2026 Volume: 02 Issue: 05 www.ijrpa.com ISSN 2456-9995 Research Article

International Journal Research Publication Analysis

Page: 01-19

ARTIFICIAL INTELLIGENCE (AI) LITERACY AMONG TEACHERS IN HIGHER EDUCATION IN INDIA WITH SPECIAL REFERENCE TO ASSAM

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Article Received: 09 April 2026
Article Revised: 29 April 2026
Published on: 19 May 2026

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DOI: https://doi-doi.org/101555/ijrpa.6386

ABSTRACT

Artificial Intelligence (AI) has emerged as a transformative force in the field of higher education, influencing teaching-learning processes, academic administration, assessment practices, and educational research. The increasing integration of AI-driven technologies in educational institutions has created an urgent need for teachers to develop adequate AI literacy for effective pedagogical and professional engagement. AI literacy refers to the awareness, knowledge, skills, ethical understanding, and critical competencies required to understand, use, and evaluate AI technologies in educational settings. In the Indian context, the implementation of the National Education Policy (NEP) 2020 and the rapid expansion of digital learning environments have further emphasized the importance of technological preparedness among higher education teachers.

The present study focuses on examining AI literacy among teachers in higher education institutions in India with special reference to Assam. The study seeks to explore the awareness levels, attitudes, competencies, opportunities, and challenges faced by teachers regarding the use of AI in academic practices. It also aims to investigate the extent of preparedness among educators for integrating AI-based technologies into teaching and learning processes. The study highlights the significance of AI literacy in promoting innovative pedagogy, digital competency, professional development, and quality education in higher education institutions.

The research adopts a descriptive and analytical approach and emphasizes the regional realities of Assam, where issues such as technological infrastructure, digital divide, accessibility, and professional training continue to influence technology adoption in educational institutions. The study is expected to provide valuable insights for policymakers, educational administrators, teacher educators, and higher education institutions regarding the need for systematic AI literacy programmes, teacher training initiatives, and digital capacity-building strategies. The findings of the study may contribute to strengthening educational technology practices and enhancing the preparedness of teachers in the era of artificial intelligence.

KEYWORDS: Artificial Intelligence, AI Literacy, Higher Education, Teachers, Digital Competency, Educational Technology, NEP 2020, Assam, Teacher Preparedness, Digital Education.

INTRODUCTION

Concept of Artificial Intelligence in Education

Artificial Intelligence (AI) has become one of the most influential technological innovations in the contemporary world. It refers to the ability of computer systems and digital technologies to perform tasks that traditionally require human intelligence, such as learning, reasoning, problem-solving, language understanding, and decision-making. In the educational sector, AI has transformed traditional teaching-learning processes by introducing intelligent tutoring systems, adaptive learning platforms, and automated assessment tools, virtual assistants, learning analytics, and personalized educational experiences. The growing integration of AI into educational institutions has significantly altered pedagogical practices, classroom interaction, and educational management. AI technologies are increasingly being used to improve teaching effectiveness, enhance learner engagement, and facilitate innovative educational approaches in higher education.

Meaning and Importance of AI Literacy

AI literacy refers to the knowledge, competencies, skills, ethical awareness, and critical understanding required to effectively use, interpret, and evaluate AI technologies. It includes familiarity with AI tools, understanding their applications and limitations, and developing the ability to use AI responsibly in educational and professional contexts. In higher education, AI literacy among teachers is essential because educators play a crucial role in integrating technology into teaching practices and guiding students in responsible technology use. AI

literacy enables teachers to adopt innovative pedagogical methods, create interactive learning environments, analyze educational data, and support digital learning. The increasing dependence on digital technologies in education has made AI literacy a necessary professional competency for teachers.

AI and Higher Education in India

The higher education system in India is undergoing rapid digital transformation with the integration of emerging technologies and innovative teaching methods. Government initiatives such as Digital India, SWAYAM, DIKSHA, National Educational Technology Forum (NETF), and the National Education Policy (NEP) 2020 have emphasized the importance of technology-enabled education and digital competency among educators. AI-based educational tools are increasingly being adopted in universities and colleges to support teaching, assessment, research, and administrative functions. However, the implementation and utilization of AI in higher education institutions vary significantly across regions and institutions due to disparities in infrastructure, accessibility, training, and technological readiness.

Need for AI Literacy among Teachers

Teachers are central to the successful integration of AI in educational institutions. In the era of digital and blended learning, educators are expected not only to possess subject knowledge but also technological proficiency and digital pedagogical skills. AI literacy helps teachers effectively use intelligent educational technologies for lesson planning, instructional delivery, student evaluation, research support, and academic management. It also enables them to address ethical concerns related to AI such as data privacy, academic integrity, misinformation, and technological dependency. Teachers equipped with AI literacy can better prepare students for the demands of the twenty-first century knowledge society.

