





# Embracing New Pedagogy in Librarianship and Higher Education: How to Use AI Generative Tools to Revolutionize Your Teaching

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## Where are you from?

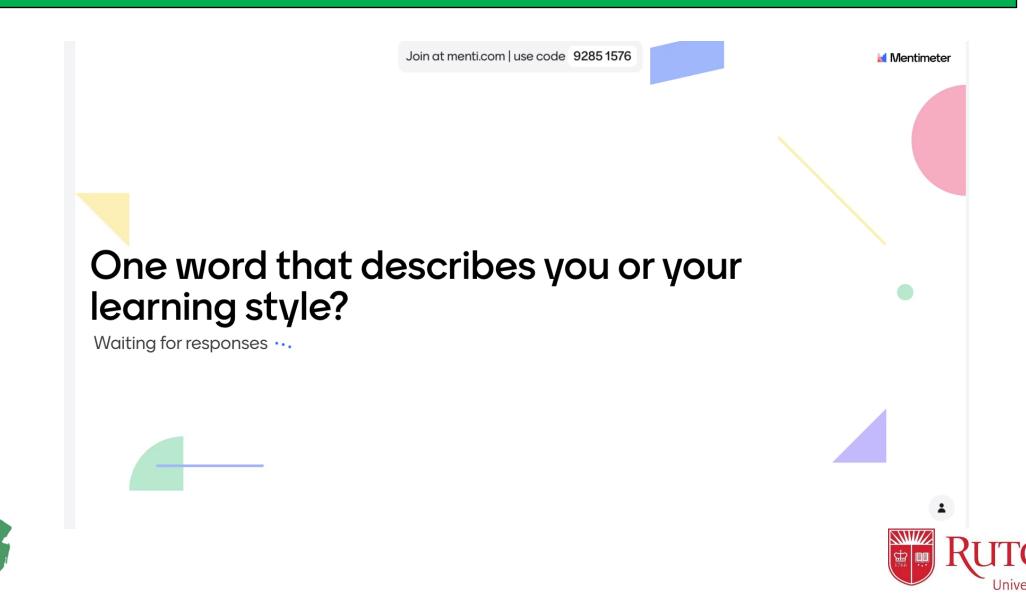
Waiting for responses ...







## One word that describes you or your learning style?



### Presentation Overview

- Part I:
- What are generative AI models?
- How AI is changing the landscape of higher education and the workplace.
- Part II:
- Development of the incorporation of AI-generated models in library pedagogical strategies:
- Case Study: Using chatGPT, Bard, and research validation charts for conducting a SWOT analysis.
- Part III:
- Challenges faced by universities and libraries using generative AI models.
- The importance of keeping up with emerging technologies.
- Questions & Answers







## Two definitions that we should know



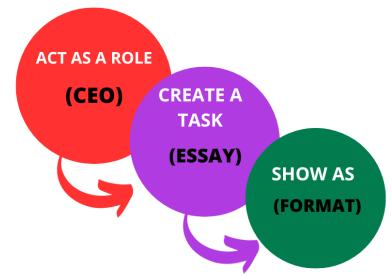




## Two definitions that we should know

**Prompts** are the inputs or queries that a user or a program gives to an LLM AI, in order to elicit a certain response from the model. Prompts can be natural language sentences or questions, or code snippets or commands. or any combination of text or code, depending on the domain and the task.

### STEPS TO UNDERSTANDING PROMPTING



**X** jonathanMLIS





( Act as a Role) I want you to act as an accountant and come up with creative ways to manage finances. You'll need to consider budgeting, investment strategies and risk management when creating a financial plan for your client. In some cases, you may also need to provide advice on taxation laws and regulations in order to help them maximize their profits.

(Create a Task) My first suggestion request is 'Create a financial plan for a small business that focuses on cost savings and long-term investments'

(Format) In a pdf document



## Additional Prompting Frameworks

- CLEAR (Challenge-Limitation-Effect-Action-Result)
  - Identify a [Challenge], acknowledge a [Limitation], predict the [Effect], propose an [Action], and envisage the [Result]

- STAR (Situation-Task-Action-Result)
  - Describe the [Situation], outline the [Task], detail [Action] taken, and share the [Result].





## Two definitions that we should know

**Artificial hallucination** refers to the phenomenon of a machine, such as a chatbot, generating seemingly realistic sensory experiences that do not correspond to any real-world input. This can include visual, auditory, or other types of hallucinations. (Alkaissi H, McFarlane SI,

2023)



ORBES > BUSINESS

**BREAKING** 

Lawyer Used ChatGPT In Court—And Cited Fake Cases. A Judge Is Considering Sanctions







## Part I: The beginning

The fundamentals of generative AI models and their impact on different fields of employment.



