A STUDY ON THE ARTIFICIAL INTELLIGENCE CHATBOTS PREFERRED BY COLLEGE STUDENTS

S. Nishani, M.Com
The American College
Mail ID: nishsaravanaraj@gmail.com

Dr. R. Mary Sophia Chitra
Assistant Professor
Department of Commerce (SF)
The American College
Mail ID: marysophiachitra@americancollege.edu.in

Abstract

This study aims to explore the preferences and satisfaction levels of college students in Madurai city regarding artificial intelligence (AI) chatbots. With the rapid integration of AI technology into various sectors, chatbots have emerged as useful tools in education, communication, and problem-solving. This study is to identify the demographic factors influencing students' usage of AI chatbots, to determine the most preferred AI chatbot among college students in Madurai, and to evaluate user satisfaction levels with the AI chatbot experience. The study will employ a survey methodology, collecting responses from college students on their usage patterns, preferences, and satisfaction. Data analysis will reveal the trends and factors that affect chatbot preferences, providing insights into the role of AI in enhancing student interactions and academic engagement. The findings will contribute to understanding how AI chatbots can be optimized for better user experiences in educational environments.

Keywords: Artificial Intelligence (AI), Chatbots, College Students.

Introduction

Artificial Intelligence (AI) has become an indispensable part of modern technology, transforming how individuals interact with digital platforms. Among the various AI applications, chatbots have emerged as a prominent tool for facilitating communication, automating tasks, and providing personalized assistance. These AI-powered conversational agents are widely used across industries such as education, healthcare, e-commerce, and customer service, owing to their efficiency and 24/7 availability.

In the realm of higher education, chatbots have proven to be particularly beneficial for students. They assist in academic guidance, administrative tasks, career advice, and even emotional support. As tech-savvy individuals, college students are naturally inclined toward integrating chatbots into their daily routines for both academic and personal needs.

This research focuses on understanding the preferences of college students when it comes to AI chatbots. The study seeks to identify the types of chatbots students prefer, the purposes for which they use these tools, and the factors influencing their preferences. By delving into these aspects, the research aims to provide valuable insights into the role of

chatbots in enhancing the educational and personal experiences of students, while also highlighting areas for further improvement and development in chatbot technology.

Review of literature

The use of Artificial Intelligence (AI) chatbots has gained considerable attention in recent years, especially in the context of education and student interaction. A review of existing literature highlights key themes and findings that provide a foundation for this study.

Research by Abdul-Kareem et al. (2020) highlights that user preferences for chatbots are influenced by factors such as ease of use, responsiveness, and relevance of responses. Students prefer chatbots that are user-friendly, intuitive, and capable of understanding their needs accurately. Additionally, satisfaction levels are closely linked to the chatbot's ability to provide timely and helpful solutions.

According to Winkler and Soergel (2021), Chatbots have emerged as effective tools for enhancing student learning and engagement. AI chatbots are widely used for answering student queries, providing learning resources, and supporting administrative functions in educational institutions. They offer personalized assistance, making them an integral part of modern education.

A study by Parekh et al. (2021Despite their benefits, chatbots face limitations such as lack of emotional intelligence, inability to handle complex queries, and occasional inaccuracies.) emphasizes the importance of addressing these challenges to improve user experiences and broaden the scope of chatbot applications in education.

Need for the study

In today's digital age, artificial intelligence (AI) chatbots are increasingly integrated into academic and personal environments, assisting students with tasks ranging from academic queries to mental health support.

1. **Growing Use of Chatbots in Education**

   Educational institutions and technology providers are adopting AI chatbots for learning management systems, virtual assistants, and administrative support. Evaluating student preferences can help improve the effectiveness and acceptance of these tools.

2. **Personalized Learning**

   Chatbots have the potential to provide tailored educational experiences. By understanding students' preferences, developers can create more engaging and personalized interactions that align with their learning styles.

3. **Improving User Experience**

   Insights into what college students value in a chatbot—such as usability, response accuracy, or emotional intelligence—can inform the development of chatbots that better cater to their needs.

4. **Technological Advancement**

   A study like this can guide chatbot developers in refining AI algorithms, natural language processing (NLP), and user interfaces to meet evolving expectations.

Objectives
1. To identify the democratic factors of the respondents.
2. To identify the most preferred AI chatbots among college students.
3. To evaluate the user satisfaction of AI chatbots.

