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A STUDY ON TEACHERS' PERCEPTIONS OF AI-BASED TEACHING IN THE EDUCATION SYSTEM OF THE MUMBAI REGION

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ABSTRACT
Artificial Intelligence (AI) is rapidly growing in many sectors along with the education sector. AI tools are helpful in providing prompt solutions, saving time, managing large data, personalized academic assistance, and assessment techniques, etc., which are changing education learning techniques. Teachers play a major role in accepting these techniques and implementing them in the learning process. Teachers' perception, awareness, and acceptance of these techniques play a crucial role.

The present study aims to examine teachers' perceptions toward the use of AI-based teaching tools in the education system of the Mumbai region and to identify their awareness about AI teaching tools. The study is based on primary and secondary data. Primary data were collected from 50 college teachers through a questionnaire by using Google Forms, while secondary data were gathered from books, journals, research articles, and web sources. The findings identify that a majority of teachers are familiar with chat-based applications and use them on a regular basis. Teachers are having strong agreement that AI tools are time-saving, effective in improving teaching and learning quality, and useful for monitoring student progress. However, the study also highlights that a lack of proper training and awareness about AI tools creates limitations for implementation. Overall, the study concludes that teachers show a positive attitude toward AI integration in education, emphasizing the need for systematic training programs to enhance the effective and ethical use of AI tools.

Keywords: *Artificial Intelligence, Teachers' Perception, Education System, AI-Based Teaching Tools.*

1. INTRODUCTION:

Swami Vivekananda's idea that "Reforms should not be brought about by destroying institutions, but by improving them" means that true social change does not come from rejecting existing systems entirely. Instead, it comes from introducing new changes that strengthen and sustain institutions, while letting go of outdated practices that no longer serve a purpose in the future. This approach emphasizes improvement rather than destruction. His thoughts can be clearly seen in the development of the education system in India, which has continuously evolved according to the changing needs of society, culture, and technology. In ancient India, education was based on the Gurukul system, where shishyas learned under the guidance of their gurus. Oral instruction, hands-on experience, and close supervision were the primary methods of learning. Palm leaves were used as the earliest means of recording knowledge in manuscript form. During the colonial period, major changes occurred in the education system with the introduction of standardized schools, fixed institutional hours, classrooms, printed textbooks, and formal examinations to assess students' knowledge. After independence, the Indian education system largely adopted the British education pattern, which was further developed to include new teaching techniques such as audio-visual methods. Teachers began sharing knowledge through media such as radio, television, and overhead projectors. These methods helped students learn beyond the classroom and improved accessibility to education. In recent times, rapid advancements in internet and computer technologies have transformed the teaching–learning process through the introduction of smart classrooms. These classrooms engage students more effectively and help them gain conceptual clarity using audio-visual tools. These technologies also provide teachers with a wide range of digital resources and multimedia presentations, thereby enhancing their subject knowledge and teaching methods.

In today's world, knowledge can be accessed with just one click. This represents the future of technology, where systems are capable of analyzing vast amounts of data and providing accurate information within seconds. This is made possible by Artificial Intelligence (AI), which refers to computer-based systems that perform tasks requiring human intelligence, such as problem-solving, decision-making, and data analysis. AI generates personalized results in an efficient and rapid manner, which has led to its rapid growth and expansion across various sectors.

In the field of education, AI plays a significant role due to its features such as personalized learning solutions, the ability to process large volumes of data, automated assessments, instant feedback, and virtual assistance. Students are increasingly attracted to these advancements as they offer quick and easy solutions to educational challenges. Mumbai is a metropolitan city and the financial capital of India, as well as one of the fastest-

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growing urban centers. The literacy rate of Mumbai is approximately 89 percent. The adaptability of individuals to new situations reflects their experiences and exposure. In this context, the present study aims to examine the awareness of teachers regarding the AI tools available in the teaching–learning process and to analyze their perceptions toward the use of AI-based teaching tools in the education system.

2. REVIEW OF LITERATURE:

1. Olaseni V. (2024), in his paper, examines the perceptions of secondary school teachers in Nigeria toward the integration of AI-based systems into the school curriculum. The study reveals that although teachers are aware of the positive impact of AI on education, most responses are negative. The main reasons for this negative response include age, lower levels of education, fear of replacement, and professional specialization. Therefore, he suggests that policymakers and educational institutions must develop guidelines to safeguard student privacy and ensure the ethical use of AI in education.
2. Fakhar H. et al. (2024), in their paper, examined Moroccan teachers' perspectives on artificial intelligence and the importance of effective training programs in equipping educators with the necessary skills for AI integration. The study concluded that teachers' perceptions of integrating AI into their teaching were highly positive, as AI was found to be useful in simplifying their work and improving the overall quality of teaching and learning.
3. Iqbal M. et al. (2025), in their paper, aimed to examine teachers' experiences with the use of AI-based tools in teaching activities and to understand the benefits and challenges faced by both teachers and students in the AI-supported learning process. The study revealed that teachers used a variety of AI-based applications in their teaching, which benefited them in administrative tasks, access to learning resources, and the quality of learning content. However, the study concluded that major challenges include limitations in technological infrastructure and the risk of over-reliance on AI.