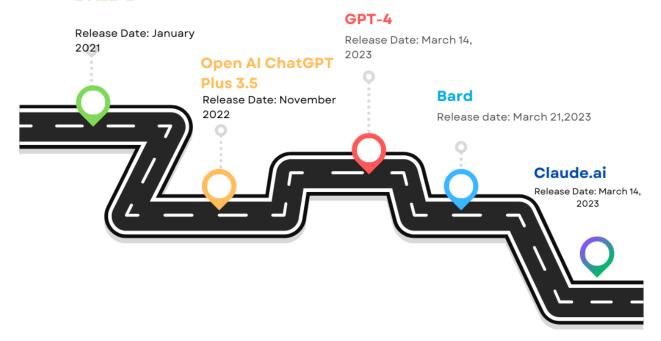




### What are generative AI models?

(IBM, 2023) "Generative AI refers to deep-learning models that can generate high-quality text, images, and other content based on the data they were trained on."

### **DALL-E**









"I copy and paste your responses in this account and Chat GTP will tell me if the program generated the content," Mumm, who teaches agricultural sciences and natural resources, wrote in the email,
misspelling Chat GPT.

This Photo by Unknown Author is licensed under CC BY-SA

"I put everyone's last three assignments through two separate times and if they were both claimed by Chat GTP you received a 0," he added.

HOME > TECH

### A Texas professor failed more than half of his class after ChatGPT falsely claimed it wrote their papers

Sophia Ankel May 17, 2023, 8:02 AM ED1











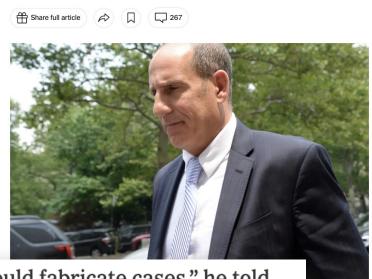
## Here's What Happens When Your Lawyer Uses ChatGPT

A lawyer representing a man who sued an airline relied on artificial intelligence to help prepare a court filing. It did not go well.



## The ChatGPT Lawyer Explains Himself

In a cringe-inducing court hearing, a lawyer who relied on A.I. to craft a motion full of made-up case law said he "did not comprehend" that the chat bot could lead him astray.



"I did not comprehend that ChatGPT could fabricate cases," he told Judge Castel.







### Mom, Dad, I Want To Be A Prompt Engineer



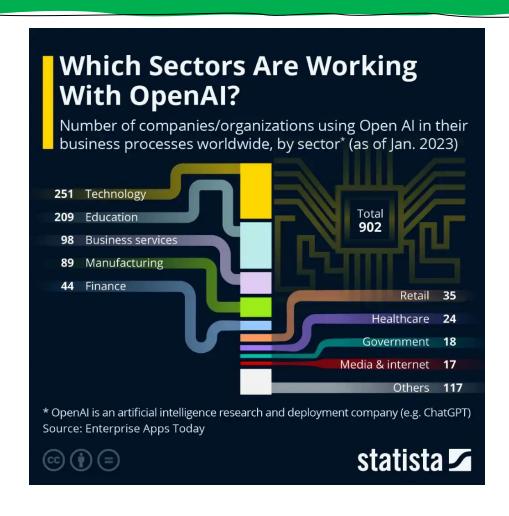


"In ten years, half of the world's jobs will be in prompt engineering," declared Robin Li, cofounder and CEO of Chinese AI giant, Baidu. "And those who cannot write prompts will be obsolete."









Industries in business and education are the top institutions working with the company open AI.



