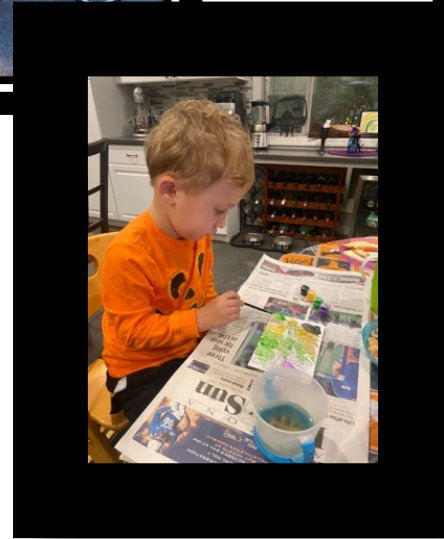


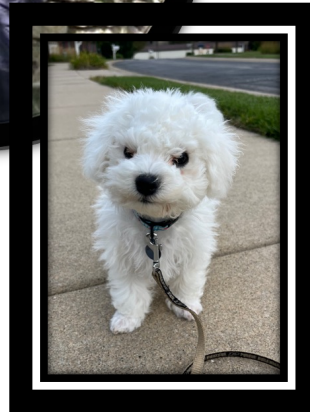
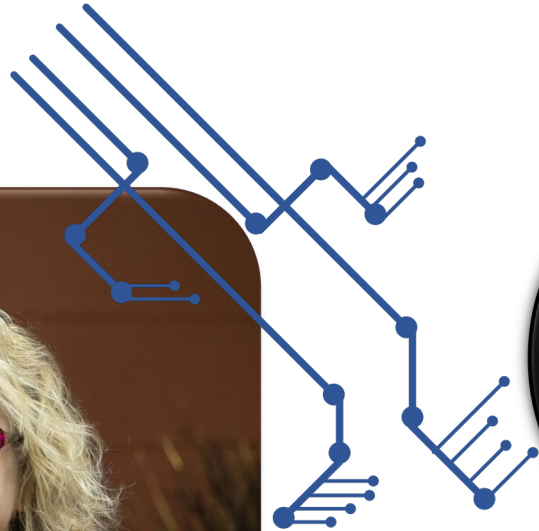
ChatGPT and Assessment: The Pros and Cons in Enhancing Mathematics Education

Hawke's 2024 Innovative Educators Virtual Summit

Presenting Dr. Angie Hodge-Zickerman & Dr. Cindy York



Dr. Angie Hodge-Zickerman



Dr. Cindy York



How is AI changing the
landscape of learning and
assessments?

Consider ChatGPT...

ChatGPT from ChatGPT's Perspective

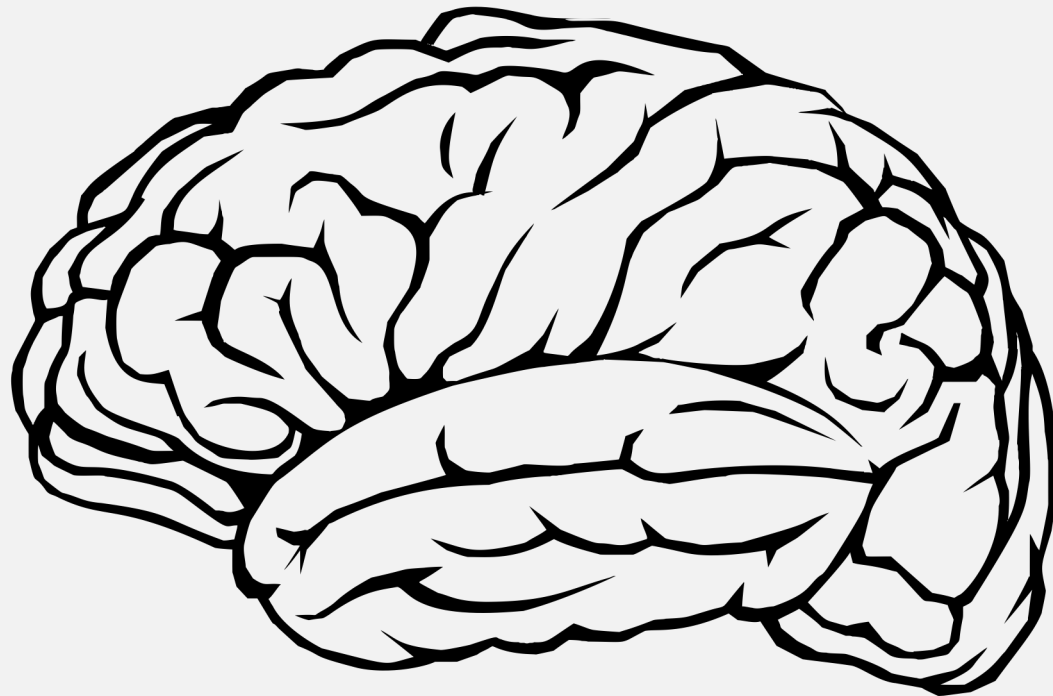
ChatGPT is a model based on OpenAI's GPT (Generative Pretrained Transformer) architecture. It is designed to understand and generate human-like text based on the input it receives, enabling it to have conversations, answer questions, generate content, and more.

