

A Study of Awareness Among Teachers Regarding the use of AI Tool in Classroom Teaching

1. Sheetal Gangwar

M.Ed. Student

Bareilly College, Bareilly (U.P.)

2. Dr. Sarah Basu


Associate Professor, M.Ed. Department

Bareilly College Bareilly (U.P.)



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Abstract

The fast growth of Artificial Intelligence (AI) has greatly affected education by changing the way teaching and learning take place how teachers perform their professional work. In the present study, the researchers adopted a descriptive research design to examine the level of awareness among teachers regarding the use of AI tools in classroom teaching. Sample of 100 teachers for the study was taken from the senior secondary schools of Bareilly district. A self-made questionnaire was used by researchers to collect the data. The findings indicate that while teachers are generally aware of basic AI applications such as automated content generation, assessment support, and digital learning platforms, variations exist in the depth of understanding and practical usage of AI tools. Factors such as training opportunities, technological skills and institutional support were found to influence awareness levels. The study contributes to understanding the emerging role of AI in education and emphasize the importance of digital literacy among educators in the evolving educational landscape.

Keywords: Artificial Intelligence, Awareness, AI tools, Teacher

Introduction

“Artificial intelligence is the science of making machines capable of performing tasks that normally require human intelligence.”

Education is changing rapidly with their development of new technologies. One of the most important technological developments in recent years is Artificial Intelligence (AI). Artificial Intelligence refers to computer systems or tools that can perform tasks which usually require human intelligence, such as understanding information, solving problems, and supporting decision-making. In the field of education, AI tools are increasingly being used to improve teaching and learning processes.

AI tools help teachers in many ways such as preparing lessons plans, creating learning materials assessing students' performance, and providing personalized learning experiences. These tools can make classroom teaching more interactive, effective, and time-saving However the successful use of AI in education depends largely on teachers' awareness and understanding of these tools. Teachers play a key role in integrating technology into classroom teaching. If teachers are aware of AI tools and know how to use them properly, they can enhance students learning experiences. On the other hand, lack of awareness or training may limit the effective use of AI in education.

AI tools are smart digital tools that assist teachers and learners by making teaching and learning easier, faster, and more effective. AI tools are computer program or digital applications that can perform task that normally require human thinking and intelligence. These tools use algorithms and machine learning techniques to understand information, give suggestions, solve problems and make decisions automatically. AI tools help teachers and students by supporting activities such as creating lesson plans, answering questions checking assignments, providing feedback, and personalizing learning according to students' needs. In the 21st century rapid advancement in machine learning data analysis and language processing led to the development of modern AI tools. These tools can now understand user input generate

content accesses Student performance and provide personalised learning experiences. Applications such as virtual assistant, automated grading systems, and AI-based learning platform have made teaching and learning more interactive and efficient.

AI Tools in Education

AI tools can keep students engaged in educational material and keep learning interesting one of the ways educators can incorporate AI tools into the classroom is through the use of chatbot's ability to personalize and adapt to personalize student's learning styles creates more opportunities to keep engaged. AI tool has infiltrated all aspects of our life, including making its way into education system. AI tools in education can revolutionize the way we learn and teach from student engagement to teaching styles, including helping learner of all different styles more accurately understanding the course material. There are so many ways, AI tools can help teachers and learners in identifying early science of struggle to creating a mere interactive personalized learning plan. Some of the key factors and benefits involved in integrating AI in classroom teaching, as indicated by numerous recent studies indicate the following-

- Importance of AI awareness
- Enhanced Engagement
- Opportunities for collaboration
- Real world skills
- Access to Information and Tools
- Reducing the burden on teachers

AI awareness also helps teachers guide students in using technology responsibly and ethically. It enables teachers to develop new teaching strategies and adapt to modern educational needs. Without proper awareness, teacher may feel hesitant or unable to use AI tools effectively in the classroom. Therefore, AI awareness is essential for teacher for teachers to enhance professional development, improve teaching quality and prepare student for a technology-driven future.

Need for the Study

AI has the potential to completely revolutionize the education system by improving personalized learning experiences, enhancing teaching efficiency, encouraging multiple uses of innovation in pedagogy, and helping prepare students for the 21st century challenges and ever-increasing demands of the digital age. It is crucial that the policymakers and teaching community approach AI adoption in education carefully; after considering the opportunities and challenges it presents for all the stakeholders. According to National Education Policy 2020, "*Concerted curricular and pedagogical initiatives, including the introduction of contemporary subjects such as Artificial Intelligence, will be undertaken to develop these various important skills in students at all levels*".

Review of related literature

Many studies have been carried out in India and abroad pertaining to various aspects of teacher awareness among teachers. The researchers have taken cognizance of some of the most relevant conducted in recent years.