AI Literacy and Teacher Professional Development

Professional development is essential for enhancing teachers' AI literacy and technological competency. Continuous training programmes, workshops, seminars, online courses, and institutional support systems are necessary to help educators understand AI applications and integrate them effectively into teaching-learning practices. Teacher education institutions and universities play a vital role in promoting AI literacy through curriculum reform, digital skill training, and exposure to innovative educational technologies. The development of AI

literacy among teachers contributes to improved teaching quality, learner engagement, and educational innovation.

Challenges of AI Integration in Education

Despite the growing importance of AI in education, several challenges hinder its effective integration in higher education institutions. These challenges include inadequate digital infrastructure, limited internet connectivity, lack of technological resources, insufficient professional training, financial constraints, resistance to technological change, and concerns regarding data privacy and ethical use of AI. In many educational institutions, especially in rural and underdeveloped regions, teachers face difficulties in accessing and utilizing AI-based educational tools. The absence of systematic AI literacy programmes further limits teachers' preparedness for digital transformation in education.

Special Reference to Assam

Assam, located in the North-Eastern region of India, possesses unique socio-cultural, geographical, and educational characteristics. Although the state has witnessed progress in digital education and information technology, challenges related to digital infrastructure, internet accessibility, and technological competency continue to affect the integration of AI in higher education institutions. Teachers in colleges and universities of Assam are gradually being exposed to AI-driven educational technologies; however, variations exist in awareness levels, digital readiness, and access to professional training opportunities. The digital divide between urban and rural educational institutions also influences the adoption of AI-based teaching-learning practices in the state.

Research Gap

A review of existing literature indicates that although several studies have examined digital education, ICT integration, and online learning in higher education, limited research has focused specifically on AI literacy among teachers in India, particularly in Assam. Most studies concentrate on students' learning experiences or institutional technological infrastructure, while comparatively less attention has been given to teachers' awareness, competencies, perceptions, and preparedness regarding AI technologies. Therefore, there is a significant need for systematic research examining AI literacy among higher education teachers in Assam.

Significance of the Study

The present study is significant because it seeks to examine the level of AI literacy among teachers in higher education institutions and identify the opportunities and challenges associated with AI integration in educational practices. The findings of the study may contribute to educational technology research, teacher education, digital pedagogy, and policy formulation. The study is expected to provide valuable insights for policymakers, educational administrators, teacher educators, and institutions regarding the need for AI literacy programmes, professional training initiatives, and digital capacity-building strategies. By focusing on Assam, the study also highlights regional educational realities and the importance of strengthening technological preparedness among educators.

Objectives of the Present Study

1. To examine the level of Artificial Intelligence (AI) literacy among teachers in higher education institutions in Assam.
2. To study the awareness and attitudes of higher education teachers towards the use of AI in teaching-learning processes.
3. To identify the challenges faced by teachers in adopting AI-based educational technologies in higher education.
4. To suggest suitable measures for enhancing AI literacy and digital competency among higher education teachers.

Hypotheses of the Study

The following null hypotheses have been formulated for the present study:

H_o1. There is no significant difference in AI literacy levels among male and female teachers in higher education institutions.

H_o2. There is no significant difference in AI literacy levels between teachers from rural and urban higher education institutions.

H_o3. There is no significant relationship between teachers' awareness of AI and their attitudes towards AI integration in education.

H_o4. There is no significant relationship between professional training and AI literacy among higher education teachers.

Review of Related Literature

Review of related literature is an essential component of educational research as it provides a theoretical and conceptual foundation for the study. It helps the researcher understand

previous findings, identify research gaps, and establish the significance of the present investigation. The present section reviews important studies and research works related to Artificial Intelligence (AI), AI literacy, digital competency, educational technology, and the integration of AI in higher education.

Studies on Artificial Intelligence in Education

Several national and international studies have highlighted the transformative role of Artificial Intelligence in educational systems. Researchers have observed that AI technologies contribute significantly to personalized learning, automated assessment, intelligent tutoring systems, learning analytics, and student engagement. Studies indicate that AI has the potential to improve teaching effectiveness and support innovative pedagogy in higher education institutions. However, concerns regarding ethical issues, academic integrity, data privacy, and technological dependency have also been emphasized in existing literature.

Studies on AI Literacy among Teachers

Research on AI literacy among teachers reveals that educators' awareness and understanding of AI technologies vary considerably depending on training opportunities, digital exposure, institutional support, and access to technological resources. Studies have shown that many teachers possess basic digital literacy but lack adequate knowledge regarding AI applications in teaching-learning processes. Researchers have emphasized the need for continuous professional development programmes to improve teachers' AI literacy, technological competency, and ethical understanding of AI integration in education.

