The Poetry of Prompts

Navigating the AI & XR Renaissance in Higher Education

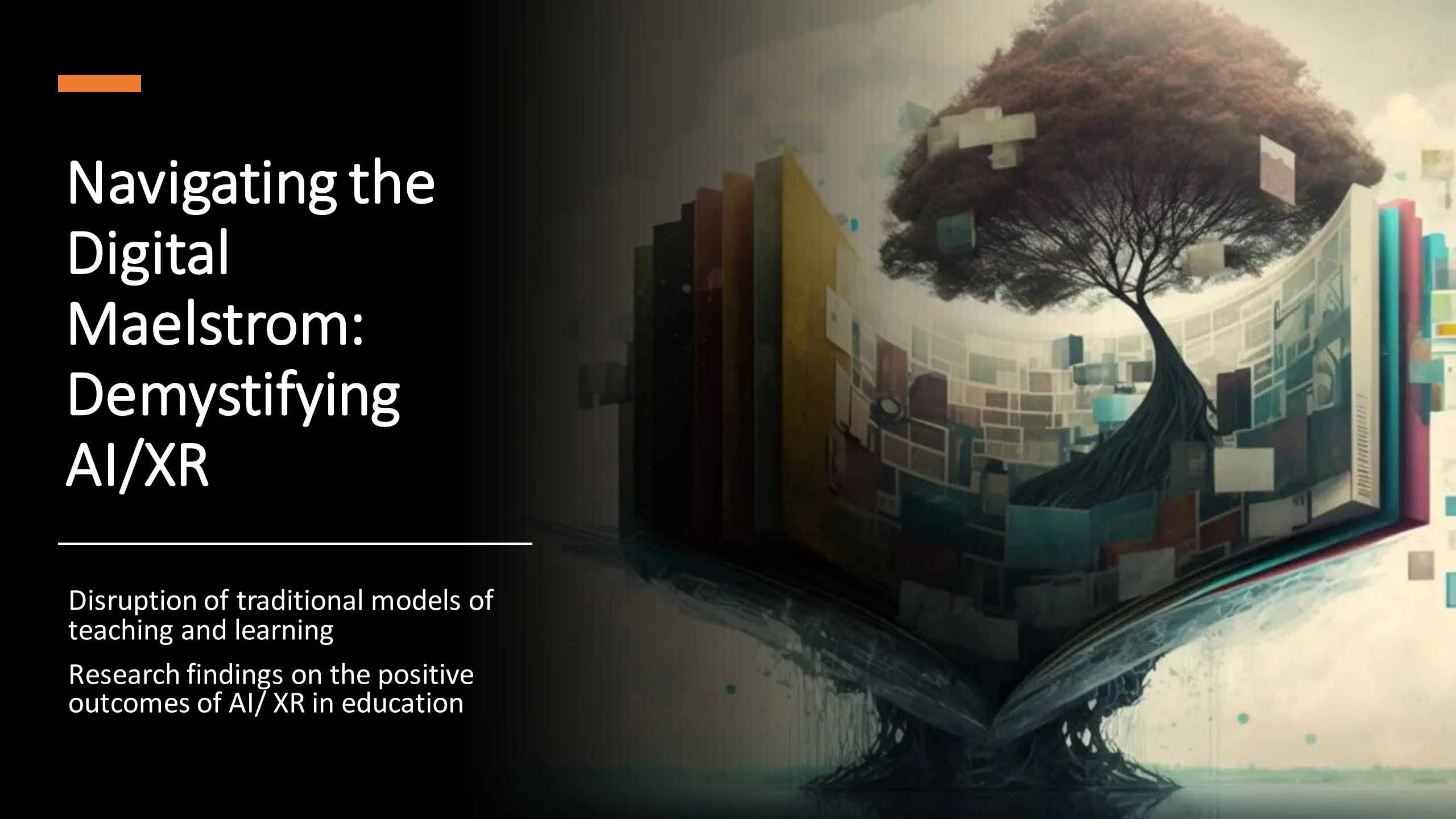**Dr. James Hutson**

Lindenwood University

Yavapai College, Arizona, May 10, 2023

Navigating the Digital Maelstrom: Demystifying AI/XR

Disruption of traditional models of teaching and learning

Research findings on the positive outcomes of AI/ XR in education

Disruptive EdTech

- **Invention of Writing (c. 3400 BCE):** The birth of written communication, marking a pivotal moment in human history and education.