Users interact with ChatGPT by providing input (text), to which the model responds with generated text based on its training. ChatGPT does not have access to the internet in real-time and does not have consciousness, awareness, or subjective experiences. Its responses are generated based on patterns it learned during its training.

It can take text input in the form of a conversation or a prompt and provide coherent and contextually relevant text outputs. ChatGPT has been used in a wide range of applications, from answering questions and providing recommendations to generating creative content and assisting with natural language understanding tasks. It's a powerful tool for natural language processing and understanding tasks, including those related to mathematics assessment and education.

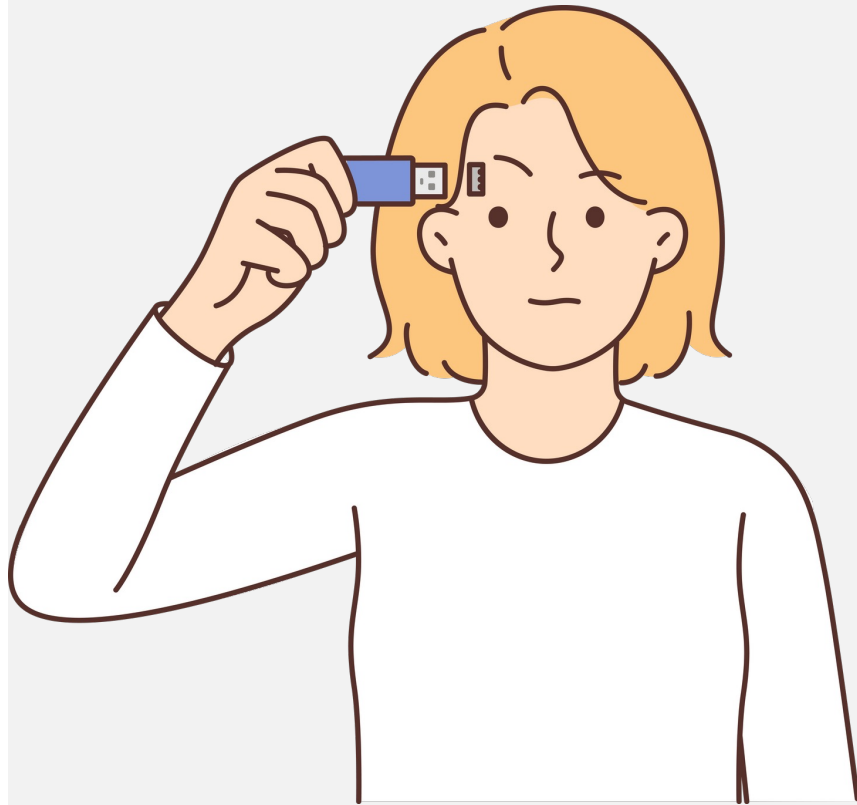
Challenges Posed by ChatGPT

- Potential issues: Dependency, bypassing struggle with concepts
- Ethical Considerations



Redefining Challenges as Opportunities

- How Challenges can lead to Innovative Educational Strategies
 - Embracing Technology for Enhanced Learning



