ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIII, Issues– I / C Jan – Feb, 2024

OPEN ACCESS Original Research Article

BEYOND TEXTBOOKS: BUILDING INVESTORS FOR THE FINANCIAL ECOSYSTEM

** Soham Nilesh Waghmode*

*** Tejas Mahesh Vedpathak*

** Student, Chetana's Self-Financing Courses, Mumbai.*

*** Student, Chetana's Self-Financing Courses, Mumbai.*

Abstract

This research paper explores the integration of artificial intelligence (AI) and chatbots in educational settings, investigating their influence on learning experiences, personalized learning, data security, and transparency in educational institutions. The study employs primary data collected through a questionnaire and secondary data obtained from online sources and articles. Analysis and interpretation of the data reveal significant insights. Findings indicate a high level of familiarity and frequent use of chatbots for educational purposes among respondents. ChatGPT emerges as the most utilized chatbot, with favorable perceptions of user-friendliness. Satisfaction with educational support provided by chatbots is generally high, although moderate satisfaction levels suggest room for improvement. Respondents overwhelmingly believe AI can effectively personalize learning experiences and positively impact critical thinking and problem-solving skills. Moreover, AI-based learning methods are perceived as highly adaptable to different learning styles. Concerns about data security and the need for transparency regarding the use and storage of student data in AI-driven systems are prevalent among respondents. The majority advocates for transparent practices by educational institutions. Overall, the findings shed light on the current landscape of AI and chatbots in education, highlighting their potential benefits and areas for further development and consideration.

Keywords: *Chatbot, Artificial Intelligence (AI), Student Education, Educational Technology, Learning Experiences, Data security, Transparency.*

Introduction:

The inception of artificial intelligence traces its roots to the 19th century, notably with Alan Turing's proposal of an "imitation game" as a metric for assessing machine intelligence. This transformation is attributed to the substantial advancements in computing power and the increased availability of expansive datasets crucial for training sophisticated AI systems. By the year 2001, it had demonstrated superior performance compared to humans in various domains, including but not limited to object classification and machine translation.

In today's world the increase in technological advancements of chatbots and Artificial Intelligence is reshaping traditional method of learning. Al provides personalized learning, 24/7 accessibility and user-friendly experience. Al and Chatbots don't create any issues regarding availability of spaces, physical infrastructure, textbooks, constrained by physical classrooms and specific time schedules, AI learning excels in providing personalized, adaptable, and

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIII, Issues– I / C Jan – Feb, 2024

OPEN ACCESS Original Research Article

accessible educational experiences, leveraging Technology.

The most widely utilised chatbots and AI-based solutions in education:

Brad: Google AI unveiled Bard in 2022. It is a multifunctional chatbot that can create text, translate languages, create original material, and respond with insightful information.

ChatGPT: OpenAI also introduced ChatGPT in 2022. It provides text generation, the creation of creative content, and educational responses; nevertheless, concerns were voiced over its application in education because to issues with ethics, accuracy, and dependability.

Ada: It is a 2017-introduced chatbot that provides individualised guidance, responses, and feedback. Ada, however, has trouble understanding complicated questions, which can occasionally result in misunderstandings and incorrect answers.

Replika: It is launched in 2017 and serves as a companion chatbot for students, offering guidance and support. However, because of the intimate nature of conversations, worries around data security and privacy surface.

Socratic: It was first introduced in 2013, its aim was to build a community where all students could benefit from studying. Socratic is an artificial intelligence-driven learning platform that Google purchased in 2018. This can result in a less emphasis on critical thinking since students might choose to use the platform to get the answers they need rather than really grasping the ideas that are being covered.

Habitica: It was launched in 2013. It is a tool that assists students in creating productive study habits. It gamifies education, increasing students' enjoyment and engagement. Students can organise their study schedules, assignments, and other academic responsibilities with Habitica.

Piazza: It was launched in 2009, Piazza has been used to promote cooperation and conversation in learning environments, especially in classrooms and academic institutions. It offers a forum where teachers and students may converse, exchange queries, and exchange information about assignments and course material.

Objectives:

Based on the research questions developed and the review of the literature, the following alternative objectives are made as followings:

- To study the integration of chatbots in educational setting
- To Study the influence of AI on enhancing the overall learning experienced
- To study personalized learning experiences through AI
- To study the data security protocols and measures implemented in AI-driven education chatbots
- To study future challenges and issues arising in the implementation of chatbots and AI in education

Review of Literature:

The literature surrounding the integration of chatbots and artificial intelligence (AI) in educational settings provides valuable insights into their potential impact on learning experiences.

