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A STUDY ON THE INFLUENCE OF ARTIFICIAL INTELLIGENCE ON STUDENT'S ACADEMIC PERFORMANCE

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ABSTRACT :

AI, also known as Artificial intelligence, is a technology with human like problem-solving capabilities. AI in action appears to simulate human intelligence it can recognize images, write poems, and make data-based predictions. For the purpose of the study primary data and secondary data were used, and percentage analysis was used for the study. The study suggests that AI should act as a guide, not a crutch. Students should be encouraged to attempt problem- Solving independently before turning to AI for verification or support. This approach fosters curiosity, strengthens foundational knowledge, and ensures that students remain active Participants in their own learning journey. The study concludes that education is more than just acquiring knowledge; it is about developing essential skills such as critical thinking, collaboration, and independent reasoning. By understanding their views, educators and policymakers can make more informed decisions about integrating AI in away that truly supports learning without replacing essential academic skills. Hence an attempt to study on the influence of artificial intelligence on students academic performance.

Key words: Artificial intelligence, AI, Students, Knowledge, Skill

INTRODUCTION

The advent of Artificial Intelligence (AI) has heralded a new era of innovation and transformation across various sectors, with education standing out as one of the most profoundly impacted fields. As educational institutions strive to meet the diverse and evolving needs of learners in a rapidly changing world .Al emerges as a powerful tool capable of redefining traditional teaching and learning paradigms. From personalized learning experiences and intelligent tutoring systems to administrative efficiency and enhanced student engagement, Al's influence on education is both extensive and multifaceted. The potential for Al to revolutionize education is vast, promising tailored instructional methods, intelligent tutoring, and efficient management tools that can cater to diverse student needs and optimize teaching practices. However, this technological advance mental so raises important questions about equity, privacy, and the role of human educators. However, this technological revolution also brings to light critical considerations surrounding ethics, privacy, and equity. As we delve into the impact of Al on the educational system, it becomes evident that while Al holds the promise of significant advancements and improvements, it also necessitates a thoughtful approach to ensure its benefits are maximized while addressing potential challenges. Moreover, education is more than just acquiring knowledge; it is about developing essential skills such as critical thinking, collaboration, and independent reasoning. By understanding their views, educators and policymakers can make more informed decisions about integrating AI in away that truly supports learning without replacing essential academic skills.

OBJECTIVES OF THE STUDY

1. To analyse the socio-economic implications of unequal access to AI tools in education.
2. To investigate the role in influencing interpersonal communication and collaboration among students.
3. To examine how AI tools in academic activities affect critical thinking, problem-solving and creativity in students.
4. To analyze the extent of overreliance on AI tools in academic activities among students.
5. To analyze preferred AI strategies for optimizing educational benefits while addressing potential challenges.

STATEMENT OF THE PROBLEM

Al in education plays a vital role in personalizing learning and providing instant feedback. It helps students grasp concepts better, supports teachers in managing tasks, and makes education more efficient and accessible. Al is transforming education helping in creating customized lessons based on students' learning styles, making education more engaging. Nowadays Students turn to Al for their academic help due to several pressing challenges. Despite the growing integration of Al in education, its impact on students' academic performance remains a double-edged sword raising concerns about students' dependency on technology. Many students increasingly rely on Al-driven tools for assignments, problem- solving, and even idea generation,

which can sometimes come at the cost of deep learning and independent thinking and also influence the interpersonal communication and collaboration among the students and hence the study focuses on the influence of artificial intelligence on student's academic performance.

SCOPE OF THE STUDY

Artificial Intelligence (AI) is rapidly transforming the way students engage with academic learning, making education more accessible , efficient, and tailored to individual needs. However, while AI enhances academic performance, it also brings new challenges that need careful consideration. This research delves into the impact of AI on students' academic performance, exploring both its advantages and potential drawbacks. Additionally, the study examines how AI is shaping students' interpersonal communication and collaboration, which are essential for holistic academic and personal growth. The scope of studying the influence of AI on student's academic performance is vast and covers multiple dimensions, making it a highly relevant and impactful topic for research. It understands how AI affects learning habits, study patterns, and academic achievements, the findings can help in formulating strategies for integrating AI into education in a balanced and ethical manner.