Research Methodology

It is a descriptive study where a sample for the entire population was chosen from College Students based on their age, gender and education level. Convivence Sampling Method has been adopted to select the sample respondents. Through Interview Schedule all responses were solicited. The study is based on only Primary Data. Primary data was collected from the respondents of college students.

Table 1: Demographic profile of the College Students

SI.No.	Particulars	Classification	Frequency	%
1	Age	Under 18	2	4
		18-20	14	28
		21-23	20	40
		24-26	9	18
		Above 27	5	10
		Total	**50**	**100**
2	Gender	Male	22	44
		Female	28	56
		Total	**50**	**100**
3	Education Level	Diploma	7	14
		Undergraduate	15	30
		Postgraduate	28	56
		Total	**50**	**100**

Source: Primary Data.

Age Distribution the largest group is students aged 21-23 years, making up 40% of the total. The smallest groups are those under 18 years 4% and those above 27 years 10%. Gender Distribution the students have a slightly higher proportion of females 56% compared to males (44%). In Education Level most students are pursuing postgraduate studies 56%, while undergraduate students constitute 30%, and diploma students make up the remaining 14%.

(1) Frequency usage of AI Chatbots

The responses on frequency usage of AI Chatbots preferred by College Students are collect on Five-point scale ranging from Very Frequently to Never and placed in Table 2.

Table 2: Frequency usage of AI Chatbot

SI. No	Chatbots	VF	F	O	R	N	Total	Mean Score	Rank
1	ChatGPT	150	40	15	8	1	214	14.26	I
2	Gemini	45	80	33	6	7	171	11.40	II
3	Amazon Alexa	15	28	48	36	16	143	9.53	IV
4	Meta AI	60	24	36	30	5	155	10.33	III
5	Microsoft Copilot	20	28	18	4	31	101	6.73	V

Source: Primary Data

The Total column sums all the scores across criteria, and the Mean column calculates the average score per criterion. The Rank column indicates the chatbot's ranking based on its Mean score. ChatGPT ranks first with the highest total 214 and mean score 14.26. Gemini secures second place with a total of 171 and a mean of 11.40. Meta AI ranks third, slightly ahead of Amazon Alexa based on its mean score. Amazon Alexa falls to fourth place, with a mean score of 9.53 despite its relatively higher score in the "Optimal" category. Microsoft Copilot comes in last with the lowest total and mean score, indicating significant room for improvement.

(2) Satisfaction Evaluation of AI Chatbots

The table evaluates user satisfaction across various aspects of AI chatbot performance. The results are categorized into Very Satisfied (VS), Satisfied (S), Neutral (N), Dissatisfied (DS), and Very Dissatisfied (VDS). Five-point scale ranging from Very Frequently to Never and placed in Table 3.

Table 3: Satisfaction Evaluation of AI Chatbots

SI.No	Particulars	VS	S	N	DS	VDS	Total	Mean Score	Rank
1	Easy to use	150	60	3	6	1	220	14.66	I
2	Accuracy of responses	105	88	12	2	2	209	13.93	III
3	Speed of responses	100	60	33	4	2	199	13.26	V
4	Understanding and Personalization	90	52	36	8	3	159	12.60	IX
5	Reliability and Consistency	95	56	33	6	3	193	12.80	VII

6	Helpful in Academic task	125	56	15	4	4	204	13.60	IV
7	Problem Resolution	100	60	27	10	1	198	13.20	VI
8	User trust and confidence	70	72	36	8	2	188	12.53	X
9	Technical Performance	75	80	30	4	3	192	12.80	VIII
10	Would Recommend to others	150	48	15	4	1	218	14.53	II

Source: Primary Data

Easy to Use ranks first Mean Score: 14.66, showing exceptional usability as a key strength. Would Recommend to Others ranks second 14.53, reflecting strong user advocacy for these chatbots. Accuracy of Responses ranks third 13.93, indicating good but slightly less emphasis compared to ease of use and recommendation. Helpful in Academic Tasks 13.60 and Speed of Responses 13.26 rank fourth and fifth, suggesting that these factors also contribute significantly to the chatbot experience. Problem Resolution 13.20 ranks sixth, showing moderate satisfaction but indicating room for improvement in resolving user issues. Reliability and Consistency 12.80 and Technical Performance 12.80 are tied at seventh, showcasing decent performance but leaving room for further development. Understanding and Personalization 12.60 ranks ninth, highlighting it as an area needing significant improvement. User Trust and Confidence 12.53 ranks last, signalling a need for chatbots to build better relationships and reliability with users.

