International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Awareness, Adoption and Effectiveness of AI Apps in the University Education with Reference to Ahmedabad District

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Abstract

The rapid advancement of artificial intelligence (AI) has significantly influenced university education by transforming learning processes and academic practices. AI-powered applications are increasingly used by university students for personalized learning, academic writing, problem-solving, and self-directed study. The present study aims to examine the level of awareness, adoption, and perceived effectiveness of AI applications among university students in Ahmedabad district. A descriptive research design was employed, and primary data were collected through a structured questionnaire administered to undergraduate and postgraduate university students. The study focuses on identifying commonly used AI applications, understanding their influence on learning processes, and exploring challenges associated with their usage. Descriptive tools were used for data analysis. The findings indicate a high level of awareness and growing adoption of AI apps among university students, with notable benefits such as improved learning efficiency, time savings, and enhanced academic performance. However, challenges including over-dependence on AI tools, ethical concerns, and lack of adequate guidance were also reported. The study highlights the need for universities to formulate clear guidelines and provide training to ensure the responsible and effective use of AI applications in university education.

Keywords: Artificial Intelligence, AI Apps, University Education, University Students, Learning Processes, Ahmedabad District

Introduction

Higher education has emerged as one of the areas most severely impacted by the rapid growth of Artificial Intelligence (AI). University education is progressively incorporating AI-based technologies including chatbots, learning management systems, intelligent tutoring systems, automated assessment tools, and personalized learning aides. By adjusting to the demands, pace, and learning preferences of individual students, these technologies promise to boost student engagement, increase teaching effectiveness, and facilitate individualized learning experiences. Adoption of AI applications has become both an educational innovation and a strategic requirement as institutions work to satisfy the needs of a digital and knowledge-driven society.

For AI applications to be successfully adopted and used, university stakeholders must be aware of them. However, because of things like digital literacy, technological access, institutional backing, and past experience with AI-enabled systems, awareness levels might differ greatly between institutions, fields, and

user groups. Adoption may be hampered by low awareness, and the efficient implementation of AI in educational settings may be limited by misunderstandings and a lack of training.

Numerous factors, such as perceived utility, usability, institutional preparedness, ethical concerns, data protection issues, and resistance to technical change, affect the adoption of AI applications in higher education. While some institutions have effectively incorporated AI tools into their administrative processes and curricula, others are still in the early stages of adoption. Policymakers, educators, and university administrators who want to use AI for academic excellence and operational efficiency must comprehend the degree to which AI applications are embraced and the factors influencing their acceptance.

AI tools have the potential to enhance academic achievement, boost critical thinking, enable self-paced learning, and help teachers with evaluation and instructional design. However, the real efficacy of these apps is contingent upon their implementation, user proficiency, and the alignment of AI technologies with educational goals. There is currently little and inconsistent empirical data regarding the efficacy of AI applications in higher education, especially in poor nations.

Examining awareness, adoption and perceived effectiveness of AI applications in higher education is the goal of this study. The study aims to offer empirical insights into how AI tools are perceived, used, and assessed in higher education institutions by examining the viewpoints of university students. The results are anticipated to add to the body of knowledge already available on educational technology and provide useful guidance for colleges, instructors, and legislators as they develop plans for successfully integrating AI into higher education.

Literature Review

Recent research regularly shows that teachers and students at universities are becoming increasingly aware of artificial intelligence (AI) applications. Students are becoming more familiar with AI-based technologies like ChatGPT, intelligent tutoring systems, and AI-powered learning aides, according to studies conducted in a variety of geographical situations (Shahzad et al.; Black and Tomlinson). Students who are involved in writing, research, and exam preparation are especially aware of AI tools, which they view as time-saving and helpful for academic assignments.