Deng and Yu (2023) conducted a study that found significant and positive influences of chatbots on various aspects of learning, although they did not observe a significant improvement in student motivation. This suggests that while chatbots may contribute to certain learning outcomes, their effect on motivation might not be as pronounced.

Winkler and Soellner (2018) identified different application clusters for chatbots and AI in education, including domains such as health and well-being interventions, language learning, feedback and metacognitive thinking, as well as motivation and self-efficacy. This categorization underscores the diverse range of areas where chatbots and AI can be deployed

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIII, Issues– I / C Jan – Feb, 2024

OPEN ACCESS Original Research Article

to support educational goals.

Additionally, concerns regarding the accuracy, reliability, and ethics of AI-driven systems have been raised. For instance, while ChatGPT, developed by OpenAI, offers text generation and informative responses, concerns have been raised about its suitability for educational purposes due to issues with accuracy and reliability. Similarly, Ada, a personalized tutoring chatbot, faces challenges in comprehending complex queries accurately, which may affect the quality of educational support it provides.

Furthermore, the literature highlights the importance of data security and transparency in AI-driven educational systems. Students express concerns about the security of their data when using AI-driven chatbots, indicating a need for robust data protection measures.

Overall, the literature review underscores the potential benefits of integrating chatbots and AI in education, such as personalized learning experiences and accessibility. However, it also highlights the need to address concerns related to data security, reliability, and transparency to ensure the responsible and effective use of these technologies in enhancing student education.

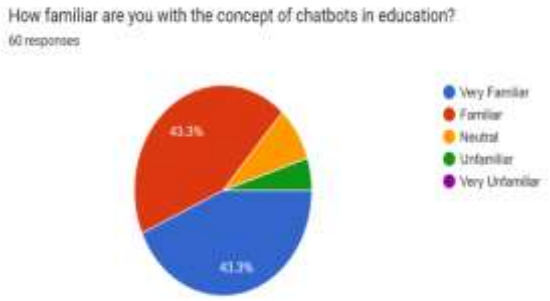
Research Methodlogy:

This study is based upon a Primary Data and Secondary Data. The primary data is collected by conducting a Questionnaire Method by using a Simple Random sampling method, in that total 10 questions were asked to the respondents and the secondary data is collected from google.

Primary Data: Questionnaire

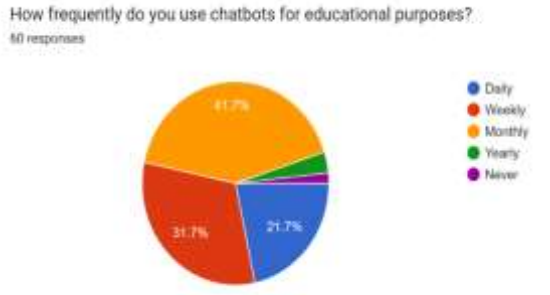
Secondary Data: Online websites and articles

Data Analysis and Interpretation:



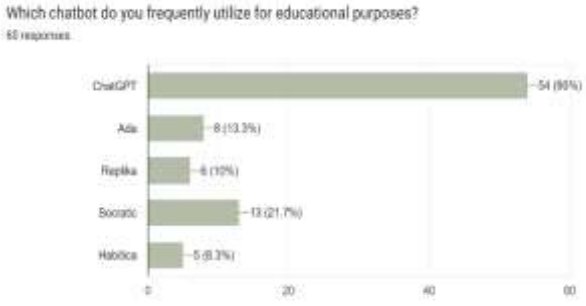
(Figure 1)

Figure 1 shows that the majority (86.6%) are either very familiar or familiar with chatbots in education, a small portion (8.3%) are neutral. A minority (5%) are unfamiliar with the concept, whereas no respondents are very unfamiliar with chatbots in education.



(Figure 2)

Figure 2 data shows that a majority of respondents (over 95%) use chatbots for educational purposes at least monthly, with about (over 37%) using them weekly and (over 40%) using them monthly. Only a small percentage use them daily, yearly, or never for educational purposes.