Chandran & Sasikala (2026) carried out a study aimed to assess the level of awareness of Artificial Intelligence (AI) among school teachers and to examine its impact on effective classroom learning and adopted the descriptive survey method. A total of 120 school teachers from Government and Private Schools in Tamil Nadu were selected using simple random sampling. Data were collected using a self-developed Artificial Intelligence Awareness Scale consisting of 30 items, covering knowledge of AI, application in classroom teaching, attitude toward AI, and challenges in implementation. The findings revealed that teachers exhibited a moderate level of AI awareness, male teachers showed higher awareness compared to female teachers, also teachers with prior experience in using digital tools had greater AI awareness compared to those without such exposure. **Marrone et.al (2025)** found that schools investing in continuous AI related training for teachers saw higher adoption rates and more effective integration. These programs often included workshops on using AI for lesson planning assessment and differentiated instruction. **Aliyu (2024)** carried out a study which examined secondary school chemistry teachers' awareness and perceptions of AI utilization for teaching and learning chemistry in Sokoto State, Nigeria. A descriptive research design was employed, with a sample of 160 teachers from Sokoto Metropolis. Data were collected using a structured questionnaire and analyzed through descriptive statistics. Findings revealed a low level of teachers' awareness regarding AI tools in chemistry education, with most teachers lacking familiarity with AI applications in their teaching. However, the perception of AI's potential benefits was generally

positive, with teachers recognizing the value of AI in enhancing student engagement and offering individualized learning experiences. The study highlighted the need for targeted professional development programs to improve teachers' understanding and application of AI in chemistry education. **Güneyli, et.al. (2024)** investigated the level of awareness among teachers regarding the use of artificial intelligence (AI) in education, focusing on whether this awareness varies according to socio-demographic characteristics, access to technology, and specific knowledge and beliefs about AI. Conducted in Northern Cyprus during the 2023–2024 academic year, this study employed a survey model with purposive and snowball sampling methods, involving 164 teachers. Teachers at different levels, namely, primary school, secondary school, high school, and university, were included in this study. The “Artificial Intelligence Awareness Scale”, developed by Ferikoğlu and Akgün (2022), was used to measure AI awareness. Data normality was verified through skewness and kurtosis values, allowing for parametric statistical tests such as t-tests, one-way ANOVA, logistic regression, and chi-square analysis. This study explored the distribution of AI use across different school types and educational levels and assessed the impact of sub-dimensions of AI awareness on its application in teaching. Findings revealed no significant influence of teacher demographics (age, gender, education level, type of school, institution level, and monthly income) on AI awareness. However, usage patterns indicated that university lecturers were more likely to incorporate AI in their teaching, followed by primary and high school teachers, with secondary school teachers using it the least. **Parthiban (2024)** conducted a study to examine the awareness of Artificial intelligence (AI) tools that help in the teaching learning process among the prospective teachers. For this study descriptive survey method was used and 300 prospective teachers of Namakkal district of Tamil Nadu were selected as sample. The data was analyzed by using descriptive statistical analysis and level of awareness was calculated. The results showed that the prospective teachers of Namakkal district have moderate level of awareness on AI Tools. **Shi (2024)** aimed to investigate the AI literacy levels of teachers, trainees and strategies to improve these levels. The research involved surveying and interviewing 430 teacher trainees. The result indicates that teacher trainees need more AI knowledge and capabilities but possess relatively high AI awareness. The researcher felt the need for steps to improve AI literacy at the school teachers and student levels.

Objectives of the Study

1. To study the level of awareness among secondary school teachers regarding the use of AI tools in classroom teaching.
2. To compare the level of awareness of male and female teachers regarding the use of AI tools in classroom teaching.
3. To compare the level of awareness of teachers from government and private schools regarding the use of AI tools in classroom teaching.
4. To compare the level of awareness of English and Hindi medium secondary school teachers regarding the use of AI tools in classroom teaching.
5. To compare the level of awareness of younger (less than 30) and older (above 50) teachers regarding the use of AI tools in classroom teaching.

Research Design

Research method: For the study, the researchers opted for Descriptive Survey method.

Research variable- In the present study:

Independent variables (attribute variables)-

Gender- Male / Female, **Type of Board** -CBSE/ UP Board, **Type of school** -Government/private

