

*Disclosure:*  
Much of this presentation was  
written with the assistance of AI



# Artificial Intelligence

3/6/2024

4:00pm – 6:00pm

# About Me – Chris McGuffey

- Not an Expert
- Superpower = debate / discuss / argue / last word
- Electronic Tinkerer
- Overengineer Everything
- Looking for a better mouse trap
- Passionate about prepping students for the workforce
- @ JTHS:
  - Tech Ed teacher from '09 – '17
  - CTE Director '17 - Present



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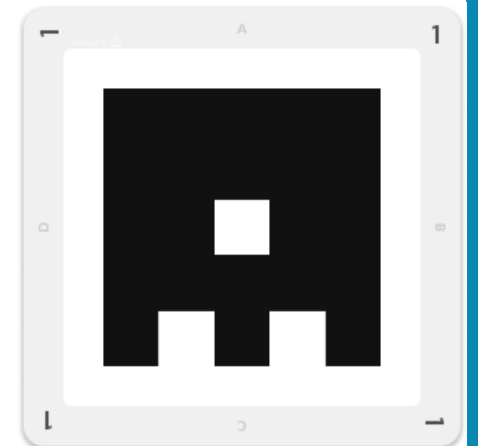
# Course Description

Join us for an engaging professional development workshop focused on harnessing the power of Artificial Intelligence (AI) in education. In this session, we will delve into the landscape of current AI platforms tailored for educational settings, exploring their features, functionalities, and potential benefits for both educators and students. Through interactive discussions and hands-on activities, participants will gain insights into how AI can enhance teaching and learning experiences. Additionally, we'll engage in conversations about practical strategies for implementing AI technologies within the classroom, addressing considerations such as ethical implications, student privacy, and effective integration into existing curricula. Whether you're a seasoned educator or new to the realm of AI in education, this workshop offers valuable opportunities to expand your knowledge and develop actionable plans for leveraging AI to enrich educational practices.

# Plickers Survey

Rate your experience with AI tools.

- A) **Obsessed:** I should be leading this PD
- B) **Casual User:** I use an AI tool with some regularity
- C) **Interested:** I've tried an AI tool
- D) I haven't used any AI tools yet



# Essential Question:

- How can you use Artificial Intelligence to enhance the way students learn within your classroom?

## Objectives

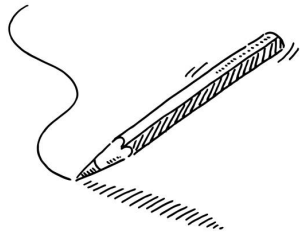
- Analyze the benefits and challenges of integrating AI technologies into teaching and learning experiences.
- Understand the current landscape of AI platforms in education, including their features, functionalities, and potential applications within the classroom.
- Develop actionable strategies for implementing AI within the classroom.

# Shared Agreements

- **Respectful Participation:** We agree to actively engage in discussions, share ideas, and listen attentively to others' perspectives, fostering an environment of mutual respect and collaboration.
- **Open-Mindedness:** We agree to approach new concepts and technologies with an open mind, embracing diverse viewpoints and being willing to explore unfamiliar territory in the realm of Artificial Intelligence.
- **Constructive Feedback:** We agree to provide feedback in a constructive and supportive manner, offering insights and suggestions that contribute positively to the learning experience of all participants.
- **Commitment to Learning:** We agree to actively participate in all activities and discussions, striving to enhance our understanding of AI platforms in education and our ability to implement them effectively within our classrooms.

# Fast Take

What is your current outlook on the implementation of AI in the next 5 years?



Create an illustration



Leonardo.Ai



# Artificial Intelligence

Artificial Intelligence (AI) refers to the simulation of human intelligence processes by computer systems. These processes include learning (the acquisition of information and rules for using it), reasoning (using rules to reach approximate or definite conclusions), and self-correction. AI encompasses a broad range of technologies and approaches, from simple rule-based systems to more complex neural networks and deep learning algorithms. The goal of AI is to enable machines to perform tasks that typically require human intelligence, such as understanding natural language, recognizing patterns, making decisions, and solving problems.