(Figure 3)

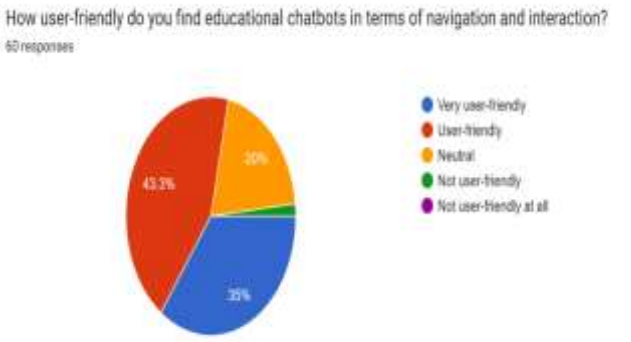
ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIII, Issues– I / C Jan – Feb, 2024

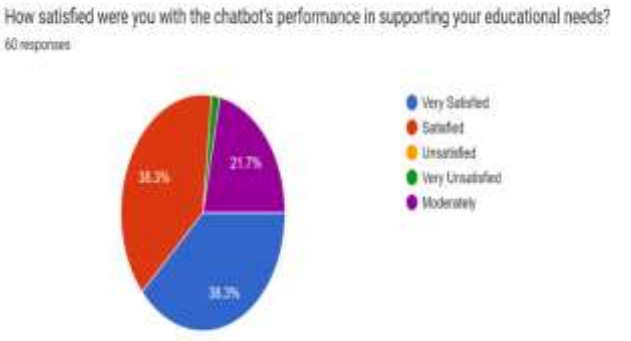
OPEN ACCESS Original Research Article

Figure 3 shows that ChatGPT is the most frequently used chatbot for educational purposes, with 90% reporting frequent usage. Socratic follows with 21.7%, while Ada and Replika are used by 13.3% and 10% respectively. Habitica is the least utilized at 8.3%.



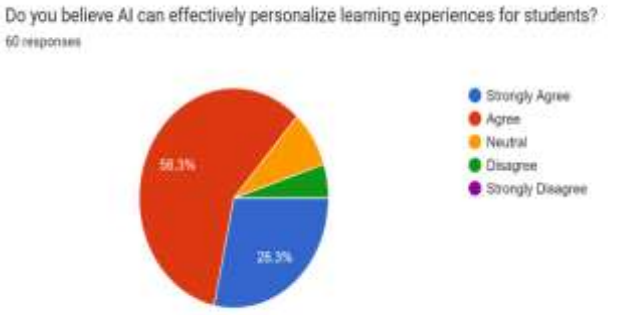
(Figure 4)

Figure 4 shows the majority of respondents (78.3%) find educational chatbots to be user-friendly or very user-friendly in terms of navigation and interaction. Only 12% perceive them as not user-friendly. Notably, none of the respondents rated them as "not user-friendly at all."



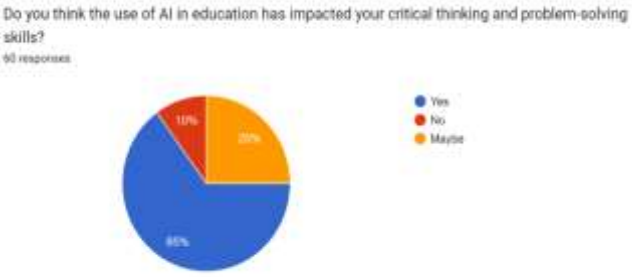
(Figure 5)

Figure 5 indicates the majority (76.6%) of respondents were satisfied with the chatbot's educational support, with 38.3% very satisfied and another 38.3% satisfied. However, 21.7% reported moderate satisfaction, indicating room for improvement, while only 1.7% were very unsatisfied.



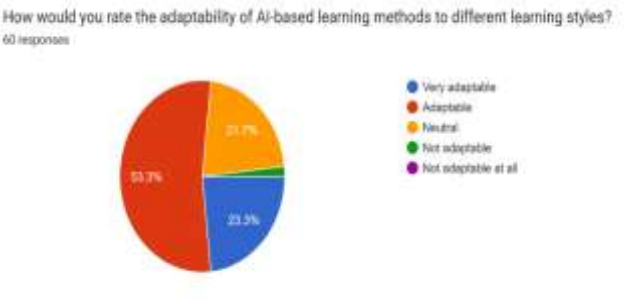
(Figure 6)

Figure 6 shows that the majority (86.6%) of respondents believe AI can effectively personalize learning experiences for students, with 58.3% in agreement and 28.3% strongly agreeing. Only a small fraction (5%) disagreed, and none strongly disagreed, indicating strong support for AI-driven personalization in education.



(Figure 7)

Figure 7 indicates that the majority (65%) of respondents believe that the use of AI in education has impacted their critical thinking and problem-solving skills positively. Additionally, 25% are unsure, while a smaller portion (10%) disagree with this notion.



