

A STUDY OF THE USE OF ARTIFICIAL INTELLIGENCE BY STUDENT-TEACHERS

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ABSTRACT

Aim. The study aims to know how student-teachers of B.Ed. courses make use of AI for education and their opinion about the use of AI in education, in general.

Methods. The Survey method was used for the study. There were 72 student-teachers of B.Ed the course of Savitribai Phule Pune University, Pune, and studying at Tilak College of Education, Pune, India, participated in the survey. The questionnaire was the data collection tool for the study. The questionnaire was circulated on WhatsApp group through Google Form which had 12 questions with choices based on the status variable.

Results. The data analysis of the 12 questions was done by using percentages and it was presented in Pie charts for each question. The results summarise that most of the student-teachers use ChatGPT, most of the student-teachers use AI for lessons, practicals, reports, and presentations and student-teachers use AI sometimes in a limited manner. According to the analysis of student-teachers, the use of AI should not be banned but regulations and guidelines should be there.

Conclusions. The study underlines that student-teachers use AI in their course and they are in support of use of AI in education. Hence there is a need for general guidelines from the apex bodies regarding use of AI in Education rather than a blanket ban on AI.

Keywords: AI in education, teacher education, ICT in education, trends in education, teacher training

INTRODUCTION

The integration of Artificial Intelligence (AI) into education represents a transformative shift in teaching and learning practices. As educators grapple with the implications of this technological advancement, attention has increasingly turned to the role of student-teachers in utilising AI tools within educational settings. As the educational landscape continues to evolve in response to technological advancements, the role of student-teachers in shaping the future of AI in education becomes increasingly pivotal.

SIGNIFICANCE OF THE STUDY

By examining student-teachers' use and opinion this study aims to shed light on the opportunities and challenges inherent in integrating AI into teacher education courses. Their perspectives, experiences, and preparedness in leveraging AI tools not only influence their own pedagogical practices but also foreshadow broader trends in educational innovation and adaptation. Through a comprehensive understanding of these issues, educators, policymakers, and researchers can effectively guide and support student-teachers in harnessing the potential of AI to enhance teaching and learning outcomes.

REVIEW OF RELATED LITERATURE

A significant portion of the literature highlights teachers' positive views toward AI's potential to personalise learning. Holmes, Bialik, and Fadel (2019) discuss how educators see AI as a powerful tool for tailoring educational content to meet individual students' needs, abilities, and learning styles.

Teachers express apprehension about the security of student data and the potential for misuse (Williamson, 2020). The literature also reflects worries about the lack of transparency in how AI algorithms make decisions and recommendations, raising questions about bias and fairness in educational outcomes.

The fear among some educators is that AI could dehumanise education or even replace teachers altogether (Selwyn, 2019). Teachers argue that while AI can provide personalised content, it cannot replicate the emotional support, motivation, and mentorship that human educators offer. There is also concern about job security, with some educators worry of being displaced by technology.

Many educators feel inadequately prepared to utilise AI tools effectively, pointing to a gap in current teacher training programmes (Archambault et al., 2020). Teachers are calling for ongoing training and support to help them navigate the technical, pedagogical, and ethical dimensions of using AI in education.

OBJECTIVES

- To find out the names of tools used by student-teachers.
- To find the purpose of the use of AI by student-teachers.
- To find the frequency of the use of AI by student-teachers.
- To get to know their opinion about the use of AI in education.
- To discuss the use, frequency and opinion about AI in the context with the results.

RESEARCH QUESTIONS

- Which AI tools are used by student-teachers?
- What is the purpose of the use of AI by student-teachers?

- What is the frequency of the use of AI by student-teachers?
- What is the opinion of student-teachers about the use of AI in education?
- What are the implications of the results?

OPERATIONAL DEFINITIONS

AI: Artificial intelligence tools that are freely available for the use i.e. Chat-GPT, Bing, Gemini

Student-teachers: Students doing their B.Ed. or M.Ed. course of Savitribai Phule Pune University, Pune, India.