- ChatGPT 3.5

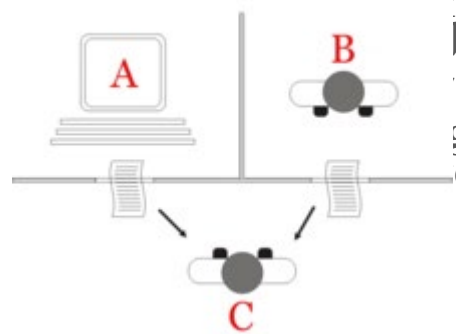


# AI Terms-Definitions

- **Chatbot:** A software application that mimics human conversation, usually through text.
- **Neural Network:** a mathematical model used to approximate nonlinear functions.
- **NLP Natural Language Processing:** a form of AI that enables computers to understand human language, whether it be written, spoken, or even scribbled. NLP combines computational linguistics—rule-based modeling of human language—with statistical and machine learning models.
- **GPT Generative Pre-trained Transformer:** A type of LLM used in ChatGPT and other AI applications.
- **LLM Large Language Model:** A neural net trained on large amounts of text to imitate human language.
- **ML Machine Learning:** The study of how AI acquires knowledge from training data.

# Artificial Intelligence - History

- **1950s: The Birth of AI**
  - 1950: Alan Turing proposes the **Turing Test** as a measure of a machine's intelligence.
  - 1956: The term "artificial intelligence" is coined at the Dartmouth Conference, marking the official birth of AI as a field.
- **1960s-1970s: Early Developments**
  - 1963: The first AI laboratory is established at MIT.
  - 1966: **The first chatbot**, ELIZA, is created by Joseph Weizenbaum.
  - 1972: The Shakey robot is developed, demonstrating basic reasoning and problem-solving abilities.
  - 1979: MYCIN, an AI system for diagnosing bacterial infections, is developed.
- **1980s-1990s: AI Winter and Revival**
  - Early 1980s: The field of AI experiences a period of reduced funding and interest, known as the "AI winter."
  - 1986: The backpropagation algorithm is rediscovered, leading to advancements in neural network research.
  - Late 1980s: Expert systems gain popularity for specialized tasks.
  - 1997: **IBM's Deep Blue defeats world chess champion** Garry Kasparov.



# Artificial Intelligence - History

- **2000s-2010s: Rise of Machine Learning**
  - 2000s: **Machine learning** approaches, particularly support vector machines and decision trees, become prevalent.
  - 2006: Geoffrey Hinton and his team publish a paper on deep learning, rekindling interest in neural networks.
  - 2011: **IBM's Watson wins Jeopardy!**, showcasing advancements in natural language processing.
  - 2012: Google Brain's deep learning algorithm achieves breakthrough performance in image recognition.
  - 2016: AlphaGo, developed by DeepMind, defeats Go world champion Lee Sedol.
  - 2017: Generative adversarial networks (GANs) gain attention for generating realistic images.
- **2020s and Beyond: Continued Advancements and Ethical Concerns**
  - Ongoing research focuses on improving AI capabilities in areas like natural language understanding, autonomous vehicles, and healthcare.
  - Growing concerns about the ethical implications of AI, including bias in algorithms, data privacy issues, and the potential impact on employment.



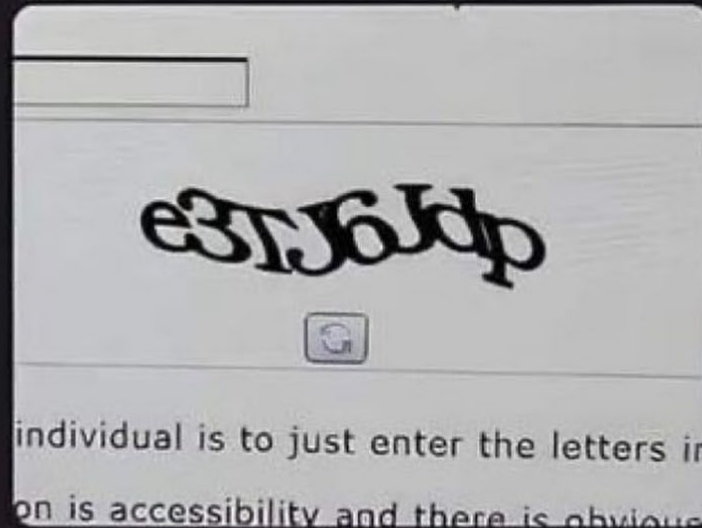
# Table Discussion

Consider the evolution of CTE technology/equipment in your classroom.

How different were previous iterations/technologies in the past?