- **Printing Press (1440):** Johannes Gutenberg's invention that revolutionized the dissemination of information and made books accessible to the masses.

- **Chalkboard (1801):** The invention of the blackboard allowed teachers to visually share information with students, facilitating group learning.

- **Photography (1839):** The invention of photography paved the way for visual documentation, enhancing educational materials with images.

- **Calculator (1642)**: Blaise Pascal's invention of the mechanical calculator revolutionized mathematics and simplified complex calculations.

- **Word Processors (1960s)**: Word processors revolutionized the way people create, edit, and share written documents, making writing more efficient.

- **Google (1998):** Google revolutionized the way we search for information, making it easier for students and educators to find relevant resources.

- **Wikipedia (2001)**: The free online encyclopedia revolutionized access to knowledge, becoming a go-to resource for students and educators alike.

- **YouTube (2005):** The video-sharing platform enabled educators to create and share educational content, giving rise to a new form of learning.

- **Grammarly (2009):** This AI-driven writing assistant improved the quality of written communication by offering real-time grammar and spell-checking.

- **Massive Open Online Courses (MOOCs) (2008):** MOOCs democratized education by providing free, high-quality courses from top institutions to anyone with internet access.

- **AI-driven Tutoring Systems (2010s)**: AI-powered tutors like Carnegie Learning's MATHia provided personalized learning experiences for students.

But this is different

- Generative Pre-Trained Transformers (GPT) & Large Language Models (LLM)
- What are they?
- How do they work?
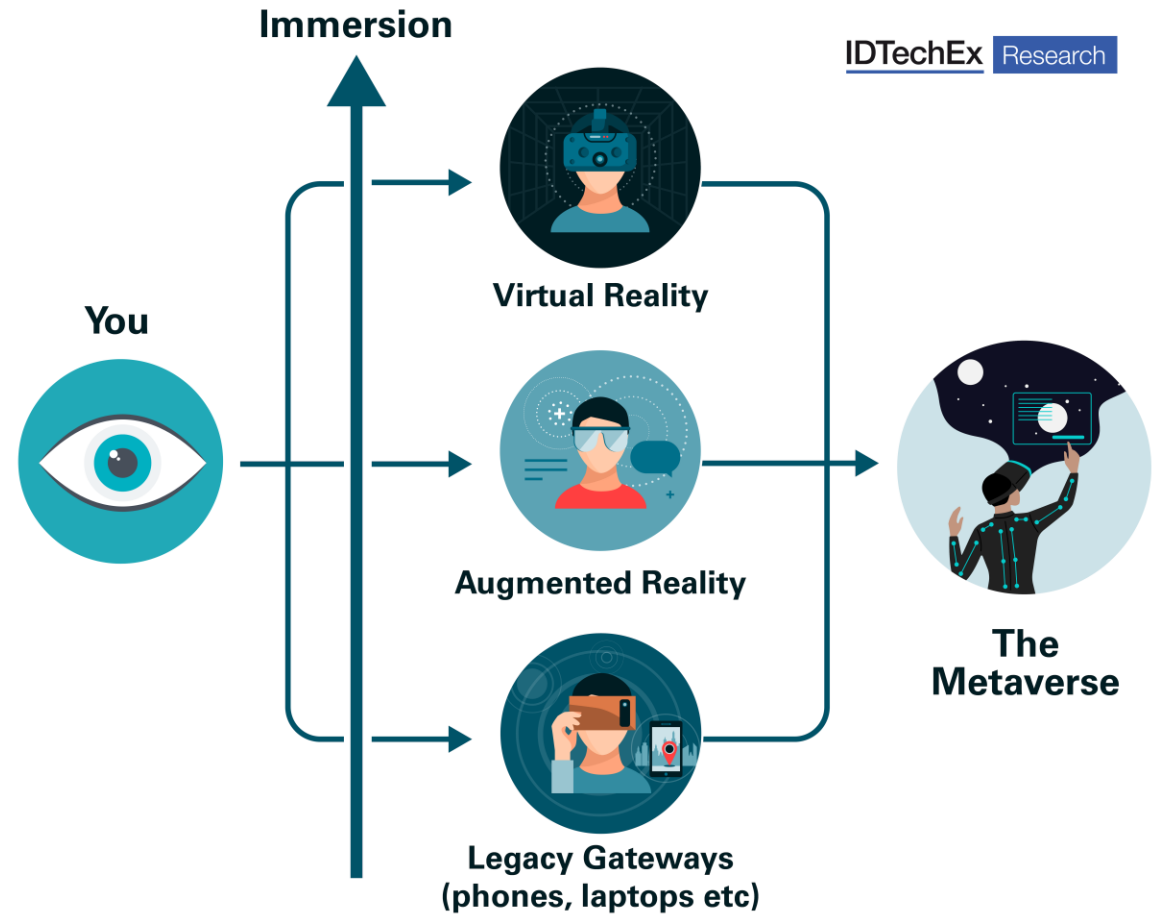- Regardless: embedded in everything now