RESEARCHMETHODOLOGY

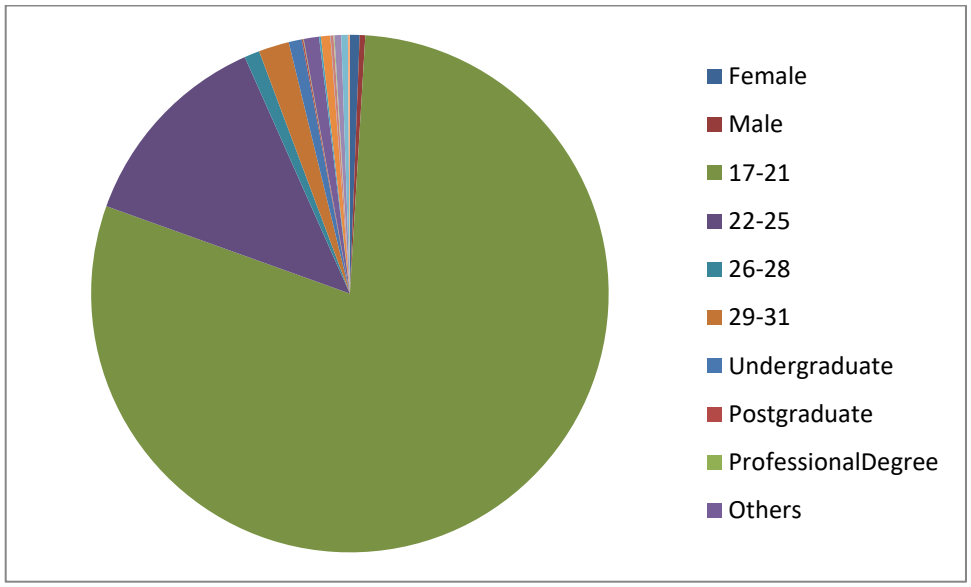
- Area of the study: The study focuses on Coimbatore city.
- Data collection: Both the primary data and secondary data were used for the study.
- Sampling Size: The sample size for this study was about 200 respondents.
- Sampling Method: A convenience sampling method has been used timeframe.
- Tools for Analysis: Percentage analysis were used for the analysis.

REVIEW OF LITERATURE

Abill Robert.et.al(2024) made a study on "The Impact of Artificial Intelligence on Students' Learning Experience," It concludes that while AI offers significant benefits in education, ethical considerations and a structured implementation approach are necessary to maximize its potential. InmaculadaGarcía-Martínez.et.al(2023) conducted a study on "Analyzing the Impact of Artificial Intelligence and Computational Sciences on Student Performance: Systematic Review and Meta", The results support the positive impact that AI and computational sciences have on student performance, finding a rise in their attitude towards learning and their motivation, especially in the STEM (Science, Technology, Engineering, and Mathematics) areas. Jiao P.et.al (2022) made a study on "Artificial intelligence-enabled prediction model of student academic performance in online engineering education". The study suggests utilizing AI-driven prediction models as effective tools for evaluating student performance in online education, providing valuable pedagogical and analytical insights for improving learning outcomes. JiahuiHuang.et.al (2021) made a study on "A Review on Artificial Intelligence in Education", ensuring that AI complements rather than replaces human educators. Ultimately, AI has the potential to revolutionize education, but a balanced approach is necessary to preserve the essential human element in teaching and learning.

RESULTS AND DISCUSSIONS

Table 1 Demographic profile of the students



Majority of the respondents are female are the age group of 17-21 years, most of the students are pursuing undergraduate.

Table 2 Facing difficulties in accessing AI tools due to financial constraints

Factor	No. of respondents	Percentage
Always	23	11.5%
Often	29	14.5%
Sometimes	94	47%
Rarely	35	17.5%
Never	19	9.5%

Majority (47%) of students sometimes face difficulties in accessing AI tools due to financial constraints.