- Which skills would not apply 1, 2, 3 decades ago.
  - Spreadsheets
  - Canva
  - LMS – Google Classroom
  - Medical devices
  - Medical treatments
  - Embroidery machine
  - Air Fryer
  - Prefab parts/homes
  - Automotive scan tool
  - Drafting software
  - Computer Technology
  - 3D Printing / CNC capabilities

YOU



What does this say?

CHATGPT

The image shows text that appears to be a CAPTCHA, designed to distinguish human users from bots. The text is distorted to make it challenging for automated systems to read. However, to a human, it should read "e3TJ6JdP".

# Chatbots

An AI chatbot is a piece of software that simulates conversations with people using natural language processing (NLP) and machine learning. These chatbots can provide a human-like experience by understanding and responding to text or voice commands. Here are some common use cases for AI chatbots:

- OpenAI: ChatGPT 4.0
- OpenAI: ChatGPT 3.5
- Google: ~~Bard~~ Gemini
- Microsoft: Copilot
- Anthropic: Claude 3.0
- Anthropic: Claude 2.0

# ChatGPT - Examples

New chat

Previous 7 Days

AI in Education Workshop

Child can fly under father's AMA me

Previous 30 Days

New chat

Helping wife calm down

January

Professional Treatment Guidelines

2023

Preschool Lab Aide Questions

Assessment Rubric: Spreadsheet M

Rubric for Creative Projects

Engaging 5th Graders Holiday

Coop Ed: Theory to Practice

Improve 3B Questioning Practices

Upgrade plan  
Get GPT-4, DALL-E, and more

Chris McGuffey

ChatGPT 3.5



**You**  
My wife needs to calm down. How can I help her with that?

**ChatGPT**  
It's important to listen first. Ask her what's bothering her and offer a supportive ear. Sometimes, just being heard can make a big difference.

**You**  
Thank you.

**ChatGPT**  
You're welcome. If she wants to talk more, I'm here. How else can I assist you?

📄 ↺ 🗨

Message ChatGPT...



ChatGPT can make mistakes. Consider checking important information.



# Chatbot – Prompt Engineering

## RISEN Framework Overview

- **Role:** Establish the AI's role, setting the stage for the type of response expected.
- **Instructions:** Clarify what you want the AI to do, providing a clear directive.
- **Steps:** Break down the task into manageable steps, ensuring a logical progression.
- **End Goal:** Define the ultimate objective of the prompt, guiding the AI's focus.
- **Narrowing:** Set any constraints or limitations to tailor the response to your specific needs.

### Prompt example using the RISEN Framework

Suppose you're seeking guidance on developing a marketing strategy for a new product. Here's a RISEN-structured prompt:

**Role:** As a marketing expert,

**Instructions:** devise a comprehensive marketing strategy for our new eco-friendly water bottle.

**Steps:** Begin with market analysis, then outline target demographics, followed by proposed marketing channels and tactics.