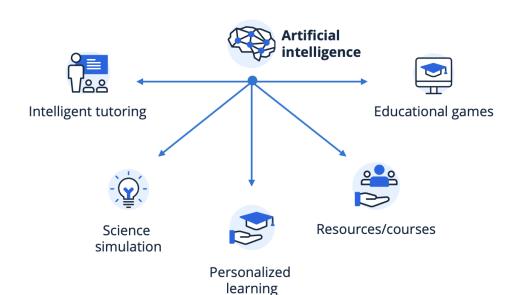




## Al is driving the personalized learning industry

**Education: Overview** 

#### **Overview**



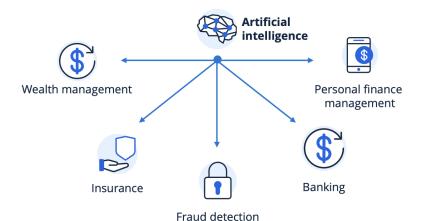








#### Overview

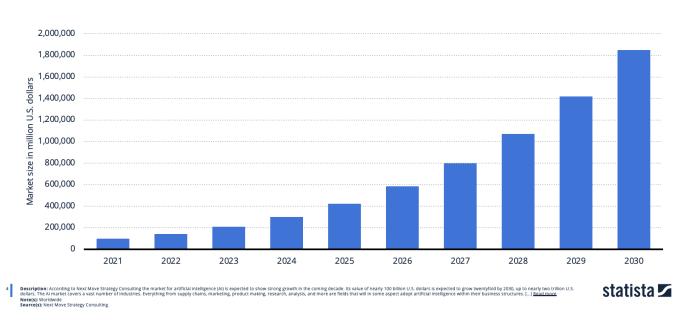








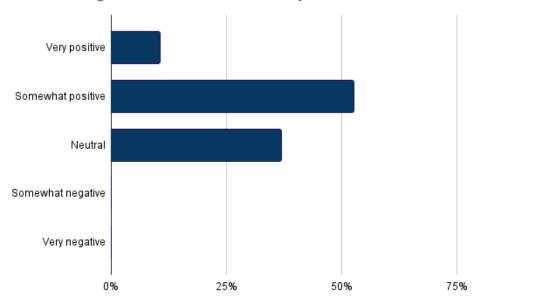
Global artificial intelligence market size 2021-2030



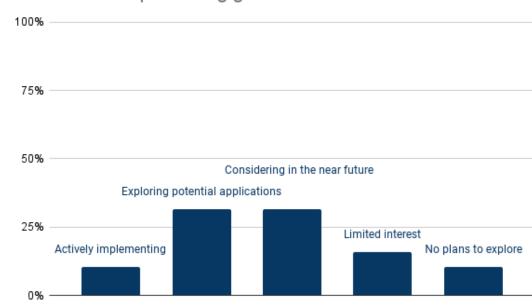


### Impact on Academic Libraries (Part I)

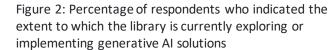
How would you describe your view on the potential of generative Al technologies in the context of library services in the next 12 months?



To what extent is your library currently exploring or implementing generative AI solutions?









### Impact on Academic Libraries (Part II)

What are the most relevant potential applications of generative AI in research libraries over the next 12 months?

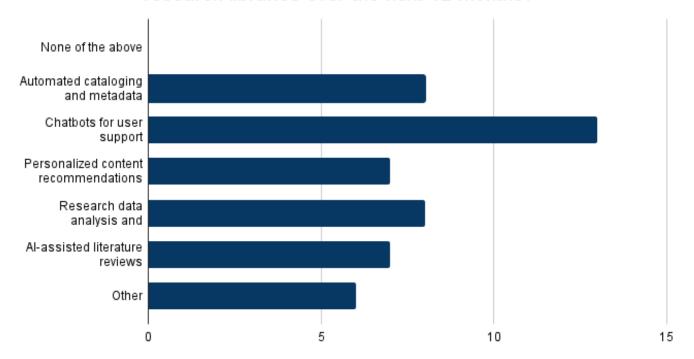


Figure 3: Number of respondents who indicated the most relevant applications of generative AI in research libraries over the next 12 months





