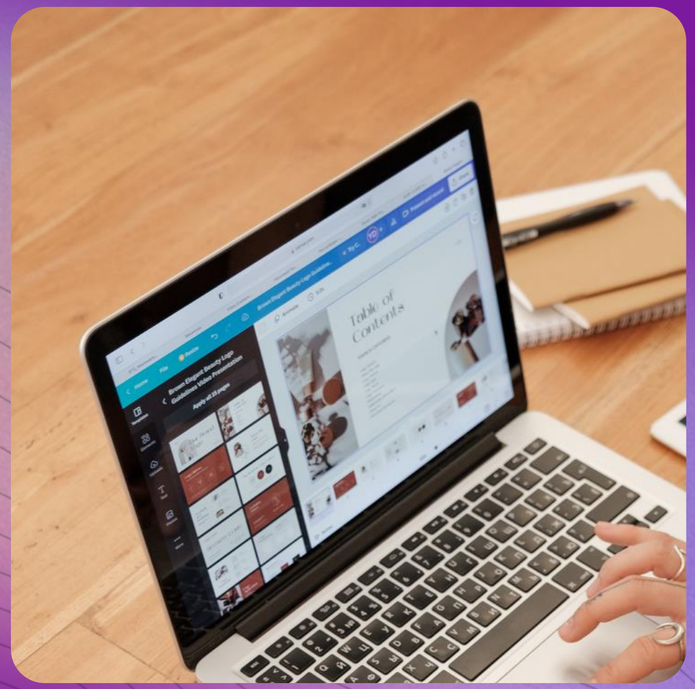
Prospects for Assessment Quality with Gen AI

