

AI in Teacher Education?

Bill McConnell

FOX
BUSINESS

LIVE

MORE SCHOOLS BAN A.I. PROGRAM CHATGPT

VARNEY & CO.

BITCOIN 17,366.00 ▼ 72.00 -0.41% | **ETHEREUM** 1,326.70 ▼ 11.00 -0.82%

LAST TRADES ► **FARGO (WFC)** 42.58 ▲ 0.22 | **EXXONMOBIL (XOM)** 110

DOW

33,786.64

▲ 82.54

+0.24%

Response to AI in Education

- **K-12 schools and AI in the US** (Ta & West, 2023)
 - Banning– student can easily circumvent bans
 - Integrating– often without training or evaluation of impacts
 - Review– kicking the can down the road
- **Attitudes of teachers in Estonia and South Korea toward AI-** Chounta, Bardone, Raudsep & Pedaste (2022); Han, Kim & Kwon (2020)
- **72% of teachers state they have received no guidance on AI** (Ta & West, 2023)
 - How to address it with students
 - Training on how to use it– if provided, usually only verbal training

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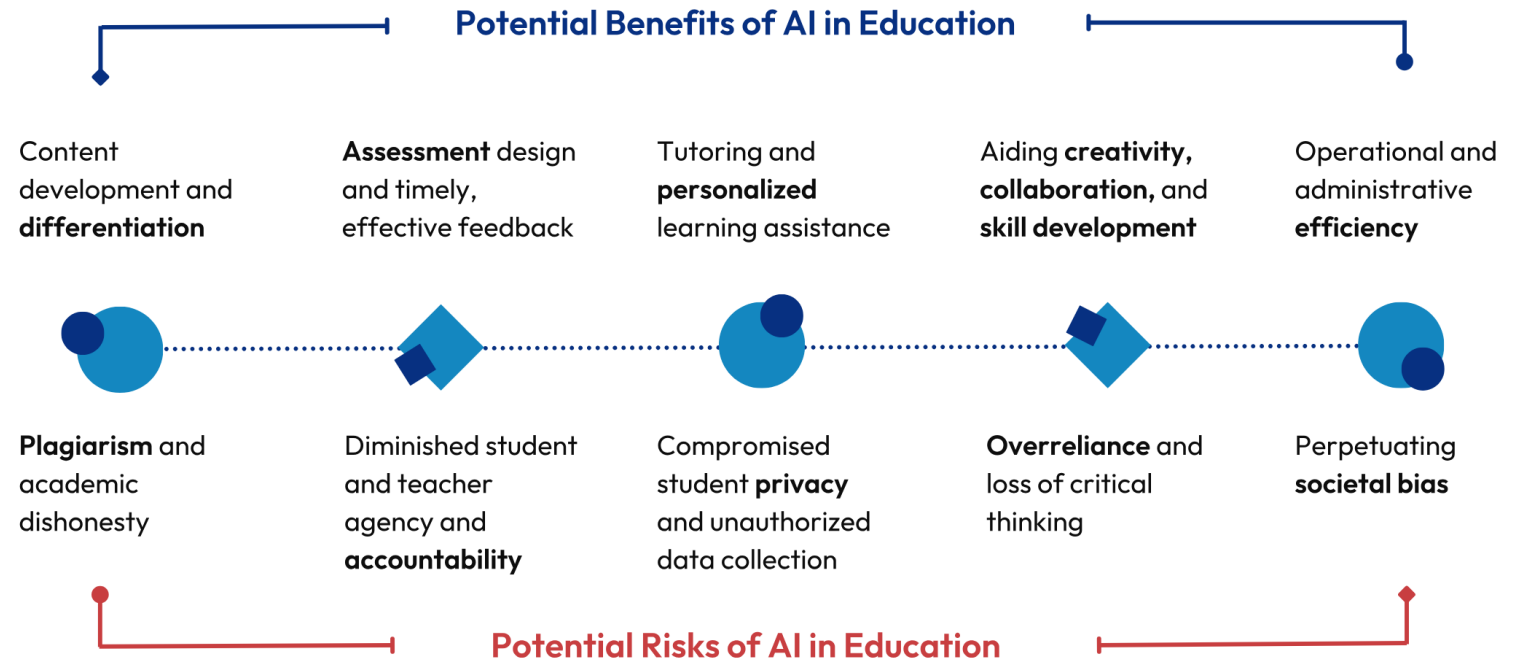
I completely understand!
Let's go with AI
in education!

