Role of Artificial Intelligence (AI) in Everyday Life and Decision-Making in Higher Education Institutions in Assam

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Abstract
The rapid advancement of Artificial Intelligence(AI)hassignificantly transformed the functioning of Higher Education Institutions (HEIS) across the globe, including in the Indian state of Assam. AI technologiesareincreasingly being integrated into teaching–learning processes, academic administration, research activities, and institutional decision-making mechanisms. This paper examines the role of Artificial Intelligence in everyday academic life and decision-making practices within Higher Education Institutions in Assam. It explores how AI-driven tools support personalized learning,student assessment,academicadvising,administrative efficiency, and data-driven governance in colleges and universities. The study also highlights the potential of AI in improving institutional planning, quality assurance, and policy formulation through predictive analytics and real-time data processing. At the same time, the paper discusses key challenges such as infrastructural limitations, digital divide, lack of trained manpower, ethical concerns, data privacy issues, and resistance to technological change prevalent in HEIS of Assam. By adopting a conceptual and analytical approach based on existing literature and regional context, the paper emphasizes the need for a balanced, ethical, and inclusive adoption of AI in higher education. The study concludes that effective integration of AIcanenhanceacademic quality, institutional effectiveness, and informed decision-making in Assam'shigher education system, provided adequate policy support, capacity building, and digital infrastructure are ensured.

Keywords
Artificial Intelligence, Higher Education Institutions, Decision-Making, Academic Administration, Teaching–Learning Process, Assam, Digital Transformation, Educational Technology

Introduction

1.1 Background of the Study

The twenty-first century has witnessed rapid technological advancements that have reshaped almost every sector of society, including education. Among these advancements, Artificial Intelligence (AI) has emerged as a transformative technology with the potential to redefine teaching, learning, administration, and decision-making processes in Higher Education Institutions (HEIs). AI refers to the capability of machines and computer systems to simulate human intelligence through learning, reasoning, problem-solving, and decision-making. Globally, universities and colleges are increasingly adopting AI-driven tools to enhance academicefficiency,institutional governance, and learner outcomes.

1.2 Artificial Intelligence and Higher Education

In the context of higher education, AI is applied in diverse forms such as learning

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management systems, intelligent tutoring systems, automated assessment tools, academic analytics, chatbots, and decision-support systems. These applications assist faculty members in instructional planning, enable students to receive personalized learning support, and help administrators make data-driven decisions. AI-based technologies facilitate adaptive learning, early identification of at-risk learners, efficient resource allocation, and improved institutional effectiveness.

1.3 AI in Everyday Academic Life of HEIS

Artificial Intelligence has gradually become part of the everyday academic life of Higher Education Institutions. Students interact with AI-enabled platforms for online learning, digital libraries, plagiarism detection, recommendation systems, and academic advising. Faculty members utilize AI tools for curriculum design, student assessment, research support, and academic performance analysis. Administrative staff benefit from AI applications in admission management, attendance monitoring, examination processing, and communication systems, thereby reducing manual workload and enhancing operational efficiency.

1.4 Role of AI in Decision-Making Processes

Decision-making in Higher Education Institutions involves complex processes related to academic planning, administrative management, quality assurance, and policy formulation. AI plays a crucial role in supporting these decisions by analyzing large volumes of institutional data and generating predictive insights. Through data analytics and machine learning models, AI assists institutional leaders in forecasting student enrollment trends, evaluating academic performance, optimizing resource utilization, and improving strategic planning. Such evidence-based decision-makingenhancestransparency,accountability, and institutional sustainability.

1.5 Higher Education Institutions in Assam: Contextual Perspective

Assam, as a developing state in the northeastern region of India, has been making gradual progress in the expansion and diversification of higher education. The state hosts a range of public and private universities, colleges, and teacher education institutions serving students from diverse socio-economic and cultural backgrounds. However, HEIs in Assam continue to face challenges such as limited digital infrastructure, uneven access to technology, shortage of trained human resources, and financial constraints. In this context, the adoption of Artificial Intelligence presents both opportunities and challenges for improving academic quality and institutional decision-making.

Objectives of the Study

The present study has been undertaken with the following specific objectives:

1. To examine the role of Artificial Intelligence in the everyday academic life of Higher Education Institutions in Assam.
2. To analyze the application of AI in teaching–learning processes within Higher Education Institutions of Assam.
3. To study the role of Artificial Intelligence in academic and administrative decision-making in HEIs of Assam.
4. To explore the benefits of AI adoption for institutional efficiency, academic quality, and governance in higher education.
5. To identify the challenges and constraints associated with the integration of AI in Higher Education Institutions in Assam.
6. To suggest measures for effective and ethical implementation of Artificial Intelligenceinhigher education institutions.