Text-to-image AI

Generative image creation

How does it work?
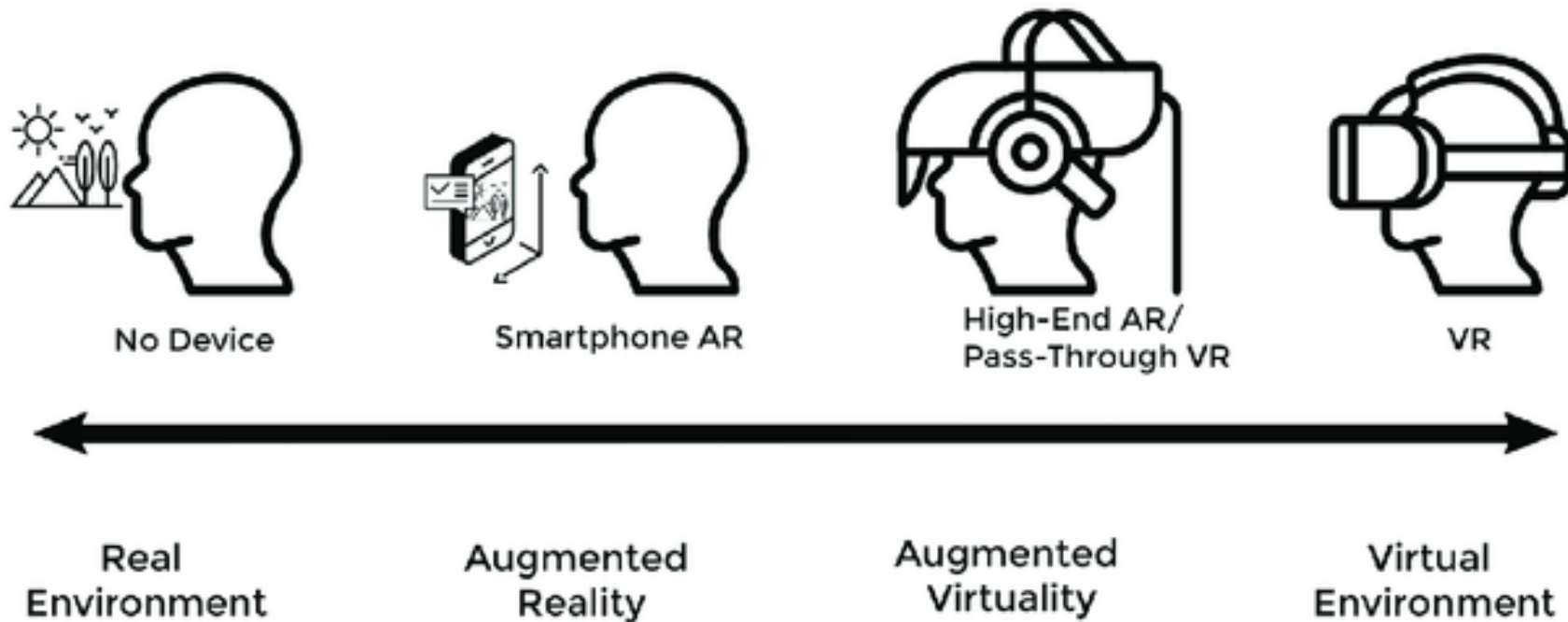
Integrating into Power Point