But rather than being conceptual, awareness is frequently informal and tool-focused. While instructors and students are aware of AI capabilities, Ghimire, Prather, and Edwards discovered that many do not fully comprehend the mechanics, constraints, and ethical implications of AI. Turková et al. also noted that while students actively use AI applications, there is still a lack of knowledge about academic integrity policies and institutional guidelines. This disparity implies that awareness does not always equate to responsible or knowledgeable use. Universities are in varying stages of AI preparation, according to Ahmed Khan et al., with many recognizing the potential of AI but lacking organized implementation plans. Zhai et al. further underlined that policy-level understanding frequently lags behind technology developments, leading to uncertainty in classroom implementation.

Technology acceptance frameworks like the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Technology Acceptance Model (TAM) have been used extensively to study the uptake of AI applications in higher education. Perceived utility, usability, and trust are important indicators of AI adoption, according to several research (Tago et al.; Shahzad et al.).

Adoption among students seems to be far higher than that of staff. According to Black and Tomlinson, students easily incorporate AI tools into their research and academic writing processes, frequently without the assistance of their teachers. Rahman et al. also discovered that students' positive attitudes of AI

chatbots had a significant impact on their desire to use them for productive online learning. On the other hand, issues with lack of training, assessment validity, and academic integrity reduce faculty uptake (Ghimire et al.).

Uneven adoption trends are further revealed by cross-disciplinary research. Ma et al. found that teacher-education students who thought AI would help with lesson preparation and reflective practice were more likely to use it. Adoption is hampered at the institutional level by a lack of formal policies, inadequate infrastructure, and few chances for professional growth (Ahmed Khan et al.; Turková et al.). These results imply that adoption is a socio-organizational process rather than just a technology problem.

Positive opinions on how well AI applications improve learning outcomes are reported in a large corpus of literature. Personalized learning, instant feedback, increased engagement, and academic productivity have all been found to be supported by AI tools (Matere). According to empirical research, when AI-powered learning assistants are utilized as supplemental tools rather than in place of teachers, they boost student engagement and satisfaction (Sajja et al.). Rahman et al. showed that by providing real-time assistance and clarification, AI chatbots enhance the perceived efficacy of learning in online learning settings.

A number of studies warn that, if not pedagogically led, an excessive reliance on AI may diminish critical thinking (Mazaheriyan and Nourbakhsh). Effectiveness depends on digital literacy, instructional design, and institutional support, according to studies published in Scientific Reports and Systems journals. Despite high awareness and acceptance rates, Turková et al. and Zhai et al. contend that ambiguous regulations regulating AI deployment can erode confidence and impede successful integration.

Research Gap

Most studies rely on cross-sectional and perception-based data, with limited longitudinal evidence on actual academic performance. There is insufficient context-specific research focusing on developing countries and public universities. Faculty perspectives and institutional governance issues remain under-explored compared to student-focused studies. Limited studies integrate awareness, adoption, and effectiveness into a single comprehensive model.

Primary Objective:

To explore the experiences and perceptions of university students and faculty regarding the use of AI-based applications in the education sector.

Objectives:

1. To identify the commonly used AI apps in university education in Ahmedabad District.
2. To understand how AI apps influence learning and teaching processes for students in Ahmedabad district.
3. To explore perceived benefits and challenges of using AI apps.