3. OBJECTIVES OF THE STUDY:

The objectives of the study are as follows:

- To highlight the AI - based tools used in the education system in Mumbai region.
- To examine teachers' perceptions toward the use of AI - based teaching tools in the education system of Mumbai.

4. SCOPE OF THE STUDY AND METHODOLOGY:

The present study focuses on colleges in Mumbai to identify the AI tools used in teaching and to examine teachers' perceptions regarding the use of AI-based techniques in the education system. To obtain relevant information, the study relied on both primary and secondary sources of data. Primary data were collected using a structured questionnaire administered via Google Forms. The questionnaire was distributed to 50 respondents through a convenient random sampling technique. Secondary data were gathered from various sources, including books, articles, journals, and the internet. The collected data were analyzed using tabular and graphical methods, and the results were interpreted accordingly.

5. FINDING OF THE STUDY:

Table -1 Personal Profile of Respondents

Particulars	Frequency	Percentage
Gender		
Male	19	37.3
Female	32	62.7
Other	-	-
Total	**51**	**100**
Age Group		
18-30	26	51
31-45	19	37.3
46-60	6	11.8
Total	**51**	**100**
Teaching Experience:		
Less than 1 year	10	20
1 - 5 year	25	49
5-10 years	7	14

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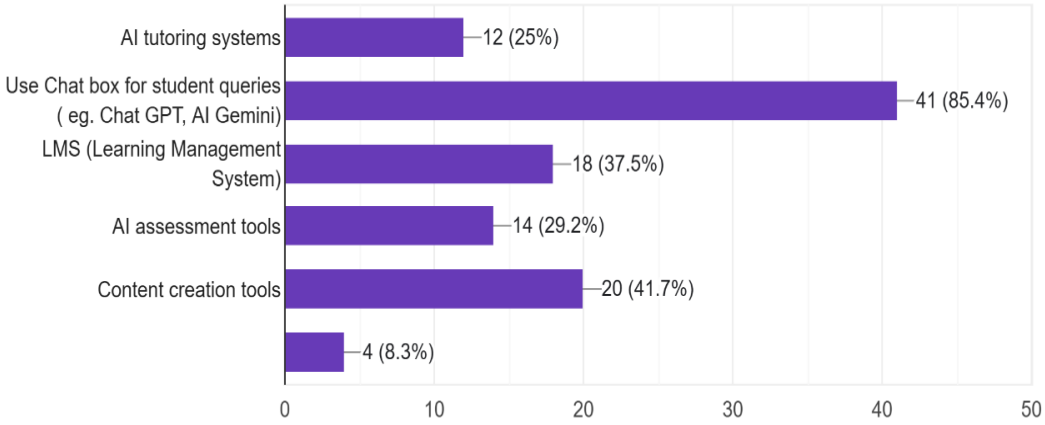
More than 10 years	9	17
Total	**51**	**100.00**

Source: Self Compiled

Table 1 presents the demographic details of the respondents based on gender, age group, and teaching experience. All participants were active teachers working in the education sector. Among the total respondents, 62.7% were female and 37.3% were male. Regarding age distribution, 51% of the participants belonged to the 18–30 years age group, followed by 37.3% in the 31–45 years age group and 11.8% in the 46–60 years age group. In terms of teaching experience, the majority of the respondents (49%) had 1–5 years of teaching experience. Additionally, 20% had less than one year of experience, 14% had 5–10 years of experience, and 17% had more than 10 years of experience.

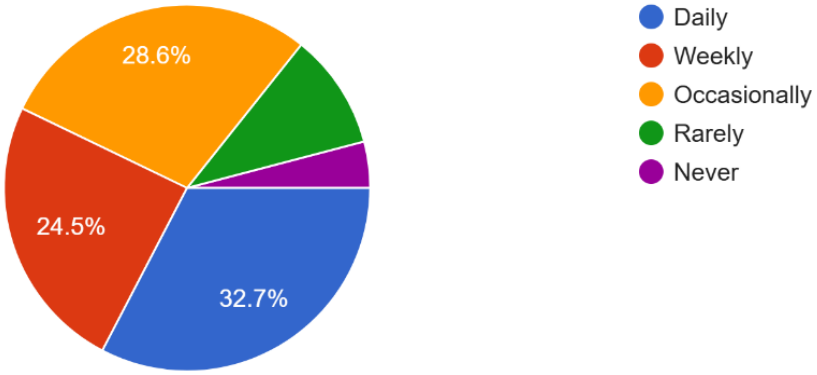
Figure 1: Teachers' Familiarity with Different AI Tools Used in Teaching