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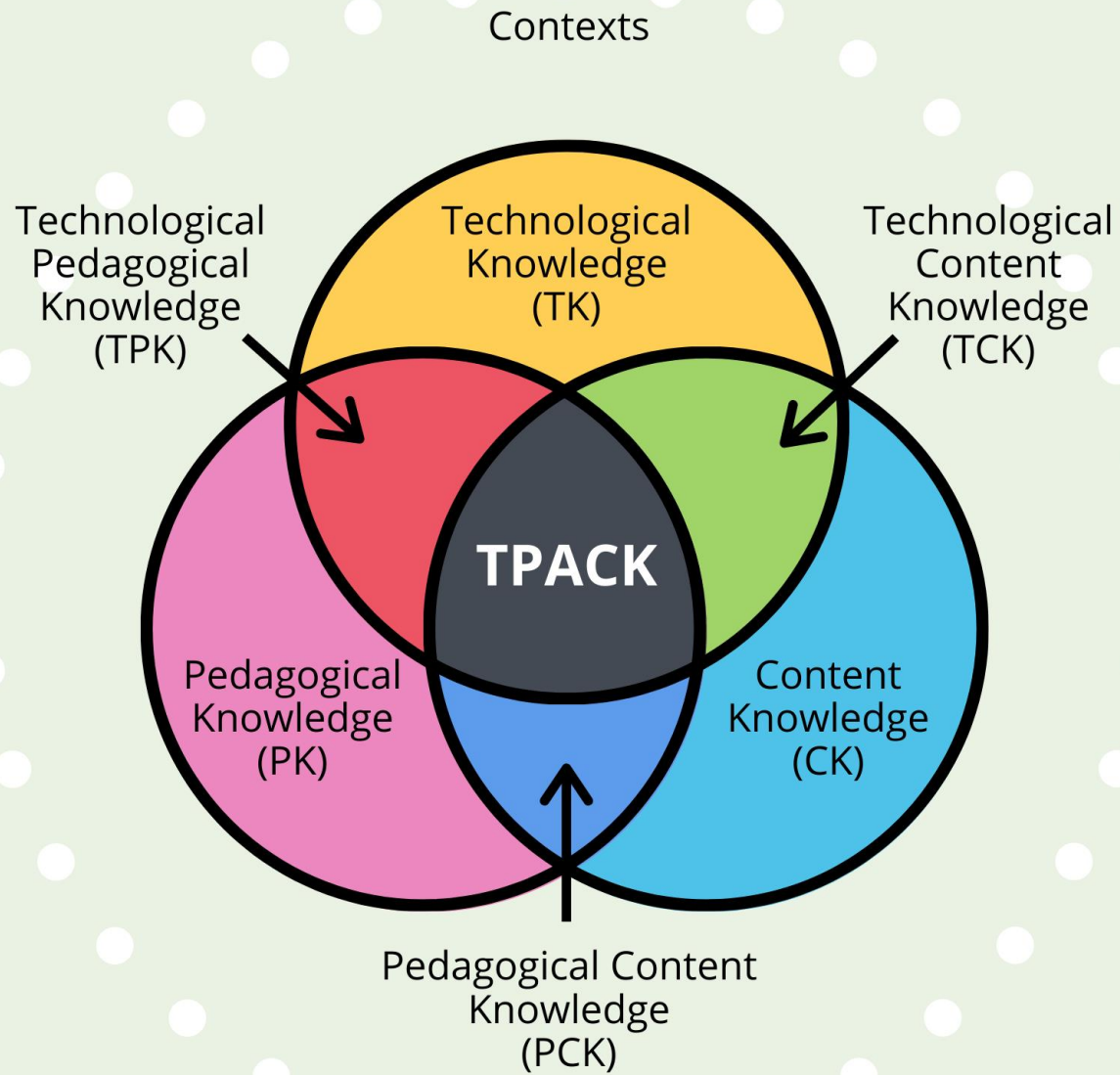