ChatGPT Analysis

Gen AI and Assessment Frameworks

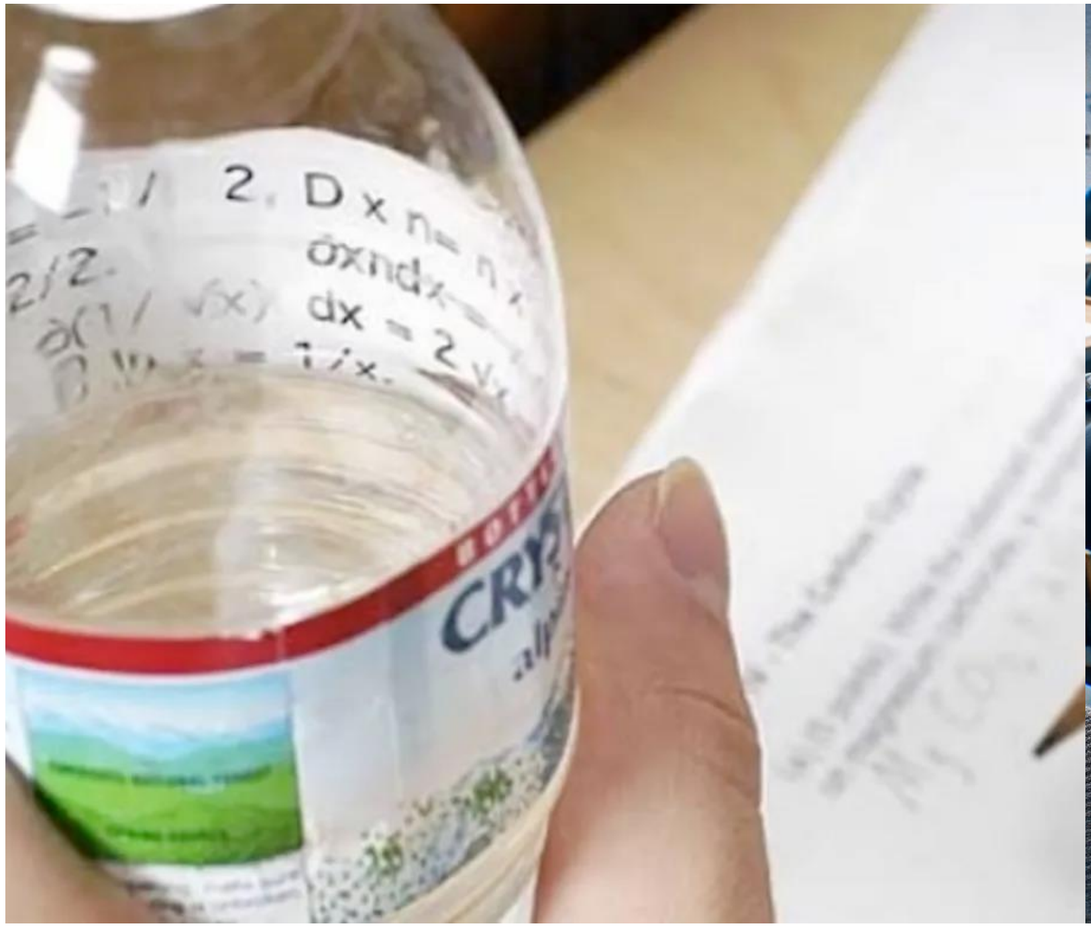
Future of Education

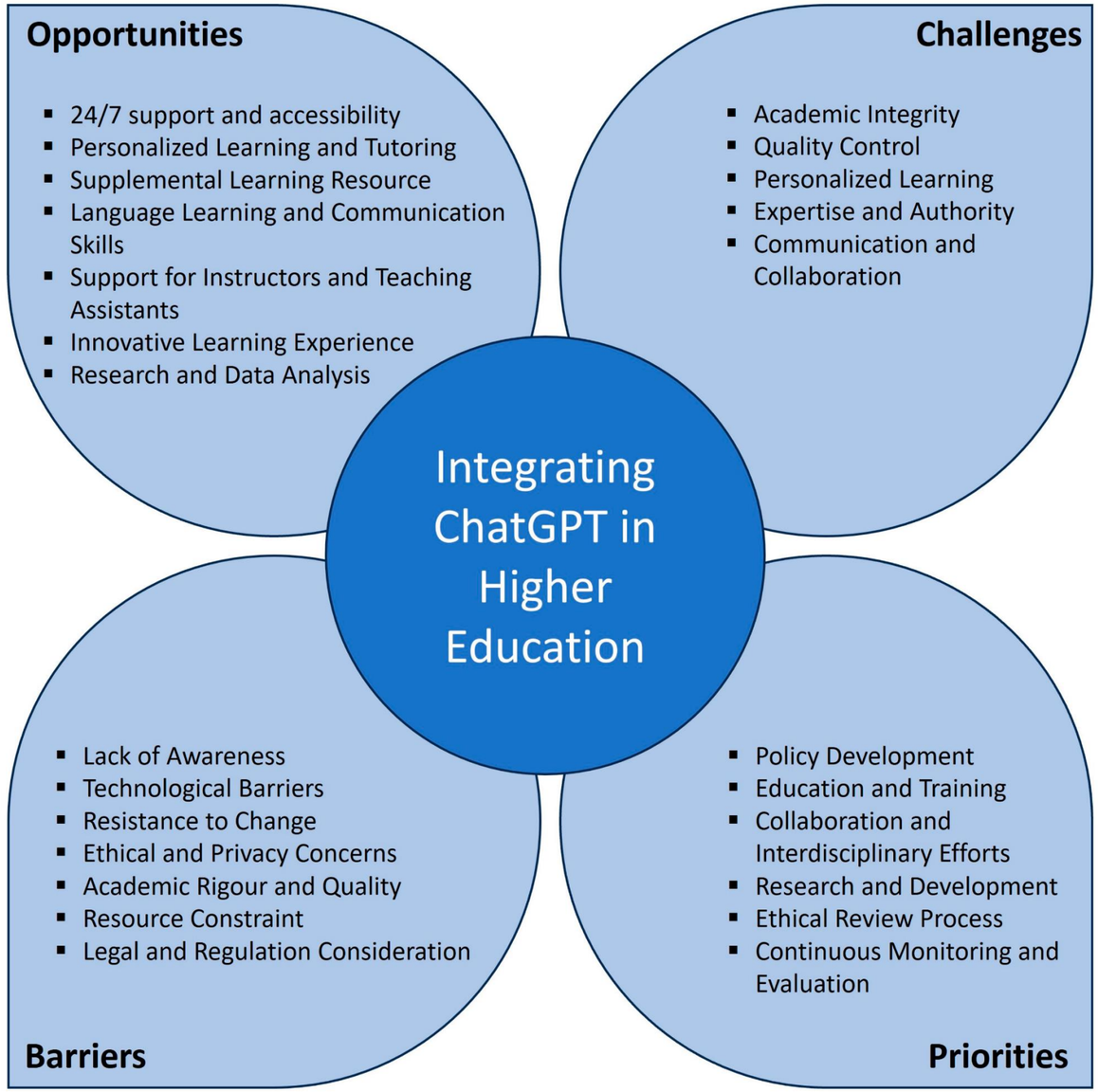