Research Questions

In order to achieve the above objectives, the study seeks to answer the following research questions:

1. What role does Artificial Intelligence play in the everyday academic life of Higher Education Institutions in Assam?

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2. How is Artificial Intelligence utilized in the teaching–learning processes of HEIs in Assam?
3. In what ways does AI support academic and administrative decision-making in higher education institutions?
4. What are the perceived benefits of using Artificial Intelligence in higher education institutions in Assam?
5. What challenges and limitations are faced by HEIs in Assam in adopting and implementing AI technologies?
6. What strategies can be adopted to ensure effective, inclusive, and ethical use of Artificial Intelligence in higher education?

1.6 Rationale of the Study

Despite the growing global discourse on Artificial Intelligence in higher education, limited scholarly attention has been paid to its role in everyday academic practices and decision-making within the regional context of Assam. Understanding how AI can support teaching–learning processes and institutional governance is crucial for informed policy formulation and sustainable implementation. This study seeks to bridge this gap by critically examining the role of AI in everyday life and decision-making in Higher Education Institutions in Assam.

1.7 Significance of the Study

The present study is significant for multiple stakeholders including policymakers, institutional administrators, faculty members, and researchers. It provides insights into the potential applications of AI in higher education and highlights key challenges that need to be addressed for effective adoption. The findings of the study may assist Higher Education Institutions in Assam in developing strategic frameworks for AI integration, capacity building, and ethical governance, thereby contributing to the overall improvement of the higher education system.

Review of Related Literature

2.1 Concept of Artificial Intelligence in Education

Artificial Intelligence (AI) has emerged as a significant technological innovation influencing contemporary education systems worldwide. Scholars describe AI in education as the application of computer-based systems capable of performing tasks that typically require human intelligence, such as learning, reasoning, problem-solving, and decision-making. In the educational context, AI enables adaptive learning environments, intelligent tutoring systems, automated assessment, and learning analytics. Researchers emphasize that AI shifts education from teacher-centered to learner-centered paradigms by supporting personalized and self-paced learning experiences.

2.2 AI and Teaching–Learning Processes in Higher Education

A substantial body of literature highlights the transformative role of AI in teaching–learning processes within higher education. Studies indicate that AI-powered learning management systems enhance instructional delivery by recommending learning materials based on individual learner needs. Intelligent tutoring systems provide real-time feedback and support, thereby improving student engagement and academic achievement. Researchers also note that AI facilitates blended and online learning environments, making higher education more flexible and inclusive.

2.3 Artificial Intelligence and Student Assessment

Assessment is a critical component of higher education, and AI has significantly influenced evaluation practices. Research findings suggest that AI-based assessment tools enable automated grading, plagiarism detection, and formative assessment with greater accuracy and efficiency. Learning analytics derived from AI systems help educators monitor student progress, identify learning gaps, and provide timely interventions. Scholars argue that AI-

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supportedassessment promotes transparency, consistency, and fairness in evaluation processes.

2.4 AI in Academic Administration and Institutional Management

Several studies focus on the application of AI in academic administration and institutional management. AI-driven systems are used for admissions management, enrollmentforecasting, timetable scheduling, attendance monitoring, and examination management. Literature reveals that these technologies reduce administrative workload, minimize human error, and improve operational efficiency. Researchers further emphasize that AI supports evidence-based management by generating predictive insights for institutional planning and resource allocation.

2.5 Role of AI in Decision-Making in Higher Education Institutions

Decision-making in higher education institutions is increasingly influenced by data analytics and AI-driven insights. Scholars highlight that AI assists institutional leaders in strategic planning, quality assurance, policy formulation, and performance evaluation. Predictive analytics help institutions anticipate student retention issues, faculty requirements, and infrastructure needs. Literature suggests that AI-based decision-support systems enhance institutional effectiveness by enabling informed, timely, and objective decisions.

2.6 Ethical Concerns and Challenges of AI in Higher Education

Despite its potential benefits, researchers have raised concerns regarding ethical and practical challenges associated with AI adoption in higher education. Issues such as data privacy, algorithmic bias, lack of transparency, and over-reliance on automated systems are widely discussed in the literature. Studies emphasize the need for ethical frameworks, human oversight, and institutional policies to ensure responsible AI use. Additionally, lack of technical expertise and resistance to change posesignificantbarriersto AI implementation.