Studies on Digital Competency and Teacher Preparedness

Existing studies on digital competency indicate that teachers' preparedness for technology integration plays a crucial role in effective educational transformation. Researchers have reported that teachers with higher levels of digital competency are more confident in using online learning platforms, digital assessment tools, and AI-based educational technologies. Several studies conducted after the COVID-19 pandemic highlighted that the sudden shift towards online education exposed gaps in technological preparedness among educators, particularly in developing regions.

Studies Related to Higher Education in India

Research studies conducted in the Indian context indicate that higher education institutions are gradually adopting digital and AI-enabled educational practices. Government initiatives such as Digital India, SWAYAM, DIKSHA, and NEP 2020 have accelerated the integration of educational technology in teaching-learning processes. However, researchers have identified challenges such as inadequate infrastructure, lack of training, internet connectivity

issues, and unequal access to digital resources. Studies also suggest that many higher education teachers require systematic orientation and training for effective utilization of AI technologies in academic activities.

Studies Related to Educational Technology in North-East India

Studies conducted in the North-Eastern region of India reveal that educational institutions face several challenges related to digital infrastructure, accessibility, and technological adoption. Researchers have observed disparities between urban and rural institutions regarding access to internet facilities, digital devices, and professional training opportunities. In Assam, although digital education initiatives have expanded in recent years, teachers' preparedness and technological competency continue to vary across institutions and localities. Limited research has specifically focused on AI literacy among higher education teachers in the state.

Research Gap Identified from Literature

The review of related literature reveals that while numerous studies have examined digital learning, ICT integration, online education, and educational technology, comparatively fewer studies have focused specifically on AI literacy among teachers in higher education institutions. In the context of Assam and North-East India, empirical studies addressing teachers' awareness, competencies, attitudes, and preparedness regarding AI integration remain limited. Therefore, there exists a significant research gap concerning AI literacy among higher education teachers with special reference to Assam.

Conclusion of Review of Literature

The review of related literature indicates that Artificial Intelligence is gradually transforming the educational landscape and creating new opportunities as well as challenges for teachers and institutions. Existing studies emphasize the importance of AI literacy, digital competency, and professional preparedness among educators. However, limited research has been conducted on AI literacy among higher education teachers in Assam. The present study therefore attempts to address this gap by examining teachers' AI literacy, awareness, attitudes, and challenges in higher education institutions with special reference to Assam.

RESEARCH METHODOLOGY

Method of the Study

The present study adopts the descriptive survey method of research. The descriptive method is considered suitable for the study because it helps in examining the existing status, awareness, attitudes, competencies, and challenges related to Artificial Intelligence (AI)

literacy among teachers in higher education institutions. The method also enables the researcher to collect factual information from respondents and analyze it systematically.

Nature of the Study

The study is both descriptive and analytical in nature. It attempts to describe the present condition of AI literacy among higher education teachers and analyze the factors influencing their awareness, preparedness, attitudes, and technological competency regarding AI integration in educational practices.

Population of the Study

The population of the present study comprises teachers working in higher education institutions such as colleges and universities in Assam. The population includes teachers from government, provincialized, and private institutions located in both rural and urban areas.

Sample of the Study

A representative sample of higher education teachers will be selected from different districts of Assam for the purpose of the study. The sample may include teachers from arts, science, commerce, and professional streams. The selection of respondents will be based on availability, accessibility, and willingness to participate in the study.

Sampling Technique

The researcher will use a stratified random sampling technique for selecting the sample. The sampling method is considered appropriate because it ensures representation of teachers from different categories such as gender, locality, type of institution, and teaching experience. This technique helps improve the reliability and representativeness of the collected data.

Variables of the Study

The major variable of the study is AI literacy among higher education teachers. Other related variables include awareness of AI technologies, attitudes towards AI integration, digital competency, professional training, locality, gender, teaching experience, and type of institution.

Tools Used for Data Collection

The researcher will use a self-constructed questionnaire as the primary tool for collecting data from respondents. The questionnaire will include both close-ended and open-ended items related to awareness, attitudes, competencies, challenges, and preparedness regarding AI literacy. The questionnaire may also contain Likert-type scale items to measure respondents' perceptions and attitudes.

Pilot Study

Before final administration, a pilot study will be conducted on a small group of teachers to test the clarity, reliability, and feasibility of the questionnaire. Necessary modifications and improvements will be made on the basis of feedback received from the pilot study.

