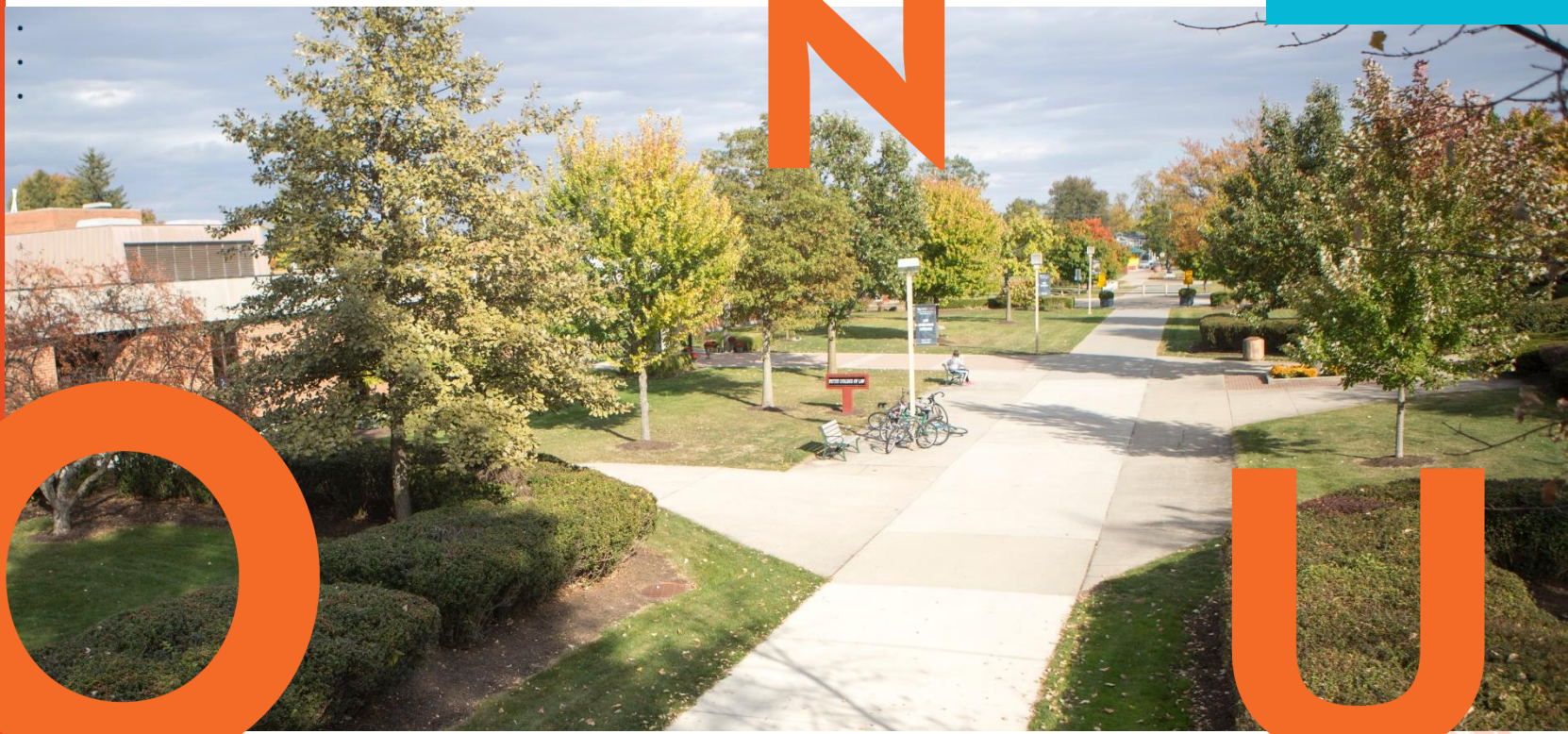


# INVESTIGATING THE RELATIONSHIP BETWEEN ARTIFICIAL INTELLIGENCE AND MARKETING EDUCATION

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OHIO  
**NORTHERN**  
UNIVERSITY



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Assistant Professor of Marketing  
Ohio Northern University

# AI'S IMPACT ON MARKETING EDUCATION

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- One of the fields most impacted by AI is education, especially the marketing major\*
- 67% of marketers do not have the right skills or expertise to implement new technologies such as AI

\*Source: Schlegelmilch, B. B. 2020, as cited in Elhajjar et al., (2021) Artificial Intelligence in Marketing Education