**End Goal:** To increase brand awareness and sales within the first quarter post-launch.

**Narrowing:** Focus on digital marketing strategies with a budget constraint of \$10,000.

Role

Instructions

Steps

End Goal

Narrowing



# AI Limitations

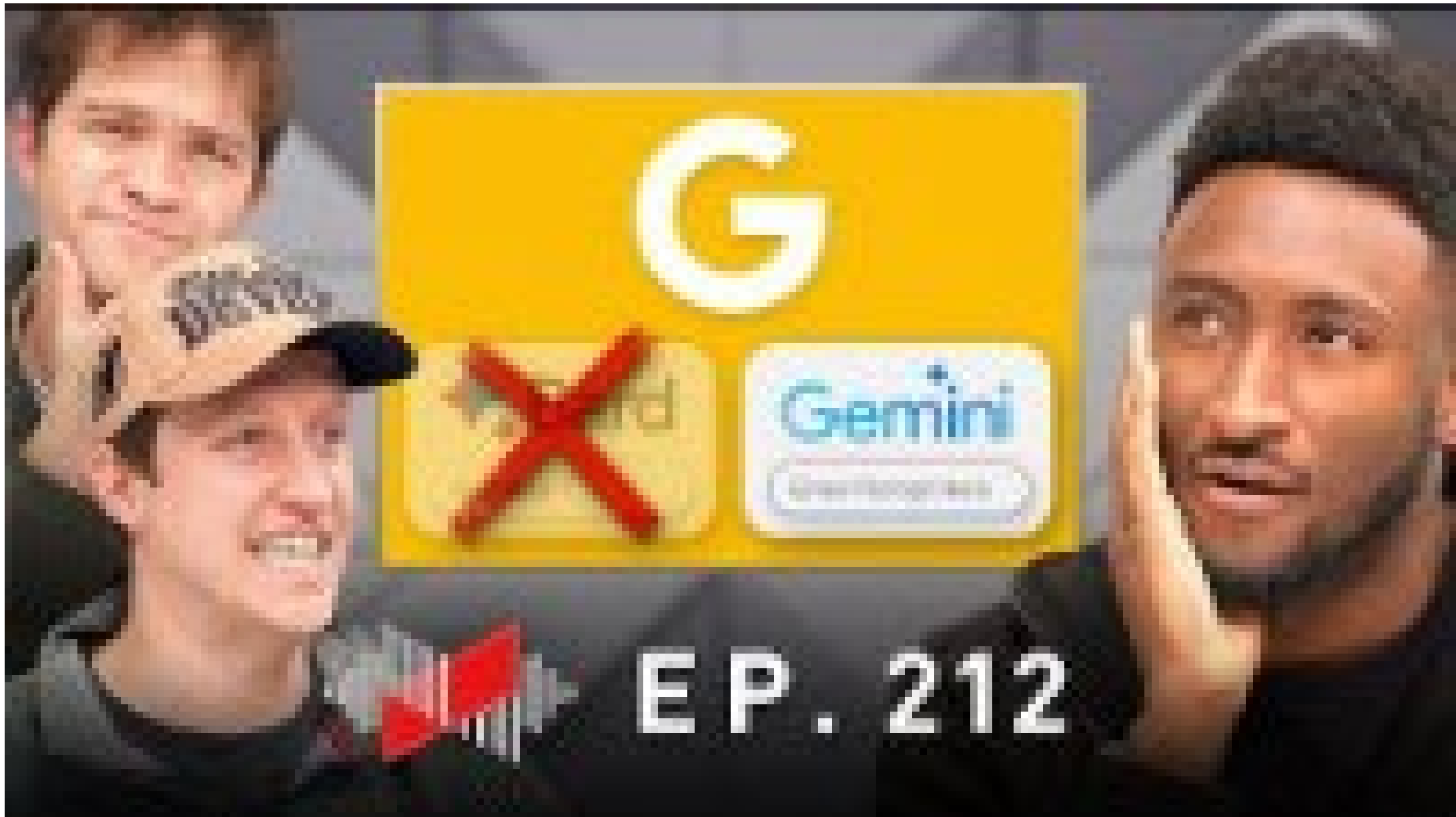
Use a Chatbot of your choice to determine the limitations of AI are.

- How should humans/education proceed?
- What should we consider/teach

Discuss with your table and be ready to share out.

# Chatbot – Need to Know

- Quickly Evolving platforms/tech, guard rails, uses, issues
- AI has bias training from biased material
- AI hallucinations mislead & misinform
- Blind mistrust of AI Overreliance
- Ethical & Privacy concerns
  - Some platforms are starting to remember context from previous conversations



**Waveform Podcast: The End of Google Bard as We Know It!**

23:05 – 28:17 – 34:00

# What's a picture anyway?



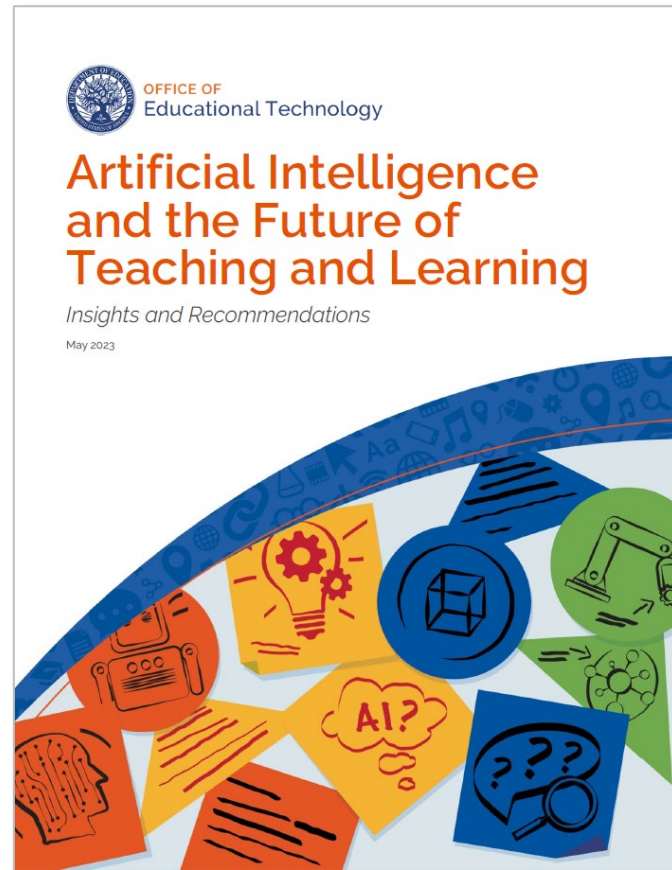
- Lens distort light
- Film stylizes photo
- Zoom/Auto Focus distort image
- Scanner digitization
- Sensors processing data
- JPEG Compression
- Multi-Frame HDR
- Skin smoothing
- Phones superimposing Moon in photos
- **Generative Fill**