VARIABLE

A status variable can be regarded as an independent variable since it is not controlled or altered by the researcher but serves the purpose of classifying or organising individuals into distinct levels or groups. The 'Use of AI in education' is the status variable for the study.

DELIMITATIONS

Population delimitations: Students B.Ed. and M.Ed. programme of Savitribai Phule Pune University in Pune is the population of study.

Geographical delimitations: The study may be restricted to Savitribai Phule Pune University, Pune, students enrolled in its two-year B.Ed. or M.Ed. programme in Tilak College of Education, Pune.

Delimitations on time: The study may be restricted to students enrolled the programmes for the academic year 2023–2024.

Delimitations on the study's scope: The study's focus could be restricted to the use, tools, frequency, nature and opinion about the AI.

Data delimitations: The study is based on the information gathered from the online survey.

Population

The study is delimited to student-teachers of B.Ed. and M.Ed. course of Savitribai Phule Pune University, Pune.

Sample

The sample of 80 students was selected by using an incidental sampling method.

Research method

The survey method has been used for the study.

Data collection tool

The questionnaire was prepared with 17 questions. 5 questions about the demography of respondents and 12 questions about the status variable. All questions were close-ended with options. The questionnaire was circulated to the students on WhatsApp by developing the Google form.

Data analysis

The questionnaire i.e. Google form was filled out by 72 student-teachers (2023-24) from Tilak College of Education, Pune. The nature of the data is quantitative hence the percentage has been used to analyse and the pie chart has been used for the presentation of the analysis of the data. The title of the pie chart itself indicates the interpretation of the data analysis of the question.

Q1. Which Artificial Intelligence do you use?

Which Artificial Intelligence do you use ?

72 responses

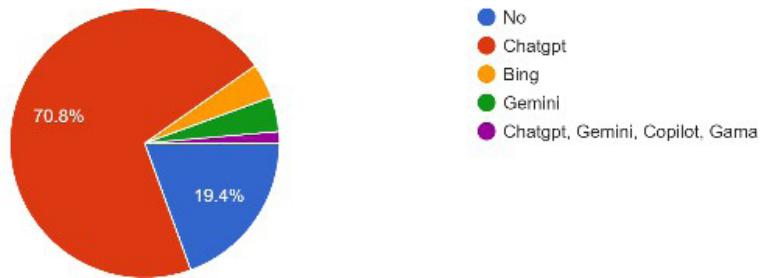


Figure 1

Most of the student-teachers use ChatGPT

Interpretation- Most of the students use ChatGpt. Apart from that being and Gemini AI is being used. There are 19.4% students who do not make use of any AI. It can be interpreted that most of the students use different AI’s.

Q2. Which of the following AI tools or platforms are you familiar with? (Please select all that apply)

Which of the following AI tools or platforms are you familiar with? (Please select all that apply)

72 responses

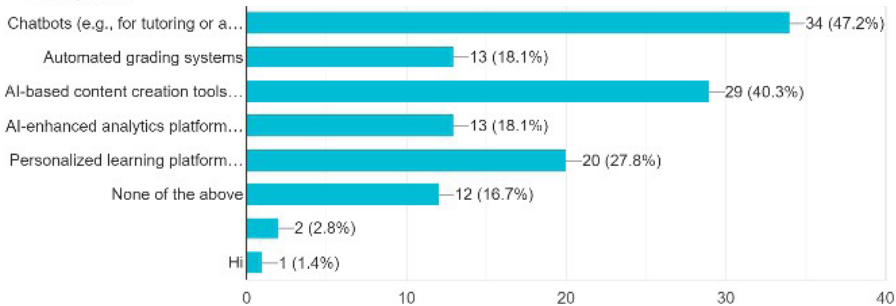


Figure 2

Chatbots and content creation tools are mostly used by the student-teachers.

Interpretation- Most of the Students are familiar with chatbots platform. Students are also familiar about AI based content creation tools, AI enhanced analytics platform, personalised learning platform, automatically grading to system platform etc. This means students are aware of familiar of multiple AI abled tools.

Q3. How frequently do you use AI tools or applications?

How frequently do you use AI tools or applications ?