# THE NEED FOR MARKETING EDUCATORS TO STAY UP TO DATE

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- Preparing students for the modern marketing landscape
- Integrating AI tools and concepts into teaching
- Equipping students with necessary skills



# AI-DRIVEN TOOLS FOR DATA ANALYSIS AND MARKET RESEARCH

- Enhancing student learning experiences
- Developing research and writing skills



Image Source: <https://blog.acceleratelearning.com/the-impact-of-classroom-ai>

# DEVELOPING CRITICAL THINKING AND PROBLEM-SOLVING SKILLS

- Challenging students with AI applications
- Encouraging critical thinking about data, algorithms, and ethics



Image source: <https://criticalthinkingsecrets.com/how-to-use-artificial-intelligence-ai-in-the-critical-thinking-process/>

# CASE STUDY: MARKETING RESEARCH COURSE DELIVERABLES & TIMELINE

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1. Team Selection & Proposal Submission (Week 2)
2. Literature Review (Weeks 2-4)
3. Survey Design and Pilot (Weeks 5-6)
4. Data Collection (Weeks 7-10)
5. Data Analysis (Weeks 11-12)
6. Drafting the Final Report (Weeks 13-14)
7. Oral Presentation (Week 15)
8. Final Report Submission and Oral Presentation  
(Week 16)

# STAGE 1: RESEARCH PLANNING AND PROPOSAL WRITING

- Tools: ONU Library Databases, Google Scholar ChatGPT, Claude, Copilot, others
- Activities:
  - Draft the research proposal and refine the content with writing assistants.
  - Use AI tools to ensure the proposal meets academic standards and is well-structured.



# CHATGPT

- **ChatGPT (chat.openai.com):** Powered by GPT-3.5, [ChatGPT](https://chat.openai.com) is an AI language model that can engage in conversational brainstorming, helping you explore new research avenues.
- **Prompt:** You are a student in an undergraduate marketing research course. Create an outline for a marketing research project on the topic of artificial intelligence in higher education.



# CHATGPT RESULT

Title: The Impact and Application of Artificial Intelligence in Higher Education

## 1. Introduction

### • Background

- Definition of artificial intelligence (AI)
- Overview of AI applications in various industries
- Importance of AI in education

### • Purpose of the Study

- To investigate the impact of AI on higher education
- To explore the applications of AI in improving teaching and learning

### • Research Questions

- How is AI currently being used in higher education?
- What are the perceptions of students and educators about AI in education?
- What are the potential benefits and challenges of AI in higher education?

## 2. Literature Review

### • History of AI in Education

- Evolution of AI technologies
- Milestones in the application of AI in education

### • Current Trends in AI and Education

- Popular AI tools and platforms used in higher education
- Case studies of successful AI implementations

### • Benefits of AI in Education

- Personalization of learning experiences
- Enhancement of administrative tasks
- Improvement of academic performance and engagement

### • Challenges and Concerns

- Ethical considerations
- Data privacy and security
- Resistance to change among educators and institutions

## 3. Methodology

### • Research Design

- Qualitative, quantitative, or mixed-method approach
- Justification for the chosen methodology

### • Data Collection Methods

- Surveys and questionnaires for students and educators
- Interviews with key stakeholders
- Analysis of existing data and case studies

### • Sampling

- Description of the target population
- Sampling techniques (e.g., random sampling, stratified sampling)

### • Data Analysis

- Techniques for analyzing qualitative and quantitative data
- Tools and software used for data analysis

## 4. Results

### • Presentation of Data

- Statistical analysis of survey results
- Thematic analysis of interview responses
- Visual representation of data (charts, graphs, tables)

### • Key Findings

- Usage patterns of AI in higher education
- Perceptions and attitudes towards AI
- Identified benefits and challenges

## 5. Discussion

### • Interpretation of Results

- Comparison with existing literature
- Explanation of significant findings

### • Implications for Higher Education

- Practical applications of AI in teaching and learning
- Recommendations for educators and institutions

### • Limitations of the Study

- Potential biases and limitations in data collection and analysis
- Impact of sample size and diversity

## 6. Conclusion

### • Summary of Findings

- Recap of key results and their significance

### • Future Research Directions

- Suggestions for further studies on AI in education

### • Final Thoughts

- Overall impact of AI on the future of higher education

## 7. References

### • Citations

- List of all academic sources, articles, and books referenced in the research

## 8. Appendices

### • Supplementary Materials

- Copies of survey instruments, interview guides, and additional data tables

This outline provides a structured framework for investigating the role and impact of AI in higher education. It includes a comprehensive approach to reviewing existing literature, collecting and analyzing data, and presenting findings and recommendations.