Innovative Assessment Design Using ChatGPT

Conceptualizing assessments that leverage ChatGPT

Encouraging critical thinking and understanding



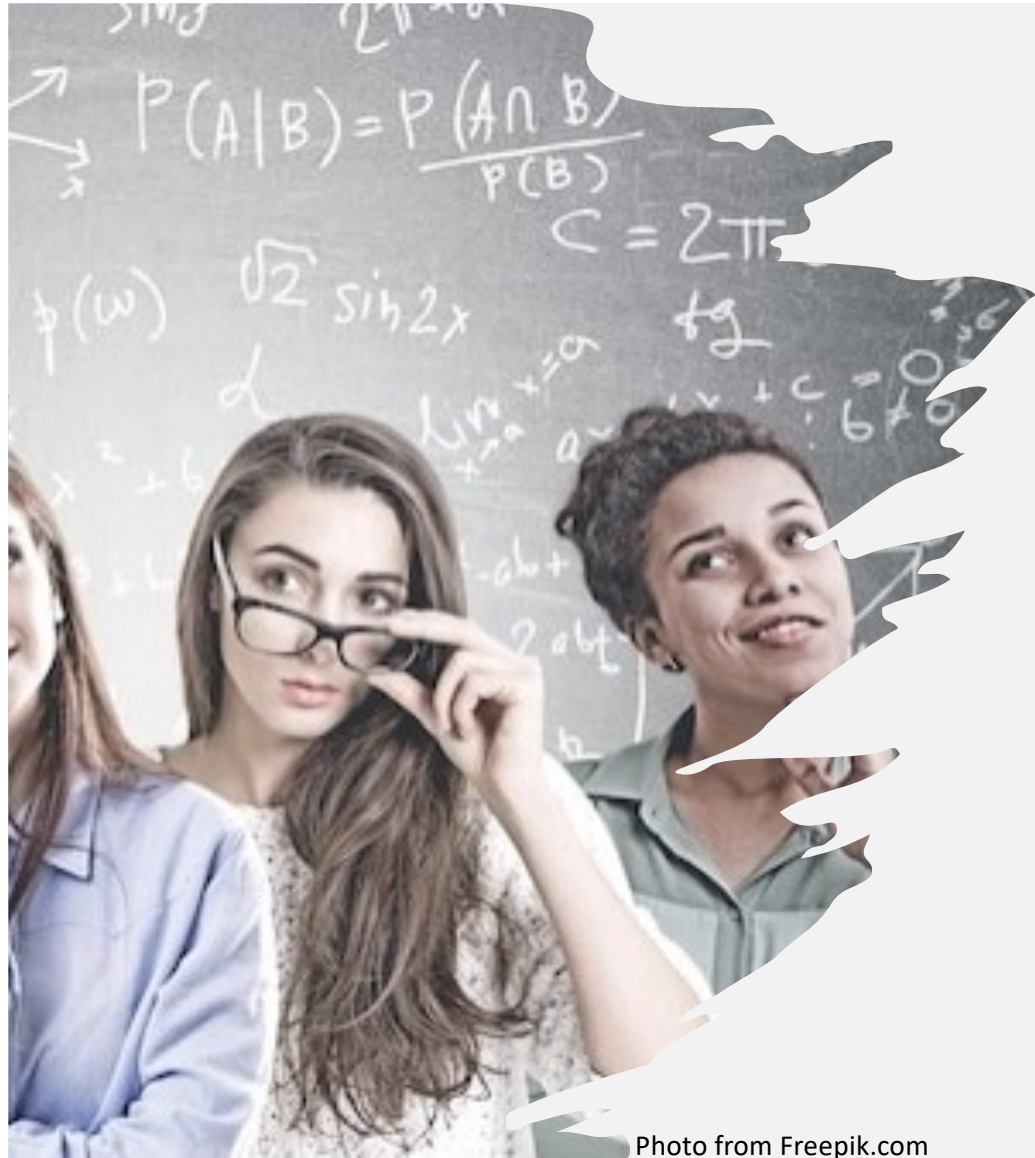


Photo from Freepik.com

- In cases where ChatGPT can provide the calculation or even the answer, we can structure assessments that demand subsequent analysis, explanation, or extrapolation.
- This way, even if students employ ChatGPT to solve a problem, the onus of understanding, analyzing, and explaining the solution still falls on them.

Example of a ChatGPT-Integrated Assignment



Detailed walk-through of a redesigned mathematics assessment

How ChatGPT aids in this process

Example



Solve $(2x - 3 = 5)$.



To solve the equation $2x - 3 = 5$, you'll need to isolate x on one side of the equation. Here are the steps to do that:

Step 1: Add 3 to both sides of the equation to get rid of the -3 term on the left side.

$$\begin{aligned}2x - 3 + 3 &= 5 + 3 \\2x &= 8\end{aligned}$$

Step 2: Divide both sides of the equation by 2 to isolate x .

$$\begin{aligned}\frac{2x}{2} &= \frac{8}{2} \\x &= 4\end{aligned}$$

The solution to $2x - 3 = 5$ is $x = 4$.



