

A STUDY ON THE USE OF AI TOOLS AMONG STUDENTS OF THE AMERICAN COLLEGE, MADURAI

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Abstract

The adoption of Artificial Intelligence (AI) has significantly transformed various industries, creating new opportunities and challenges in the domain of education. This study explores the awareness, perception, and preparedness of college students in embracing AI related tools. With a sample size of 100 students, data was collected using structured questionnaires to analyze their understanding of AI technologies, skill levels, and career aspirations. The study identifies key factors influencing students' interest in AI, such as academic exposure, access to learning resources, and perceptions of using of AI tools in their education.

Keywords: Artificial Intelligence (AI), AI tools, learning resources

Introduction

The rapid advancements in artificial intelligence (AI) have significantly impacted various domains, including education. This study explores the usage of AI tools among the students of The American College, Madurai, focusing on their adoption patterns, awareness, and perceived benefits. With AI tools like Chatgpt, language processors, and data analyzers becoming increasingly accessible, students are leveraging these technologies to enhance learning, improve productivity, and solve academic challenges. The research aims to assess how students integrate AI tools into their academic routines, the challenges they face, and their overall attitude toward AI-enabled learning. By understanding the role of AI in their educational experience, this study seeks to provide valuable insights into the effectiveness of such tools and identify areas for further development, ensuring students are better equipped to adapt to the growing influence of AI in academics and beyond.

Statement of the Problem

The increasing integration of artificial intelligence (AI) in education has transformed how students approach learning and problem-solving. However, the extent to which students effectively utilize AI tools in their academic pursuits remains unclear. Among the students of The American College, Madurai, there is a need to understand their awareness,

usage patterns, and perceptions of AI tools. Are these tools being used to their full potential to enhance learning outcomes, or students facing challenges in their adoption. Furthermore, there is a lack of clarity on whether these tools are perceived as beneficial or intimidating. This study addresses the gap by exploring the role of AI tools in the academic lives of students, examining their usage, challenges, and impact, while identifying ways to maximize the benefits of AI in education.

Objectives of the Study

1. To analyze the influence of socio-economic background on the awareness, accessibility, and adoption of artificial intelligence (AI) tools and technologies among the students of The American College, Madurai.
2. To assess the awareness and interest of American College students in using AI-related resources.
3. To examine the satisfaction levels of students at The American College, Madurai, concerning the effectiveness of AI tools in enhancing their learning experience.

Review of Literature

¹Jeff Schiel, Becky L Bobek, Joyce Z Schnieders

There is growing interest in artificial intelligence (AI) tools, especially high-profile tools like ChatGPT, and these tools now appear to be part of the education experience for many high school students. To investigate students' use of AI tools for school assignments, their impressions of how using the tools might affect them cognitively and academically, and their thoughts on using AI tools to write their college admissions essays, ACT developed a survey in June 2023 which was administered to a large nationwide sample of students in Grades 10 through 12. In this study, almost half of the participating students reported that they had used AI tools, and the most common tool they used was ChatGPT. Among students who did not use AI tools, the top reason for not using them was having no interest in them. About two thirds of students also reported that they did not trust the information provided by AI tools, and a little over half indicated that they did not know enough about AI tools"

²Clare Baek, Tamara Tate, Mark Warschauer

This study investigates how U.S. college students (N = 1001) perceive and use ChatGPT, exploring its relationship with societal structures and student characteristics. Regression results show that gender, age, major, institution type, and institutional policy significantly influenced ChatGPT use for general, writing, and programming tasks.

¹ "Schiel, J., Bobek, B. L., & Schnieders, J. Z. (2023). High School Students' Use and Impressions of AI Tools. ACT Research. ACT, Inc."

² "Baek, C., Tate, T., & Warschauer, M. (2024). "ChatGPT seems too good to be true": College students' use and perceptions of generative AI. *Computers and Education: Artificial Intelligence*, 7, 100294."