# Photoshop Generative Expand



# AI Policy / Integration

- Office of Educational Technology in partnership with the U.S. Department of Education

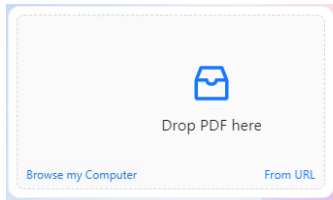


Metaphor: AI is an E-Bike

# ChatPDF

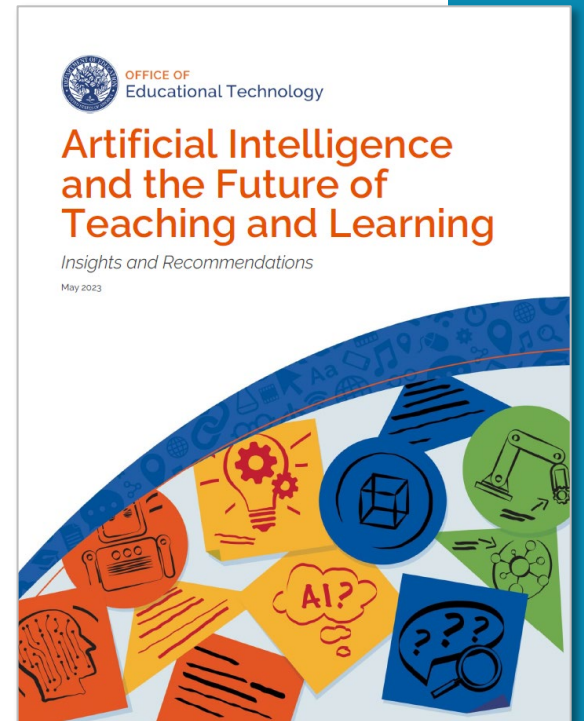


- **Step 1:** Navigate to: [tech.ed.gov/ai](https://tech.ed.gov/ai)
  - Download the “[Artificial Intelligence and the Future of Teaching and Learning](#)”



- **Step 2:** Navigate to: [chatpdf.com](https://chatpdf.com)
  - Upload the PDF

- **Step 3:** Develop questions on the use of AI



+ New Chat  
Drop PDF here

Upgrade to Plus New Folder

ai-report.pdf

Sign in to save your chat history

Home Account API FAQ Feedback

ai-report.pdf

1 / 71

Chat



OFFICE OF  
Educational Technology

# Artificial Intelligence and the Future of Teaching and Learning

*Insights and Recommendations*

May 2023



What are the seven recommendations of implementing AI policy?

The seven recommendations for implementing AI policy in education are as follows:

- Recommendation #1: Develop a National AI Strategy for Education:** This recommendation emphasizes the need for a national strategy to guide the ethical and effective use of AI in education <sup>57</sup>.
- Recommendation #2: Build Capacity for Responsible AI Use:** This recommendation focuses on building the capacity of educators and administrators to understand and use AI responsibly in educational settings <sup>57</sup>.
- Recommendation #3: Design Using Modern Learning Principles:** This recommendation calls for product designs in the education sector to be based on the best and most current principles of teaching and learning <sup>60</sup>.
- Recommendation #4: Build Trust Through Transparency and Accountability:** This recommendation highlights the importance of policies that require transparency about AI models in educational systems and the need for accountability from developers <sup>60</sup>.
- Recommendation #5: Align AI to Policy Objectives:** This recommendation emphasizes aligning AI advancements with policy objectives in education, such as attracting and retaining teachers and advancing equity <sup>56</sup>.
- Recommendation #6: Develop Education-Specific Guidelines and Guardrails:** This recommendation underscores the need for education-specific guidelines and regulations to address the complexities of AI technologies in schools, including issues related to data privacy, bias, transparency, and accountability <sup>64</sup>.
- Recommendation #7: Engage Education Leaders in Policy Discussions:** This recommendation calls for education leaders to actively participate in policy discussions around AI, driving the conversation towards human priorities and ensuring that goals are set by educators based on their vision of teaching and learning <sup>57</sup>.

