

THE ROLE OF ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION: A SPECIAL FOCUS ON COMMERCE STUDIES

Dr. N. Umaiba

Assistant Professor of Commerce

Pioneer Kumaraswamy College, Nagercoil

DOI: <https://www.doi.org/10.34293/eduspectra.v7is1-feb25.011>

Abstract

As the integration of Artificial Intelligence (AI) in education increases, comprehending its ramifications is essential. This study examines the benefits and obstacles of AI in education, particularly its effects on student engagement, motivation, and academic achievement. It also delineates potential hazards linked with the utilization of AI in higher education. The research examines the extent of AI adoption among students, its applications, and the perceived benefits and drawbacks. Findings suggest that AI is primarily utilized for content creation, answer retrieval, and research assistance, making learning more efficient and accessible.

Keywords: *AI, Higher Education, Learning, Commerce Studies, Technology.*

Introduction

The use of Artificial Intelligence (AI) into higher education has revolutionized conventional learning methods, providing sophisticated tools that improve student engagement and academic outcomes. AI-driven technologies, like intelligent tutoring systems, chatbots, and virtual assistants, offer real-time assistance, allowing students to receive immediate feedback and tailored learning experiences. Adaptive learning platforms assess individual student progress and customize content to align with their learning pace, enhancing comprehension and retention. Moreover, AI-driven automated assessments alleviate the workload of educators by delivering prompt and precise evaluations, enabling instructors to concentrate on more intricate instructing responsibilities.

In commerce education, where analytical skills and data-driven decision-making are essential, AI augments learning through predictive analytics, financial modeling simulations, and market trend analysis. Students acquire practical experience with AI technologies utilized in many businesses, thereby connecting theoretical understanding with real-world application. AI enhances collaborative learning by facilitating virtual group conversations and providing intelligent content recommendations, so promoting a more engaged educational atmosphere. Nonetheless, although AI presents various advantages, issues such as data privacy concerns, algorithmic biases, and the digital divide require attention.

The function of educators is transforming, necessitating ongoing skill enhancement to proficiently include AI into instructional methodologies. Institutions must formulate policies that advocate for ethical AI utilization while guaranteeing accessible for all students. Future investigation should inspect the long-term effects of AI on higher education,

particularly on cognitive growth, emotional intelligence, and career preparedness. With the increasing usage of AI, it is crucial to maintain a balance between technological progress and human-centered education, ensuring that AI acts as an enabler rather than a substitute for conventional learning methods.

Statement of the Problem

Despite AI's rapid expansion in education, many students remain unaware of its adoption and impact on learning. This study explores AI usage, student demographics, benefits, and challenges in academic settings. It examines how AI influences student performance and engagement while identifying barriers to accessibility. The project seeks to elucidate the optimization of AI-driven technologies for enhanced learning experiences. Furthermore, it tackles ethical issues, guaranteeing the correct incorporation of AI in education. By analyzing these factors, the study seeks to enhance AI's role in personalized and data-driven learning. The findings will support educators and policymakers in implementing AI effectively. Ultimately, this research contributes to bridging the gap between AI advancements and student awareness..

Review of Literature

AI has become an integral part of various professional and academic domains, significantly transforming higher education. Research suggests that AI enhances teaching methodologies, streamlines academic processes, and fosters personalized learning experiences (Luckin et al., 2016; Selwyn, 2019). AI-powered analytics enable institutions to make data-driven decisions, improving student engagement, academic performance, and institutional efficiency (Cui, Zhang, & Zheng, 2020; Holmes, Bialik, & Fadel, 2019). Intelligent systems of tutoring, automated assessments, and adaptive learning systems have further revolutionized the learning landscape, providing real-time feedback and individualized support (Zawacki-Richter et al., 2019). Challenges such as lack of faculty training, ethical concerns, algorithmic biases, data privacy issues, and resistance to technological change hinder the full-scale adoption of AI in education (Sharma & Kumar, 2020; Aoun, 2017). Additionally, disparities in digital access create barriers to equitable AI integration, limiting its potential benefits. Understanding students' attitudes toward AI is crucial in designing effective AI-based curricula and ensuring meaningful educational outcomes (Dwivedi et al., 2021; Cabero-Almenara & Fernández-Batanero, 2020). Future research should focus on ethical AI implementation, bridging the digital divide, and Improving AI literacy among educators and students to optimize the beneficial things of AI in tertiary education.