Methodology

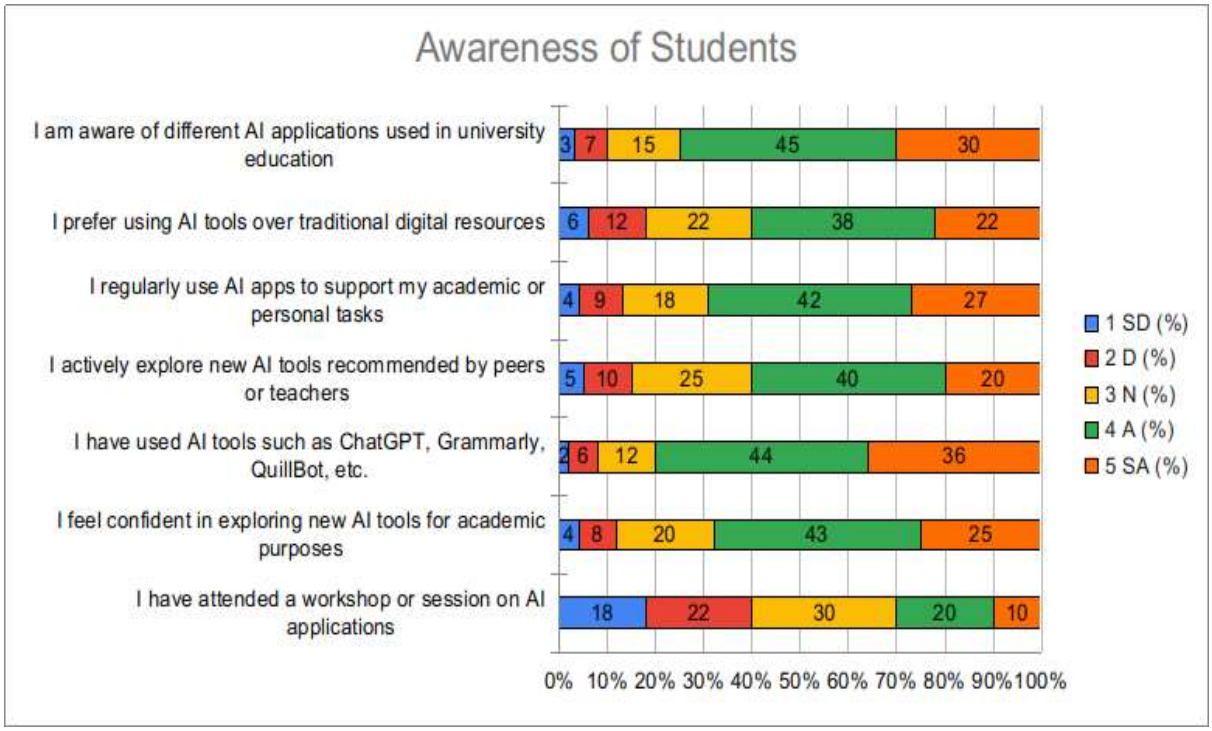
Research Design: This study adopted a Qualitative research design to investigate the levels of awareness, adoption, and perceived effectiveness of AI applications among university students in Ahmedabad. A descriptive survey method was used to collect structured data that can be statistically analyzed for insights into patterns, relationships, and demographic differences.

Sample: The research population comprised undergraduate and postgraduate students enrolled in universities and higher education institutions across Ahmedabad. This includes students from diverse disciplines such as management, engineering, commerce, arts, and sciences. A sample size of 300 respondents was chosen to ensure representativeness and statistical validity. The sample was selected using random sampling.

Data Collection and Analysis: Data were collected through a structured questionnaire developed based on literature and validated scales. Demographic variables such as age, gender, program level, and discipline were measured using nominal or ordinal scales. Responses were recorded on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree) and ranking scale. Collected data were coded and analyzed using MS Excel.