# STAGE 2: LITERATURE REVIEW

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- Tools: Jenni.ai, Research Rabbit, Mendeley, Zotero, Litmaps, Jenni.ai, Scite, Others
- Activities:
  - Organize references and create a comprehensive bibliography.
  - Track and map out key research trends and citations.
  - Highlight and share insights from research articles with team members and submit assignment for grading.

# LITERATURE REVIEW

- **Iris (iris.ai):** [Iris](#) streamlines the literature review process by identifying key papers and concepts, facilitating in-depth exploration of your research topic.
- **Elicit (elicit.org):** [Elicit](#) uses AI to extract relevant information from research papers, accelerating the extraction of data for your literature review.
- **Inciteful (inciteful.xyz):** [Inciteful](#) employs AI-driven analytics to analyze scholarly literature and extract valuable insights to strengthen your academic arguments.
- **The Literature (the-literature.com):** [The Literature](#), This AI-powered platform assists in searching and organizing research papers, simplifying the literature review process.
- **Research Rabbit (researchrabbit.ai):** [Research Rabbit](#) employs AI to find and organize research papers, making it easier to discover relevant sources for your review.
- **Connected Papers (connectedpapers.com):** [Connected Papers](#), This platform provides interactive visualizations of research paper connections, enabling you to explore related studies more effectively

# ELICIT

The screenshot displays the Elicit web application interface. At the top, the navigation bar includes the Elicit logo, links to Notebooks and Library, an Upgrade button, a Help dropdown, and a user profile for Nadia Shuayto. The main heading is "Artificial Intelligence in Higher Education Marketing". Below this, a search bar contains the text "Extract data from papers". The results are sorted by "Most relevant" and show 20 items. A table of results is displayed with columns for Paper, Summary, and Manage Columns. The first result is "Adoption of artificial intelligence in higher education: a quantitative analysis using structural equation modelling" by Sheshadri Chatterjee. A teal overlay at the bottom indicates "5 papers selected" and provides an "Add new step" button. The Manage Columns panel on the right shows a search bar and a list of current columns including Summary and Methodology.

Elicit

Notebooks Library

★ Upgrade

Help

Nadia Shuayto

## Artificial Intelligence in Higher Education Marketing

Extract data from papers

Sort: Most relevant CSV PLUS 20

Paper	Summary	Manage Columns
<input checked="" type="checkbox"/> <b>Adoption of artificial intelligence in higher education: a quantitative analysis using structural equation modelling</b> Sheshadri Chatterjee +1 Education and Information Technologies : Official Journal of the IFIP technical committee on Education Adoption of artificial intelligence in higher education a quantitative analysis using structural	This study develops and validates a conceptual model to explore the factors that influence the adoption of artificial intelligence in higher education in India, finding that Perceived Effort Expectancy, Facilitating Conditions and Performance Expectancy are key determinants of AI adoption intention.	<p>Search or create a column</p> <p>Describe what kind of data you want to extract</p> <p>e.g. Limitations, Survival time</p> <p>CURRENT COLUMNS</p> <p>Summary</p> <p>Methodology</p>

↓ Add new step 5 papers selected



# LITERATURE REVIEW CONT'D

- **R Discovery (discovery.researcher.life):** [R Discovery](#) offers AI-powered tools to assist in literature review, citation management, and research organization.
- **Evidence Hunt (evidencehunt.com):** [Evidence Hunt](#) uses AI algorithms to identify and rank academic papers based on relevance, helping you focus on the most significant research.
- **System Pro (pro.system.com):** [System Pro](#) offers AI-driven tools to analyze and summarize research articles, making the literature review process more efficient.
- **Consensus (consensus.app):** [Consensus](#) uses AI to analyze scholarly articles, providing you with concise summaries and key takeaways for your research.
- **Keenious (keenious.com):** [Keenious](#) utilizes AI to assist in finding research papers relevant to your study, enhancing the efficiency of your literature review.
- **Scite (scite.ai):** [Scite](#) applies AI to verify and classify research citations, ensuring the credibility of the sources you reference in your academic writing.