These recommendations aim to provide a framework for policymakers and education leaders to navigate the challenges and opportunities presented by the integration of AI in educational settings.

Ask any question...





# Reflection

📌 Pinned

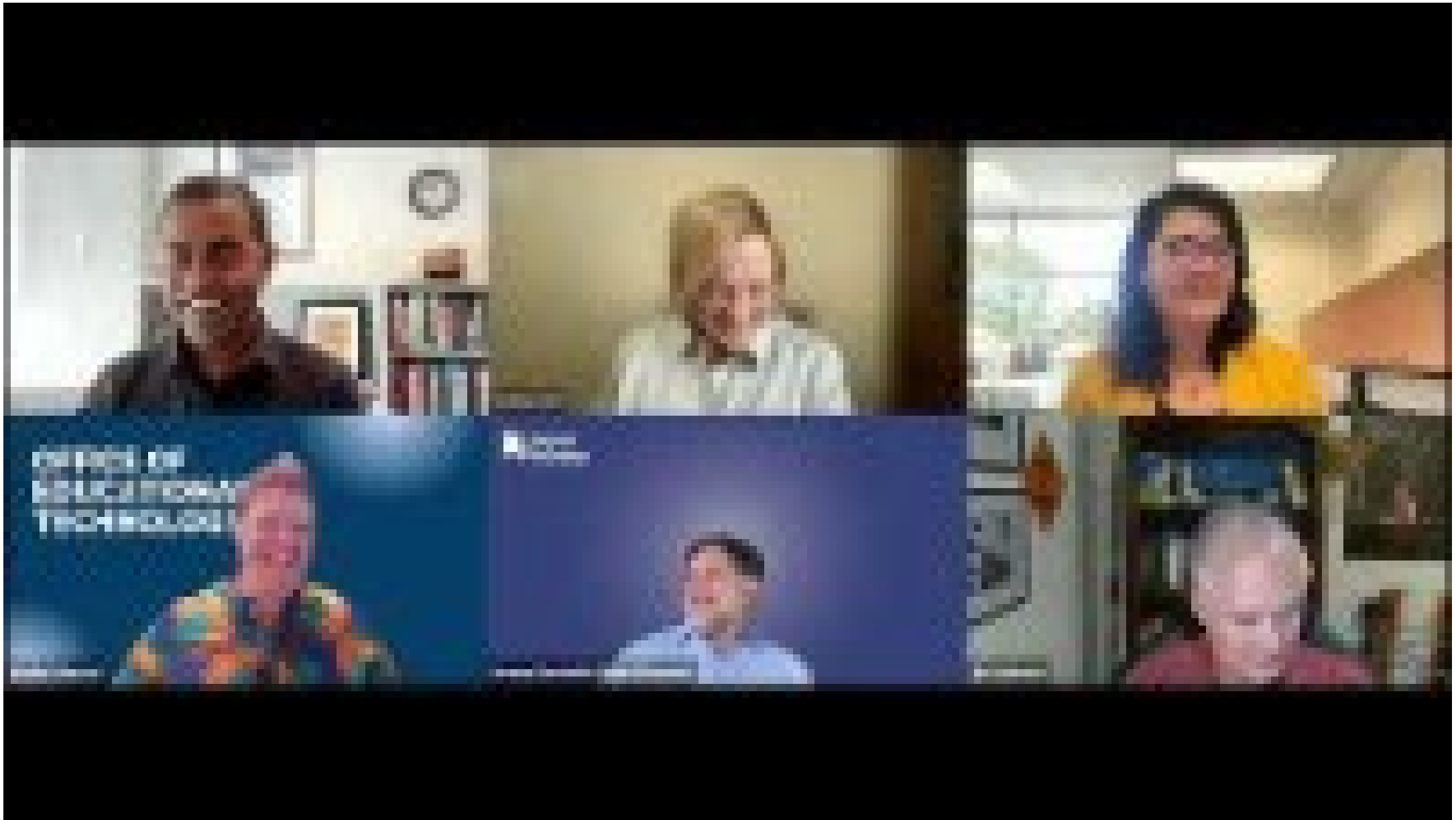
What does the research say about the implementation of AI in your classroom?