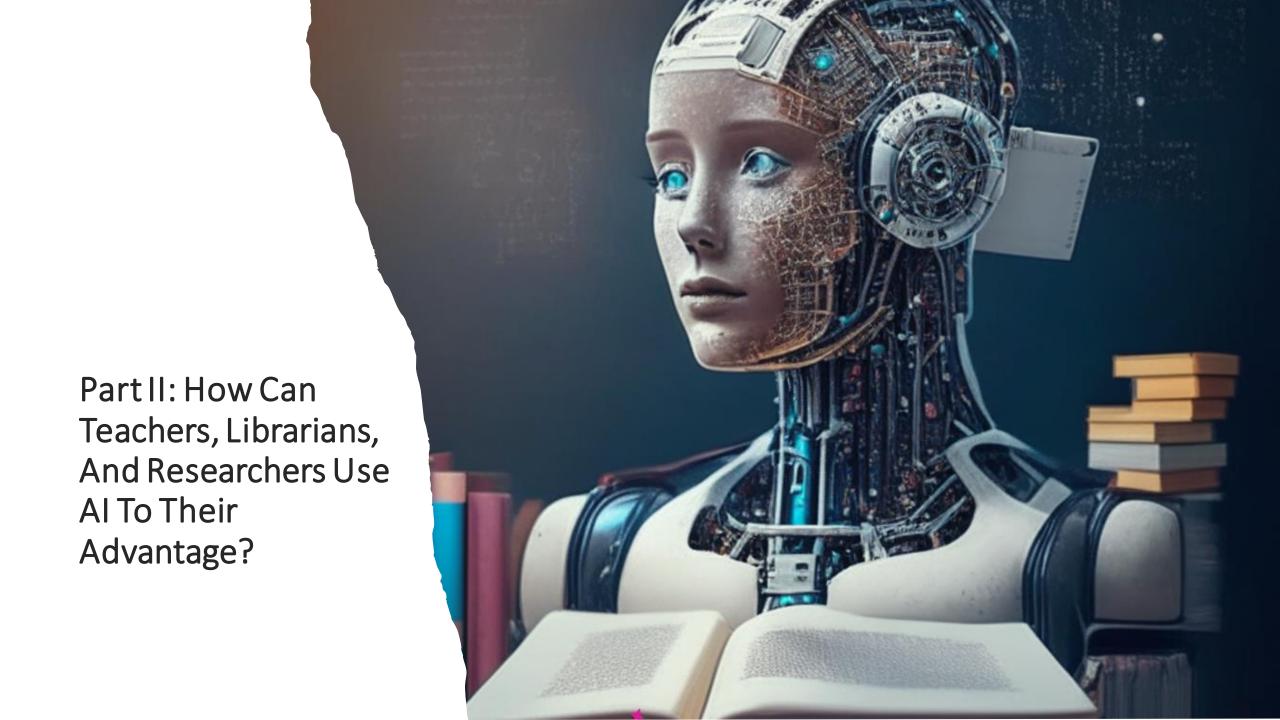




Figure 3: Possible uses of ChatGPT in the research process

04

03

01

02



### Writing up

- · Improve writing quality
- Reformat citations and references
- Translate writing



### Data analysis

- Code data
- Suggest themes or topics for analysis

Image created by UNESCO IESALC



### Research design

- Generate ideas for research questions or projects
- Suggest data sources



### Data collection

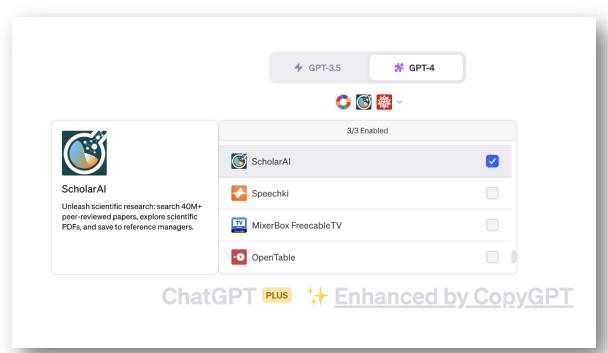
- Search archives and datasets
- Translate sources into other languages

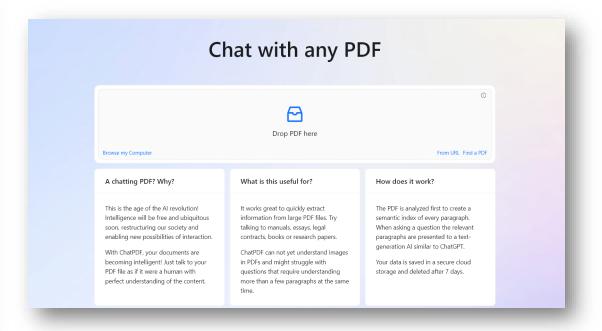












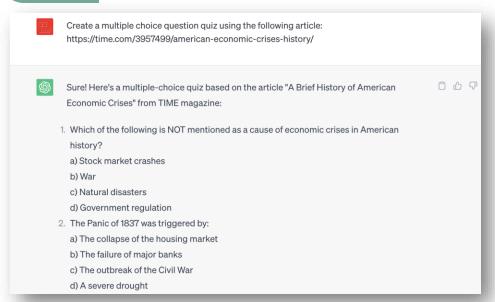






A\ Copy 'O Retry







Here are 10 additional AI in higher education research topics to consider:

1. Evaluating the pedagogical effectiveness of intelligent tutoring systems

2. Implementing personalized, adaptive learning via AI - challenges and best practices

3. The role of explainable AI in education - interpreting model decisions

4. AI assistants for research and literature review - qualitative perceptions

5. Preparing faculty to teach and design AI-driven curricula

6. Ensuring transparency and fairness in AI admissions selection tools

7. Scaling personalized feedback and assessment with natural language processing

8. Can AI enhance diversity, equity and inclusion in higher education?

9. The environmental impact of scaling AI in online education

10. AI productivity tools in higher ed - impacts on educators' roles and workloads

Let me know if you need me to clarify or expand on any of these suggestions. I'm happy to provide additional details and tailor these topics to your specific research interests and goals.