# SCITE

assistant by scite

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What is the impact of artificial intelligence on marketing education?

Export References

Artificial intelligence (AI) is transforming various industries, including marketing education. The integration of AI in marketing education has the potential to revolutionize traditional practices and enhance learning outcomes. AI technologies can support marketing managers in tasks such as lead generation, market research, social media management, and personalized user experiences (Shaik, 2023). Additionally, AI can optimize advertising campaigns, improve consumer profiling, facilitate rapid communication with consumers, and enable autonomous marketing decisionmaking based on consumer behavior (Latha, 2024).

Generative AI is recognized as a significant tool that can shape and enhance the future of marketing education by leveraging various inputs (Guha, 2023). The utilization of AI-driven strategies like word-of-mouth communication and personalized recommendations has been demonstrated to significantly influence consumer behavior and decision-

Ask a question... (type '/' for menu)

References Search Strategy

and user experience personalization (Sterne, 2017) ... >>

Section: Theoretical Review

Impact of artificial intelligence on marketing Mahabub Shaik<sup>1</sup> 2023 *EAJMR*

17 0 12 0

View full text Add to dashboard Cite

“...Originality/Value: The artificial intelligence can also optimize the advertisement campaigns, preserving profile of consumers, quick communication to the consumers, clarity in the marketing approach and to take independent autonomous marketing decisions with

# CHATTING WITH RESEARCH PAPERS

- **Claude (claude.ai):** In addition to brainstorming, [Claude](#) also allows you to engage in interactive conversations with research papers, facilitating a deeper understanding of their content.
- **Humata (humata.ai):** [Humata](#) provides a conversational interface for research papers, making it easier to grasp complex concepts.
- **ChatPDF (chatpdf.com):** [ChatPDF](#) employs AI to transform PDF documents into interactive chatbots, enabling an engaging and interactive reading experience.
- **Docanalyzer.ai:** [Docanalyzer](#) allows you to use and intelligently chat with your documents. You can ask questions and receive precise answers in real time. It offers dynamic, context-aware interactions with one or multiple PDFs, powered by cutting edge AI research for superior document analysis.

# CHATPDF

- **ChatPDF (chatpdf.com):** [ChatPDF](https://chatpdf.com) employs AI to transform PDF documents into interactive chatbots, enabling an engaging and interactive reading experience
  - Upload pdf articles
  - From your library or have it search for articles
  - Ask questions
  - Go into depth
  - Follow up questions
  - Explain figures or tables
  - Summarize paper
  - What are the limitations?





# CHATPDF

+ New Chat

Drop PDF here

Upgrade to Plus

New Folder

Artificial\_Intelligence\_in\_Education\_A...

Sign in to save your chat history

Home Account API FAQ Feedback

Artificial\_Intelligence\_in\_...

1 / 15

Chat

transformative role of AI in facilitating innovative teaching methods and enhancing student engagement.

Overall, the review underscores the importance of integrating AI technologies into educational practices to foster a more effective learning environment, while also acknowledging the challenges and ethical considerations that accompany such advancements in the field of education 1, 3.

What is the aim of the study

The aim of the study "Artificial Intelligence in Education: A Review" is to assess the impact of Artificial Intelligence (AI) on education. Specifically, the study seeks to evaluate how AI has affected various aspects of education, including administration, instruction, and learning. The authors aim to provide a comprehensive understanding of the applications and effects of AI in the educational sector, thereby informing policy and practice to promote the beneficial use of AI technologies in education 1, 3.

Ask any question...

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Original Paper Identifier: 10.1109/ACCESS.2020.2987001

Artificial Intelligence in Education: A Review

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This work was supported in part by the Humanities and Social Science Planning Funds of Fujian Province under Grant 275 JAS19453, and in part by the Outstanding Scholar Grant of Educational Commission of Fujian Province.