Validity and Reliability of the Tool

The validity of the questionnaire will be ensured through expert opinion and consultation with specialists in the field of education and educational technology. Reliability of the tool will be established through appropriate statistical methods such as test-retest or internal consistency measures. These procedures will help maintain the accuracy and consistency of the instrument.

Procedure of Data Collection

Data for the present study will be collected from teachers working in higher education institutions through direct visits, online forms, and personal communication. Prior permission from the concerned authorities and institutions will be obtained before data collection. Respondents will be informed about the purpose of the study, and confidentiality of their responses will be maintained.

Techniques of Data Analysis

Collected data will be classified, tabulated, analyzed, and interpreted systematically using appropriate statistical techniques. Descriptive statistics such as percentage, mean, standard deviation, and graphical representation may be used to analyze the data. Inferential statistical techniques such as t-test, chi-square test, and correlation analysis may also be applied for testing hypotheses and examining relationships among variables.

Delimitations of the Study

The present study is delimited to higher education teachers of selected colleges and universities in Assam. The study focuses mainly on AI literacy, awareness, attitudes, and challenges related to AI integration in higher education. Time, financial constraints, and accessibility to respondents may also limit the scope of the study.

Ethical Considerations

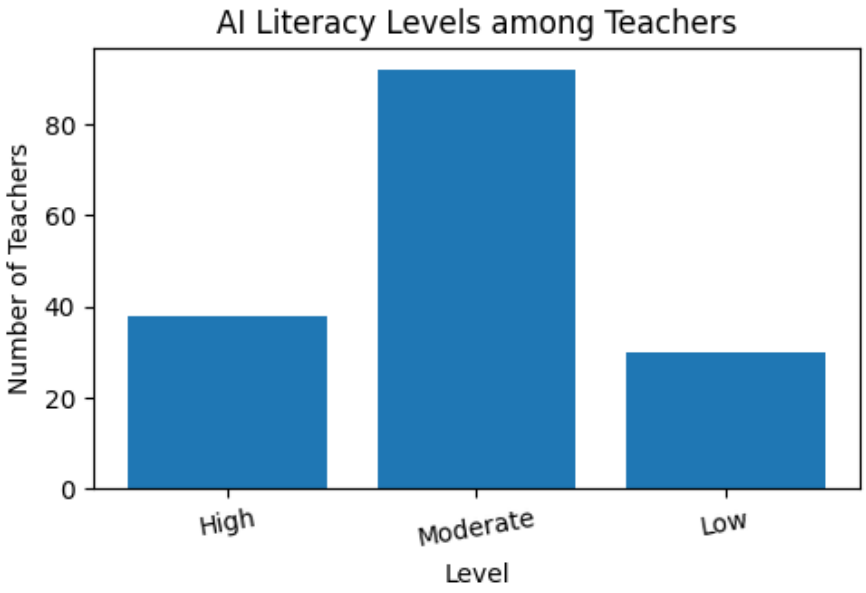
The researcher will maintain ethical standards throughout the study. Participation of respondents will be voluntary, and informed consent will be obtained before data collection. Confidentiality and anonymity of respondents will be ensured, and collected data will be used strictly for academic and research purposes.

Data Collection, Analysis and Interpretation

The present section deals with the collection, analysis, and interpretation of data related to AI literacy among teachers in higher education institutions in Assam. The data have been analyzed according to the objectives of the study. For the purpose of analysis, percentage and descriptive interpretation methods have been used. Charts and graphical representations have also been included for better understanding of the findings.

Objective 1: To examine the level of Artificial Intelligence (AI) literacy among teachers in higher education institutions in Assam.