72 responses

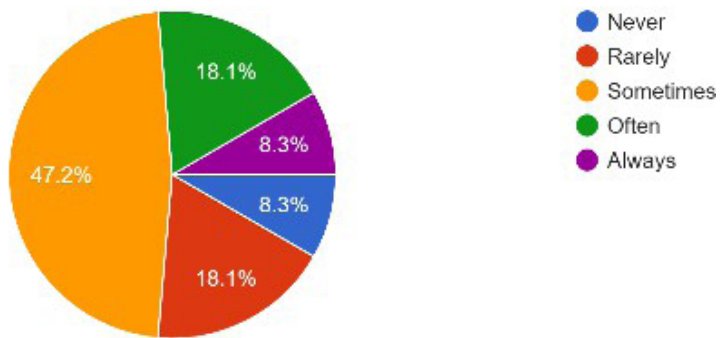


Figure 3

The student-teachers sometimes use AI tools

Interpretation – 88.3% of the students never make use of AI tools or applications but rest of 91.7% of the students make use of AI tools.

Q4. How frequently do your peer use AI tools or applications?

How frequently do your peer use AI tools or applications ?

72 responses

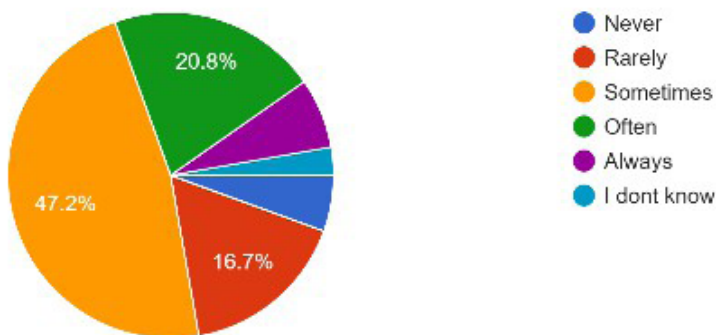


Figure 4

The student-teachers think that their peer use AI tools sometimes

Interpretation – This question was asked to the students to share their opinion about the use of AI by their peers it can be interpreted by observing above chart that students think that their peers are frequently used AI tools or application.

Q5. Which of the following educational activities have you integrated AI tools into?

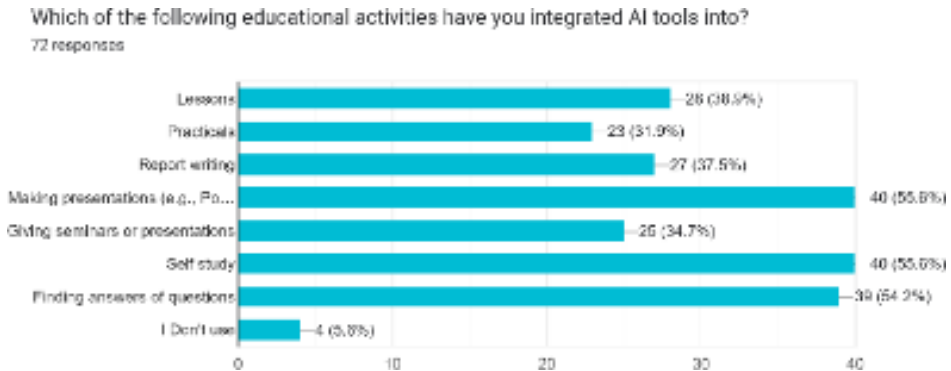


Figure 5
The student-teachers use AI tools for different academic activities

Interpretation – students make use of AI for lessons, practical’s, report writing, giving seminars, presentations, self-study, finding answers to questions etc.

Q6. Why do you use AI ?