**ABSTRACT** The purpose of this study was to assess the impact of Artificial Intelligence (AI) on education. Premised on a narrative and framework for assessing AI identified from a preliminary analysis, the scope of the study was limited to the application and effects of AI in administration, instruction, and learning. A qualitative research approach, leveraging the use of literature review as a research design and approach was used and effectively facilitated the realization of the study purpose. Artificial intelligence is a field of study and the resulting innovations and developments that have culminated in computers, machines, and other artifacts having human-like intelligence characterized by cognitive abilities, learning, adaptability, and decision making capabilities. The study ascertained that AI has extensively been adopted and used in education, particularly by education institutions, in different forms. AI initially took the form of computer and computer related technologies, transitioning to web-based and online intelligent education systems, and ultimately with the use of embedded computer systems, together with other technologies, the use of humanoid robots and web-based chatbots to perform instructors' duties and functions independently or with instructors. Using these platforms, instructors have been able to perform different administrative functions, such as reviewing and grading students' assignments more effectively and efficiently, and achieve higher quality in their teaching activities. On the other hand, because the systems leverage machine learning and adaptability, curriculum and content has been customized and personalized to fit with students' needs, which has fostered uptake and retention, thereby improving learners experience and overall quality of learning.

**INDEX TERMS** Education, artificial intelligence, learner.

**I. INTRODUCTION**

As illustrated by Henry Ford in the analogy, innovation does not mean working that the society should work only with what has been the norm, such as finding ways of making horses faster. Sometimes, it is necessary to search beyond the norm, develop new ways of doing things. Instead of making horses faster, build the automobile, which will be faster than the horse and take a person from Point A to Point B faster. These principles and approaches have driven the rapid developments in technology experienced over the years, particularly in the education sector.

The year is 1950. Dr. Potter, a tenured professor at a local university shuffles to a class, a heavy load of papers under his arm. He has just marked all the papers, after reading and assessing the grammar and content of each of the papers handed in by the 40 students in his class. Going through some of the papers, Dr. Potter felt that the content in there had been plagiarized from other sources, but he had no sure way of ascertaining from where the student had copied the content materials. Fast forward, in 2019, Dr. Potter now walks into a class, barely carrying any papers, but having read, flagged incidents of plagiarism for disciplinary action, and graded papers for an even larger number of students. Sometimes, when he is off campus, he can dial in or video conference into the class and can still perform his duties and responsibilities leveraging technology. The introduction, advancements, and proliferation of technology, more particularly, artificial intelligence, has made it easier for instructors to dispense their duties more effectively and efficiently. These technological innovations have also permeated other sectors of the academia, fostering effectiveness and efficiency.

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# READING RESEARCH PAPERS

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- **SciSpace (typeset.io):** [SciSpace](https://typeset.io) offers an AI-powered reader to enhance the reading experience by providing interactive features for research papers.
- **Scholarcy (scholarcy.com):** [Scholarcy](https://scholarcy.com) uses AI to create concise summaries and key points from research papers, enabling faster comprehension.

# EDITING AND PARAPHRASING

- **Paperpal (paperpal.com):** [Paperpal](https://paperpal.com) is an AI-powered editing tool specifically designed for academic writing, offering suggestions to improve the clarity and coherence of your work.
  - Cross reference with Mendeley and GoogleDocs.



# REFERENCES AND CITATIONS

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- **Zotero (zotero.org):** While not AI-powered, [Zotero](https://zotero.org) is a powerful reference management tool that can be integrated with various AI apps, making it an essential tool for academic research.
- **Mendeley (Mendeley.com):** [Mendeley](https://mendeley.com) is a reference manager and academic social network that can help organize research, allow you to collaborate with others online, and discover the latest research.

Source: [30 AI Apps to Revolutionize Your Academic Writing and Reading \(iojh.org\)](https://iojh.org)



Artificial Intelligence Technologies for Teaching and Learning in Higher Education, Cha... x

Generative AI and Marketing Education: What the Future Holds, Guha A, Grewal D et al... x

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All References
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<input type="checkbox"/>	AUTHORS ▲	YEAR	TITLE	SOURCE
<input type="checkbox"/> ● ☆	Elhajjar, Samer; Karam, S...	2021	ARTIFICIAL INTELLIGENCE IN MARKETING EDUCATION PROGRAMS	Marketing Ed...
<input type="checkbox"/> ● ☆	King, Michael R.	2023	A Conversation on Artificial Intelligence, Chatbots, and Plagiarism in Higher ...	Cellular and M...
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<input type="checkbox"/> ☆	Rudolph, Jürgen; Tan, Sa...	2023	ChatGPT: Bullshit spewer or the end of traditional assessments in higher ed...	Journal of Ap...
<input type="checkbox"/> ● ☆			MRKT3821 Marketing Research Final Project Instructions (1)	
<input type="checkbox"/> ☆	Dwivedi, Yogesh K.; Kshet...	2023	"So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportuniti...	International
<input type="checkbox"/> ● ☆	Nanayakkara, N W O K D ...	2020	Application of Artificial Intelligence in Marketing Mix: A Conceptual Review	
<input type="checkbox"/> ☆	Zawacki-Richter, Olaf; Mar...	2019	Systematic review of research on artificial intelligence applications in higher...	International
<input type="checkbox"/> ● ☆	Seo, Kyounghwon; Tang, J...	2021	The impact of artificial intelligence on learner–instructor interaction in online...	International
<input type="checkbox"/> ☆	Michel-Villarreal, Rosario; ...	2023	Challenges and Opportunities of Generative AI for Higher Education as Exp...	Education Sci...