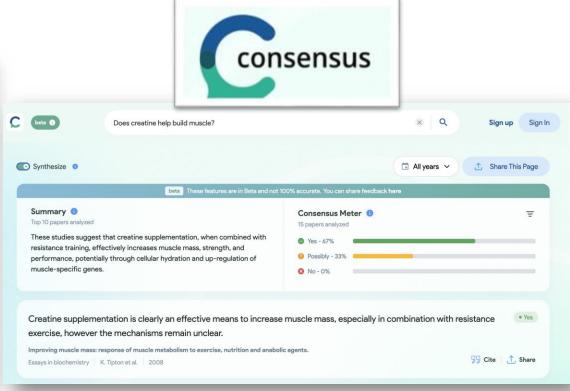
I am researching the impact of artificial intelligence in higher education. Task: Please











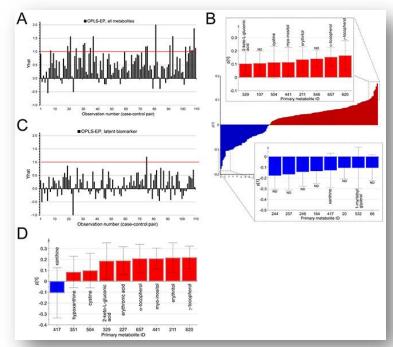




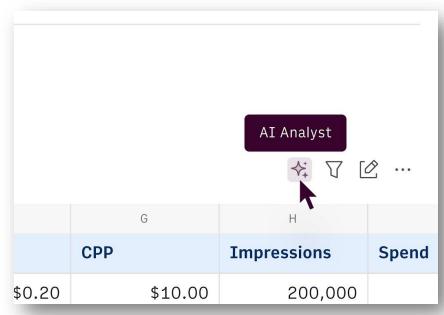


### Quantitative Data AI tools For Everyone!















Art, imaging, and video with Dall-e, Gencraft and Lexica



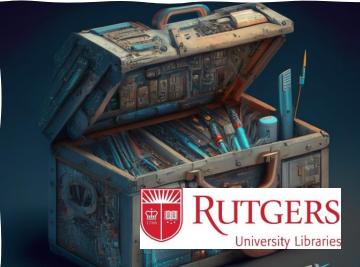














## A case study on developing pedagogical strategies using Chatgpt and Bard for academic librarians

#### Business Research Question and Answers by ChatGPT

#### Q: Provide me with a SWOT analysis for Canoo

ChatGPT: SWOT analysis is a strategic planning tool that helps identify the Strengths, Weaknesses, Opportunities, and Threats of a company. Here is a SWOT analysis for Canoo:

- Innovative Technology: Canoo is developing advanced electric vehicle (EV) technology, including a scalable skateboard platform, which can be used across multiple vehicle types. This technology provides a competitive edge over traditional automakers.
- Strong Management Team: Canoo has an experienced management team that includes industry veterans from BMW, Faraday Future, and Apple.
- Unique Design: The company's design philosophy emphasizes functionality and minimalism, which appeals to customers seeking an alternative to traditional vehicle design.
- Strategic Partnerships: Canoo has formed strategic partnerships with companies like Hyundai and Magna International, which can help the company scale up production and expand its offerings.

#### Weaknesses

- Limited Production: Canoo has yet to launch its first vehicle and has limited production capacity. It may struggle to meet demand if its products are successful.
- Limited Market Presence: Canoo is a new entrant in the electric vehicle market and lacks the brand recognition and market presence of more established players.

#### Opportunities:

- Growing EV Market: The global electric vehicle market is growing rapidly, and Canoo can capitalize on this
  trend by offering innovative and high-quality EVs.
- Shift Towards Sustainable Transportation: As concerns about climate change and sustainability continue to
  grow, more consumers are seeking eco-friendly transportation options. <u>Canoo's</u> electric vehicles align with
  this trend.
- Expansion into New Markets: Canoo has the opportunity to expand into new markets and vehicle segments, such as delivery vehicles or ride-sharing platforms.

#### Threats:

- Intense Competition: The electric vehicle market is becoming increasingly crowded, with established players like Tesla, GM, and Ford, as well as new entrants like Rivian and Lucid Motors. Canoo will need to differentiate itself to succeed.
- Regulatory Changes: Changes in government regulations, such as subsidies or taxes on EVs, could impact Canoo's business.
- Supply Chain Disruptions: Canoo's supply chain could be disrupted by various factors, including natural disasters, pandemics, or geopolitical tensions.



Q: Provide me with SWOT analysis for Canoo Bard: Sure, here is a SWOT analysis for Canoo

#### Strength

1. Innovative design: Canoo's vehicles have a unique and futuristic design that is unlike anything else on the market.

Business Research Question and Answers by Bard

- Modular platform: Canoo's modular platform allows for a variety of different vehicle configurations, which gives the company a competitive advantage.
- Scalable production: Canno's production process is designed to be scalable, which will allow the company to meet demand as it grows.
- Experienced management team: Canoo's management team has a wealth of experience in the automotive industry, which will be invaluable as the company grows.
- Strong financial backing: Canoo has strong financial backing from investors, which will allow the company to develop its products and bring them to market.