AI in Assessment: A New Era of Learning



Revolutionizing Assessments with Gen AI

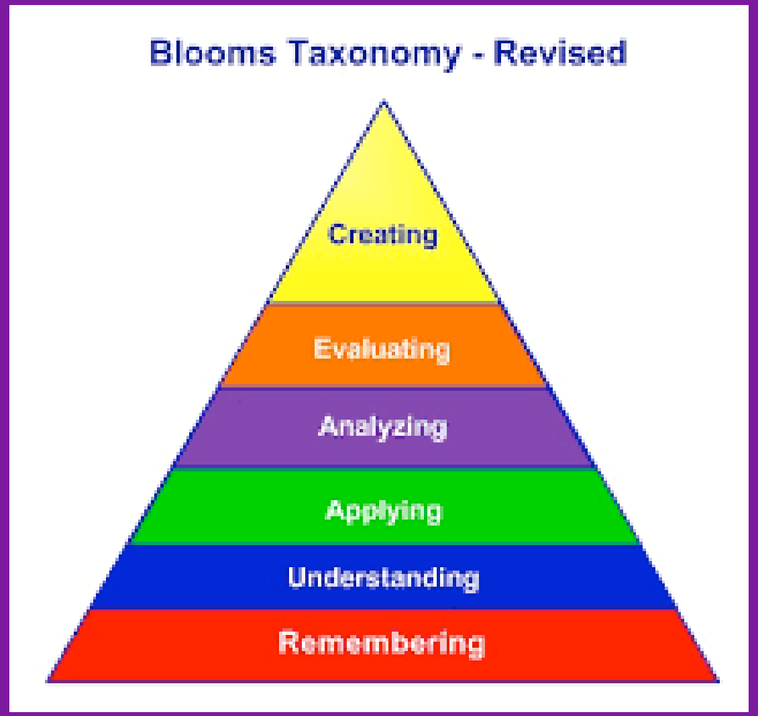
`Academic dishonesty — is older than any teacher!