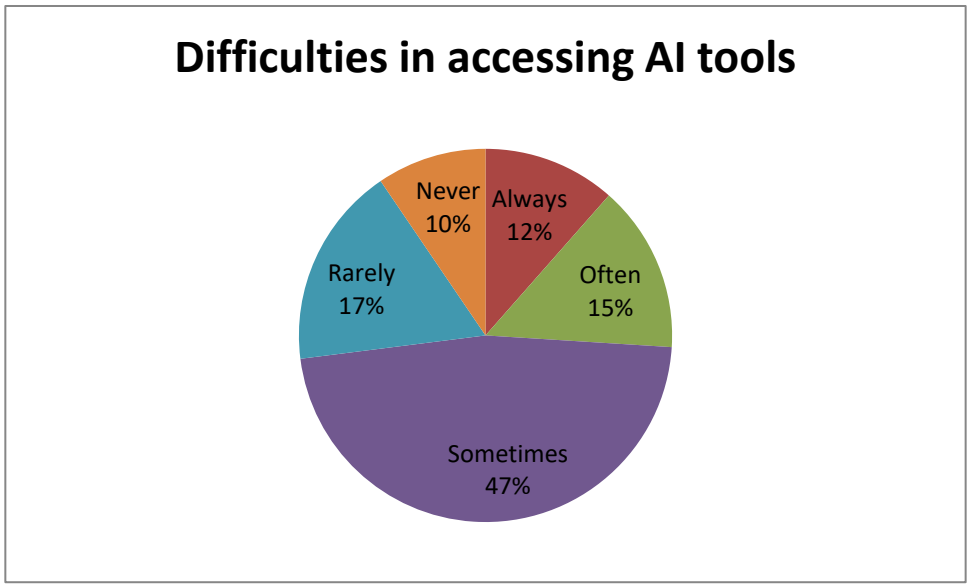


Table-3 Influence of use of AI tools on face-to-face discussions among students

Factor	No. of respondents	Percentage
Reduced in person discussions	70	35%
Decreased face-to-face interactions	79	39.5%
No noticeable impact	31	15.5%
More in person discussions by Sparking curiosity	20	10%

Majority (39.5%) of students believe that the use ofAI tools have decreased face-to-face interactions among students.

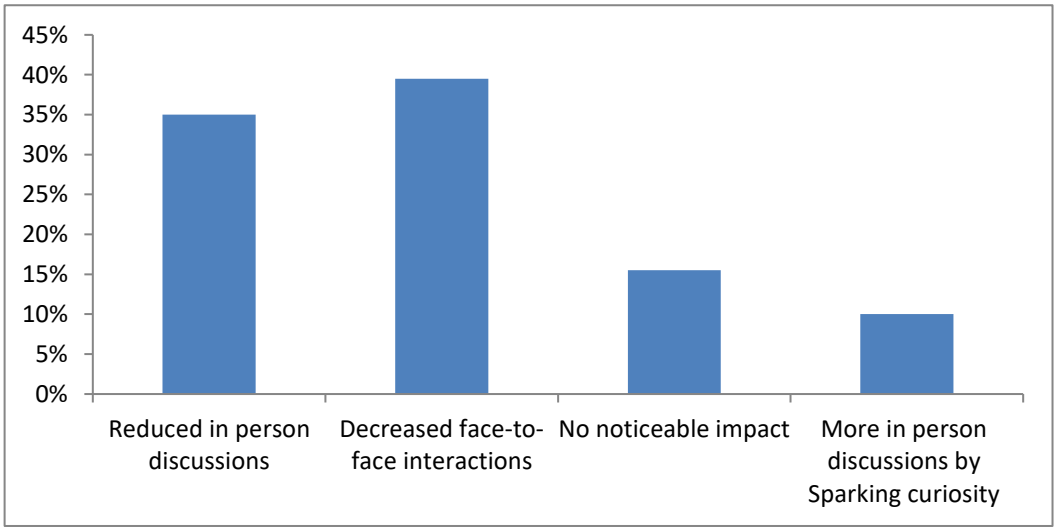
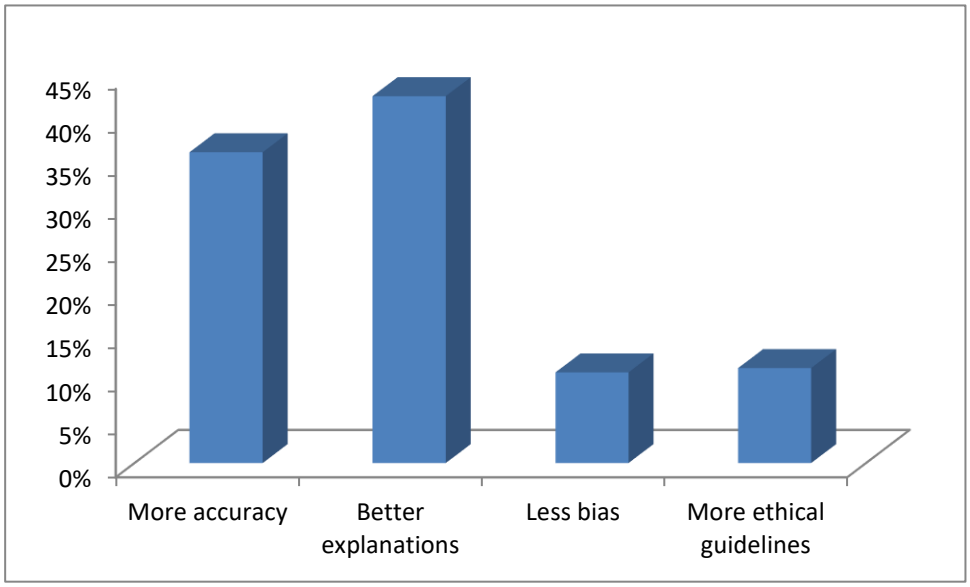


Table 4 Improvements to see in AI for academic use

Factor	No. of respondents	Percentage
More accuracy	72	36%
Better explanations	85	42.5%
Less bias	21	10.5%
More ethical guidelines	22	11%

Majority (42.5%) of students suggests improvements in better explanations to see in AI for academic use.



