

Teachers and Role of Artificial Intelligence in Education

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Abstract: Over the past decade, there has been a tremendous change in teaching and learning methods. Traditional methods of teaching are now modified to blended teaching methods. These methods are combination of traditional and technology-supported to cater to the changing needs of students.

Teachers have access to a wide range of resources on the internet in the form of reference books, question papers, PDF notes, web-links for videos, quizzes, etc. These can be used in class or shared with the students. With the launch of 'Artificial Intelligence' the scope of learning has broadened. A few popular examples of AI among the masses are Alexa, Siri, Rufus, etc. These apps provide the resources or results as per the needs of the user.

In this paper, we conducted a survey to study the integration of AI in classroom teaching, its benefits, uses and challenges faced by teachers in its application for which, teachers from different disciplines participated. We observed that all teachers participating in the survey were familiar with AI applications. They learned about AI through workshops, conferences, peer sharing, etc. Majority of teachers use virtual teaching assistant application for research. It also facilitates in the process of planning the curriculum, to cater to the needs of the students, engaging activities for the students, etc. It helped them to develop interesting and engaging teaching methods for students arousing curiosity and scientific aptitude among young minds.

Keywords: Artificial Intelligence, benefits, challenges, virtual, traditional, etc

I. INTRODUCTION

^[1]Artificial Intelligence (AI) has become a part of our daily life. It has made our life simple and easy to collect information about a place or product. Pen and paper are left behind in this digital world. The world of education is dynamic. It readily introduces new methods and techniques in teaching learning methods. ^[2,3]Traditionally, teaching was limited to classroom, fixed syllabus, etc. Now it has undergone a drastic change. Now teaching learning methods are modified to student-centred and not teacher-centred. The classrooms are supported by a digital platform. ^[4]This has helped students and teachers to stay connected with students to exchange knowledge from different parts of the globe.

^[5]Teachers are the crucial stake-holders in the use of AI-based teaching. With proper technical support and guidance, teachers can upgrade classroom teaching with AI. This can help teachers to have more interactive classes. Research says that audio-visual learning has always been a boon for students with learning disabilities. In the past few years, with the advancement in science and technology, teachers have also been trained to get familiarise with the integration of AI in classroom teaching. Use of technology helps to use a variety of teaching-learning methods for teachers. This gives an inclusive perspective to the teaching methods. ^[6]Similarly, AI can help to develop rubrics for activities and can give a transparent assessment for the same^[7]





Fig.1: AI Image

Objectives:

To study:

- The usage of AI in teaching.
- The impact of usage of AI in classroom teaching learning method
- The challenges faced by teachers in integrating AI in teaching.

II. METHODOLOGY

The data collection is done using a survey method. In this, a questionnaire was developed and shared with the participants. The questionnaire was developed to study the awareness of AI among the teacher community, the usage of AI in classroom teaching and learning and any challenges faced during the usage of technology in classroom teaching and learning. After data collection, there is interaction with the teacher participants to have a deep understanding of participants' views, challenges, suggestions and solutions regarding the usage of AI in classroom teaching and learning. Later, sorting and analysis was carried out to know the outcome of the survey.

Questionnaire consisting of following questions:

General Information

- What is your current role?
- You are from which place?
- What is your highest qualification?
- What subject(s) do you teach?
- Which age group you belong?
- What is your level of teaching experience?
- Which classes you teach?

Technical Information

- How familiar are you with AI-powered tools in education?
- Which AI-powered tools have you used?
- What benefits do you think AI-powered tools can bring to education?
- What challenges do you think AI-powered tools pose in education?
- What type of training or support did you receive?
- What additional support or resources do you think would help you effectively integrate AI-powered tools into your teaching practice?

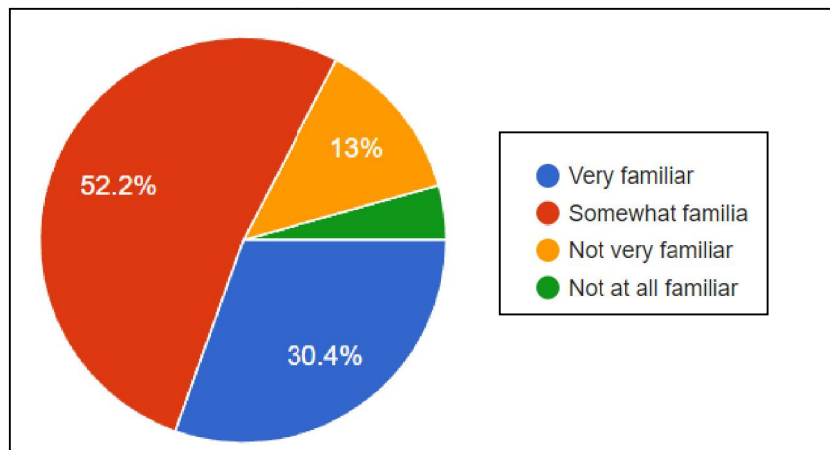
III. RESULTS AND DISCUSSION

The above survey was taken by 25 teachers. 78.3% teachers and 21.7% educators and freelancers. These teachers are basically from Thane, Mumbai and Pune regions teaching in urban area schools. In this sample, 85% of the teachers are