2.7 AI in Indian Higher Education: National Perspective

Indian scholars have examined the growing role of AI in higher education within the national context. Literature indicates that government initiatives promoting digital education have accelerated AI adoption in universities and colleges. Research highlights the potential of AI to address challenges such as large class sizes, faculty shortages, and quality assurance. However, studies also reveal disparities in digital infrastructure and access across regions, affecting equitable implementation.

2.8 Artificial Intelligence in Higher Education Institutions of Assam

Limited but emerging literature addresses the integration of AI in higher education institutions in Assam. Studies suggest that while institutions are gradually adopting digital technologies, AI implementation remains at a nascent stage. Researchers identify challenges such as inadequate infrastructure, limited funding, lack of trained personnel, and digital divide among students. At the same time, literature emphasizes that AI holds significant potential to improve academic quality, administrative efficiency, and institutional decision-making in the state.

2.9 Research Gap Identified from the Review

A critical analysis of the reviewed literature reveals that most existing studies focus on global or national perspectives of AI in higher education, with limited emphasis on regional contexts such as Assam. There is a noticeable gap in research examining the role of AI in everyday academic life and decision-making processes of Higher Education Institutions in Assam. Moreover, empirical evidence related to institutional challenges and contextual opportunities remains scarce. The present study seeks to address these gaps by providing a focused analysis of AI integration in HEIs of Assam.

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Research Methodology

3.1 Research Design

The present study adopts a descriptive and analytical research design to examine the role of Artificial Intelligence in everyday academic life and decision-making processes in Higher Education Institutions (HEIs) in Assam. The study is primarily conceptual in nature and is based on systematic analysis of existing literature, policy documents, reports, and empirical studies related to AI and higher education. This design is considered appropriate as it allows an in-depth understanding of emerging trends, applications, and challenges of AI in higher education within a regional context.

3.2 Nature of the Study

The study is qualitative in nature and relies on secondary data sources. It seeks to interpret and synthesize existing knowledge to develop a comprehensive understanding of AI integration in Higher Education Institutions of Assam. The qualitative approach enables critical examination of concepts, practices, and policy implications related to Artificial Intelligence in education.

3.3 Sources of Data

The study is based on secondary sources of data. Relevant information has been collected from research articles published in peer-reviewed journals, books, edited volumes, conference proceedings, government reports, policy documents, and authentic online databases related to Artificial Intelligence and higher education. Special emphasis has been given to studies published in UGC CARE–listed journals to ensure academic credibility and quality.

3.4 Method of Data Collection

Data for the study have been collected through an extensive review of literature. Scholarly databases and academic repositories were consulted to identify relevant studies on AI applications in higher education. Documents were selected based on their relevance to the objectives of the study, contextual applicability, and methodological rigor.

3.5 Method of Data Analysis

The collected data were analyzed using thematic and content analysis techniques. Key themes related to teaching–learning processes, academic administration, decision-making, benefits, and challenges of AI were identified and critically examined. The analysis focused on synthesizing findings from diverse sources to develop coherent interpretations aligned with the objectives of the study.

3.6 Scope of the Study

The scope of the study is limited to Higher Education Institutions located in the state of Assam. The study focuses on the role of Artificial Intelligence in everyday academic activities and institutional decision-making processes. It does not include empirical field surveys or experimental interventions but provides a theoretical and analytical foundation for future empirical research.

3.7 Limitations of the Study

As the study is based on secondary data, its findings are dependent on the availability and quality of existing literature. The absence of primary data limits the ability to capture institution-specific practices and stakeholder perceptions. Additionally, rapid technological advancements in AI may result in changes that are beyond the temporal scope of the present study.

Data Collection, Analysis and Interpretation

4.1 Data Collection

The present study is based on secondary data collected from various academic and policy-related sources. Relevant data were gathered from peer-reviewed research articles, UGC CARE–listed journals, government reports, higher education policy documents, institutional reports, and credible online databases. The collected data focused on applications of Artificial Intelligence in teaching–learning processes, academic administration, and decision-

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making practices in Higher Education Institutions, with specific reference to Assam.

4.2 Data Analysis

The collected data were analyzed using qualitative content analysis and thematic interpretation methods. Themes related to everyday academic applications of AI, institutional decision-making, administrative efficiency, and student support systems were identified and systematically examined. For interpretativeclarity,conceptualcategorizatio n was employed to illustrate the relative emphasis on different areas of AI application in Higher Education Institutions.