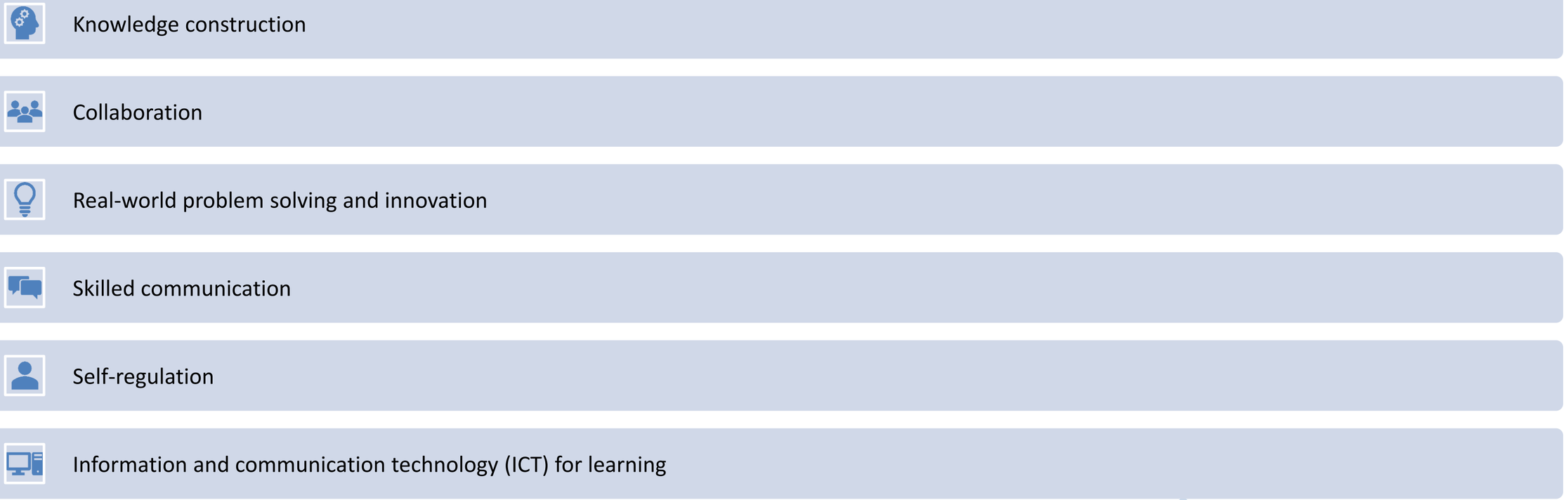

Opportunities
24/7 support and accessibility
Personalized Learning and Tutoring
Supplemental Learning Resource
Language Learning and Communication Skills
Support for Instructors and Teaching Assistants
Innovative Learning Experience
Research and Data Analysis
Challenges
Academic Integrity
Quality Control
Personalized Learning
Expertise and Authority
Communication and Collaboration
Integrating ChatGPT in Higher Education
Barriers
Lack of Awareness
Technological Barriers
Resistance to Change
Ethical and Privacy Concerns
Academic Rigour and Quality
Resource Constraint
Legal and Regulation Consideration
Priorities
Policy Development
Education and Training
Collaboration and Interdisciplinary Efforts
Research and Development
Ethical Review Process
Continuous Monitoring and Evaluation

Revised version of Bloom's Taxonomy

Revolutionizing grading and educational evaluation methods.


Blooms Taxonomy - Revised
Creating
Evaluating
Analyzing
Applying
Understanding
Remembering

21CLD comprises six dimensions, or skills, which are essential to the development of capable and well-rounded learners. The six 21st century dimensions (or skills) are:



Knowledge Construction rubric

1	▪ The learning activity does NOT require learners to construct knowledge. Learners can complete the activity by reproducing information or by using familiar procedures
2	▪ The learning activity DOES REQUIRE learners to construct knowledge by **interpreting**, **analyzing**, **synthesizing**, or **evaluating** information or ideas ▪ BUT the activity's main requirement is NOT knowledge construction
3	▪ The learning activity's **main requirement** IS knowledge construction ▪ BUT the learning activity does NOT require learners to apply their knowledge in a new context
4	▪ The learning activity's **main requirement** IS knowledge construction ▪ AND the learning activity DOES require learners to **apply their knowledge in a new context** ▪ BUT the learning activity does NOT have **learning goals in more than one subject**
5	▪ The learning activity's **main requirement** IS knowledge construction ▪ AND the learning activity DOES require learners to **apply their knowledge in a new context** ▪ AND the knowledge building IS interdisciplinary. The activity DOES have **learning goals in more than one subject**

Learn | Discover | Product documentation | Development languages | Topics

Training | Products | Career Paths | Browse all training | Educator Center | Student Hub | FAQ & Help