**COLLECTIONS**

- AI and ChatGPT
- AI and Ethics
- New Collection

# STAGE 3: DATA COLLECTION AND DOCUMENT ANALYSIS

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- Tools: ChatPDF.com, DocAnalyzer.ai
- Activities
  - Analyze, synthesize and summarize relevant research papers.
  - Collaborate with team members, share references, and manage research tasks as assigned.


# STAGE 4: PRIMARY RESEARCH

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- Tools: Qualtrics, Iris.ai, Research Rabbit and others
- Activities:
  - Conduct primary research by developing a survey and disseminating it to sample of the population
  - Collaborate with team members, share references, and manage research tasks.


# QUALTRICS






AI in Marketing Education ▾





N




Survey

Distributions


Data & Analysis

Results


Reports




Edit question



Question type



Answer type



Choices

Multiple choice ▾

Allow one answer

Allow multiple answers

Number of choices

−


3

+

Tools ▾

Saved at 6:32 PM


Draft



Preview

Publish

AI in Marketing Education



ExpertReview score

Great

Default Question Block

☐ Q1

Click to write the question text

Click to write Choice 1

Click to write Choice 2

Click to write Choice 3

Start Free Trial

Import from library

Add new question



# RESEARCH RABBIT

The screenshot displays the Research Rabbit web application interface. The browser address bar shows the URL <https://researchrabbittapp.com/home>. The interface is divided into several sections:

- Left Sidebar:** Contains options for "New Collection", "New Category", and "Connect to Zotero". Below these are sections for "Uncategorized" (with a "Collection" link) and "Shared with Me" (showing "No collections").
- Filter Section:** Includes a "Filter" dropdown set to "Custom", checkboxes for "Abstracts" and "Comments", and buttons for "Select None" and "Select All".
- Paper List:** Displays a list of papers, including:
  - "Artificial Intelligence for University Marketing" (PROCEEDINGS OF THE III INTERNATIONAL CONFERENCE ON TECHNOLOGY & ENTREPRENEURSHIP IN DIGITAL SOCIETY)
  - "Roundtable on Artificial Intelligence, Advertising, and Society" (Advertising & Society Quarterly) by Barsan '2023 and Timke '2023
  - "Generative Artificial Intelligence and Advertising" by Dimitrieska '2024
- Network Graph:** A central visualization titled "Connections between your collection and 0 papers". It shows a network graph with nodes representing authors and papers. Nodes include Jarek '2019, Elhajjar '2020, Barsan '2023, Gerlich '2023, Nanayakkara '2020, Bhandari '2021, Sun '2023, Jabeen '2022, Yang '2023, Mr. '2021, Alyoshina '2021, and Sood '2023. The graph type is set to "Network" and labels are set to "First Author" and "Last Author".
- Right Sidebar:** Contains sections for "EXPLORE PAPERS" (Similar Work, Earlier Work, Later Work), "EXPLORE PEOPLE" (These Authors, Suggested Authors), "EXPLORE OTHER CONTENT" (Linked Content), and "EXPORT PAPERS" (BibTeX, RIS, CSV, Donate). It also includes a "PUBLIC COLLECTION" section.

# STAGE 5: WRITING AND PRESENTATION

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- Tools: Jenni.ai, Claude.ai, Paperpal, ChatGPT, SlidesAI.io, Dalle3, Descript,
- Activities:
  - Draft the final research paper report and ensure it is polished and well-written
  - Use proper citation and referencing
  - Prepare presentation materials and delivery using AI-generated content

# DRAFTING

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- **Jenni (jenni.ai):** [Jenni](https://jenni.ai) employs AI to assist in writing drafts, providing suggestions and improvements for your academic writing.
- **AudioPen (audiopen.ai):** [AudioPen](https://audiopen.ai) uses AI to transcribe spoken content into text, making it useful for dictating and drafting written work.