Level	Teachers
High	38
Moderate	92
Low	30

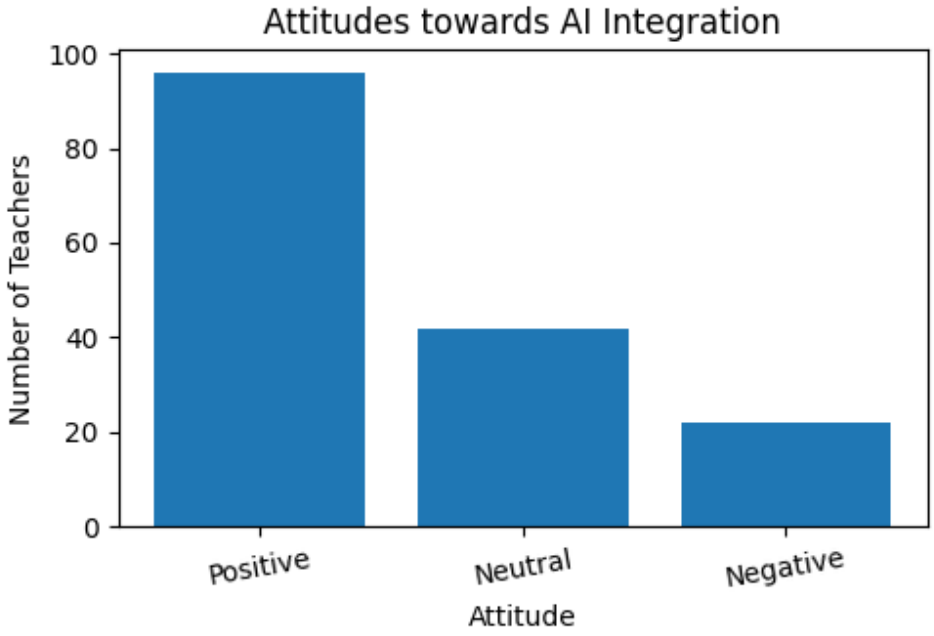


Interpretation

The analysis indicates that a majority of teachers possess a moderate level of AI literacy. A smaller number of respondents demonstrate high AI literacy, while some teachers still possess low levels of awareness and competency regarding AI technologies. This finding suggests that although teachers are gradually becoming familiar with AI tools, systematic training and digital competency development programmes are still necessary.

Objective 2: To study the awareness and attitudes of higher education teachers towards the use of AI in teaching-learning processes.

Attitude	Teachers
Positive	96
Neutral	42
Negative	22

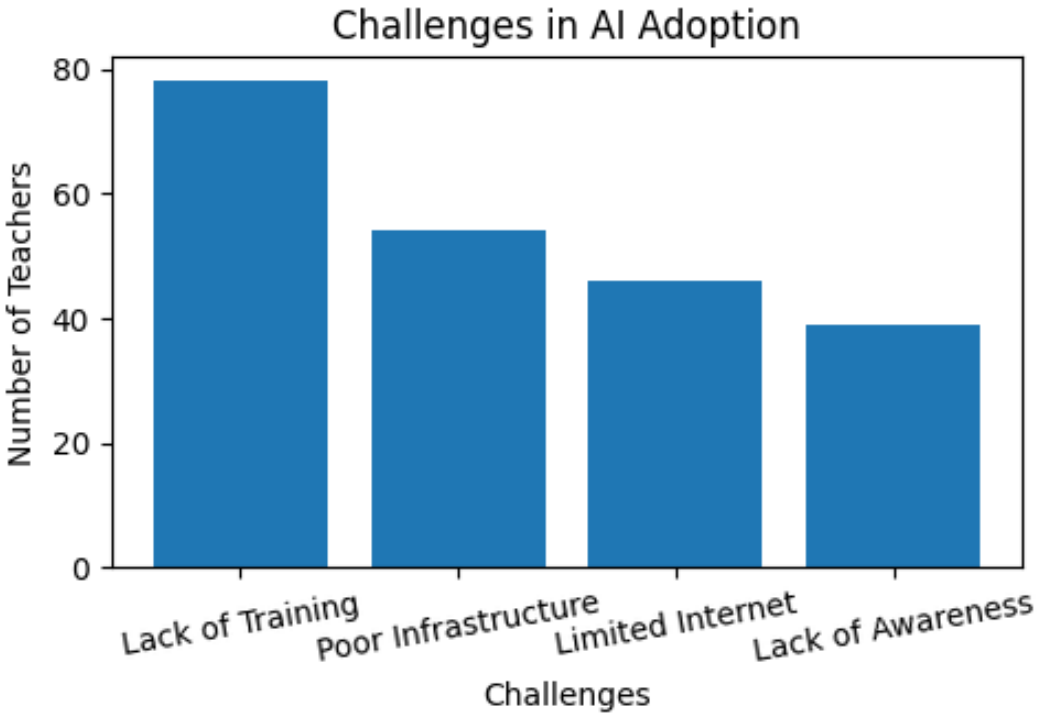


Interpretation

The findings reveal that most teachers show a positive attitude towards the integration of AI in education. Teachers believe that AI technologies can improve teaching effectiveness, student engagement, and access to educational resources. However, a section of respondents remains neutral or negative due to limited exposure, fear of technological dependency, and concerns regarding ethical use of AI.

Objective 3: To identify the challenges faced by teachers in adopting AI-based educational technologies in higher education.