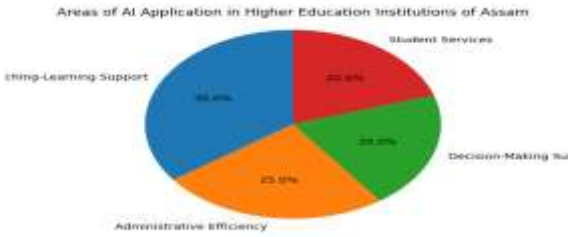
4.3 Interpretation of Data

Analysis of the reviewed literature indicates that Artificial Intelligence is predominantly used to support teaching–learning processes in Higher Education Institutions. AI-enabled learning management systems, digital contentrecommendationtools,and assessment platforms play a major role in enhancing student engagement and academic performance. Administrative efficiency represents another significant area where AI contributes through automation of admissions, attendance monitoring, and examination processes.

Decision-making support through data analytics and predictive tools is gradually gaining importance, particularly in institutional planning and quality assurance. Student support services such as academic advising, chatbots, and grievance redressal systems also reflect emerging AI applications, though their adoption remains limited in many institutions of Assam.

4.4 Diagrammatic Representation

The following pie diagram represents the conceptual distribution of major areas where Artificial Intelligence is applied in Higher Education Institutions of Assam, based on trends identified in the reviewed literature.



The pie diagram shows that teaching–learning support constitutes the largest share of AI application, followed by administrative efficiency and decision-making support. Student services represent a smaller but emerging area of AI integration. This distribution highlights the academic-centric approach of AI adoption in HEIs of Assam, with gradual expansion toward governance and student-centered services.

Major Findings and Discussion

5.1 Major Findings of the Study

Based on the analysis and interpretation of secondary data, the study reveals several important findings regarding the role of Artificial Intelligence in everyday academic life and decision-making processes in Higher Education Institutions of Assam.

1. Artificial Intelligence is increasingly being integratedinto teaching–learning processes, particularly through learning management systems, digital content platforms, and automated assessment tools.
2. AIapplicationsarepredominantly academic-centric,withgreateremphasisoninstructional support compared to administrative and governance-related uses.
3. Higher Education Institutions in Assam are gradually adopting AI-enabled tools for administrativeefficiency,including admission management, attendance monitoring, and examination processing.

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4. AI-supported data analytics are emerging as valuable tools for institutional decision-making, especially in areas such as academic planning, quality assurance, and resource allocation.
5. Student support services such as catboats, academic advising systems, and digital grievance mechanisms are in an early stage of AI adoption.
6. Despite its potential benefits, the integration of AI in HEIs of Assam is constrained by infrastructural limitations, lack of trained manpower, and digital divide among students.

5.2 Discussion of Findings

The findings of the study highlight the growing significance of Artificial Intelligence in enhancing the effectiveness of higher education institutions. The prominence of AI in teaching–learning processes aligns with global trends emphasizing personalized and technology-enabled education. AI-driven platforms facilitate adaptive learning, timely feedback, and improved student engagement, which are crucial for improving academic outcomes.

The limited yet increasing use of AI in administrative functions indicates a shift toward automation and data-driven institutional management. By reducing manual workload and minimizing errors, AI contributes to operational efficiency and transparency. However, the relatively lower adoption of AI in strategic governance suggests that institutions are still in the transitional phase of digital transformation.

Decision-making supported by AI analytics represents a critical advancement in higher education governance. Predictive tools enable institutional leaders to make informed decisions regarding student retention, faculty deployment, and infrastructure planning. In the context of Assam, such capabilities are particularly important given resource constraints and diverse student demographics.

The study also reveals significant challenges that influence AI integration in HEIs of Assam. Inadequate digital infrastructure, limited financial resources, and lack of professional training hinder effective implementation. Ethical concerns related to data privacy, algorithmic bias, and accountability further necessitate cautious and regulated adoption of AI technologies.

Overall, the discussion underscores that while Artificial Intelligence holds substantial promise for improving academic quality and institutional decision-making, its successful integration requires strategic planning, capacity building, policy support, and ethical governance. Addressing these challenges is essential for realizing the transformative potential of AI in higher education institutions of Assam.

Recommendations and Educational Implications

6.1 Recommendations

Based on the major findings and discussion of the study, the following recommendations are proposed for the effective and ethical integration of Artificial Intelligence in Higher Education Institutions of Assam:

1. Higher Education Institutions should develop a clear institutional policy frameworkfor the adoption and governance ofArtificialIntelligence,ensuring alignment with academic goals and ethical standards.
2. Government and regulatory bodies should strengthen digital infrastructure in HEIs, particularly in rural and semi-urban areas, to support AI-enabled teaching and administrative systems.
3. Capacity-buildingprogrammes, workshops, and professional development initiatives should be organized to train faculty members and administrative staff in the effective use of AI technologies.
4. Institutions should promote the use of AI-driven learning management systems and assessment tools to enhance personalized learning and continuous evaluation practices.
5. Data privacy, security, and ethical considerations must be prioritized through the establishment of clear guidelines and accountability mechanisms for AI use.
6. Collaborative partnerships with technology providers and research organizations

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should be encouraged to facilitate innovation and context-specific AI solutions for higher education.