#### Weaknesses

- New company: Canoo is a new company, which means that it has no track record of production or sales.
- 2. No brand awareness: Canoo is a relatively unknown company, which will make it difficult to generate sales.
- Competition from established automakers: Canoo will face competition from established automakers that have a much larger market share.
- 4. High cost of batteries: The high cost of batteries is a challenge for all electric vehicle manufacturers.

#### Opportunities:

- Growing demand for electric vehicles: The demand for electric vehicles is growing, which creates an opportunity
  for Canon to enter the market.
- Government incentives for electric vehicles: Governments around the world are offering incentives to encourage the purchase of electric vehicles.
- 3. Expansion into new markets: Canoo has the potential to expand into new markets, such as Europe and Asia.
- Development of new technologies: Canoo is developing new technologies, such as its modular platform, that
  could give it a competitive advantage.

#### Threats:

- 1. High cost of batteries: The high cost of batteries is a threat to all electric vehicle manufacturers.
- Shortage of raw materials: The shortage of raw materials, such as lithium, is a threat to the electric vehicle industry.
- 3. Trade wars: Trade wars could disrupt the supply chain for electric vehicles.
- 4. Regulatory changes: Regulatory changes could make it more difficult for Canoo to bring its products to market.

Overall, Canoo is a promising company with a bright future. However, it will need to overcome some challenges in order to be successful.

Table 2: O&A Bard transcripts



Bard Al









### **Research Validation Charts**

Table 3. Research Validation Chart: ChatGPT

Table 5. Research Validation Chart: ChatGP1							
Company: Canoo Inc.	Strength	Weaknesses	Opportunities	Threats			
ChatGPT	Strong Management Team: Canoo has an experienced management team that includes industry veterans from BMW, Faraday Future, and Apple.	Limited Production: Canoo has yet to launch its first vehicle and has limited production capacity. It may struggle to meet demand if its products are successful.	Expansion into New Markets: Canoo has the opportunity to expand into new markets and vehicle segments, such as delivery vehicles or ride- sharing platforms.	Intense Competition: The electric vehicle market is becoming increasingly crowded, with established players like Tesla, GM, and Ford, as well as new entrants like Rivian and Lucid Motors. Canoo will need to differentiate itself to succeed.			
Factiva	Gurman Mark. (2021). Apple Hires Former BMW Executive for Its Rebooted Car Project. Bloomberg.com	Klayman. B (2022) Canoo production starts could slip, but CEO remains confident in funding. Reuters.com	Berthiaume. D (2022) Walmart launches delivery with Canoo all- electric vans. Chain Store Age	Klayman. B (2022) EV startup Canoo plans to roll out American-built, pod-like electric pickup in 2023. Reuters.com			
Business Source Premier	Mathews, J. (2022). Exclusive: Troubled EV company Canoo loses another 4 senior employees. Fortune.com	Mathews, Jessica. 2022. "Exclusive: As Production Begins at Troubled EV Company Canoo, Internal Documents Show Vehicle Parts Are Still Missing and Late Payments May Lead to Delays." Fortune.com	Ludlow, E. (2020). EV Startup Canoo Fast- Tracks Launch of Commercial Delivery Van. Bloomberg.com	O'Kane, S. (2022). Walmart's Deal <u>With</u> EV Startup Canoo Comes With Strings: No Amazon. Bloomberg.com.			
Is the information outdated?	Yes	No	No	No			
Did the business databases justify this area given by ChatGPT?	No	Yes	Yes	Yes			

Table 4. Research Validation Chart: Bard

Company:	Strength	Weaknesses	Opportunities	Threats
Canoo Inc.				
Bard	Experienced management team: Canoo's management team has a wealth of experience in the automotive industry, which will be invaluable as the company grows	High cost of batteries: The high cost of batteries is a challenge for all electric vehicle manufacturers.	Growing demand for electric vehicles: The demand for electric vehicles is growing, which creates an opportunity for Canoo to enter the market.	Trade wars: Trade wars could disrupt the supply chain for electric vehicles.
Factiva	Contify Automotive News (2023). Canoo appoints Ken Manget chief financial officer. Contify.com	Journal Record Staff (2022). Report: Oklahoma in running for second Panasonic plant. Journal Record	Dow Jones & Company, Inc. (2023). Automakers invest to secure metals for EVs. WSJ Dow Jones Institutional News	Lopez (2023). The one crucial industry where China is crushing America in the Tech Cold War. Business Insider
Business Source Premier	Exclusive: EV company Canoo loses another eight executives and senior employees as it struggles with 2022 production goals.	O'Kane, S. (2022). EV startup Canoo has second battery fire in preproduction tests. Bloomberg.com	According to MarketLine, (2023), "In 2026, the United States hybrid & electric cars market is forecast to have a value of \$74,924.8 million, an increase of 56.5% since 2021" (p2).	Irwin, J. (2023). Why EV programs are causing problems for automotive suppliers. Plastics News
Is the information outdated?	Yes	No	No	No
Did the business databases justify this area given by Bard?	No	Yes	Yes	Yes