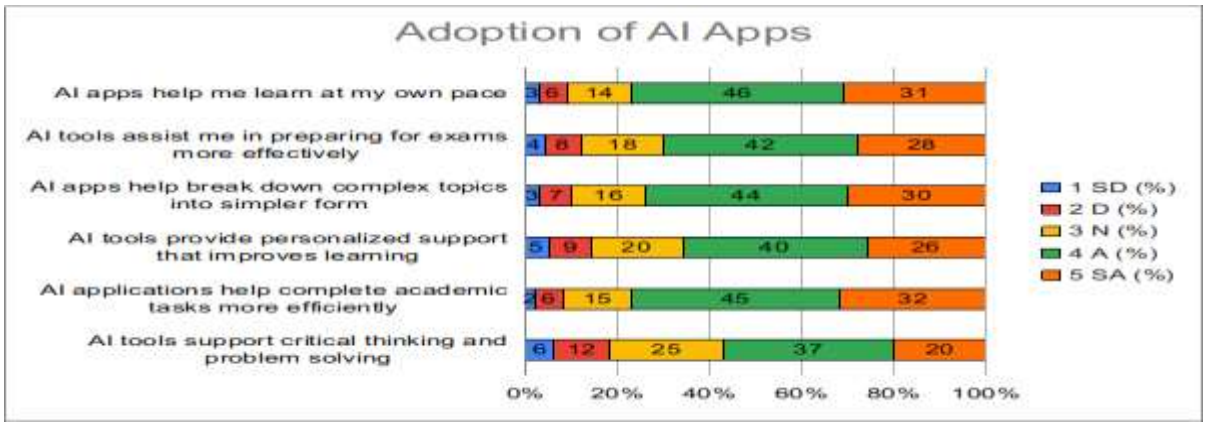
Data Interpretation

1. Awareness Of students



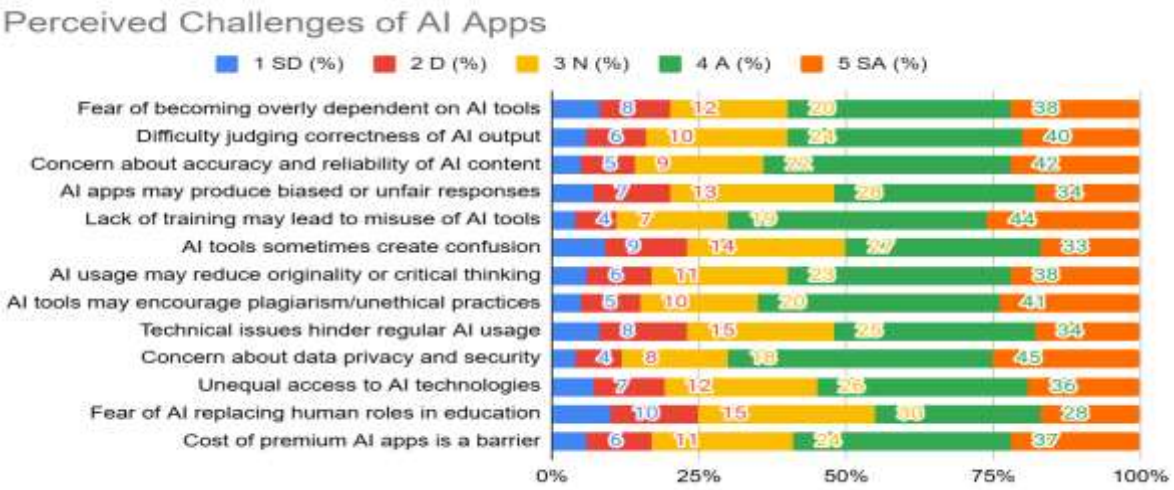
The data reveals a high level of awareness and adoption of AI applications among university students. A substantial majority of respondents agreed or strongly agreed that they are aware of different AI applications used in university education (75%), indicating widespread familiarity with AI tools. Similarly, regular usage of AI apps for academic or personal tasks is evident, with 69% of respondents expressing agreement. As 60% of respondents agreed or strongly agreed, while a noticeable proportion (22%) remained neutral, suggesting a transitional phase from conventional tools to AI-based resources. The use of popular AI tools such as ChatGPT, Grammarly, and QuillBot is particularly prominent, with 80% of respondents reporting usage, highlighting the practical penetration of AI in academic activities. Confidence in exploring new AI tools is also strong (68% agreement), reflecting a positive attitude toward technological experimentation. However, attendance at formal workshops or sessions on AI applications is relatively low, with only 30% agreeing, while 40% disagreed, indicating a gap between informal usage and structured institutional training.

2. Adoption of AI Apps



A significant majority of respondents agreed that AI apps help them learn at their own pace (77%), demonstrating the role of AI in facilitating self-directed and flexible learning. Similarly, AI tools are perceived as beneficial for exam preparation (70%) and for breaking down complex topics into simpler forms (74%). The ability of AI tools to enhance efficiency in completing academic tasks received one of the highest agreement levels (77%), underscoring their value in time management and productivity. Personalized learning support provided by AI is positively acknowledged by 66% of respondents. However, support for critical thinking and problem-solving, while still positive (57% agreement), shows comparatively lower agreement and higher neutrality (25%), suggesting that AI is seen more as a supportive or assistive tool rather than a replacement for higher-order cognitive skills.