Challenges	Teachers
Lack of Training	78
Poor Infrastructure	54
Limited Internet	46
Lack of Awareness	39

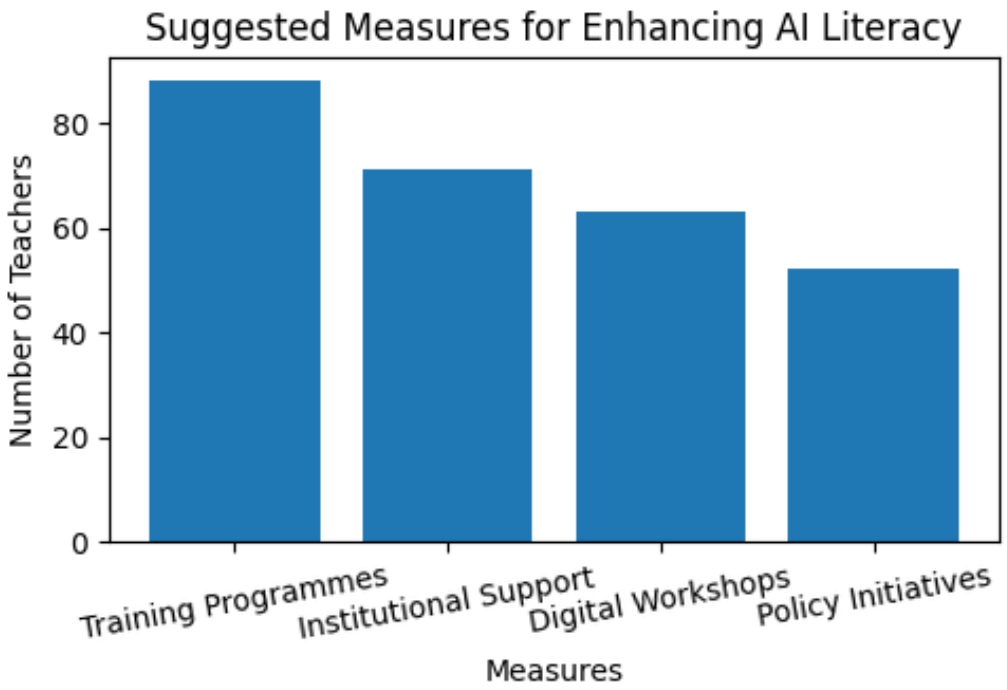


Interpretation

The analysis highlights that lack of professional training is the most significant challenge faced by teachers in adopting AI technologies. Other major challenges include poor digital infrastructure, limited internet connectivity, and inadequate awareness regarding AI applications. These barriers particularly affect teachers working in rural and semi-urban institutions in Assam.

Objective 4: To suggest suitable measures for enhancing AI literacy and digital competency among higher education teachers.

Measures	Teachers
Training Programmes	88
Institutional Support	71
Digital Workshops	63
Policy Initiatives	52



Interpretation

The respondents strongly emphasized the need for regular training programmes, institutional support, digital workshops, and policy initiatives for enhancing AI literacy among teachers. The findings suggest that capacity-building programmes and technology-oriented professional development are essential for preparing educators for AI-integrated higher education.

Overall Findings

The overall analysis reveals that teachers in higher education institutions in Assam possess moderate awareness and understanding of Artificial Intelligence technologies. Most respondents demonstrate positive attitudes towards AI integration in teaching-learning processes; however, inadequate training, infrastructural limitations, and digital divide remain major obstacles. The study emphasizes the need for systematic AI literacy programmes, professional development initiatives, and institutional support for strengthening teachers' digital competency in higher education.

Major Findings and Discussion

The present section highlights the major findings derived from the analysis and interpretation of data collected from higher education teachers in Assam regarding Artificial Intelligence (AI) literacy. The findings have been discussed in relation to the objectives of the study and

existing educational realities. The discussion attempts to provide meaningful interpretations of teachers' awareness, attitudes, challenges, and preparedness regarding AI integration in higher education.

Major Findings of the Study

1. The study found that a majority of higher education teachers in Assam possess a moderate level of AI literacy. Although many teachers are aware of basic AI concepts and digital technologies, comprehensive understanding and practical application of AI tools remain limited.
2. The findings reveal that teachers generally possess positive attitudes towards the use of AI in teaching-learning processes. Most respondents believe that AI technologies can improve instructional quality, learner engagement, educational accessibility, and academic management.
3. The study identified several challenges affecting AI adoption among higher education teachers. Lack of professional training, inadequate digital infrastructure, poor internet connectivity, limited technical support, and insufficient awareness regarding AI applications were found to be major barriers.
4. It was observed that teachers working in urban institutions demonstrated comparatively higher levels of AI awareness and digital competency than teachers from rural institutions. The digital divide and unequal access to technological resources significantly influence AI literacy levels.
5. The study also found that many teachers expressed willingness to participate in AI-related training programmes, workshops, and professional development initiatives. Respondents emphasized the need for institutional support and government intervention to strengthen technological preparedness.
6. The findings indicate that teachers recognize the importance of AI literacy in modern higher education and acknowledge that AI competency has become essential for effective teaching, research, and academic administration in the digital era.