Students in their 30s–40s were more likely to use ChatGPT frequently than younger students. Non-native English speakers were more likely than native speakers to use ChatGPT frequently for writing, suggesting its potential as a support tool for language learners. Institutional policies allowing ChatGPT use predicted higher use of ChatGPT. Thematic analysis and natural language processing of open-ended responses revealed varied attitudes towards ChatGPT, with some fearing institutional punishment for using ChatGPT and others confident in their appropriate use of ChatGPT. Computer science majors expressed concerns about job displacement due to the advent of generative AI. Higher-income students generally viewed ChatGPT more positively than their lower-income counterparts. Our research underscores how technology can both empower and marginalize within educational settings; we advocate for equitable integration of AI in academic environments for diverse students"

³Lindsay C Page, Hunter Gehlbach

Deep reinforcement learning using convolutional neural networks is the technology behind autonomous vehicles. Could this same technology facilitate the road to college? During the summer between high school and college, college-related tasks that students must navigate can hinder successful matriculation. We employ conversational artificial intelligence (AI) to efficiently support thousands of would-be college freshmen by providing personalized, text message-based outreach and guidance for each task where they needed support. We implemented and tested this system through a field experiment with Georgia State University (GSU). GSU-committed students assigned to treatment exhibited greater success with pre-enrollment requirements and were 3.3 percentage points more likely to enroll on time. Enrollment impacts are comparable to those in prior interventions but with substantially reduced burden on university staff. Given the capacity for AI to learn over time, this intervention has promise for scaling personalized college transition guidance."

Research Methodology

This study adopts an analytical research design to explore the acquisition of AI-related skills among students of The American College, Madurai. Primary data was collected using a structured questionnaire distributed to a representative sample of students across various departments. The sample size consisted of 100 students, selected using a simple random sampling technique to ensure diversity in responses. Secondary data was gathered from scholarly articles, institutional reports, and online resources to supplement the findings.

³ "Page, L. C., & Gehlbach, H. (2017). How an artificially intelligent virtual assistant helps students navigate the road to college. *Aera Open*."

Analysis and Findings

One of the objectives of the study is to analyze the influence of socio-economic background on the awareness, accessibility, and adoption of artificial intelligence (AI) tools and technologies.

Table 1 Socio-economic characteristics of respondents

Particulars	Frequency	Percentage
Age		
Below 25 years	82	82%
25 to 35	18	18%
Gender		
Male	43	43%
Female	57	57%
Marital status		
Married	35	35%
Unmarried	65	65%
Nature of the family		
Joint	49	49%
Nuclear	51	51%
Family Monthly income		
Below Rs.5,00,000	11	11%
Rs.5,00,001 to Rs.10,00,000	24	24%
Rs.10,00,001 to Rs.15,00,000	22	22%
Above Rs.15,00,001	43	43%
Department/Field of study		
Science	39	39%
Arts	61	61%
Educational qualification		
Under graduate	47	47%
Post graduate	53	53%
Current level of study and year		
Undergraduate - I Year	8	8%
Undergraduate - II Year	20	20%
Undergraduate - III Year	16	16%
Postgraduate - I Year	15	15%
Postgraduate - II Year	41	41%

Source: Primary data

Table 1 reveal a diverse demographic profile. A majority (82%) are below 25 years of age, with the remaining 18% aged between 25 and 35. Gender distribution is fairly balanced, with 57% female and 43% male respondents. Most respondents (65%) are

unmarried, and family structures are almost evenly split, with 49% belonging to joint families and 51% to nuclear families. In terms of income, 43% have a monthly income above Rs. 15,00,001, while the rest fall across lower income brackets. Academically, 39% are from science fields and 61% from arts, with 47% pursuing undergraduate and 53% postgraduate studies. Among students, 41% are in their second year of postgraduate studies, followed by 20% in the second year of undergraduate programs, reflecting a concentration in advanced education levels.