## Findings

- The analysis of (Table 3) (Table 4) shows that 25% of the information from that was generated by Bard and ChatGPT could not be justified as a credible resource to use for a SWOT analysis.
- While 25% of the information considered outdated was prompt from Bard and ChatGPT.
- Overall, both tables show a promising trajectory, as both columns were 75% in providing current information and were justified based on articles from Business Source Premier and Factiva.







## Case Study Conclusion

- ✓ This study found that the SWOT analysis produced by ChatGPT and Bard did not produce artificial hallucinations.
- ✓ Both AI chatbots could be used as tools to incorporate pedagogical practices when teaching information literacy in conjunction with other library resources.
- ✓ The use of research validation charts proved effective when crossexamining the information from two business databases.
- ✓ Using AI platforms to teach information and data literacy may advance academic librarians' status as experts in teaching practices for higher education, which may lead to stronger collaborations with faculty.



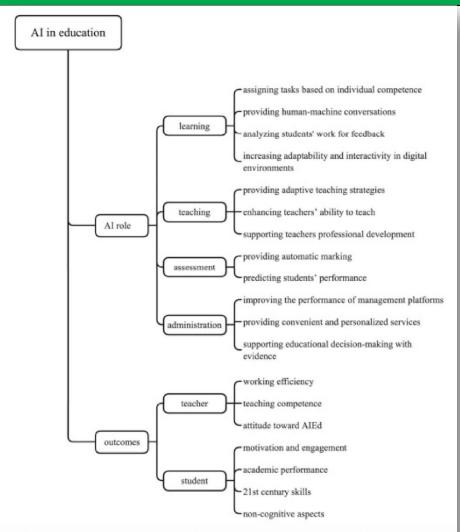




Part III:
Challenges
and
opportunities
with AI



### Recommendations for Higher Education



Computers and Education: Artificial Intelligence 6 (2024) 100197



Contents lists available at ScienceDirect

#### Computers and Education: Artificial Intelligence



journal homepage: www.sciencedirect.com/journal/computers-and-education-artificial-intelligence

### Future research recommendations for transforming higher education with generative AI

Thomas K.F. Chiu

Department of Curriculum and Instruction and Associate Director of the Centre for University and School Partnership and Centre for Learning Sciences and Technologies at the Chinese University of Hong Kong, Hong Kong

ARTICLE INFO

Keywords:
Generative artificial intelligence
ChatGPT
Learning outcomes
AI literacy
Assessment

#### $A\ B\ S\ T\ R\ A\ C\ T$

Higher education is crucial for producing ethical citizens and professionals globally. The introduction of generative AI (GenAI), such as ChatGPT, has posed opportunities and challenges to the traditional model of education. However, the current conversations primarily focus on policy development and assessment, with limited research on the future of higher education. GenAI's impact on learning outcomes, pedagogy, and assessment is crucial for reforming and advancing the workforce. This qualitative study aims to investigate student perspectives on GenAI's impact on higher education. The study uses an initial conceptual framework driven by a systematic literature review to investigate the opportunities and challenges of AI in education. This framework serves as an initial data collection and analysis framework. A sample of 51 students from three research-intensive universities was selected for this study. Thematic analysis identified three themes and 10 subthemes. The findings suggest that future higher education should be transformed to train students to be future-ready for employment in a society powered by GenAI. They suggest new learning outcomes-skills in learning and teaching with GenAl, AI literacy—and emphasize the significance of interdisciplinarity and maker learning, with assessment focusing on in-class and hands-on activities. They recommend six future research directions - competence for future workforce and its self-assessment measures, AI literacy or competency measures, new literacies and their relationships, interdisciplinary teaching, Innovative pedagogies and their evaluation, new assessment and its acceptance.







### Impact on Universities and Academic Libraries (Part I)



- 1. A system-wide vision and strategic priorities.
- 2. Overarching principle for AI and education policies
- 3. Interdisciplinary planning and inter-sectoral governance
- 4. Policies and regulations for equitable, inclusive, and ethical use of Al
- 5. Master plans for using AI in education management, teaching, learning, and assessment
- 6. Pilot testing, monitoring and evaluation, and building an evidence base.
- 7. Fostering local AI innovations for education







### Impact on Academic Libraries (Part II)



### The Journal of Academic Librarianship

Volume 49, Issue 5, September 2023, 102761



### Recommended articles

No articles found.