SUGGESTIONS OF THE STUDY

AI should do more than just provide information it should make learning interactive and meaningful. By offering real-life examples, simplified explanations, and personalized Responses based on a student's progress, AI can cater to different learning styles and help students truly grasp complex concepts. Education should be aright, not a privilege. Partnering with AI developers and educational organizations to offer free or affordable AI-powered learning tools can help bridge the Educational gap. This would ensure that students from all backgrounds have equal opportunities to learn and grow. AI tools should challenge students to think for themselves instead of just giving them answers. By posing open-ended questions and presenting complex problems, AI can help students develop strong analytical and problem-solving skills that will serve them well beyond the classroom.

CONCLUSION OF THE STUDY

Artificial Intelligence (AI) is reshaping education by introducing personalized learning, intelligent tutoring, and efficient administrative support.AI-powered chatbots assist students with instant feedback, answer queries, and automate routine tasks, allowing teachers to focus on meaningful instruction. Personalized learning, driven by AI, tailors less on based on student progress, helping both struggling and advanced learners achieve their full potential. However, while AI brings many benefits, concerns around privacy, accessibility, and fairness must be carefully addressed. While AI comes with lot of advantages it also has it's disadvantages and problems such as data privacy concerns, potential biases in AI-driven decision-making, and the Accessibility of AI tools for all students remain significant barriers. Additionally, there liability of AI-generated responses and its impact on human educators require careful consideration. Addressing these challenges through ethical AI development, improved data security measures, and inclusive design strategies is crucial for maximizing AI's benefits in education while minimizing its risks. The project concludes that AI in education enhances learning through contextual learning features, adapting to different styles with real-world applications. Affordable AI access ensures equal opportunities, while personalized assessments like oral exams and live problem-solving foster deeper understanding. A blended learning approach integrates AI with classroom collaboration, encouraging critical thinking by guiding students to analyze and solve problems independently. AI should serve as a learning aid, not are placement, supporting rather than replacing cognitive efforts. By following these principles, AI can revolutionized education while preserving essential human interaction.

REFERENCES

1. Abill Robert, Kaledio Potter, Louis Frank; The Impact of Artificial Intelligence on Students' Learning Experience, was published in the journal "Logical Techniques in Computer Science," Volume 2, Issue 2, on November 4, 2024.

2. Dr. Sarang R. Javkhedkar, Dr. Anjali Shrungarkar, Dr. Atul P. Kulkarni (2024); The Influence of Artificial Intelligence on Sustainable Education Practices, Vol 5, journal No :6, June 2024

3. Qanita Imtiaz, Mahrukh Altaf, Rodriguez Perez Berlan, Man Djun Lee, Saghir Ahmad, Hulya Salman(2024);Artificial Intelligence: A Double-EdgedSword for the Education and Environment of the Global Market, Journal no:30,Volume no:6, ISSN: 2148-2403.

4. Oyeyemi Ademola Ahmed, Okoye Alexander Tochukwu, Okenwa-Fadele ,Ijeoma, AbiakwuFelicity Onyinyechi"PerceivedEffectOfArtificialIntelligenceToolsOnTheAcademicPerformanceOfStudents In Public Universities In Anambra State"Volume 11 Issue 2, February 2024.

5. Sihem Guidoum,Elkhansa Saadi "The Impact of Artificial Intelligence on Students' Academic Performance from University Teachers' Perspectives"ISSN: 2710-8759/ EISSN: 2992-1376ATRAS Volume 5 (Special Issue on AI and Education, Online Learning and Education), pp. 381-395 30/09/ 2024

6. Chunpeng Zha, Santoso Wibowo and Lily D. Li" The effects of over-reliance on AI dialogue systems on students' cognitive abilities: a systematic review"

7. LeovigildoLi to D. Mallillin,"Artificial Intelligence (AI) Towards Students Academic Performance ",Innovative Journal Of Education, Vol 12,Issue 4,2024, pp ;16 -21