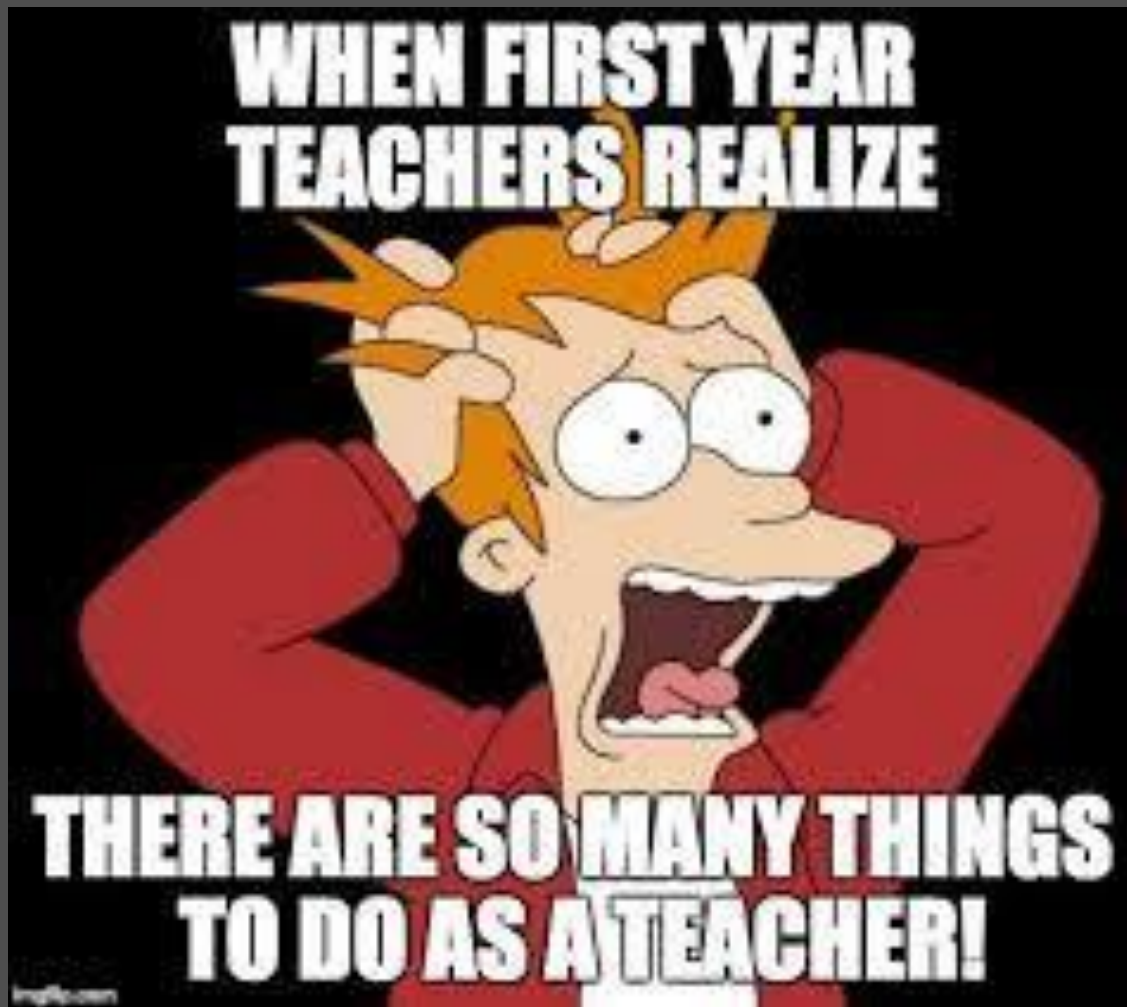
Emerging Research

- *CLEVER*- AI Lesson Planning in Germany (Pender, Bohl, Schönberger, & Knopf, 2022)
- LUNA- AI analyzes and interprets student performance data– impacted lesson planning of teachers (Xhakaj, Aleven, & McLaren, 2017)
- ChatGPT- (Van den Berg & Du Plessis 2023)
 - Benefits and Risks– similar to TeachAI