Sources: self-compiled

Figure 1 indicates that out of 51 respondents, 92.1% of teachers reported using AI-based tools, while 7.8% stated that they have not used any AI tools. The AI tools most commonly used by teachers are chat-based applications (such as ChatGPT and AI Gemini), as these are the most familiar to users. Approximately 85.4% of teachers reported using chat-based tools. And out of 51 respondents, content creation tools are used by 41.7% of teachers, and Learning Management Systems (LMS) are used by 37.5% of respondents. Whereas 29.2% of respondents use AI-based assessment tools for evaluating students and 25% respondents are familiar with AI tutoring systems.

Figure 2: Frequency of Teachers' Use of AI-Based Teaching Tools



Sources: self-compiled

Figure 2 shows that out of 51 respondents, 32% of teachers use AI tools on a daily basis, while 24.5% use them weekly, indicating that a substantial proportion of participants regularly integrate AI tools into their teaching practices. whereas 28.6% of teachers are using AI tools in occasionally. It means the acceptance and implementation of AI tools among teachers are increasing.

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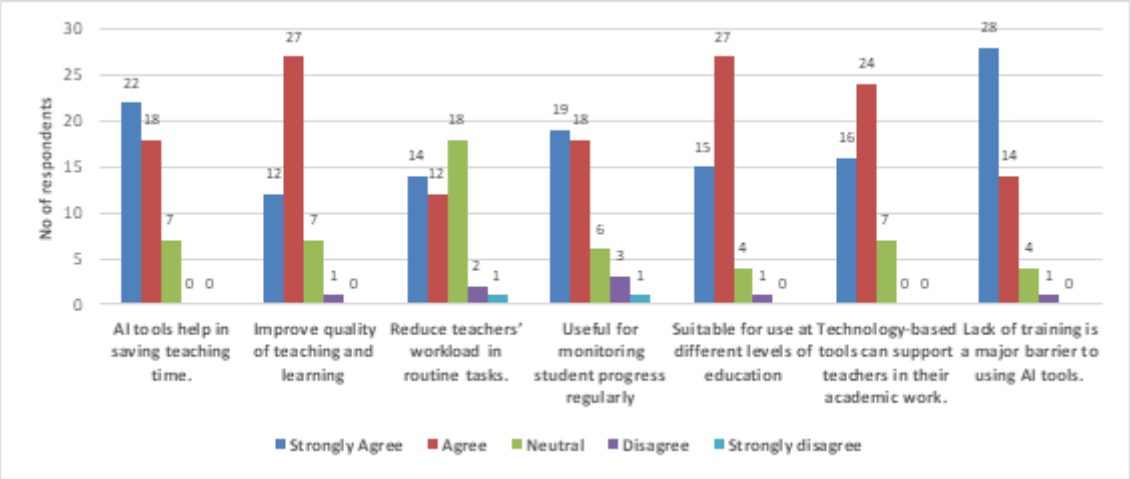
Figure 3: Tteachers' Acceptance and Perception of AI Tools in Education



Sources: self-compiled

a. Figure 3 shows that out of 47 respondents, 22 strongly agree and 18 agree that AI tools help save time, while 7 respondents expressed a neutral opinion. No respondents disagreed with this statement. These findings indicate that the use of AI tools can significantly reduce teachers' working time.

b. Out of 47 respondents, 12 strongly agree and 27 agree that AI tools improve the quality of teaching and learning experiences, while only 1 respondent disagreed. This indicates that teachers generally accept AI tools positively and recognize their effectiveness in enhancing the teaching–learning process.

c. Out of 47 respondents, 14 strongly agreed, 12 agreed, and 18 expressed a neutral opinion that AI tools help reduce teachers' workload. The fact that the majority are neutral indicates limited hands-on experience with AI tools and some uncertainty regarding their effectiveness in reducing workload.