Medium of Instruction- English/Hindi, **Age** -Less than 30/ above 50

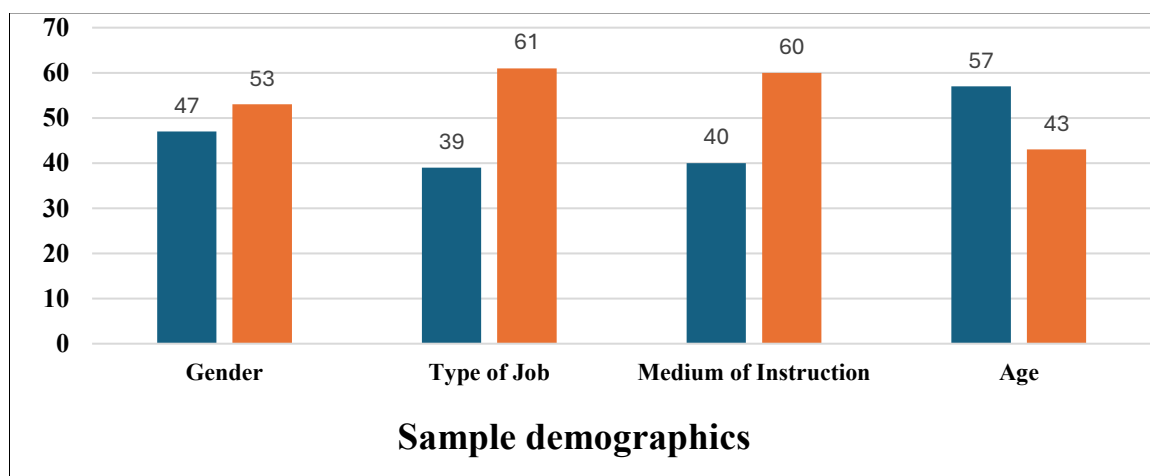
Dependent Variable – Awareness of AI tools in Education

Population and sample size

In the present study, the population consisted of teachers teaching classes 9th to 12th taught in various senior secondary schools (government aided-private) of Bareilly district of U.P affiliated to CBSE and UP Board. The researchers selected a sample of 100 teachers of senior secondary schools by using Stratified Sampling Technique.

Sample details:

Demographic details		N	Percentage
Gender	Male	47	47%
	Female	53	53%
Type of job	Govt.	39	39%
	Private	61	61%
Medium of instruction	Hindi	40	40%
	English	60	60%
Age	Less than 30 yrs	57	57%
	Above 50yrs	43	43%



Tool Used

For the purpose of data collection, A self-constructed questionnaire was used by the researchers. The tool was developed via Google forms according to the objectives of the study to measure the level of Awareness among teachers regarding the use of AI tools in classroom teaching. The questionnaire consisted of structured questions related to personal details of subject (name, gender, age, school name, type of School, Medium of school), teacher’s interest, training, motivation, future prospects and knowledge about applications.

Statistical Techniques: Percentage analysis was employed to analyse and interpret the collected data.