3. Perceived challenges of AI Apps.



The data indicates that respondents are highly aware of the challenges associated with AI applications. Concerns about over-dependence on AI tools are notable, with 60% of respondents agreeing or strongly agreeing. Similarly, difficulty in judging the correctness of AI-generated output (60%) and concerns about accuracy and reliability (64%) are widely acknowledged.

Ethical and pedagogical concerns such as bias in AI responses (52%), reduced originality or critical thinking (60%), and encouragement of plagiarism or unethical practices (65%) also emerge strongly. These findings highlight apprehensions regarding the responsible use of AI in academic settings.

Lack of training is identified as a major issue, with 70% agreeing that insufficient training may lead to misuse of AI tools, reinforcing findings from Question 1 regarding limited formal exposure. Concerns

related to data privacy and security (70%), unequal access to AI technologies (55%), and the cost of premium AI apps (59%) indicate structural and socio-economic barriers.
Fear of AI replacing human roles in education shows relatively lower agreement (45%), suggesting that while students recognize AI's growing role, they do not yet perceive it as a direct threat to educators.

Findings

The study reveals a high level of awareness of AI applications among university students. About 75% of respondents reported being aware of different AI tools used in university education. Regular use of AI applications for academic or personal tasks was reported by 69% of students. Popular AI tools such as ChatGPT, Grammarly, and QuillBot are widely used. Nearly 80% of respondents indicated using at least one AI-based application. Preference for AI tools over traditional digital resources is moderately high among students. Around 60% of respondents agreed that they prefer AI tools to conventional digital resources. A considerable proportion of students remained neutral, indicating a transitional stage of adoption. Confidence in exploring and experimenting with new AI tools is relatively strong among students. About 68% of respondents expressed confidence in trying new AI applications. Attendance at formal AI-related workshops or training programs is comparatively low. Only 30% of students reported participation in structured AI learning sessions. A majority of respondents perceive AI applications as effective learning support tools. AI apps are widely recognized for enabling self-paced learning. Approximately 77% of respondents agreed that AI helps them learn at their own pace. Students also perceive AI tools as helpful for exam preparation and academic efficiency. Around 70% agreed that AI tools support exam preparation. AI applications are seen as effective in simplifying complex academic topics. About 74% of respondents acknowledged this benefit. Personalized learning support through AI is positively perceived by most students. However, support for critical thinking and problem-solving received comparatively lower agreement. About 57% of respondents agreed that AI enhances critical thinking skills. Students expressed significant concerns regarding over-dependence on AI tools. Ethical issues such as plagiarism, bias, and reduced originality were widely acknowledged. Overall, the findings indicate positive adoption of AI alongside notable ethical, training, and reliability challenges.

Conclusion & Recommendations

The study concludes that artificial intelligence applications have become an important component of university students' academic practices, with high levels of awareness, acceptance, and regular usage. Students perceive AI tools as effective in supporting self-paced learning, improving academic efficiency, and simplifying complex concepts. The widespread adoption of AI applications reflects a positive attitude toward digital innovation in higher education. However, the findings also indicate that AI usage is largely informal, with limited institutional guidance or structured training. Concerns related to over-dependence, accuracy of AI-generated content, ethical issues, data privacy, and academic integrity remain significant. Despite these challenges, students do not strongly perceive AI as a threat to human educators, suggesting acceptance of AI as a complementary learning aid rather than a replacement.
Based on these findings, it is recommended that universities develop clear policies and ethical guidelines for the responsible use of AI in academic settings. Institutions should integrate formal training programs and workshops to enhance students' digital and AI literacy. Faculty members should be encouraged to guide students on appropriate and ethical use of AI tools to promote originality and critical thinking. Measures should be taken to address data privacy, security concerns, and unequal access to AI technolo-

gies. Universities may also consider providing institutional access to reliable AI tools to reduce cost barriers. A balanced approach that combines AI-assisted learning with traditional pedagogical methods is essential to maximize educational benefits while minimizing potential risks.