(Figure 8)

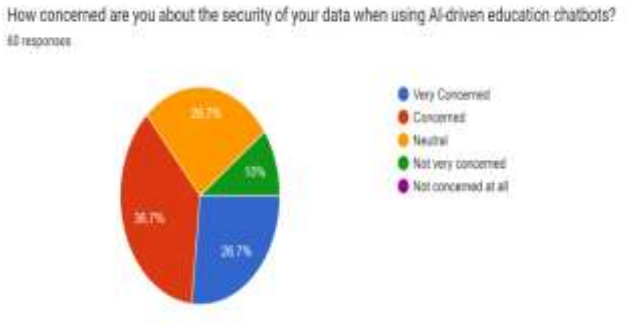
ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIII, Issues– I / C Jan – Feb, 2024

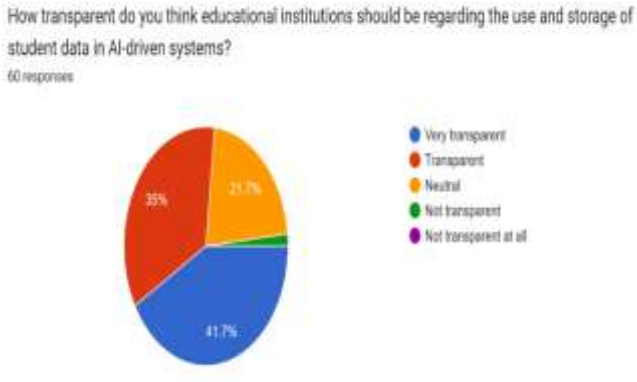
OPEN ACCESS Original Research Article

Figure 8 indicates that the majority (76.6%) of respondents perceive AI-based learning methods as adaptable to different learning styles, with 53.3% finding them "Adaptable" and 23.3% rating them "Very adaptable." Only a small fraction (1.7%) deemed them "Not adaptable," indicating widespread adaptability.



(Figure 9)

Figure 9 The majority (63.4%) of respondents express some level of concern about the security of their data when using AI-driven education chatbots, with 26.7% being "Very Concerned" and 36.7% "Concerned." Additionally, 26.7% remain neutral, while 10% are not very concerned.



(Figure 10)

Figure 10 shows that the majority (76.7%) of respondents believe educational institutions should be transparent about the use and storage of student data in AI-driven systems, with 41.7% advocating for "Very transparent" practices and 35% endorsing "Transparent" approaches.

Conclusion:

The research findings affirm the transformative potential of integrating AI and chatbot technologies in educational frameworks. ChatGPT emerges as the predominant platform, with users generally perceiving it as user-friendly and beneficial for educational augmentation. While the study reveals robust familiarity and consistent utilization of chatbots, moderate satisfaction levels suggest opportunities for refinement. AI is shown to effectively personalize learning experiences, cater to diverse modalities, and foster critical thinking skills. However, persistent concerns about data security and transparency highlight the need for robust protection protocols and transparent institutional practices. The consensus on ethical considerations underscores the imperative for responsible technological integration.

In conclusion, the research emphasizes the unprecedented opportunities AI and chatbots offer for educational advancement but stresses the importance of addressing concerns to ensure successful integration. Diligent efforts are needed to refine these technologies, maximizing efficacy while mitigating potential risks, and propelling educational paradigms forward in the digital era.

Bibliography:

Kumar Abhishek (May 2023) History and progress of artificial intelligence.

https://www.red-gate.com/simple-talk/development/data-science-development/introduction-to-artificial-intelligence/

Deng, X., & Yu, Z. (2023). A meta-analysis and systematic review of the effect of chatbot technology use in sustainable education. Sustainability, 15(4), 2940.

https://www.mdpi.com/2071-1050/15/4/2940

Abhinav Bhutada Bibliography (2018) Applications of Artificial Intelligence in Education

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XIII, Issues– I / C Jan – Feb, 2024

OPEN ACCESS Original Research Article

https://www.linkedin.com/pulse/9-applications-artificial-intelligence-education-abhinav-bhutada

Winkler and Soellner (2018) Unleashing the Potential of Chatbots in Education: A State-Of-The-Art Analysis https://www.researchgate.net/publication/326281264_Unleashing_the_Potential_of_Chatbots_in_Education_A_State-Of-The-Art_Analysis

Lela Machaidze, Maya Grigolia, Lasha Labadze (2023) Role of AI chatbots in education: systematic literature review https://educationaltechnologyjournal.springeropen.com/articles/10.1186/s41239-023-00426-1#:~:text=The%20integration%20of%20artificial%20intelligence,personalized%20and%20engaging%20learning%20experiences

Cite This Article:

Waghmode S.N. & Vedpathak T.M. (2024). *A Descriptive study on the Role of Chatbots and Artificial Intelligence in Enhancing Student Education. In Aarhat Multidisciplinary International Education Research Journal: Vol. XIII (Number I, pp. 1–6).* ***AMIERJ.*** *https://doi.org/10.5281/zenodo.10657476*