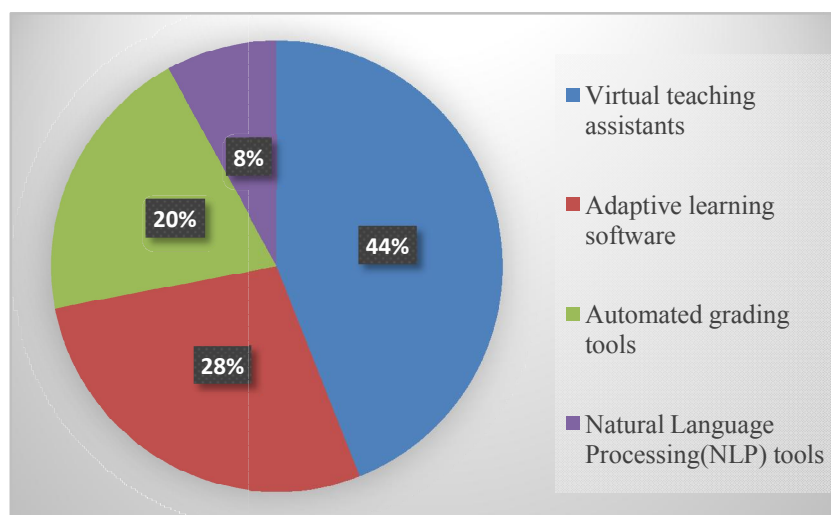
female and 15% male. 91% were post graduate teachers and 9% graduate teachers. 60% of the teachers are in the age group of 31-40, 25% teachers are in the age group of 41-50-year age group. The medium of communication was English for 87% and the remaining 13% use Hindi or Marathi as the medium of communication in school. 44% of teachers are subject experts with 12+ years of experience, 35% teachers having 8+ years of teaching experience, whereas 21% of teachers are having 5 years of experience. In this sample, teachers consist of teaching middle school to senior secondary classes with different subjects like science (10), mathematics (7), languages (9), computers (3), and other subjects (8). Few teachers teach two subjects, and so they have been considered for more than one subject.

How familiar are you with AI-powered tools in education?



The pie chart can show that 83% teachers are 'familiar' with the use of AI whereas a small part of population is not familiar with the AI.

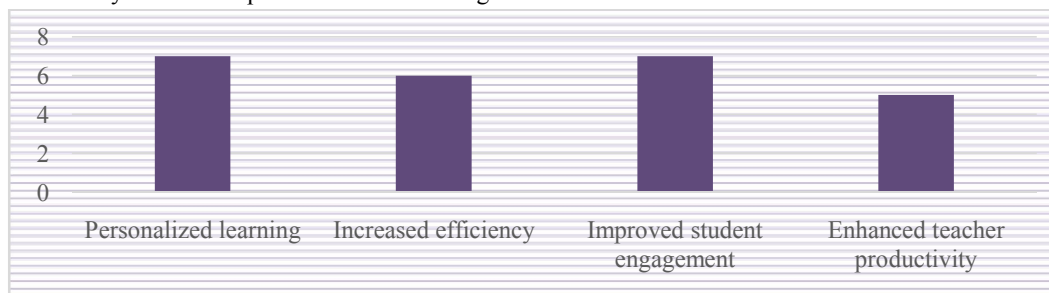
If yes, which AI-powered tools have you used?



The above pie chart says that maximum percentage of population uses virtual teaching for searching resources, planning curriculum. Whereas few people from the sample set uses AI for adaptive learning, auto assessment and NLP purpose.

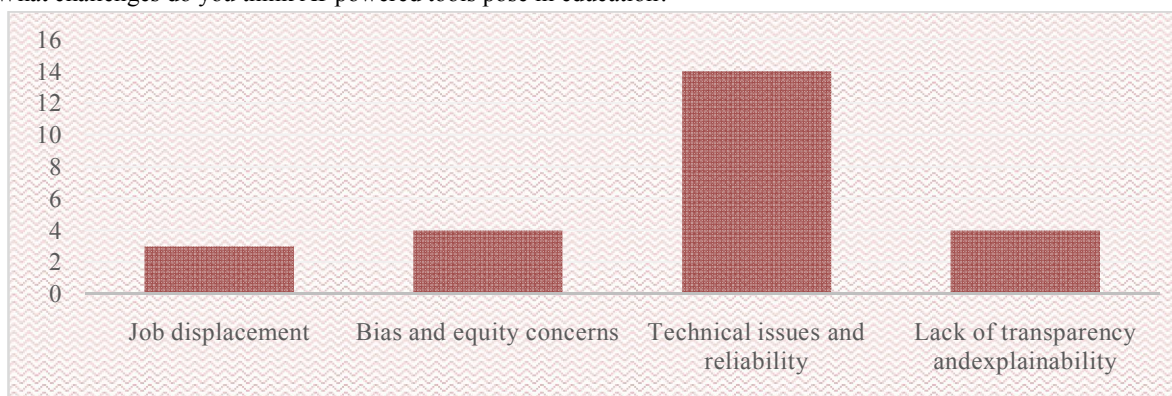


What benefits do you think AI-powered tools can bring to education?



The use of AI brought multiple benefits to teachers and students. It has helps teachers to provide personalised learning tool for students in the classroom. This is showing a positive impact on the performance of the students. Students are tech savvy and usage of AI provide constant engagement activities for the students. This helps students to develop interest and brings constant improvement in the performance.

What challenges do you think AI-powered tools pose in education?



Inorder to check the cause of the problem regarding usage of AI above question plays an important role in this study. The common issue teachers teaching in urban area school are facing is technical issue. It may include insufficient availability internet, IT support, availability of system in the classroom or laboratories. There are other challenges like lack of transparency, bias and equity concerns and job displacement in using AI.

IV. CONCLUSION

In our study we conclude that teachers of different age groups are looking forward positively to using AI in classroom teaching. This has improved the academic performance of students. This is not just limited to the chalk-board method. It keeps students engaged in different activities. It has helped to enhance curiosity and scientific attitude among young minds. AI can help teachers with developing rubrics for assessments. This can help teachers to give quick feedback and grading remarks to students. With proper technical support and guidance can help teachers to use AI for improvisation.

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