The Multiverse of Metaverses

Extended Reality (XR)

eXtended Reality (XR) Continuum

No Device | Smartphone AR | High-End AR/ Pass-Through VR | VR

Real Environment | Augmented Reality | Augmented Virtuality | Virtual Environment

Luna: The AI & XR Alliance

- Luna: AI and XR's Creative Offspring
- A New Realm of Learning and Collaboration
- Example: Virtual art galleries and AI-guided learning experiences

Benefits of XR in Education

- Engaging and immersive learning experiences

- Promotes active learning and student engagement

- Enhances understanding of complex concepts

- Facilitates personalized and self-paced learning

- Encourages collaboration and interaction among students

Classroom Examples

- Virtual Field Trips

- Anatomy and Biology Simulations

- Language Learning with AR

- STEM Education with VR

- Cultural Immersion and Historical Reenactments

- Vocational training

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Additional Benefits

Supports durable skill development

Supports neurodiverse/introverted populations

Supports confidence building

THE GROWTH OF AI IN PLAGIARISM DETECTION

A Losing Cat & Mouse Game

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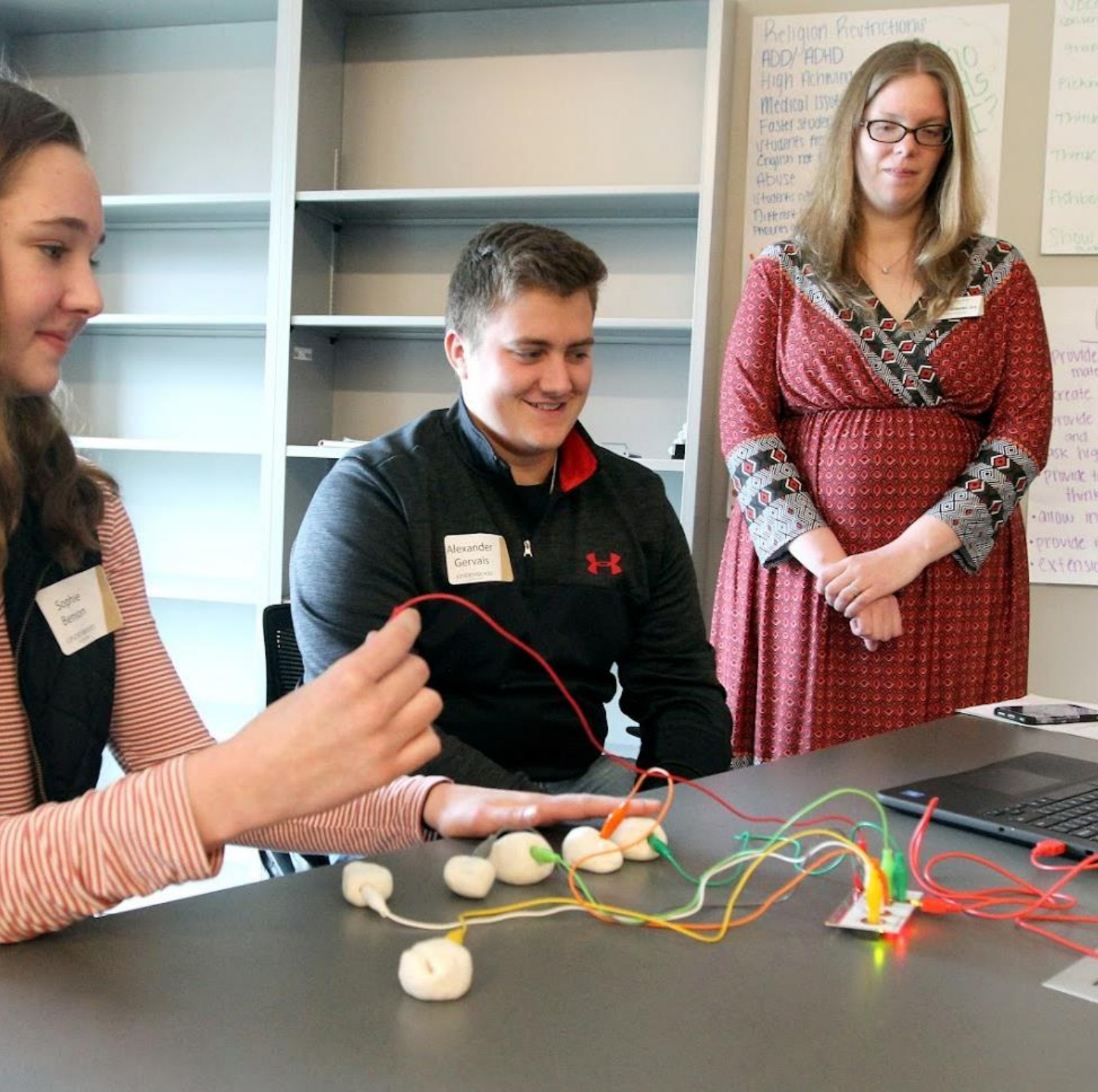Perceptions that faculty need to retool their teaching strategies