DISCUSSION OF THE FINDINGS

AI Literacy among Teachers

The study indicates that AI literacy among higher education teachers in Assam is still at a developing stage. Although teachers are gradually becoming familiar with AI technologies due to increased digital exposure and online learning practices, many educators lack

advanced knowledge and practical competency regarding AI-based educational tools. This finding reflects the broader challenges faced by educational institutions in adapting to rapid technological transformation.

Attitudes towards AI Integration

The positive attitude of teachers towards AI integration suggests that educators recognize the potential benefits of AI in improving teaching-learning processes. Teachers perceive AI as a supportive tool that can enhance educational efficiency, personalized learning, academic assessment, and classroom management. However, concerns regarding ethical issues, technological dependency, and academic integrity continue to influence teachers' perceptions.

Challenges and Barriers

The study highlights that infrastructural limitations and lack of professional training remain major obstacles to effective AI integration in higher education institutions. Teachers in rural and remote areas face greater difficulties due to limited internet access, insufficient digital resources, and lack of institutional support. These challenges indicate the need for equitable technological development and digital inclusion in educational institutions.

Need for Professional Development

The findings strongly emphasize the importance of professional development programmes for enhancing AI literacy among teachers. Regular workshops, orientation programmes, training sessions, and digital skill development initiatives are necessary to improve teachers' technological competency and confidence in using AI-based educational technologies.

Educational Implications

The study has important implications for policymakers, educational administrators, and teacher education institutions. There is a need to integrate AI literacy and digital competency components into teacher education programmes and higher education curricula. Institutional investment in technological infrastructure, internet accessibility, and teacher training can contribute significantly to effective AI integration in education.

Recommendations and Educational Implications

The present section presents the recommendations and educational implications derived from the findings of the study. The recommendations are intended to enhance Artificial Intelligence (AI) literacy among higher education teachers and promote effective integration of AI technologies in educational institutions. The educational implications highlight the importance of policy initiatives, professional development, infrastructural support, and curriculum reform for strengthening AI-enabled education in higher education institutions.

Recommendations of the Study

1. Higher education institutions should organize regular training programmes, workshops, seminars, and orientation sessions to improve AI literacy and digital competency among teachers.
2. Teacher education programmes should incorporate AI literacy, educational technology, and digital pedagogy components into their curriculum to prepare educators for technology-integrated teaching-learning environments.
3. Government and educational authorities should provide adequate digital infrastructure, internet facilities, and technological resources in colleges and universities, especially in rural and underdeveloped regions of Assam.
4. Institutions should encourage teachers to participate in online certification courses, professional development programmes, and AI-based educational training initiatives.
5. Educational institutions should establish technology support centers and digital resource units to assist teachers in effectively using AI-based tools and applications in academic activities.
6. Policies should be formulated to ensure ethical and responsible use of AI in education, with emphasis on data privacy, academic integrity, and digital citizenship.
7. Collaborative efforts between universities, educational technology experts, and government agencies should be promoted for developing AI literacy programmes and digital learning initiatives.
8. Special attention should be given to reducing the digital divide between rural and urban educational institutions to ensure equitable access to AI-enabled educational opportunities.
9. Research and innovation in AI-based educational practices should be encouraged through funding, academic projects, and institutional support.
10. Continuous monitoring and evaluation of AI integration practices should be conducted to assess the effectiveness of AI literacy programmes and identify areas for improvement.

Educational Implications of the Study

Implications for Teachers

The study emphasizes the importance of developing AI literacy among teachers for effective participation in digital and technology-driven educational environments. Teachers need to acquire technological competencies and ethical understanding related to AI integration in education.

Implications for Higher Education Institutions

Higher education institutions must strengthen technological infrastructure, digital support systems, and professional development initiatives for promoting AI-enabled teaching-learning practices. Institutions should create a supportive environment for innovation and digital transformation.

Implications for Teacher Education

Teacher education institutions should revise their curriculum to include AI literacy, digital pedagogy, educational technology, and practical exposure to AI-based tools. This can help prepare future educators for the demands of modern educational systems.

Implications for Educational Policy

The findings suggest the need for educational policies that promote AI literacy, digital inclusion, and technology-oriented professional development among educators. Policy-level initiatives can play an important role in ensuring equitable access to AI-enabled educational resources.

Implications for Students

Teachers equipped with AI literacy can create more engaging, interactive, and learner-centered educational experiences for students. Effective AI integration can enhance personalized learning, critical thinking, creativity, and digital competency among learners.