THE TPACK MODEL





A functional AI tool could relieve some of what Kennedy (UVA) calls “the extremely high cognitive load carried by new teachers.” (Breen, 2023)

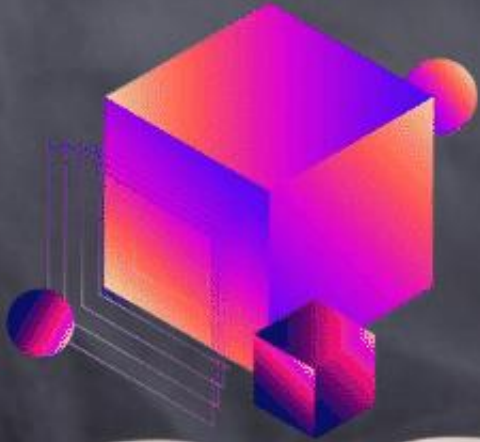


Methodology

- RQ- How do preservice teachers perceive the use of AI for lesson planning?
- Design: Mixed-methods Exploratory Case Study
- Data Collection: Pre/post survey; Artifacts
- Analysis: statistical analysis; emergent coding

Eduaide.Ai

AI-Assisted Course Development



VWU Methods Courses

Case participants



18 Graduate students, Juniors and Seniors from 8 different Ed programs.



33% had used AI before

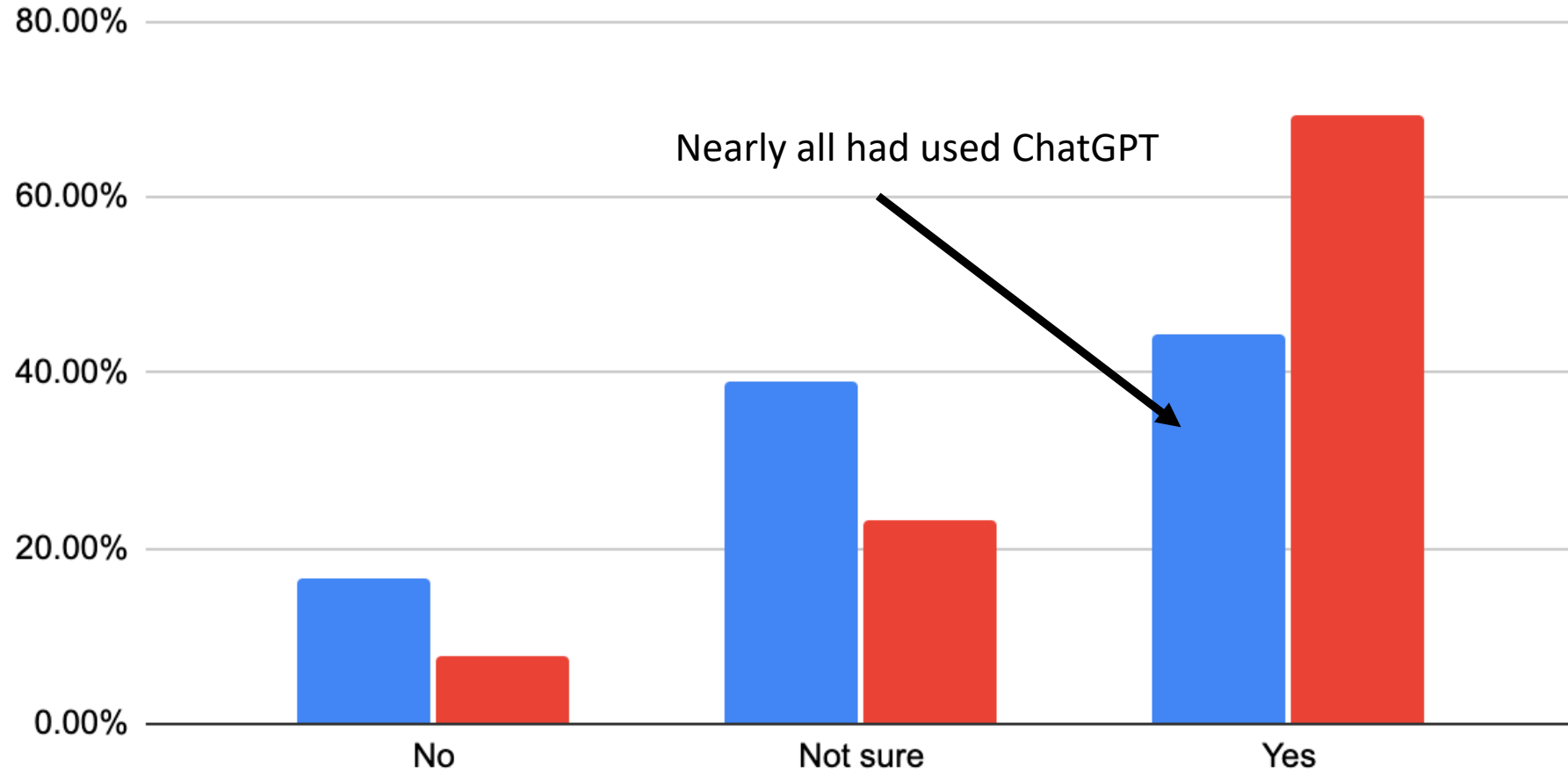
Of those, users had only used ChatGPT



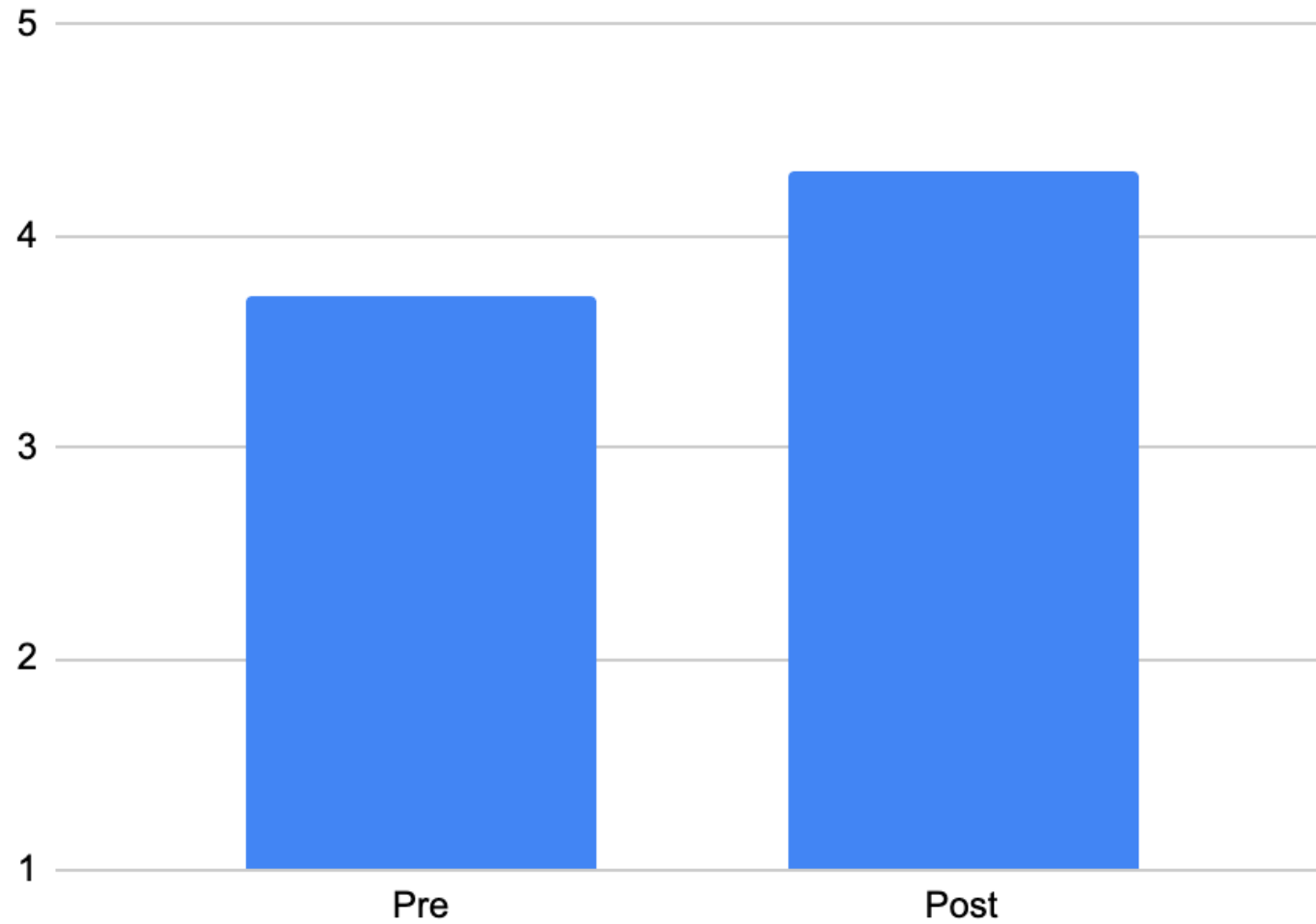
All had developed a lesson plan for class without the use of AI.