Real-World Scenario: Calculating Profit

Imagine you're a small business owner selling handmade soap. You have a certain fixed cost, which includes rent, utilities, and raw materials. On top of that, there's a variable cost per unit of soap made. Your profit equation for each unit of soap can be represented as:

$$\text{Profit} = 2x - 3$$

In this equation, x represents the selling price of each unit of soap, and the profit is in dollars. The fixed cost is represented by the -3 (perhaps you have a \$3 expense for some raw material or packaging per soap), and $2x$ represents twice the selling price (this could account for a two-for-one deal you're offering to bulk purchasers).

You aim for a profit of \$5 per soap bar to sustain your business and plan for future investments. Therefore, you want to find out what the selling price x should be to meet this profit margin. This leads you to the equation $2x - 3 = 5$.

Approach and Solution

To find out what the selling price x should be, you'll solve for x :

1. **Add 3 to both sides of the equation:** This eliminates the -3 on the left-hand side, resulting in $2x = 8$.
2. **Divide both sides by 2:** This isolates x on one side, resulting in $x = 4$.

The solution, $x = 4$, means you would need to set the selling price of each unit of soap at \$4 to achieve the desired profit of \$5 per unit.

Interpretation

In this scenario, the value $x = 4$ represents the selling price per soap bar that will enable you to hit your target profit of \$5 per unit. By solving this equation, you've essentially figured out your pricing strategy for your soap to meet your profit goals. This kind of problem-solving is integral to small business operations, helping you make informed decisions that directly impact your sustainability and growth.

We prompted ChatGPT to describe a real-world scenario where you would need to solve the equation $(2x - 3 = 5)$, asked how you would approach it, and what the scenario represented in the solution.

**How does ChatGPT specifically
contribute to
the understanding and learning of
complex mathematical concepts among
students?**

In what ways might reliance on AI tools like ChatGPT for assessment impact the development of critical thinking and problem-solving skills in mathematics?

Could you provide examples of how ChatGPT has been integrated into mathematics curricula, and what measures are in place to ensure academic integrity?

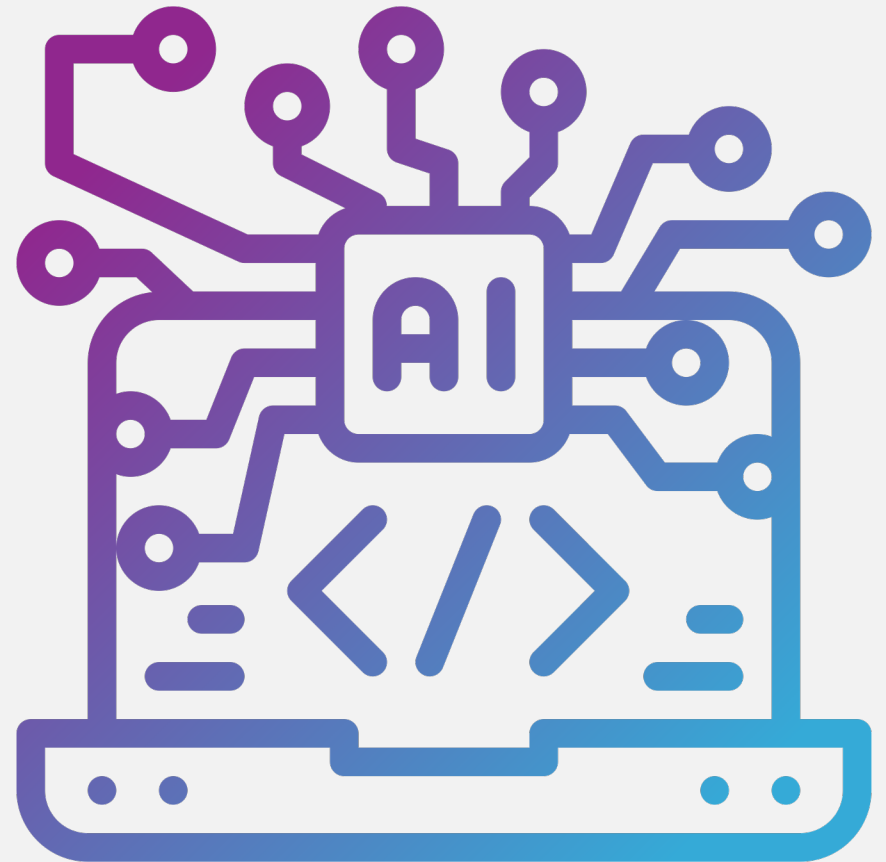


In Conclusion: Embracing AI in Education

Inspiring participants to see ChatGPT as a tool for authentic learning



Q&A/ Closing Remarks



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