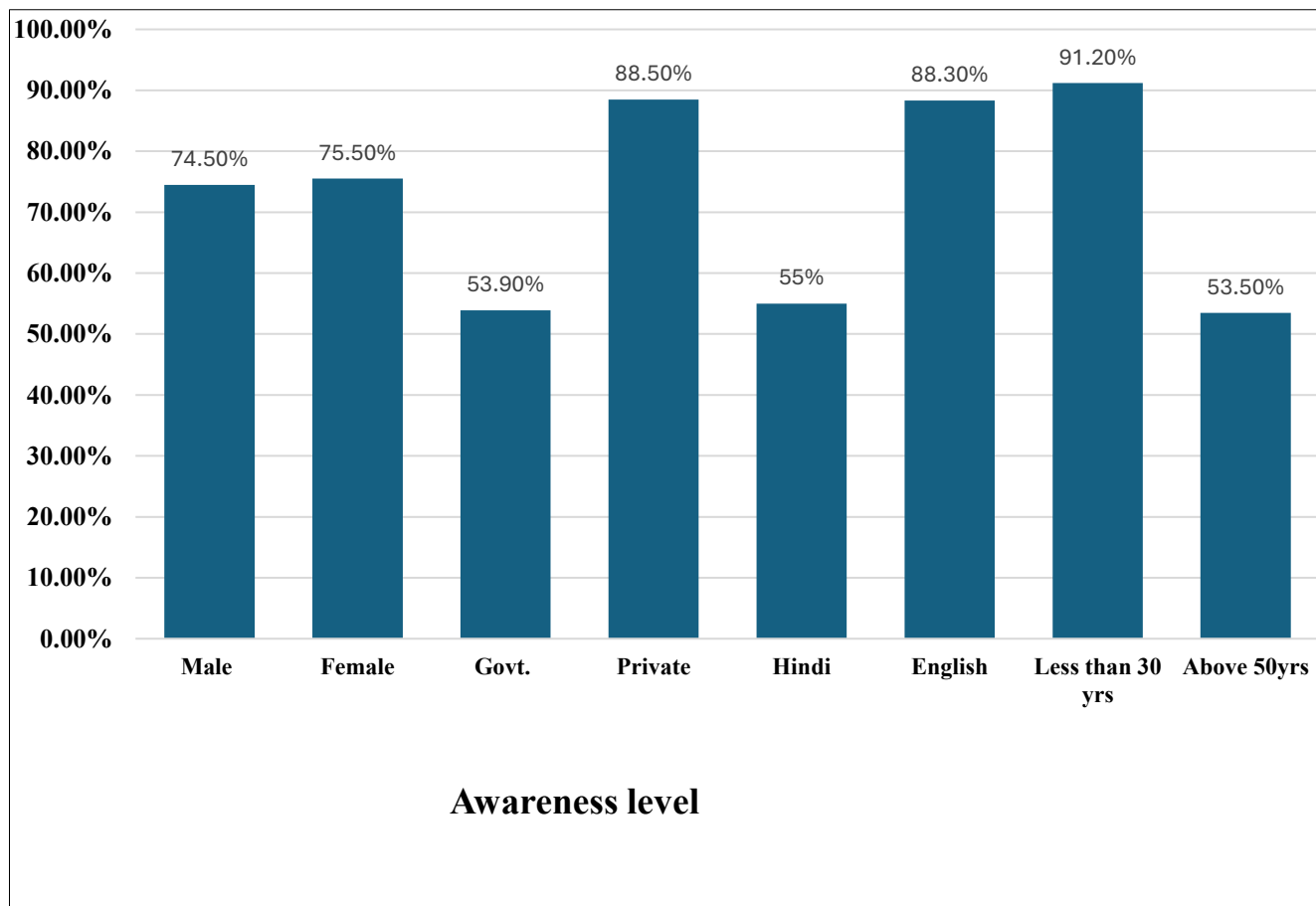
Data Analysis and Interpretation

Level of awareness among secondary school teachers regarding the use of AI tools in classroom teaching when compared on various demographic factors

Demographic details		N	n	Percentage
Gender	Male	47	35	74.5%
	Female	53	40	75.5%
Type of job	Govt.	39	21	53.9%
	Private	61	54	88.5%
Medium of instruction	Hindi	40	22	55%
	English	60	53	88.3%
Age	Less than 30 yrs	57	52	91.2%
	Above 50yrs	43	23	53.5%

An analysis of the data presented in Table 1 indicates that male and female secondary school teachers possess almost similar levels of awareness regarding AI tools available for classroom teaching. As per the data analysed by the researchers, government school teachers seem to exhibit considerably lower levels of awareness about AI tools as compared to the private school teachers. Similarly, Hindi medium school teachers exhibit much lower levels of awareness as compared to English medium school teachers. When compared on the basis of age, the researchers reported that younger teachers (below 30 years of age) seem to be much more aware about AI tools for classroom teaching as compared to the older (above 50 years of age) teachers.

In other words, gender does not apparently impact the level of awareness about AI tools for classroom teaching while type of job (govt./ private), medium of instruction (English/ Hindi) and age (below 30 years/ above 50 years) seem to be differentiating factors for level of awareness about availability and operating knowledge of AI tools for classroom teaching at the secondary school level. A graphical representation of the data is given below:



Conclusion

The researchers meticulously collected, analyzed and compared the data collected from secondary school teachers with varying demographic factors. Findings of the study lead to the following conclusions:

1. The larger majority of secondary school teachers, on an average possess good level of awareness regarding the use of AI tools in classroom teaching.
2. On comparing the level of awareness of male and female teachers regarding the use of AI tools in classroom teaching, the differences were not found to be significant.
3. On comparing the level of awareness of teachers from government and private schools regarding the use of AI tools in classroom teaching, government teachers were found to be lagging far behind the private school teachers.
4. On comparing the level of awareness of English and Hindi medium secondary school teachers regarding the use of AI tools in classroom teaching, Hindi medium school teachers were found to be lagging far behind their counterparts teaching in English medium schools.

5. On comparing the level of awareness of younger (less than 30) and older (above 50) teachers regarding the use of AI tools in classroom teaching, the younger teachers exhibiting far better skills and awareness about AI tools useful for classroom teaching as compared to the older teachers.

Educational implications and Suggestions

The findings of the study and deeper analysis along with some informal discussion with the teachers reveals that while almost all teachers are in agreement about the utility and potential of AI tools in simplifying classroom teaching, some teachers are reluctant to use them as they fear that these tools may make their role as teachers insignificant. Also, another issue that arose was about training. In-service training for government school teachers are far and few as compared to the private schools' teachers. Age was also found to be an important factor with the more senior teachers nearing retirement were more rigid in their teaching styles and reluctant to learn and adopt new teaching strategies, the younger teachers were far more receptive to the idea of integrating AI tools into their classroom teaching.

There is a need for organizing more comprehensive, dedicated, compulsory professional development programmes for in-service teachers. These would be more useful if conducted in online/ hybrid mode or asynchronous teaching with pre-recorded online classes. The policymakers must seriously look into this and take some urgent measures if India is to move ahead with its dream of becoming Viksit Bharat@2047.

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