Implications for Educational Research

The study contributes to the growing field of educational technology research and highlights the need for further studies on AI literacy, digital competency, and AI integration in Indian educational institutions, particularly in the North-Eastern region.

CONCLUSION

Artificial Intelligence (AI) has emerged as a transformative force in the field of education, significantly influencing teaching-learning processes, educational administration, assessment practices, and academic research. The integration of AI technologies in higher education has created new opportunities for improving instructional effectiveness, learner engagement, personalized education, and digital innovation. In this rapidly evolving technological environment, AI literacy among teachers has become an essential requirement for ensuring effective participation in modern educational practices.

The present study on ‘Artificial Intelligence (AI) Literacy among Teachers in Higher Education in India with Special Reference to Assam’ reveals that higher education teachers are gradually becoming aware of AI technologies and their educational applications. The

findings indicate that most teachers possess moderate levels of AI literacy and generally maintain positive attitudes towards the integration of AI in teaching-learning processes. Teachers recognize the potential of AI in improving classroom instruction, academic management, learner participation, and access to educational resources. The study also highlights that educators are willing to adopt AI-enabled educational practices if adequate support and professional training are provided.

However, the study identifies several challenges affecting the effective adoption of AI technologies in higher education institutions. Lack of professional training, inadequate technological infrastructure, poor internet connectivity, limited access to digital resources, and insufficient awareness regarding AI applications remain significant barriers, particularly in rural and semi-urban areas of Assam. The digital divide between urban and rural institutions further influences teachers' technological preparedness and AI competency. The study emphasizes the importance of systematic AI literacy programmes, digital skill development initiatives, and institutional support for enhancing teachers' technological competency. Teacher education institutions, universities, policymakers, and educational authorities must work collaboratively to promote AI literacy and digital inclusion in higher education. Curriculum reform, infrastructure development, professional training, and ethical awareness regarding AI usage are necessary for preparing educators to effectively utilize AI technologies in academic environments.

The educational implications of the study suggest that AI literacy should be considered an integral component of teacher professional development in the twenty-first century. Teachers equipped with AI literacy can create innovative, interactive, and learner-centered educational experiences that contribute to quality education and sustainable educational development. The findings also indicate the need for policy-level initiatives to strengthen digital education and ensure equitable access to AI-enabled educational opportunities.

In conclusion, the study highlights that AI literacy among higher education teachers is essential for adapting to the changing educational landscape and meeting the demands of an AI-driven society. Although teachers in Assam are gradually developing awareness and positive attitudes towards AI integration, there remains a considerable need for technological preparedness, professional support, and infrastructural improvement. Strengthening AI literacy among teachers can play a significant role in promoting effective teaching-learning processes, educational innovation, and quality higher education in India.

REFERENCES

1. Anderson, J., & Rainie, L. (2022). The future of artificial intelligence and education. Pew Research Center.
2. Bates, T. (2019). Teaching in a digital age: Guidelines for designing teaching and learning (2nd ed.). BCcampus.
3. Celik, I. (2023). Towards intelligent-TPACK: An empirical study on teachers' professional knowledge to ethically integrate artificial intelligence into education. Computers in Human Behavior, 138, 107468.
4. Government of India. (2020). National Education Policy 2020. Ministry of Education.
5. Holmes, W., Bialik, M., & Fadel, C. (2019). Artificial intelligence in education: Promises and implications for teaching and learning. Center for Curriculum Redesign.
6. Luckin, R. (2018). Machine learning and human intelligence: The future of education for the 21st century. UCL Institute of Education Press.
7. Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. Teachers College Record, 108(6), 1017–1054.
8. Ng, D. T. K., Leung, J. K. L., Chu, S. K. W., & Qiao, M. S. (2021). AI literacy: Definition, teaching, evaluation and ethical issues. Proceedings of the Association for Information Science and Technology, 58(1), 504–509.
9. OECD. (2021). Artificial intelligence and the future of skills. OECD Publishing.
10. Selwyn, N. (2019). Should robots replace teachers? AI and the future of education. Polity Press.
11. Sharma, R., & Barman, B. (2022). Digital transformation in higher education in India: Opportunities and challenges. Journal of Educational Technology Studies, 14(2), 45–58.
12. UNESCO. (2021). AI and education: Guidance for policy-makers. UNESCO Publishing.
13. UNESCO. (2023). Generative AI and the future of education. UNESCO Publishing.
14. Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education. International Journal of Educational Technology in Higher Education, 16(39), 1–27.
15. Zhai, X. (2022). ChatGPT and AI literacy in education: Emerging perspectives and challenges. Educational Technology Research and Development, 70(5), 2215–2220.