Objectives of the Study

1. To assess the extent of AI adoption among commerce students.
2. To examine the advantages and disadvantages of AI in higher education.

- To analyze the impact of AI on student engagement, motivation, as well as academic performance.

Research Methodology

This research used a descriptive approach to investigate AI uptake among commerce students in the Kanyakumari district. A sample of 40 students is obtained by convenience sampling to guarantee accessibility and practicality. Data is gathered using a standardized questionnaire that examines AI utilization trends, perceived advantages, and related problems in academic learning. The collected responses are analyzed using statistical tools to derive meaningful insights into students' awareness, engagement, and concerns regarding AI integration in education. The study aims to provide valuable recommendations for optimizing AI-based

Data Analysis and Interpretations

Table 1 Data Analysis and Interpretations

S. No	Gender	No of Participants	Percentage
1	Male	18	45
2	Female	22	55
	Total	40	100
S. No	Year of study	No of Participants	Percentage
1	1 st year	13	32.5
2	2 nd year	12	30
3	3 rd year	15	37.5
	Total	40	100
S. No	Perceived Usefulness	No of Participants	Percentage
1	Very high	6	15
2	High	15	37.5
3	Medium	13	32.5
4	Low	3	7.5
5	Very low	3	7.5
	Total	40	100

Source: Primary Data

Gender-wise Distribution

Out of 40 Participants, 18 (45%) are male, and 22 (55%) are female. The slight predominance of female Participants suggests a balanced gender representation with a small inclination toward female participation.

Year-wise Distribution

1st-year students: 13 (32.5%), 2nd-year students: 12 (30%) and 3rd-year students: 15 (37.5%). The distribution is fairly even, indicating that AI adoption is being analyzed across all levels of study in commerce education.

Perceived Usefulness of AI in Learning

Very High: 6 (15%), High: 15 (37.5%), Medium: 13 (32.5%), Low: 3 (7.5%), and Very Low: 3 (7.5%). A majority (52.5%) of students find AI useful (High or Very High), while 15% rate it as Low or Very Low.

The perception of AI usefulness significantly differs among students based on their year of study

Hypothesis Formulation

Null Hypothesis (H_0): "There is no significant difference in the perception of AI usefulness among 1st, 2nd, and 3rd-year students".

Alternative Hypothesis (H_1): "There is a significant difference in the perception of AI usefulness among different years of study".

Table 2 Understanding the Table

S.No	Sources of Fund	1st Year Mean Rank	2nd Year Mean Rank	3rd Year Mean Rank	Chi-Square Value	Asymp. Sig. (p-value)
1	Usefulness of AI	32.07	10.68	14.65	39.02	0.007

Source: Computed data

A statistically significant disparity exists in the perception of AI utility among 1st, 2nd, and 3rd-year students. This means that students in different academic years have varying opinions on how useful AI is in their studies.

Major Purpose of using AI by students

The researcher analyze to the major purpose of using AI for their education under six heads namely find out answer for question, prepare article, seminar notes, clarify the doubts, to improve English knowledge and communication, and the researcher apply Garrett ranking test to knowledge rank position of purpose of using AI.

Table 3 Major Purpose of using AI by students

S.No	Usage	Score	Average Score	Rank
1	Find out answer for question	2097	52.425	II
2	Prepare article	2221	55.525	I
3	Seminar notes	1885	47.125	V
4	Clarify the doubts	1853	46.325	VI

5	To improve English knowledge	1908	47.7	IV
6	Communication	1944	48.6	III

Source: Computed data

Prepare Articles (Rank I):The highest-ranked purpose of using AI by students is to prepare articles, with a score of 2221 and an average score of 55.525. This indicates that students find AI most useful for creating content, such as articles for assignments or research work.

Find Out Answers for Questions (Rank II):The second most common use of AI is to find out answers to questions, with a score of 2097 and an average score of 52.425. Students use AI frequently to quickly retrieve information or answers for their queries.

Communication (Rank III):AI for improving communication skills is ranked third, with a score of 1944 and an average score of 48.6. This suggests that students utilize AI to enhance their communication abilities, potentially through language models or conversational tools.

To Improve English Knowledge (Rank IV):AI is also used by students to improve their English language knowledge, ranking fourth with a score of 1908 and an average score of 47.7. This highlights the role of AI in aiding students in language learning.

Seminar Notes (Rank V):Preparing seminar notes is ranked fifth, with a score of 1885 and an average score of 47.125. Although important, this purpose is not as highly ranked as other uses, suggesting that students use AI less for creating seminar-related content.