6.2 Educational Implications

The findings of the study have important educational implications for teaching, learning, administration, and policy formulation in Higher Education Institutions of Assam. The integration of Artificial Intelligence has the potential to transform pedagogical practices by enabling adaptive learning environments that cater to diverse learner needs. Faculty members can leverage AI tools to enhance instructional planning, assessment, and feedback, thereby improving student engagement and academic achievement.

From an administrative perspective, AI-driven systems can significantly improve institutional efficiency, transparency, and accountability. Automated processes and data analytics support evidence-based decision-making, which is essential for quality assurance and strategic planning in higher education. These developments can contribute to better governance and sustainable institutional growth.

At the policy level, the study underscores the need for inclusive and ethical AI adoption strategies that address regional disparities and digital divide issues. Policymakers must ensure that AI integration in higher education promotes equity, accessibility, and human-centered learning. Overall, the effective use of Artificial Intelligence can play a transformative role in strengthening the higher education system of Assam and preparing learners for the demands of a technology-driven society.

Limitations and Scope for Further Research

7.1 Limitations of the Study

Every research study has certain limitations, and the present study is no exception. The major limitations of this study are as follows:

1. The study is based entirely on secondary data sources such as research articles, reports, and policy documents; no primary data were collected from faculty members, students, or administrators.
2. Due to the conceptual and descriptive nature of the study, institution-specific practices and ground-level realities of AI implementation could not be examined in detail.
3. The scope of the study is limited to Higher Education Institutions in Assam; therefore, the findings may not be directly generalizable to other states or regions of India.
4. Rapid advancements in Artificial Intelligence technologies may result in changes that go beyond the temporal scope of the present study.
5. Limited availability of region-specific empirical literature on AI adoption in Assam posed constraints on in-depth comparative analysis.

7.2 Scope for Further Research

Despite the above limitations, the present study opens several avenues for further research in the field of Artificial Intelligence and higher education.

1. Future studies may adopt empirical research designs involving surveys, interviews, or case studies to examine stakeholder perceptions of AI integration in Higher Education Institutions.
2. Comparative studies can be conducted between Assam and other states to analyze regional variations in AI adoption and implementation practices.
3. Further research may focus on the impact of AI-based teaching and assessment tools on student learning outcomes and academic achievement.
4. Longitudinal studies can be undertaken to examine the long-term effects of AI integration on institutional governance, decision-making, and quality assurance.
5. Ethical dimensions of Artificial Intelligence, including data privacy, algorithmic bias, and accountability in higher education, may be explored in greater depth.

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Conclusion

The present study examined the role of Artificial Intelligence in everyday academic life and decision-making processes within Higher Education Institutions in Assam. The analysis reveals that Artificial Intelligence has emerged as a transformative tool with significant potential to enhance teaching–learning processes, academic administration, and institutional governance. AI-enabled technologies support personalized learning, efficient assessment practices, administrative automation, and data-driven decision-making, thereby contributing to improved academic quality and institutional effectiveness.

The findings indicate that while Higher Education Institutions in Assam have begun adopting AI-driven tools, the integration remains uneven and largely concentrated in instructional and administrative support functions. The use of AI for strategic decision-making and governance is still at a developing stage. Challenges such as inadequate digital infrastructure, limited technical expertise, financial constraints, and ethical concerns continue to restrict the full-scale implementation of Artificial Intelligence in the region's higher education system.

Despite these challenges, the study highlights that Artificial Intelligence holds immense promise for addressing several structural and operational issues faced by Higher Education Institutions in Assam. With appropriate policy support, capacity building, ethical safeguards, and investment in digital infrastructure, AI can play a crucial role in promoting inclusive, efficient, and future-ready higher education.

In conclusion, the effective and responsible integration of Artificial Intelligence in Higher Education Institutions requires a balanced approach that combines technological innovation with human judgment, ethical considerations, and contextual sensitivity. Strengthening AI adoption in higher education will not only improve institutional decision-making but also prepare learners in Assam to meet the demands of a rapidly evolving knowledge-driven and technology-oriented society.

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