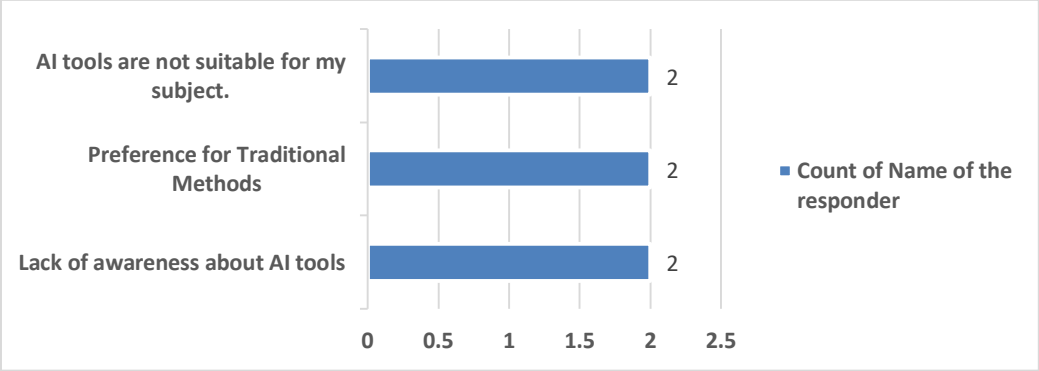
d. Out of 47 respondents, 19 strongly agreed and 18 agreed that AI tools are useful for monitoring student progress, while 6 were neutral, 3 strongly disagreed, and 1 disagreed. This suggests that most respondents are aware of AI monitoring tools and are satisfied with their effectiveness in providing instructional support.

e. Out of 47 respondents, 15 strongly agreed and 27 agreed that AI tools are suitable for different levels of education. This indicates that AI tools are perceived as useful across all educational levels and are being adopted increasingly.

f. Out of 47 respondents, 16 strongly agreed and 24 agreed that AI tools assist teachers in their academic work, while 7 were neutral. These findings indicate that AI tools enhance teachers' efficiency and effectiveness and are considered supportive resources.

g. Out of 47 respondents, 28 strongly agreed and 14 agreed that a lack of training is a major barrier to using AI tools, while 4 were neutral and 1 disagreed. The majority of respondents perceive insufficient AI training as a significant barrier to the adoption and implementation of AI tools in education.

Figure 4: Reasons for Not Using AI Tools by Teachers



Sources: self-compiled

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As per Figure 4, there are 4 respondents who are not using AI tools in their teaching practices. This indicates that the major reasons include lack of awareness about AI tools, the perception that AI tools are not helpful for their subject, and that they still follow and feel comfortable with traditional teaching methods.

6. CONCLUSION:

The study of teachers' perceptions towards the use of AI in the education sector of the Mumbai region shows that teachers are having a positive aspect about using AI tools. Most respondents were female. Most of respondents belong to early and mid-career group, which indicates that younger teachers are more open to accept new technological changes and experienced teachers add valuable perspective. Large group of teachers already using AI tools; they are more familiar with chat box like ChatGPT, AI Gemini, which gives instant support solution. Many of teachers using AI on regular basis, which shows that AI tools are becoming part of their everyday. Majority of respondents have perception that AI tools help save time, improve teaching and learning quality, support academic work, and assist in monitoring student progress. The findings also highlight that teachers believe AI tools are suitable for all levels of education. On workload reduction, respondents are neutral, as it shows that teachers are not having negative view but need more hands-on experiences on AI tools. However, lack of proper training remains a major barrier, showing that teachers need more guidance and support to use AI tools effectively. There are a few teachers who are not using AI tools, not because they are discourage innovation, but because they lack awareness and have concerns related to their subject knowledge. They are also comfortable with traditional teaching methodologies. More than 90% of teachers who are participants in this study show positive acceptance of new changes in the education sector. They are familiar with AI tools and also have a positive perception of the benefits of AI tools, such as time saving, data analysis, personalized solutions, and instant support. However, teachers need more awareness and training programmes to use these tools in a more efficient and effective way.

REFERENCES:

1. Fakhar H. et al. (2024). 'Artificial Intelligence from Teachers' Perspectives and Understanding: Moroccan Study.' *International Journal of Information and Education Technology*. Vol. 14, pp 856-864.
2. Iqbal M.et al. (2025). 'Teachers' Perceptions of the Use of Artificial Intelligence (AI) in Daily Learning at Elementary Schools'. *Global Journal of Basic Education (GJBE)*. pp 96-116.
3. Konecki M. et al. (2024). 'Teachers' Perception of AI and Their Attitudes Towards AI'. *International Conference on Computer Supported Education.* pp 564-568.
4. Lamrabet M. et al. (2024). 'AI-Based Tools: Exploring the Perceptions and Knowledge of Moroccan Future Teachers Regarding AI in the Initial Training - A Case Study.' *International Journal of Information and Education Technology*. pp 1493 - 1505.
5. Olaseni Vivian M. (2024). 'Teachers' Perception Towards Integration of Artificial Intelligence Tutoring-Based System in the School Curriculum : A Survey.' *E-Journal of Humanities, Arts and Social Sciences (EHASS)*. ISSN – Online 2720-7722, pp 2242-2251.