Misconceptions of rampant academic dishonesty with AI use

Faculty Shift in Postsecondary Education

Shifting from imparting information to facilitating learning

Active learning environments
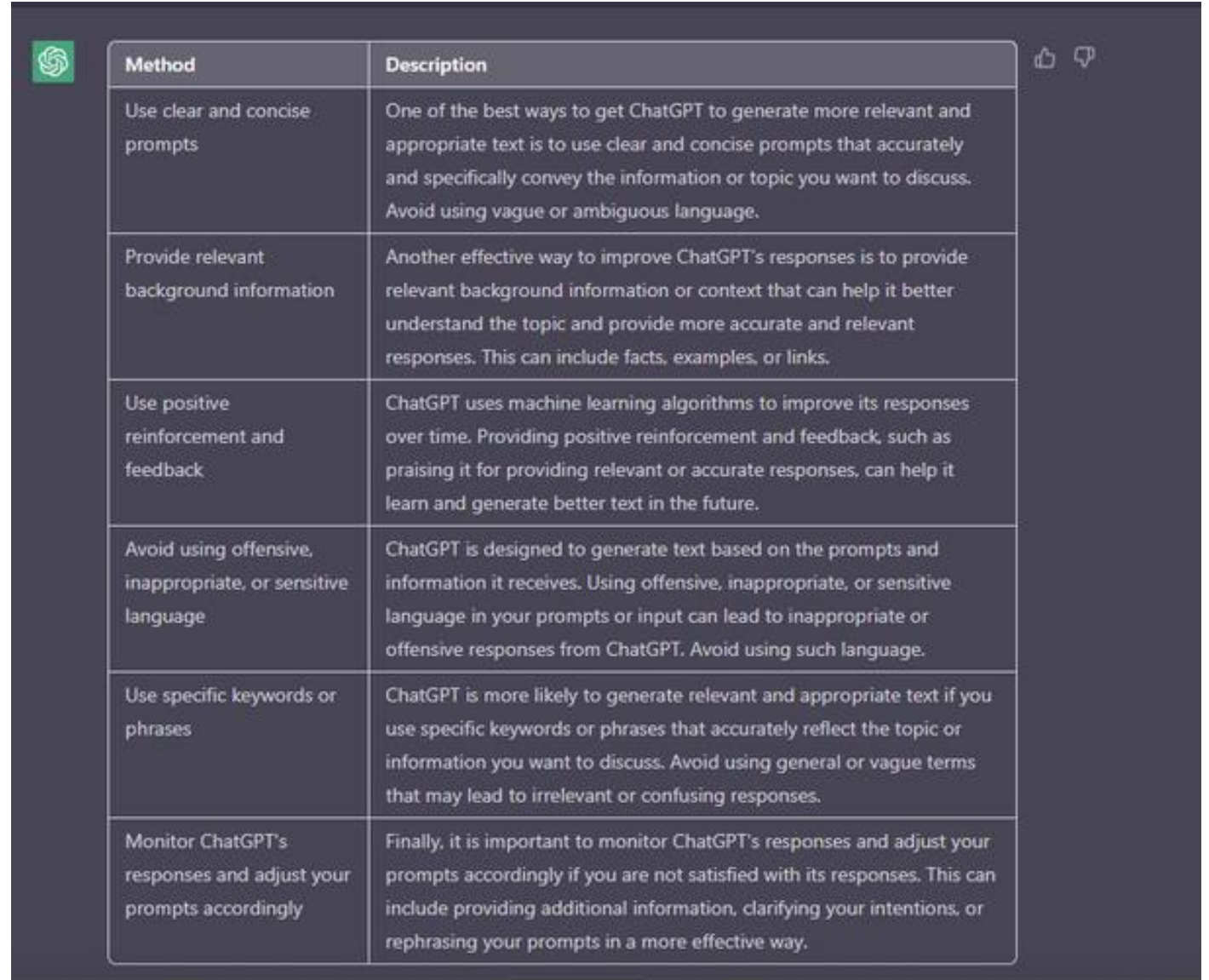
Use of AI in Different Disciplines