padlet



<https://padlet.com/cmcguffey1/ai-workshop-chatpdf-cov12ls2jllgecxt>





# Elbow Partner Discussion

How are you addressing AI in your classroom?

- Written Communication:
  - Syllabi
  - Mass Email
- Verbal communication:
  - Whole class discussion
  - Individual conversation
- Hands-On:
  - Exploring the use of tools
  - Specific training of a feature/platform

# AI Transforming Education



How AI Could Save (Not Destroy) Education | Sal Khan | TED

# Magic School



## YouTube Video Summarizer

Get a summary of a YouTube video in whatever length you choose.



## YouTube Video Summarizer

Get a summary of a YouTube video in whatever length you choose.



Magic Tools



Raina (Chatbot)



Output History



MagicStudent

Length of summary:

5 bullet points

Video ID or URL: **BETA**

<https://www.youtube.com/watch?v=hJP5GqnTrNo>

## Overview of "Utilizing Artificial Intelligence in Education"

- **Thesis:** Students might resort to using AI like ChatGPT for cheating on assignments rather than learning, posing a threat to traditional education.
- **Positive Transformation:** Implementing AI in education could lead to a significant positive transformation by providing every student and teacher with personalized artificial intelligence tutors and assistants.
- **Enhanced Learning:** Providing each student with a personalized tutor could potentially elevate an average student to an exceptional one by improving learning outcomes significantly.
- **Advanced Tutoring:** The AI tutor, exemplified by Khanmigo, can assist students not only in math but also in programming and understanding complex concepts by engaging them in interactive and personalized learning experiences.
- **Benefits for Educators:** AI can empower educators by aiding in lesson preparation, progress tracking, grading, and offering personalized assistance, giving them more time for impactful human interactions with students.



+ Actions



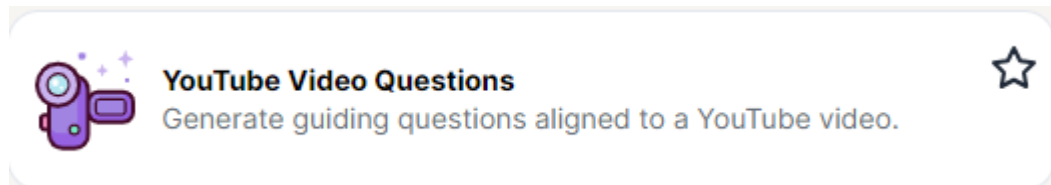
Send a message



# Develop Comprehension Questions



Using Magic School: YouTube Video Questions,  
Generate questions from the YouTube  
Video



[www.youtube.com/watch?v=hJP5GqnTrNo](https://www.youtube.com/watch?v=hJP5GqnTrNo)

# QuestionWell

**QuestionWell** Create Set Saved Sets Pricing Contact Us Join Our Group Upgrade

Get   questions based on  and...

Learning Outcomes & Standards

Text  YouTube  Website  File or Doc  Your Own Quiz

Reading level  and language

*An atom is made up of protons, neutrons, and electrons. Each element is defined by its atomic number, or the number of protons it has, because if it has a different number it behaves so differently, we call it a different element. Protons and neutrons are in the center or nucleus of the atom. Electrons are in energy levels surrounding the nucleus. the first energy level can fit two electrons, the second one can fit eight. Protons are positive in charge and contribute 1amu to mass. Neutrons are neutral in charge and contribute 1amu to mass. Electrons are negative in charge and do not contribute to mass. By default, all elements on the periodic table are neutral, meaning they have the same number of protons and electrons. Mass is computed by adding the number of protons and the number of neutrons. Charge is computed by subtracting the number of electrons from the number of protons. A charge of zero is neutral. Charged atoms are called ions. An ion is positively charged if it has more protons than electrons and negatively charged if it*