# JENNI.AI

- **Jenni (jenni.ai):** [Jenni](https://jenni.ai) employs AI to assist in writing drafts, providing suggestions and improvements for your academic writing.
  - Start a new document
  - Write a prompt
  - Build me an outline
  - Write an essay on....
  - Input information
  - Be sure to cite “Add citation”



## Exploring the Role of AI in Marketing Education

Artificial intelligence has been transforming various sectors, including education, and its impact on teaching and learning marketing in higher education is an area of growing interest and exploration (Popenici & Kerr, 2017). With the advancement of AI technologies, educators can utilize intelligent tutoring systems and personalized learning platforms to enhance students' understanding and application of marketing concepts. (Crompton & Burke, 2023)(Walczak & Cellary, 2023) These AI-powered tools can provide immediate feedback, recommend customized learning resources, and analyze student performance data to identify areas of strength and weakness(Braiki et al., 2020). Furthermore, AI can be used to create virtual simulations and interactive



# RESULT

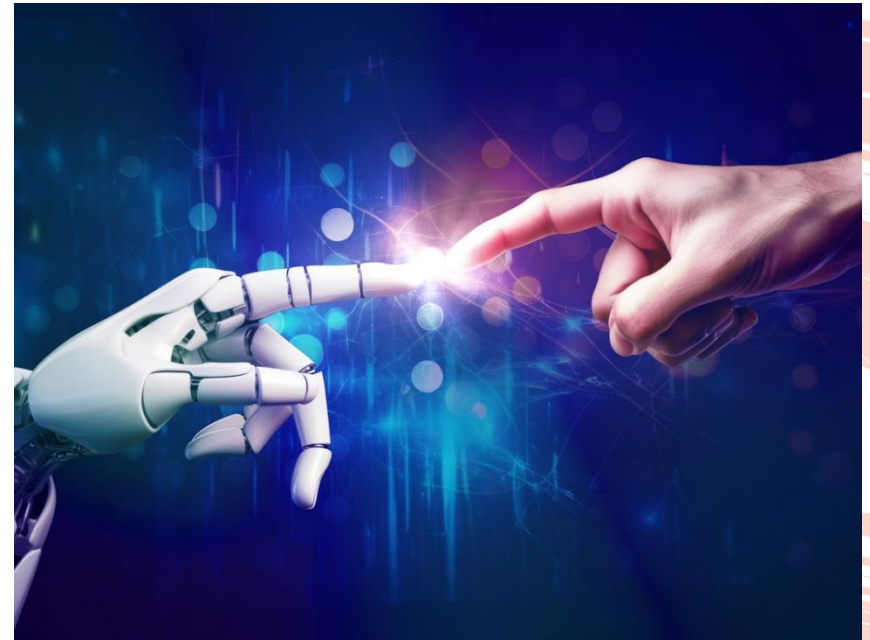
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- By leveraging these AI tools, marketing research projects can be conducted more efficiently, with enhanced accuracy and deeper insights, ultimately leading to more robust and impactful research outcomes.

# TEACHING AND LEARNING WITH AI ARE INTERTWINED

The future of academia will be transformed by Large Language Models (LLMs)

- Academics will either embrace its potential or voice concerns about its risks
- There are early adopters of AI (innovators) or those who think AI corrupts academic integrity (laggards)
- Understanding the limitations and opportunities of AI can make LLMs a tool that can be of value to academia
  - Which camp are you part of?



# STRATEGIES FOR INTEGRATING AI INTO CLASSROOM ACTIVITIES

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- Incorporate AI discussions in lectures
- Use AI tools for interactive projects
- Encourage students to explore AI applications in marketing

# THANK YOU

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- Contact Information:
  - [nshuayto@onu.edu](mailto:nshuayto@onu.edu)
- Questions?

# SOURCES

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- Elhajjar, S, Karam, S, Borna, S, (2021), “Artificial Intelligence in Marketing Education Programs,” *Marketing Education Review*, Vol 31, NO. 1, 2-13
- Schlegelmilch, B.B. (2020), “Why business schools need radical innovations: Drivers and development trajectories,” *Journal of Marketing Educations*, 42(2), 93-107