- Investigation of the use of AI in English and Art and Design

- Results and considerations for adoption
  - Hutson et al. (2022) - Strategies for Integrations across Disciplines
  - Plate and Hutson (2022) - Leveraging Natural Language Processing for Creative Writing, Art and Design
  - Hutson and Plate (2023) - AI-Essay Generators in College Composition
  - Hutson and Robertson (2023) - AI Generative Art in the Drawing Studio
  - Hutson and Cotroneo (2023) - Case Study in the Use of Generative AI Art in the Digital Art Classroom

The Poetry of Prompts: AI's Literary Maestros

•The Artful Creators: AI Text Generation Tools

•ChatGPT, Bard, Lama: The AI Pioneers of Education

•Example: ChatGPT assisting in essay writing and editing

| Method	Description
Use clear and concise prompts	One of the best ways to get ChatGPT to generate more relevant and appropriate text is to use clear and concise prompts that accurately and specifically convey the information or topic you want to discuss. Avoid using vague or ambiguous language.
Provide relevant background information	Another effective way to improve ChatGPT's responses is to provide relevant background information or context that can help it better understand the topic and provide more accurate and relevant responses. This can include facts, examples, or links.
Use positive reinforcement and feedback	ChatGPT uses machine learning algorithms to improve its responses over time. Providing positive reinforcement and feedback, such as praising it for providing relevant or accurate responses, can help it learn and generate better text in the future.
Avoid using offensive, inappropriate, or sensitive language	ChatGPT is designed to generate text based on the prompts and information it receives. Using offensive, inappropriate, or sensitive language in your prompts or input can lead to inappropriate or offensive responses from ChatGPT. Avoid using such language.
Use specific keywords or phrases	ChatGPT is more likely to generate relevant and appropriate text if you use specific keywords or phrases that accurately reflect the topic or information you want to discuss. Avoid using general or vague terms that may lead to irrelevant or confusing responses.
Monitor ChatGPT's responses and adjust your prompts accordingly	Finally, it is important to monitor ChatGPT's responses and adjust your prompts accordingly if you are not satisfied with its responses. This can include providing additional information, clarifying your intentions, or rephrasing your prompts in a more effective way.