Learn / Training / Browse /

6300 XP

21st century learning design

6 hr 51 min • Learning Path • 8 Modules

Intermediate | K-12 Educator | School Leader | Office 365

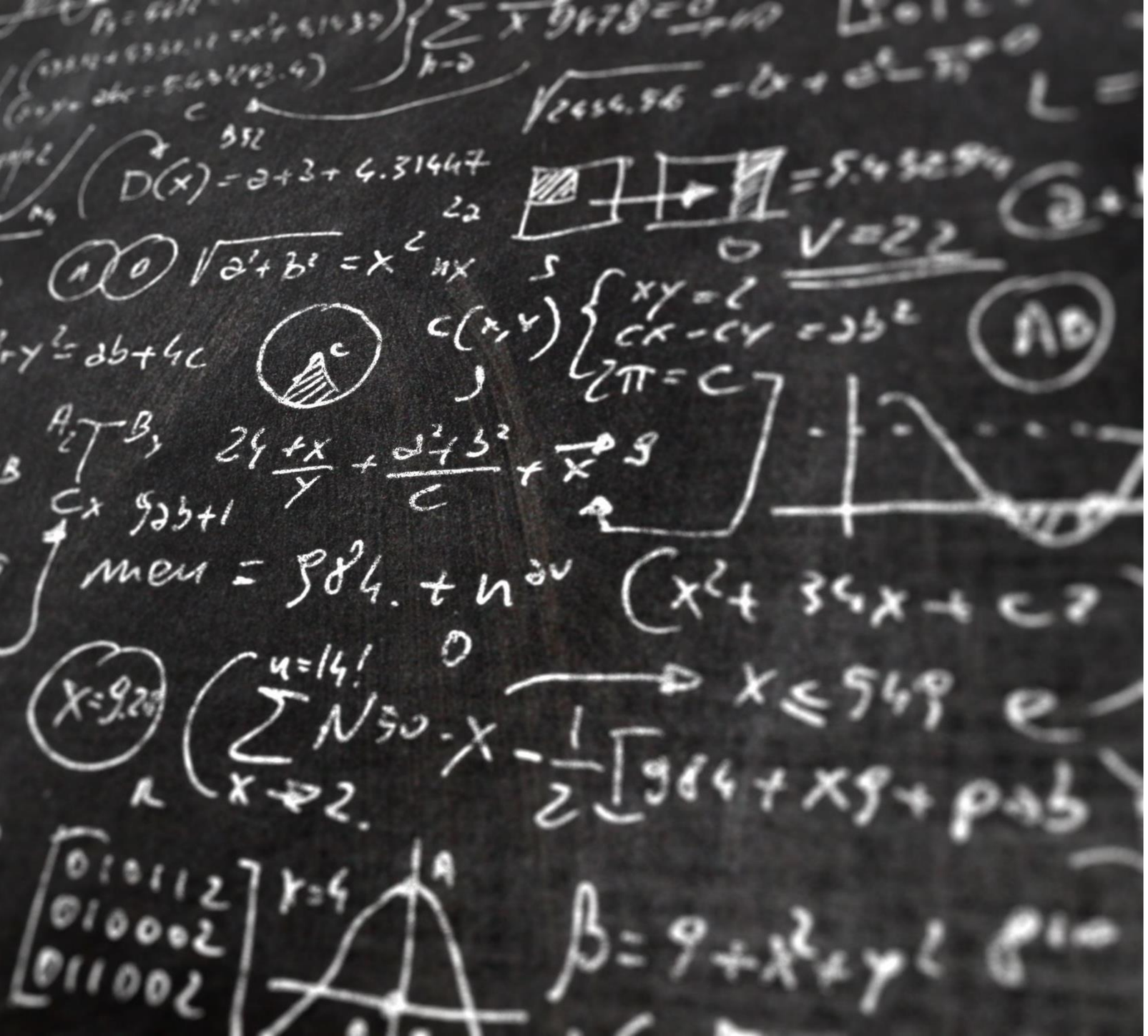
Higher levels of Bloom’s Taxonomy

- Localize Assignments: Highlighting the importance of incorporating class discussions, specific texts, and recent events.