Case studies

An initial interpretation of the U.S. Department of Education's AI report: Implications and recommendations for academic libraries

Leo S. Lo 🖂

Show more V

#### Conclusion and call to action

As AI continues to evolve and become more integrated into our educational systems, it is crucial for academic libraries to stay informed and involved. By promoting AI literacy, involving librarians in AI implementation, developing guidelines for AI use, preparing for AI issues, and collaborating with other stakeholders, academic libraries can effectively navigate the AI landscape and harness its potential to enhance library services and operations.







## Incorporating artificial intelligence into curriculums for library information science

JOURNAL OF THE AUSTRALIAN LIBRARY AND INFORMATION ASSOCIATION 2022, VOL. 71, NO. 3, 256–274 https://doi.org/10.1080/24750158.2022.2081111



RESEARCH



## Artificial Intelligence and Robots in Libraries: Opportunities in LIS Curriculum for Preparing the Librarians of Tomorrow

Elizabeth Tait <sup>1</sup> and Cameron M Pierson <sup>1</sup> b

<sup>a</sup>School of Information and Communication Studies, Charles Sturt University, Bathurst, Australia; <sup>b</sup>L3S Research Centre, Leibniz University, Hannover, Germany

Investigate options for offering continuing professional development (CPD) and/or micro-credentials specifically targeting the required skills for existing practitioners looking to upskill. (Pge 269)

Integrate further subject content covering AI: its fundamental workings, limitations, and current and potential benefits/problems arising from it. This would involve some collaboration with other disciplines such as computer science for domain knowledge. (Page 268)







### My initiative is to spread the word!



## Conclusion

- Being part of the library information science field offers numerous advantages that should not be overlooked.
- Librarians and information specialists must be willing to adapt to the current environment of artificial intelligence.
- Studies have indicated that the library community should not overlook AI technologies such as ChatGPT, as overlooking Google and Web 2.0 proved to be a costly error (Chen, 2023).
- The urgency to incorporate artificial intelligence education into library information and science curriculums to give new graduates an advantage when entering the workplace.













- Teaching Critical AI Literacy: Advice for the New Semester: <a href="https://otear.rutgers.edu/teaching/ai-advice">https://otear.rutgers.edu/teaching/ai-advice</a> Guidance for Rutgers faculty prepared by OTEAR and the AI Round Table Advisory Council. Includes a brief intro to AI, implications for education and academic integrity, and suggested language for developing course policies.
- Critical AI Literacy in a Time of Chatbots: A Public Symposium for Educators, Writers, and Citizens
   https://sites.rutgers.edu/critical-ai/event-details/
   A day-long symposium sponsored by Critical AI @ Rutgers featured panel discussions on the meaning and significance of critical AI literacy.
- Artificial Intelligence (AI) <a href="https://libguides.rutgers.edu/artificial-intelligence">https://libguides.rutgers.edu/artificial-intelligence</a>: offers a brief introduction to AI and its limitations, provides an overview of the various types of generative AI tools, discusses common academic use cases and prompt-writing examples, and a list of resources for further reading. (Special thanks to Janice Pilch for her help

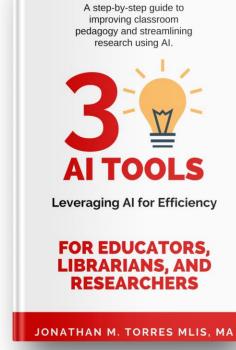




### MyeBook







Independent Publishing

CHATGPT With ChatGPT, users can create quizzes containing multiple-choice questions from an article's HTML link by prompting the AI generative CHAPTER 4: MEDIA AND AUDIO TUTORIALS FOR SOCIAL MEDIA



Dall-E is an AI generated image creator that allows you to create artistic images using text. It uses natural language processing and generative adversarial networks to create images from text descriptions. It is capable of producing

> and can be used by twork with ease.



**CHAPTER 3: WRITING FOR RESEARCH** 



CHAPTER 1: USING CHATGPT, BARD, AND CLAUDE FOR EDUCATIONAL

**ENGAGEMENT** 

Wordtune is a writing tool that provides assistance with punctuation, document revision, and adding further explanations to your writing topic and subject. It can adjust to your preferred writing language and tone for a personalized experience.

Regger Lifewarty Liferance primary selection development graft is in make audition to all Reggers and makes. Note, and self-shower they are should, or expected, or expected comments and considerable selections, the deput part of exist or solvaries primaries for they must be select of primaries and the selections and the selections of the selections are self-selections and the selections of the selections are selected primaries and the selections are selected primaries. The selections are selected primaries are selected primaries and the selections are selected primaries are selected primaries.



Expand on ...
Expand on a request











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