Reference

1. Ahmed Khan, Muhammad, et al. The Rise of AI in Academia: Adaptation Strategies for Transforming Higher Education. American Journal of Smart Technology and Solutions, vol. 4, no. 2, 2025. DOI:10.54536/ajsts.v4i2.4892.
2. Black, Rebecca W., and Bill Tomlinson. University Students Describe How They Adopt AI for Writing and Research in a General Education Course. Scientific Reports, vol. 15, article 8799, 2025.
3. Ghimire, Aashish, James Prather, and John Edwards. Generative AI in Education: A Study of Educators' Awareness, Sentiments, and Influencing Factors. arXiv, March 2024.
4. Audrey Matere. Effectiveness of Artificial Intelligence Tools in Teaching and Learning in Higher Education Institutions in Kenya. Journal of the Kenya National Commission for UNESCO, vol. 5, no. 1, 2024.
5. Ma, et al. A Multidimensional Study of AI Adoption Among University Students in Teacher Education Programs. Smart Learning Environments, 2025.
6. Mazaheriyan, Adeleh, and Erfan Nourbakhsh. Beyond the Hype: Critical Analysis of Student Motivations and Ethical Boundaries in Educational AI Use in Higher Education. arXiv, Nov. 2025.
7. Rahman, M. K., et al. Students' Mindset to Adopt AI Chatbots for Effectiveness of Online Learning in Higher Education. Future Business Journal, vol. 11, 2025. DOI:10.1186/s43093-025-00459-0.
8. Shahzad, Muhammad Farrukh, Shuo Xu, and Iqra Javed. ChatGPT Awareness, Acceptance, and Adoption in Higher Education: The Role of Trust as a Cornerstone. International Journal of Educational Technology in Higher Education, vol. 21, article 46, 2024.
9. Sajja, Ramteja, Yusuf Sermet, Brian Fodale, and Ibrahim Demir. Evaluating AI-Powered Learning Assistants in Engineering Higher Education: Student Engagement, Ethical Challenges, and Policy Implications. arXiv, June 2025.
10. Tago, Sajeela Ashfaque, Ayaz Keerio, Shahmurad Chandio, and Altaf Hussain Abro. Exploring the AI-Powered Adoption in Higher Education: A Comprehensive Study Using UTAUT4 Model to Understand User Acceptance and Usage. Journal of ICT, Design, Engineering and Technological Science, vol. 8, no. 2, Dec. 2024.
11. Turková, Kateřina, et al. Adapting to the Future: The Use of AI Tools and Applications in University Education and a Call for Transparent Rules and Guidelines. International Journal for Educational Integrity, vol. 21, 2025.
12. Determinants of Student Adoption of Artificial Intelligence Applications in Higher Education. Scientific Reports, 2025.
13. Artificial Intelligence Tool Adoption in Higher Education: A Structural Equation Modeling Approach to Understanding Impact Factors Among Economics Students. Electronics, vol. 13, no. 18, 2024.
14. From Perception to Practice: Artificial Intelligence as a Pathway to Enhancing Digital Literacy in Higher Education Teaching. Systems, vol. 13, no. 8, 2024.
15. Integrating Artificial Intelligence in Higher Education: Perceptions, Challenges, and Strategies for Academic Innovation. Computers and Education Open, vol. 9, 2025.

16. Artificial Intelligence in Higher Education Institutions: Systematic Review of Opportunities and Challenges. Zhai et al., Frontiers in Education, 2024.
17. Artificial Intelligence in Higher Education: Impact Depends on Support. Studies in Higher Education, 2025.
18. Making AI Generative for Higher *Education. Ithaka SR Report, 2024.*