Will you use AI for lesson planning in your first year?

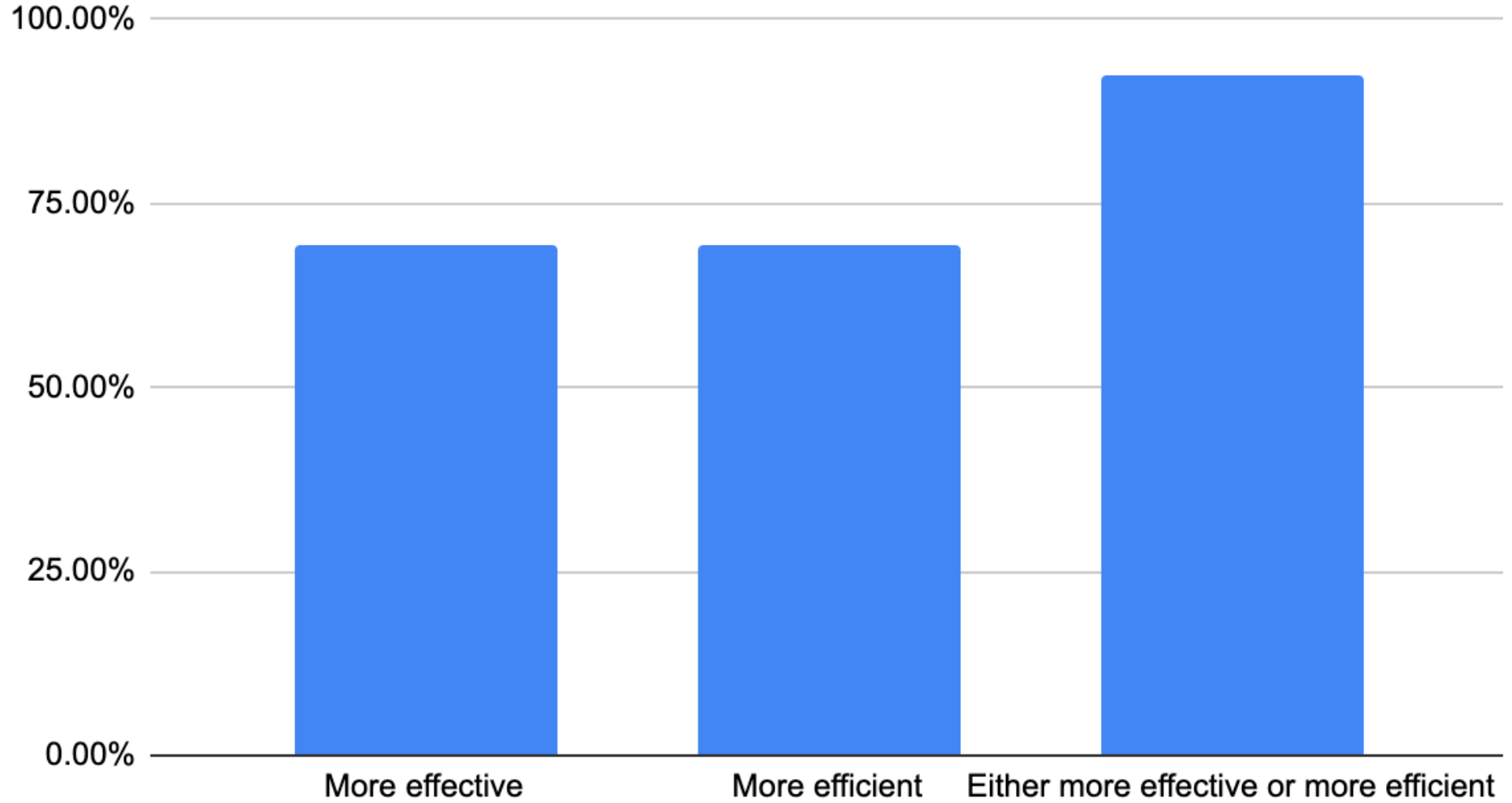
Pre Post



The use of AI for lesson planning should be included in methods courses.



How would AI have impacted your plan?



Participant concerns...

Level of specificity

- Prompts needed to be specific to get desired output
- Output was sometimes too general to be of use

Quality of content**

- May not be suitable, content shallow at times
- Assessment doesn't align to Bloom's level
- Review of generated plan was needed

Accuracy**

- Hallucinations –especially if relying on it heavily
- Understanding resources available

Please write a recommendation letter for Brandon. He likes unicorns and is good at math.

Brandon possesses an exceptional aptitude for mathematics. His analytical thinking and problem-solving abilities are truly remarkable. Through his dedication and hard work, Brandon consistently demonstrates a deep understanding of complex mathematical concepts. His ability to think critically and approach challenges with determination sets him apart from his peers.

Please write a recommendation letter for Brandon. He likes unicorns and is good at math.

In addition to his strong academic performance, Brandon exhibits remarkable leadership skills. He is a proactive student who consistently takes the initiative in group projects and classroom discussions. Brandon is able to effectively communicate his ideas and respectfully listen to his peers, fostering a collaborative and inclusive learning environment. He is someone who motivates his classmates and encourages them to achieve their best.

Never mentions unicorns...😊

Participant concerns...

Functionality of certain features

- Language lessons
- Enhance button

Security and Ethics**

- Grading and feedback feature
- Input of student work
- Do teachers understand pedagogy/ methods?
- Do teachers understand content?

Perceptions of AI strengths

Customization and differentiation**

- Provides individualized and differentiated plans quickly
- Can increase or decrease reading level of content reading

Content creation**

- Innovative ideas like escape rooms and other interactive learning activities
- Can translate materials into different languages for students who have trouble with English

Efficient**

- Creates multiple ideas for the same content in a matter of seconds
- Creates well-made rubrics, other assessments, worksheets, lesson plans, unit plans quickly
- Can help generate ideas and lesson components quickly.

Students will accurately simulate the movements of the moon and Earth around the sun, demonstrating a comprehensive understanding of celestial mechanics.