The Anatomy of a Prompt

- **Simulate Persona**
- **Task**
- **Steps to complete**
- **Context / Constraints**
- **Goal**
- **Format Output**

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Using ChatGPT for Academic Research

- **Familiarize Yourself with ChatGPT Capabilities:** Before using ChatGPT for research, it is important to understand its capabilities and limitations. ChatGPT is an AI-powered language model that can generate human-like text based on input prompts. It can assist in generating ideas, summarizing information, and even completing sentences or paragraphs. However, it is important to note that ChatGPT is not perfect and may generate errors or irrelevant information.

- **Create a Literature Review:** ChatGPT can assist in the creation of a literature review. Start by inputting a few keywords related to your research topic, and ChatGPT can generate a list of relevant articles and studies. This can save time and provide a starting point for further research. However, it is important to review and critically evaluate the sources suggested by ChatGPT to ensure they are credible and relevant to your research question.

- **Craft a Research Question:** Based on the gaps in the existing scholarship identified through the literature review, create a research question to organize your argument around. ChatGPT can assist in this process by generating ideas for research questions or even suggesting potential research designs.

- **Conduct Research:** Use ChatGPT to assist in the research process by generating summaries of relevant articles or studies, identifying potential sources, or even generating data for analysis.

- **Provide Critical Analysis and Evaluation:** Once you have collected and analyzed your data, use ChatGPT to assist in the critical analysis and evaluation of your research question. ChatGPT can provide alternative perspectives, identify potential biases, or even suggest areas for future research.
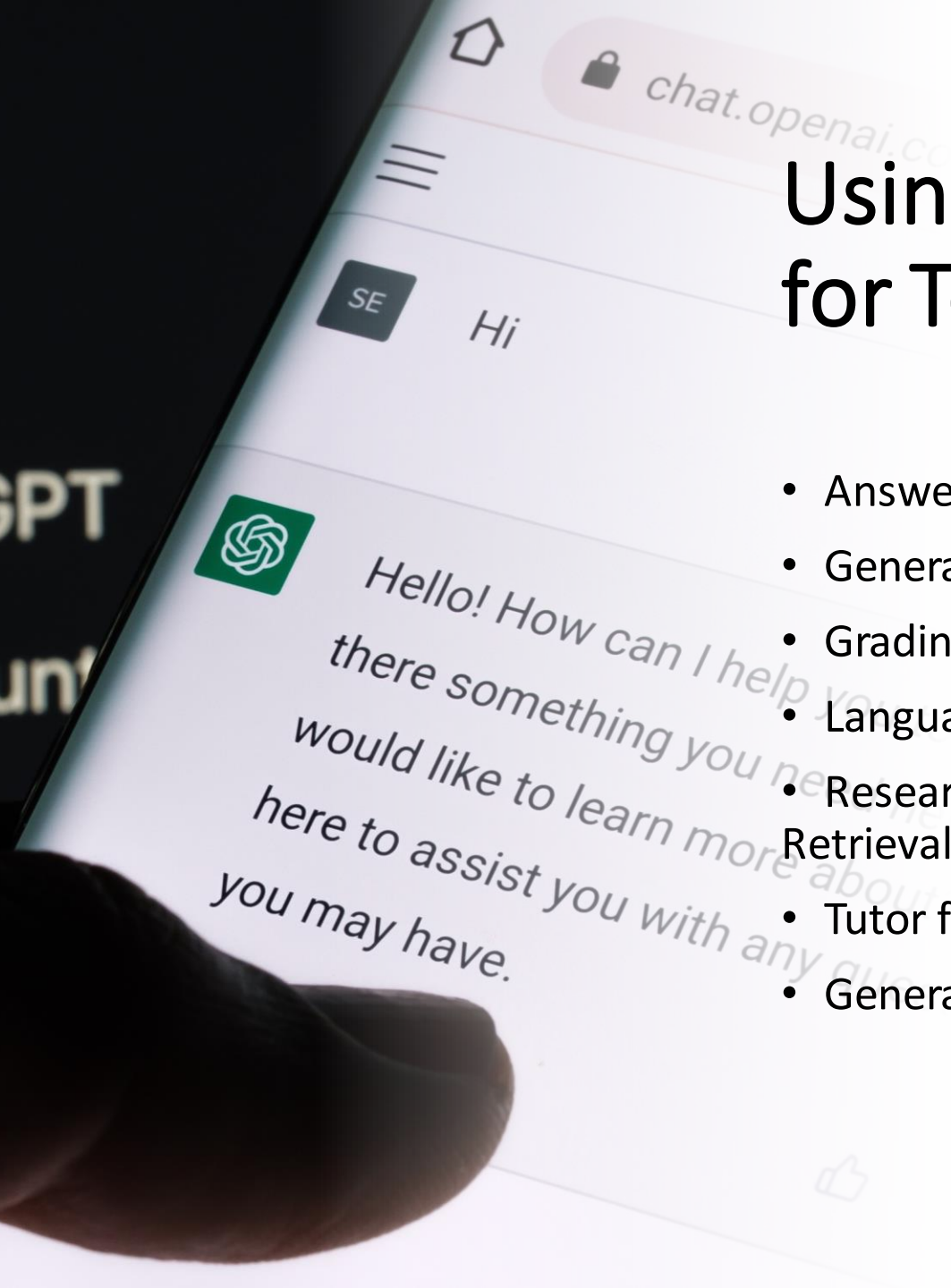
Using Chatbots for Teaching