8. Abdul Wajid Fazil,Musawer Hakimi,Amir Kror Shahidzay,Ansarullah Hasas,"Impact Of Artificial Intelligence On Student Engagement And Academic Performance, Addressing Awareness,Ethical Considerations, Autonomy Perceptions And AI Integration Into Curricula", Journal of Artificial Intelligence and Digital Business,Vol.2 No.2,2024,pp;1 to 6

9. Yaser Hasan Al-Mamary, Adel Abdulmohsen Alfalah, Alina Shamsuddin, Aliyu Alhaji Abubakar; Artificial Intelligence Powering Education: Chat GPT's Impact on Student's Academic Performance through the Lens of Technology-to-Performance Chain Theory; Journal of Applied Research in Higher Education, 2024.

10. AriAlamäki,CristerNyberg,AnnaKimberley and Arto O.Salonen4 "Artificial intelligence literacy in Sustainable development: A Learning experiment in higher Education" volume no:10 , issue 3

11. MuyideenDeleAdewale,AmbroseAzeta,AdebayoAbayomi-Alli,AminaSambo-Magaji,"Impact of Artificial Intelligence Adoption on Students Academic Performance in Open And Distance Learning: A Systematic Literature Review " Vol 1;10(22), 2024

12. Aggarwal D., Sharma D., Saxena A.B. "Adoption of artificial intelligence (AI) for development of smart education as the future of a sustainable education system". Journal of Artificial Intelligence Machine Learning and Neural Network. 2023;36:23-28. Doi:10.55529/jaimlnn.36.23.28.[DOI] [Google Scholar]

13. InmaculadaGarcía-Martínez,JoséMaríaFernández-Batanero,JoséFernández-Cerero,SamuelPLeón; Theimpactofartificialintelligenceandcomputationalsciencesonstudentperformance:Systematicreview and meta. Journal of New Approaches in Educational Research Vol no: 12 (1); 171-197,2023.

14. Zouhaier Slimi; The Impact of Artificial Intelligence on Higher Education, European Journal of Educational Sciences, Vol.10, No.1, March 2023, ISSN: 1857-6036.

15. Deepshikha Aggarwal, Deepti Sharma, Archana B. Saxena, "Adoption of Artificial Intelligence (AI) For Development of Smart Education as the Future of a Sustainable Education System",ISSN:2799-1172 ,Vol:03,No.06, Oct-Nov2023.

16. KumarS.,Choudhury S.Gender and feminist considerations in artificial intel ligence from a developing- world perspective, with India as a case study. Humanities and Social Sciences Communications.2022;9(1) doi:10.1057/s41599-022-01043-5. [DOI] [Google Scholar]

17. Jiao P., Ouyang F., Zhang Q., Alavi A.H. Artificial intelligence-enabled prediction model of student academic performance in online engineering education. Artif. Intell. Rev. 2022;55(8):6321-6344. Doi: 10.1007/s10462-022-10155-y. [DOI] [Google Scholar]

18. Harikumar Pallathadka,Bankuru Sonia, DomenicT Sanchez, John VDe Vera, Julie Anne TGodinez, Marcial T Pepito; Investigating the Impact of Artificial Intelligence in Education Sector by Predicting Student Performance; Materials Today: Proceedings 51, 2264-2267, 2022.

19. Liu X., Huang X. Design of artificial intelligence-based English network teaching (AI-ENT) system. Math. Probl Eng. 2022 doi: 10.1155/2022/1849430. [DOI] [Google Scholar]

20. KhanI.A.,AhmadA.l.,JabeurN.,MahdiM.N," An Artificial Intelligence Approach To Monitor Student Performance And Devise Preventive Measures", journal of Smart Learning Environment, Vol.8,2021,pp;1- 18

21. HorowitzM.,KahnL.E.What influences attitudes about artificiall intelligence adoption: evidence from U.S. local officials. PLoS One. 2021;16(10) doi:10.1371/journal.pone.0257732. [DOI] [PMC free article] [PubMed] [Google Scholar]

22. Jiahui Huang, SalmizaSaleh,Yufei Liu. A Review on Artificial Intelligence in Education. Vol 10No 3 May 2021, E-ISSN 2281-4612 ,ISSN 2281-3993, DOI: https://doi.org/10.36941/ajis-2021-0077.

23. Ilkka Tuomi (2018); The Impact of Artificial Intelligence on Learning, Teaching, and Education was published by the Publications Office of the European Union as part of The Joint Research Centre (JRC) Science for Policy Report series. ISBN: 978-92-79-97257-7, ISSN: 1831-9424, DOI: 10.2760/12297.