Table 2 General perception on adoption of AI tools

General Perception	Frequency	Percentage
Workshop on AI learning		
Attended	78	78%
Not attended	22	22%
For Future career		
Essential	100	100%
Not essential	Nil	Nil
Interest in learning AI technologies		
Interested	98	98%
Not interested	2	2%
Need of using AI		
Gaining knowledge	31	31%
Personal interest	46	46%
Technological curiosity	17	17%
Peer influence	6	6%
Infrastructural support from college		
Available	98	98%
Not available	2	2%
Using AI to learn new languages		
Occasionally	79	79%
Never	21	21%
Rely on AI tools for academic purpose		
Sometimes	64	64%
Never	36	36%
Using of AI for presentations		
Sometimes	96	96%
Never	4	4%
Using of AI tools for brainstorming or generating ideas for assignments		
Sometimes	98	98%
Never	2	2%

Using of AI tools for enhancing project work		
Certainly	94	94%
Never	6	6%
Frequency of usage		
Daily	18	18%
Weekly	53	53%
Monthly	15	15%
Rarely	14	14%

Source: Primary data

Table 2 reveals the general perception of students at The American College, Madurai, regarding the adoption of AI tools highlights significant trends. A majority of students (78%) have attended workshops on AI learning, and all (100%) consider AI is essential for their future careers. Interest in learning AI technologies is notably high, with 98% expressing interest. The primary motivations for using AI include personal interest (46%), gaining knowledge (31%), and technological curiosity (17%), with only 6% influenced by peers. Most students (98%) report sufficient infrastructural support from the college. AI is frequently utilized for specific purposes, such as learning new languages (79% occasionally), brainstorming ideas for assignments (98%), presentations (96%), and enhancing project work (94%). Usage patterns reveal that while 18% use AI daily, a majority engage weekly (53%), with smaller percentages using it monthly (15%) or rarely (14%). However, reliance on AI for academic purposes varies, with 64% using it sometimes and 36% never. Overall, the findings reflect a positive perception and significant adoption of AI tools among students.

Table 3 Level of satisfaction regarding the use of AI tools

Particulars	W Strongly Agree	W Agree	W Neutral	W Disagree	W Strongly Disagree	Total Weightage Points
AI plays a crucial role in modern talent acquisition process	80	128	0	2	1	211
AI based tools simplifies the learning process for students	75	128	3	0	2	208
Confident about the ability to use AI tools for gaining knowledge	95	104	9	4	0	212
AI can effectively reduce bias in the learning process	85	104	18	2	0	209

The use of AI in talent acquisition improves the chances of finding the right job	85	92	24	0	2	203
Familiar with AI tools like Chatgpt, Gamma AI, Presentation AI, Gemini, Meta AI, etc.,	130	72	12	4	0	218
AI can replace traditional methods of talent acquisition in the near future	85	68	24	14	1	189
College provides adequate resources to use AI related skill techniques	80	64	30	14	1	189
Acquiring AI related skills is important for enhancing future career opportunities	95	56	27	14	1	193

Source: Primary data

The Table 3 indicates that "Familiar with AI tools like ChatGPT, Gamma AI, Presentation AI, Gemini, Meta AI, etc." with a total weightage of 218, is the foremost satisfaction factor regarding the use of AI tools. "AI plays a crucial role in the modern talent acquisition process" with a total weightage of 211, showcasing a strong agreement among students about the importance of AI in transforming talent acquisition practices. On the other hand, the lowest-rated aspects are, "AI can replace traditional methods of talent acquisition in the near future" with a total weightage of 189, reflecting skepticism about AI completely replacing conventional methods. "College provides adequate resources to use AI-related skill techniques" with a total weightage of 189, indicating a need for more institutional support in providing resources for AI-related skill development.

Findings of the Study

1. The majority of respondents (82%) are below 25 years of age, with a balanced gender distribution of 57% female and 43% male. Most students (65%) are unmarried, and the socio-economic profile indicates that 43% of the respondents have a monthly income above ₹15,00,001, suggesting a relatively diverse financial background.
2. Academically, 61% of students are from arts-related fields, and 53% are pursuing postgraduate studies. A significant portion (41%) comprises second-year postgraduate students, indicating a concentration of responses from students in advanced education levels.