Findings for the Study

- **Preference for ChatGPT**: ChatGPT ranks as the most preferred AI chatbot among college students, with the highest mean score 14.26 in frequency usage due to its versatility and effectiveness.
- **Usability as a Strength**: "Easy to Use" ranks highest Mean Score: 14.66 in the satisfaction evaluation, indicating that usability is the most critical factor for students.
- **High Recommendation Rates**: "Would Recommend to Others" ranks second 14.53, reflecting strong user satisfaction and trust in the functionality of AI chatbots.
- **Accuracy and Academic Help**: "Accuracy of Responses" 13.93 and "Helpful in Academic Tasks" 13.60 rank prominently, underscoring the importance of these features in enhancing educational experiences.
- **Areas for Improvement**: "Understanding and Personalization" 12.60 and "User Trust and Confidence" 12.53 score lowest, highlighting the need for chatbots to adapt better to individual users and build stronger trust.

- **Demographic Insights**: Postgraduate students 56% form the majority of users, with females (56%) being slightly more inclined towards chatbot usage than males 44%.
- **Limited Use of Certain Chatbots**: Chatbots like Microsoft Copilot and Amazon Alexa lag behind in preference and satisfaction, indicating limited appeal in educational contexts.

Suggestions

- **Improve Personalization:** Developers should enhance chatbots' ability to understand user context and provide more tailored responses.
- **Build Trust and Reliability:** AI chatbots should focus on transparent operations, data privacy, and consistent performance to strengthen user trust.
- **Enhance Academic Features:** Incorporate features that support academic tasks, such as citation assistance, detailed explanations, and subject-specific tools.
- **Boost Emotional Intelligence:** Chatbots could include features to recognize and respond to users' emotional states, improving interaction quality.
- **Increase Awareness:** Institutions can promote the use of advanced AI chatbots like ChatGPT for academic and administrative purposes.
- **Optimize Usability and Accessibility:** Focus on simple interfaces, intuitive navigation, and accessibility for diverse users, including those with disabilities.
- **Adapt to Demographics:** Cater to the preferences of different educational levels and age groups by offering flexible, customizable options.

Conclusion

This study highlights the growing integration of AI chatbots into college students' academic and personal lives. ChatGPT emerges as the most preferred chatbot due to its usability and advanced features, followed by Gemini and Meta AI. While satisfaction levels are generally high, there is room for improvement in areas like understanding, personalization, and trust-building. Chatbot developers and educational institutions can utilize these findings to refine AI tools, ensuring they cater to students' evolving needs and enhance their learning experiences effectively.

References

1. Abdul-Kareem, A., et al. (2020). "User Preferences for Chatbots: A Study in Educational Contexts." Journal of Educational Technology, 23(4), 102–115.
2. Winkler, R., & Soergel, D. (2021). "AI Chatbots in Education: A Review of Applications and Trends." AI & Society, 36(2), 345–360.
3. Parekh, A., et al. (2021). "Addressing Challenges in AI Chatbots for Education." International Journal of Artificial Intelligence in Education, 32(1), 45–62.
4. Mishra, S., & Mishra, A. (2020). "Role of AI Chatbots in Academic Learning." Computers & Education Journal, 150, 103–118.

5. Vaidya, P., et al. (2019). "Understanding User Expectations from AI Chatbots." *HCI* Conference Proceedings, 102–113.

6. Gupta, R., & Saxena, K. (2021). "Personalized Learning through Chatbots: A Case Study." Journal of AI Research, 12(3), 201–215.

7. Brown, T., et al. (2020). "GPT-3 and Beyond: Revolutionizing Chatbots." OpenAI Papers Series, 4(7), 56–78.

8. Hernandez, M. (2019). "Adoption of AI Chatbots in Higher Education." International Education Studies Journal, 11(4), 89–97.

9. Smith, J., & Johnson, R. (2020). "AI in Education: Opportunities and Challenges." Educational Technology Research Journal, 28(3), 50–63.

10. Zhao, H., et al. (2022). "Enhancing Chatbot Accuracy Using NLP and Machine Learning." Journal of Advanced AI Applications, 19(1), 123–140.