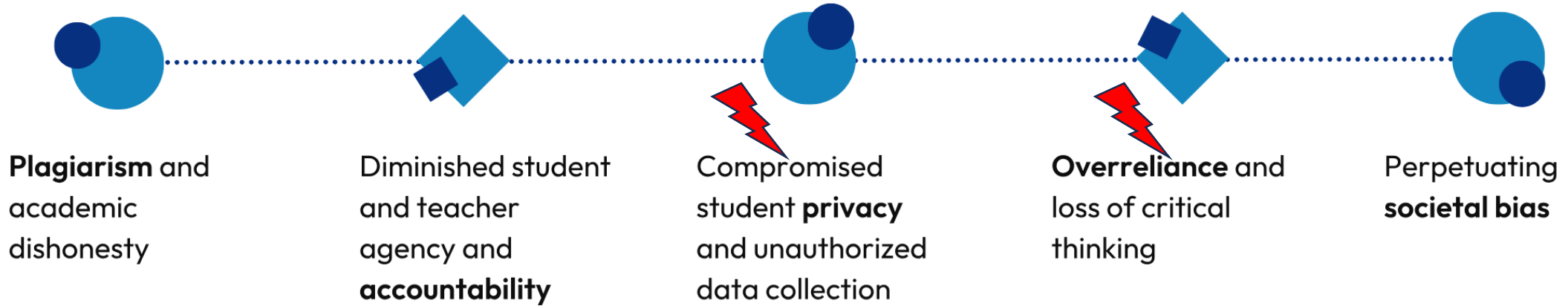
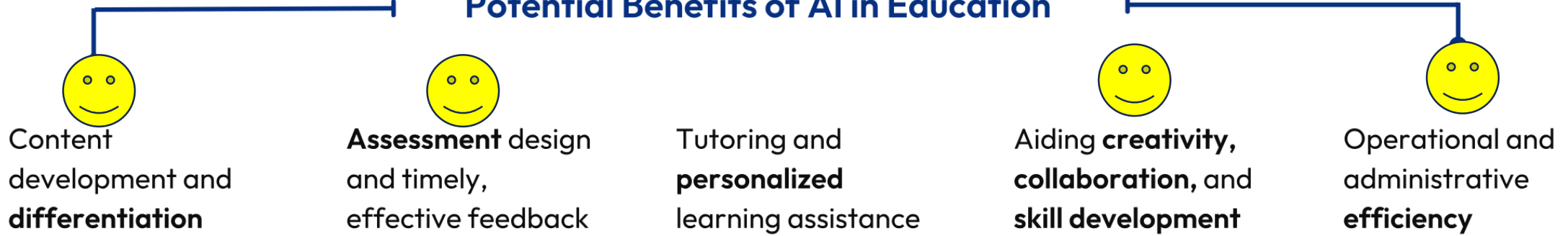
- Team-Based Activities:

1. Group Simulation: Divide students into small groups and assign each group a specific celestial phenomenon, such as lunar and solar eclipses. Instruct students to research and then simulate the placement of each celestial body during the phenomena.
2. Group Simulation: Divide students into small groups and assign each group a specific celestial phenomenon, such as moon phases. Instruct students to research and then simulate the placement of each celestial body during each phase of the moon. A flashlight and a dark room can enhance this activity.
3. Celestial Mechanics Game: Organize a game-based activity where students compete in teams to answer questions related to celestial mechanics. Use flashcards or an online platform to facilitate the game and encourage student engagement.

Perceptions of AI strengths

- Real world applications
 - Can make lessons relevant to students' lives and interests
 - Seems to incorporate learning theory in lesson plans—
ex. multiple representations, social learning theory,
zone of proximal development

Potential Benefits of AI in Education



Potential Risks of AI in Education

Conclusions and Implications

They will likely use it.

- Despite concerns, participants stated they would use AI for planning in their first year and that it should be included in methods courses.
- Some also mentioned that individual creative thought and practice toward planning is important without AI.

Decreased workload

- Nearly all preservice teachers mentioned efficiency and/or effectiveness of plan would have benefitted with the tool.

Digital Literacy (T-PACK)

- Preservice teachers need explicit training on the ethics and policies related to AI.
- Preservice teachers need training in AI before entering schools.
- Need to understand benefits and risks.
- Using AI without review may be detrimental for teachers and students.

More benefits and risks

- AI benefits and risks are situational
 - By user
 - By platform
 - By context

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