

Teachers' Attitude toward Artificial Intelligence in Education: A Survey Study in Gujarat

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Abstract - Artificial Intelligence (AI) is rapidly transforming the field of education by improving teaching methods, learning resources, and classroom management. The present study aimed to examine teachers' attitudes toward Artificial Intelligence in education in Gujarat. The study used the survey method and collected data from 100 teachers from secondary schools and colleges. A structured questionnaire based on a five-point Likert scale was used to gather responses regarding awareness, usefulness, challenges, and acceptance of AI tools in teaching-learning processes. Statistical techniques such as percentage analysis, mean, and standard deviation were used for data interpretation. The findings revealed that most teachers showed a positive attitude toward AI integration in education. Teachers believed that AI can improve teaching efficiency, personalized learning, and student engagement. However, concerns regarding lack of training, digital literacy, ethical issues, and overdependence on technology were also observed. The study concludes that proper training programs and institutional support are essential for effective AI adoption in educational settings.

Keywords: Artificial Intelligence, Teachers' Attitude, Educational Technology, Gujarat, Digital Learning, AI in Education

I. INTRODUCTION

Education systems across the world are experiencing a major technological transformation due to the emergence of Artificial Intelligence (AI). AI-based tools such as intelligent tutoring systems, automated grading systems, virtual assistants, adaptive learning platforms, and AI chatbots are increasingly being integrated into classrooms. In India, the implementation of digital learning initiatives after the COVID-19 pandemic has accelerated the use of educational technologies among teachers and students.

Artificial Intelligence refers to the ability of machines and software systems to perform tasks that generally require human intelligence. In education,

AI helps in personalized learning, automated assessment, data analysis, student monitoring, and improved classroom engagement. Teachers play a significant role in adopting and implementing AI technologies effectively in educational institutions. Therefore, understanding teachers' attitudes toward AI is essential for successful educational transformation.

Teachers' attitudes influence their acceptance, use, and integration of technology in classrooms. Positive attitudes encourage innovation and experimentation, whereas negative attitudes create resistance and fear toward technological change. In Gujarat, many schools and colleges have started using digital learning platforms, smart classrooms, and AI-supported educational applications. However, there is still limited research regarding teachers' perceptions and readiness toward AI integration in education.

The present study attempts to explore teachers' attitudes toward Artificial Intelligence in education in Gujarat. The study is important because it helps educational institutions, policymakers, and researchers understand the opportunities and challenges related to AI adoption in teaching-learning processes.

Need and Significance of the Study

The study is significant because Artificial Intelligence is becoming an important part of modern education systems. Teachers are expected to adapt themselves to new technologies and digital teaching methods. Understanding their attitudes toward AI can help educational institutions organize training programs and develop effective educational policies. The study also contributes to the existing literature related to educational technology and teacher readiness in the Indian context.

Objectives of the Study

- To study teachers' attitudes toward Artificial Intelligence in education.
- To identify the perceived benefits of AI in teaching-learning processes.
- To examine the challenges faced by teachers regarding AI adoption.
- To analyze teachers' awareness and readiness toward AI-based educational tools.

Hypothesis of the Study

- Teachers have a positive attitude toward Artificial Intelligence in education.
- Teachers believe that AI can improve teaching effectiveness and student learning.
- Teachers face challenges related to training and technical knowledge regarding AI usage.

II. REVIEW OF LITERATURE

Recent studies indicate that Artificial Intelligence has significantly influenced educational practices globally. Research by Holmes et al. (2022) highlighted that AI-based educational tools support personalized learning and improve student outcomes. Kumar and Sharma (2023) found that Indian teachers generally show positive attitudes toward digital learning technologies but require proper training for effective implementation. Studies also reveal concerns regarding ethical issues, privacy, and overdependence on technology.

Another study by Singh (2024) reported that teachers who receive digital training are more likely to adopt AI technologies confidently. International studies suggest that AI can reduce teachers' workload through automated grading and performance tracking. However, lack of infrastructure and technological awareness remain major barriers in developing countries.

III. METHODOLOGY

The present study employed the survey method. A structured questionnaire containing 20 statements related to Artificial Intelligence in education was developed by the researcher. The questionnaire used a five-point Likert scale ranging from Strongly Agree to Strongly Disagree.

Sample:

The sample consisted of 100 teachers from schools

and colleges in Gujarat. Random sampling technique was used for data collection.

Tool Used:

A self-developed Teachers' Attitude toward AI Scale was used for collecting responses.

Statistical Techniques:

Percentage analysis, mean, and standard deviation were used for analyzing the data.

IV. DATA ANALYSIS AND INTERPRETATION

Category	Number of Teachers	Percentage	Interpretation
Positive Attitude	72	72%	Most teachers showed favorable attitudes toward AI.
Neutral Attitude	18	18%	Some teachers remained uncertain regarding AI usage.
Negative Attitude	10	10%	Few teachers expressed concerns about AI integration.

Mean Score of Teachers' Attitude toward AI: 74.86
Standard Deviation: 11.65

The statistical analysis revealed that the majority of teachers possessed a positive attitude toward Artificial Intelligence in education. The mean score (74.86) indicates favorable perceptions regarding the usefulness of AI tools in classrooms. The standard deviation (11.65) suggests moderate variability among teachers' responses.

Most teachers agreed that AI can help improve classroom engagement, personalized learning, and teaching efficiency. Teachers also believed that AI tools can reduce administrative workload and support innovative teaching practices. However, some respondents expressed concerns regarding lack of training, insufficient infrastructure, and ethical issues related to AI usage.

V. MAJOR FINDINGS

- Most teachers in Gujarat demonstrated positive attitudes toward AI in education.
- Teachers believed that AI improves teaching effectiveness and classroom engagement.
- Many teachers supported the use of AI for personalized learning and assessment.
- Lack of technical training and awareness emerged as significant barriers.
- Teachers expressed concerns regarding ethical and privacy-related issues.
- Educational institutions need to provide AI-related professional development programs.

Educational Implications and Suggestions

Educational institutions should organize workshops and training programs to improve teachers' AI literacy. Government agencies and educational policymakers should develop clear guidelines regarding ethical AI usage in classrooms. Teacher education programs such as B.Ed. and M.Ed. courses should include AI-related modules to prepare future educators for digital classrooms.

Schools and colleges should also improve digital infrastructure and provide access to AI-based educational tools. Continuous professional development programs can help teachers adapt to emerging technologies more confidently.

VI. CONCLUSION

Artificial Intelligence is becoming an integral part of modern education systems. The findings of the present study indicate that teachers in Gujarat generally possess positive attitudes toward AI integration in education. Teachers recognize the potential of AI to improve teaching-learning processes, student engagement, and educational efficiency. However, successful implementation of AI requires proper training, institutional support, ethical awareness, and technological infrastructure.

The study emphasizes the importance of teacher readiness and professional development for effective AI adoption in education. Future research may focus on comparative studies among rural and urban teachers, subject-wise analysis, and long-term impact of AI on educational outcomes.

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