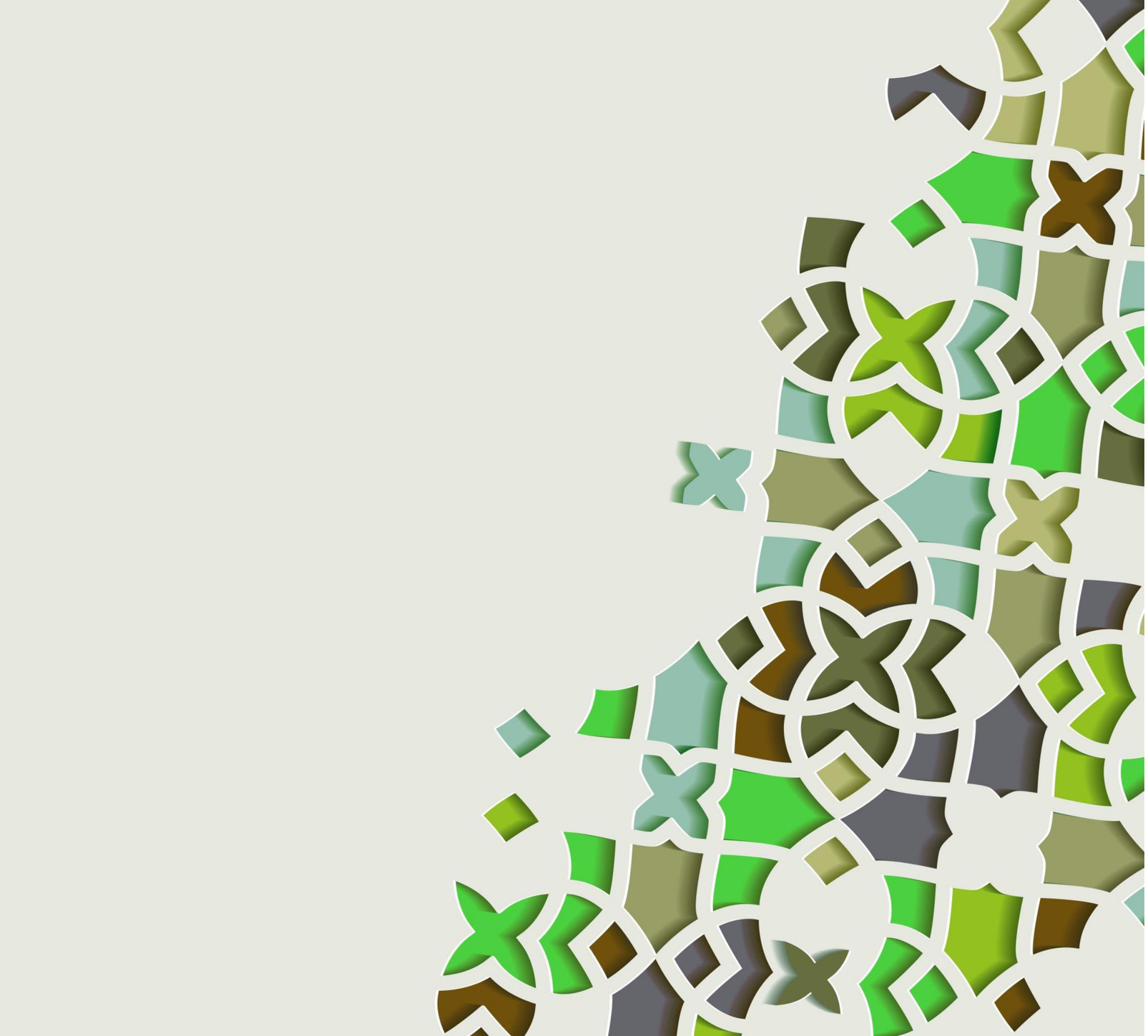
- Personal Reflections: Explaining how personal reflections ensure authenticity.

- Exploratory Activities: Discussing the value of hands-on activities that require personal input, beyond what AI can generate.- **Problem Based Learning.**

- Assignment Formatting: Offering strategies for formatting assignments to, including breaking down assignments and incorporating in-class tasks.



- “As we navigate the frontier of education with tools like ChatGPT and other GenAI applications, we're not just evolving how we assess knowledge; we're redefining what it means to learn, teach, and understand. These technologies offer us a mirror, reflecting the depth of human intellect and the boundless potential for innovation. Yet, they also pose a profound question: How do we measure learning in an era where knowledge creation is not just about the answers we find, but the questions we dare to ask? In embracing these tools, we commit to a journey of discovery—one where the ultimate assessment lies in our ability to integrate, innovate, and inspire” OpenAI. (2024). *ChatGPT* (4) [Large language model]. https://chat.openai.com



Thank you!
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