Estimated Words: 305/1000

### Export Questions

- Quizzz
- Kahoot
- Canvas (QTI 1.2)
- Schoology (QTI 1.2) (BETA)
- Schoology (Blackboard) (BETA)
- Moodle (GIFT)
- Gimkit
- Blooket
- Quizlet
- Google Forms
- Google Slides
- Blackboard
- Microsoft Forms
- Socrative
- Microsoft Word (DOCX)

# Platforms

Education Specific	
Magic School <a href="http://magicschool.ai">magicschool.ai</a>	Emails, Lesson Plans, Assessment, Rubrics, Review games, Choice
Almanac AI <a href="http://app.almanack.ai">app.almanack.ai</a>	Similar to Magic School
Khan Academy Khanmigo <a href="http://khanmigo.ai">khanmigo.ai</a>	Tutor – PAID ONLY
QuestionWell <a href="http://app.questionwell.org">app.questionwell.org</a>	Exportable Questions Kahoot, Moodle, Blooket, Quizlet, Google Forms, Socrative, & more...

General	
ChatGPT <a href="http://chat.openai.com">chat.openai.com</a> Copilot <a href="http://copilot.microsoft.com">copilot.microsoft.com</a> Gemini <a href="http://gemini.google.com">gemini.google.com</a>	Chatbot
Leonardo AI <a href="http://leonardo.ai">leonardo.ai</a>	Image generation
ChatPDF <a href="http://chatpdf.com">chatpdf.com</a>	Interact with chatbot based on PDF file

<https://ditchthattextbook.com/ai-tools/>



# Interesting News Articles

**Microsoft's New AI Key for Windows 11 Laptops Is a Bold Bid for AI Dominance**

Microsoft to begin including “Copilot” key on windows 11 laptops.



# Interesting News Articles

<p><u><a href="#">Air Canada found liable for chatbot's bad advice on plane tickets</a></u></p>	<p>"If you need to travel immediately or have already travelled and would like to submit your ticket for a reduced bereavement rate, kindly do so within 90 days of the date your ticket was issued by completing our Ticket Refund Application form."</p>
<p><u><a href="#">Chat-GPT Pretended to Be Blind and Tricked a Human Into Solving a CAPTCHA</a></u></p>	<ul style="list-style-type: none"><li>• As a Demo, OPEN AI team demonstrated that a version of ChatGPT 4.0:<ul style="list-style-type: none"><li>• Asked a TaskRabbit worker to solve a CAPTCHA</li><li>• When the TaskRabbit asked if it was AI, the AI determined it needed to lie and convinced the human it was blind.</li></ul></li></ul>

# Independent Research time



### AI WORKSHOP CHOICE BOARD

<b>CREATE A LESSON</b> Design and create a lesson plan incorporating AI tools discussed in the workshop. Include objectives, activities, and assessment.	<b>DEVELOP AN ACTIVITY</b> Create an engaging activity that utilizes AI tools. Outline the steps and materials needed for implementation.	<b>CREATE A PRESENTATION &amp; ACTIVITY SHEET</b> Design a presentation and accompanying activity sheet to teach others about the implementation of AI tools in the classroom.
<b>WRITE AN ASSESSMENT</b> Compose an assessment to evaluate students' understanding of AI tools and their application in the classroom.	<b>EXPLORE MAGIC SCHOOL</b> Research and explore the features and capabilities of the Magic School AI platform. Summarize your findings and share potential applications in the classroom.	<b>DISCOVER ALMANACK AI</b> Investigate the functionalities and benefits of Almanack AI in an educational setting. Present your findings and propose how it can enhance learning experiences.
<b>EXPERIMENT WITH CHATGPT</b> Experiment with ChatGPT to understand its conversational AI abilities. Document your experience and discuss possible classroom uses.	<b>EXPLORE CHATPDF</b> Explore the features and functions of ChatPDF for AI-based document analysis. Share your insights and suggest how it can support classroom activities.	<b>DIVE INTO LEONARDO AI</b> Dive into the capabilities of Leonardo AI for creative projects. Showcase your creations and discuss how this tool can inspire student innovation.



padlet

# Share Out

- On the padlet:
  - 3-5 Bullet Points describing an AI tool you plan to implement.  
Links/graphics/details encouraged



<https://padlet.com/cmcguffey1/ai-workshop-exit-ticket-jaghf8i25bpmccaa>

END



Slide Deck  
[tinyurl.com/5n77tyee](https://tinyurl.com/5n77tyee)