Clarify Doubts (Rank VI)

The least common purpose for using AI is to clarify doubts, with a score of 1853 and an average score of 46.325. This indicates that while AI is helpful for answering queries, it is not the primary tool used by students to resolve uncertainties.

Suggestions

1. **AI Training and Awareness Programs:** Institutions should conduct AI workshops to enhance student awareness and proficiency in using AI tools effectively.
2. **Personalized Learning Integration:** AI should be leveraged to create tailored learning experiences based on individual student needs.
3. **Improved AI Accessibility:** AI tools should be adapted for students from diverse educational backgrounds, including those with language barriers.
4. **Collaborative AI Tools for Doubt Clarification:** AI-driven chatbots and virtual assistants should be introduced to help students resolve academic queries in real-time.
5. **Enhanced AI Applications in Research:** AI should be encouraged in academic research, including literature reviews and data analysis.

6. Bridging Language Disparities: AI tools should support multilingual capabilities to cater to Tamil and English-medium students.

Conclusion

This research emphasizes the increasing integration of AI in commerce edification, specifically in content generation, information extraction, and communication improvement. The results demonstrate that although AI markedly enhances learning efficiency and accessibility, its application differs among student levels. The Kruskal-Wallis test confirms that students' perceptions of AI usefulness differ significantly by year of study. Despite its advantages, challenges such as limited AI literacy, accessibility barriers, and ethical concerns remain. Addressing these issues through targeted AI training, policy improvements, and enhanced AI applications can maximize its educational impact. Institutions should focus on integrating AI tools effectively to support personalized learning experiences. Encouraging AI-driven research and problem-solving applications will further enhance students' academic and professional growth. By bridging the digital divide and promoting AI awareness, higher education can harness AI's full potential. Future research should explore AI's long-term implications on student engagement, motivation, and career readiness. Ultimately, the proper implementation of AI in education will cultivate a more inventive and efficient learning atmosphere.

References

1. Chassignol, M., Khoroshavin, A., Klimova, A., & Bilyatdinova, A. (2018). Artificial Intelligence trends in education: A narrative overview. *Procedia Computer Science*, 136, 16-24.
2. Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *IEEE Access*, 8, 75264-75278.
3. Chen, X., Xie, H., Zou, D., & Hwang, G. J. (2020). Application and theory gaps during the rise of artificial intelligence in education. *Computers and Education: Artificial Intelligence*, 1, 100002.
4. Cui, Y., Zhang, L., & Zheng, Y. (2020). Artificial intelligence in higher education: Learning analytics systems to facilitate student learning outcomes. *IEEE Access*, 8, 136034-136043.
5. Dwivedi, Y. K., Hughes, D. L., Ismagilova, E., et al. (2021). Artificial intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice, and policy. *International Journal of Information Management*, 57, 101994.
6. García-Peñalvo, F. J., & Seoane-Pardo, A. M. (2015). Artificial intelligence and education: The state of the art. *Journal of Universal Computer Science*, 21(5), 620-628.

7. Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in education: Promises and implications for teaching and learning. Center for Curriculum Redesign.
8. Hwang, G. J., Xie, H., Wah, B. W., & Gašević, D. (2020). Vision, challenges, roles and research issues of artificial intelligence in education. *Computers & Education: Artificial Intelligence*, 1, 100001.
9. Kumar, A., & Pal, R. (2018). Artificial intelligence in education: A brief review. *Innovations in Teaching & Learning Conference Proceedings*, 2(1), 1-6.
10. Luckin, R., Holmes, W., Griffiths, M., & Forcier, L. B. (2016). *Intelligence unleashed: An argument for AI in education*. Pearson.
11. Popenici, S. A. D., & Kerr, S. (2017). Exploring the impact of artificial intelligence on teaching and learning in higher education. *Research and Practice in Technology Enhanced Learning*, 12(1), 1-13.
12. Roll, I., & Wylie, R. (2016). Evolution and revolution in artificial intelligence in education. *International Journal of Artificial Intelligence in Education*, 26(2), 582-599.
13. Selwyn, N. (2019). *Should robots replace teachers? AI and the future of education*. Social Science Research Network.
14. Sharma, S., & Kumar, R. (2020). Adoption of artificial intelligence in higher education: A study in Indian context. *Journal of Education and Practice*, 11(10), 112-120.
15. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education: Where are the educators? *International Journal of Educational Technology in Higher Education*, 16(1), 1-27.