- Answering Student Questions:

- Generating Lesson Plans:

- Grading Assistance

- Language Learning Support

- Research and Information Retrieval

- Tutor for Students

- Generating Rubrics

AI in Art: A Creative Alliance Flourishing for Over a Decade

- **AI Enhancements in Graphic and Video Applications:** graphic and video applications to streamline processes for graphic designers

- **Non-Creative Tasks and AI Technology:** graphic designers spend a large portion of their time on non-creative tasks

- **Adobe Sensei and AI Enhancements in Photoshop:** enabled the company to add neural filters and content-aware functionality to its flagship application, Photoshop; streamline processes for designers, including image-driven searches and removal of unwanted elements in photos and videos

- **AI-Enhanced Portraits and Artistic Style Transfer:** quickly adjust portraits, transfer artistic styles, and change the season of a landscape

- **Generative Adversarial Networks (GANs) and Pattern Recognition:** generate fictitious photo-realistic images

Visualizing Words through AI

- The Imaginative World of Text-to-Image Generation
- DALL-E 2, Stable Diffusion, Midjourney: Painting Classrooms with AI-generated Images
- Assignment: Generate and then recreate in another medium

Idea Generation

Assignments: combine 3 household objects and then create in 3D

Recursive Ideation

Augmented Creativity

Understand Prompt Engineering

Assignment: Create original work and another student recreate with AI

Navigating Copyright Waters: The Collaborative Approach of Nvidia, Adobe, and Firefly

- The Copyright Conundrum
    - AI-generated content raises new copyright concerns
    - Legal landscape still evolving to address these challenges

- Nvidia, Adobe, and Firefly: A United Front
    - Recognizing the importance of copyright compliance
    - Proactive partnership to address potential issues

- Paying for Access to Getty Images and Other Databases
    - Financial compensation for the right to scrape images
    - Ensuring AI-generated content remains ethical and compliant

- Balancing Innovation and Respect for Creators
    - Encouraging the responsible use of AI in art
    - Protecting the rights of artists and content creators

- Setting a Standard for the Industry
    - The partnership as a model for future collaborations
    - Fostering a culture of ethical AI development and application

How to Use AI in EDU Now

- Example assignments
- Creating Rubrics
- Apply Rubrics and Grade/ feedback
- Authentic assessment
- Project-based learning
- Developing "soft skills"

Fostering Metacognition and Resilience

- Nurturing Reflection and Growth
- Thinking about Thinking/ Learning How to Learn
- Crafting Durable Skills through AI and XR
- Not a Vending Machine
- Conversation/ Collaboration/ Dialogue

There's an AI for That

ttps://theresanaiforthat.com/

Future-Proofing

Importance of preparing students for the future of work

Integration of AI and machine learning into curriculum

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