3. Most students (78%) have attended AI-related learning sessions, with all respondents unanimously agreeing that AI is essential for their future careers. Interest in learning AI technologies is remarkably high at 98%, driven primarily by personal interest (46%) and career opportunities (31%).
4. Institutional support for AI learning at the college is perceived positively, with 98% of students acknowledging adequate support. However, significant challenges remain, including limited access to resources (51%) and lack of awareness (25%), which hinder the acquisition of AI skills.
5. Students frequently use AI tools for academic purposes, including brainstorming ideas (98%), creating presentations (96%), and enhancing project work (94%). Weekly usage of AI tools is the most common frequency (53%), showcasing consistent engagement.
6. Students recognize the critical role of AI in modern talent acquisition processes, with high confidence in using AI tools for knowledge enhancement (212 total weightage points) and a strong belief in AI's potential to reduce bias in learning (209 total weightage points).
7. Familiarity with AI tools like ChatGPT and Presentation AI is widespread (218 total weightage points), highlighting significant exposure to modern AI applications. However, there is mixed sentiment regarding the complete replacement of traditional talent acquisition methods by AI (189 total weightage points).
8. Perceptions of the adequacy of college-provided resources for AI skill development are varied, with some students indicating that institutional efforts are not fully aligned with industry demands.

Suggestions

1. The college should organize more awareness campaigns, workshops, and seminars to improve students' understanding of AI applications across various industries, bridging the gap in awareness levels.
2. Increasing the availability of AI-related learning resources, such as access to tools, software, and updated digital libraries, can address the challenges faced by students in acquiring AI skills.
3. The curriculum should be updated to reflect current industry trends and demands, ensuring relevance and equipping students with practical skills applicable to the job market.
4. Faculty members should be trained in the latest AI technologies, and they should be encouraged to mentor students in AI-related projects, improving overall support.
5. Collaborating with companies and organizations to provide more internships and placements in AI-related fields can enhance career opportunities and boost students' confidence in the job market.
6. Establishing dedicated research labs and fostering collaboration opportunities for AI-based projects can inspire innovation and hands-on learning among students.

Conclusion

In conclusion, this study highlights the growing interest and awareness among students at The American College, Madurai, regarding the importance of AI in shaping their future careers. Despite the high levels of interest and institutional support, challenges such as limited access to resources, lack of awareness, and the need for more industry-relevant curriculum remain. The students strongly acknowledge AI's potential in modern talent acquisition, as well as its role in enhancing employability and academic performance. To fully capitalize on these insights, the college should focus on improving resource availability, aligning the curriculum with industry needs, and fostering more opportunities for practical engagement with AI technologies. By addressing these areas, the institution can better prepare students for the rapidly evolving job market and contribute to the development of AI talent for the future.

References

1. Chui et al. (2018): This research explores the widespread adoption of AI tools across various sectors and underscores the importance of integrating AI into educational curricula to equip students with the necessary skills for the future workforce.
2. West (2018): West's study analyzes the role of AI in education, particularly focusing on how AI tools can enhance learning experiences. The research also discusses the challenges and opportunities in fostering AI literacy among students.
3. Müller and Bostrom (2016): This study examines the ethical implications of AI and the necessity for incorporating discussions on AI ethics into educational programs. It argues that students should not only learn how to use AI tools but also understand their social and ethical consequences.
4. Koller et al. (2020): This study focuses on the integration of AI tools in higher education settings and the impact on student learning outcomes. It highlights the need for institutions to invest in both the infrastructure and training necessary to incorporate AI effectively.
5. O'Neil (2016): O'Neil's research provides insights into the role of algorithms and AI in shaping modern society. The study advocates for enhancing AI education to prepare students for the ethical challenges and complexities of using AI tools responsibly.