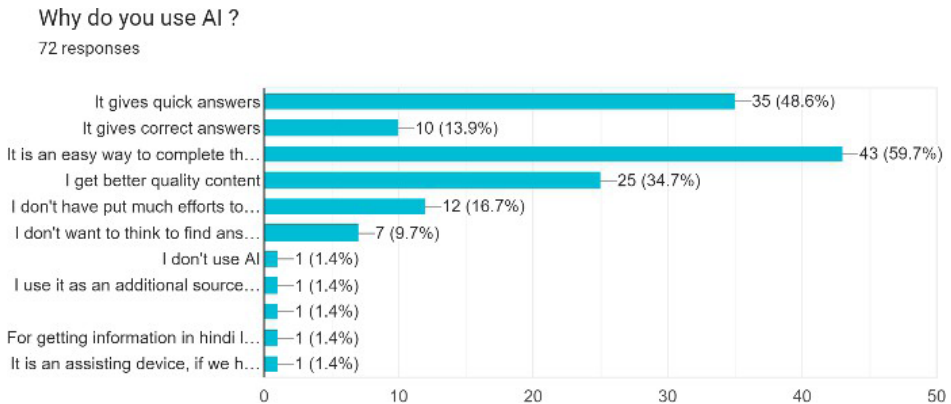


Figure 6
Student-teachers use AI to find answers easily and quickly

Interpretation – The reason of the use of AI was asked in the question. The different reasons students agree with the speed correctness, quality of AIs and also it saves time and energy.

Q7. Students should receive guidance or training from teachers or institution on how to use AI in education.

Students should receive guidance or training from teachers or institution on how to use AI in education.

72 responses

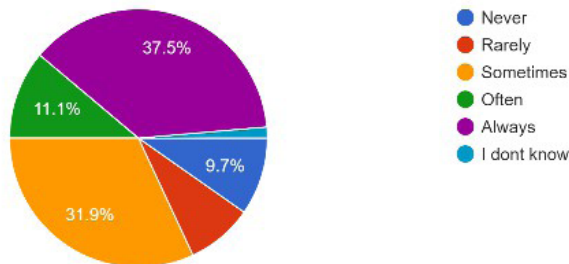


Figure 7

The student-teachers feel that they should receive training and guidance to make use AI in education

Interpretation – students feel that they need to be trained formally to make use of AI in education.

Q8. Is there a need of guidelines regarding use of AI in education for teachers and students should be issued by government/ university?

There is a need of guidelines regarding use of AI in education for teachers and students should be issued by government/university?

72 responses

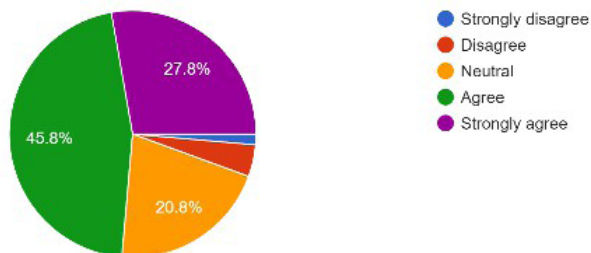


Figure 8

Most of the student-teachers agree about the need of the guidelines issued by government and university

Q9. AI and related technologies should be included in teacher education curriculum?

AI and related technologies should be included in teacher education curriculum?

72 responses

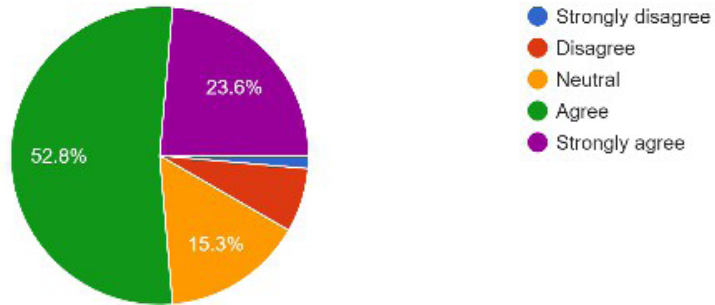


Figure 9

Most of the student-teachers agree to include the AI and related technology in teacher-education curriculum

Interpretation – 52.8% students are agreeing and 23.6% are strongly agree that Ai and related technology should be included in teacher education. This means 76.4% agree the inclusion of AI in curriculum.

Q10. AI will affect the employment opportunities in teaching profession

AI will affect the employment opportunities in teaching profession.

72 responses

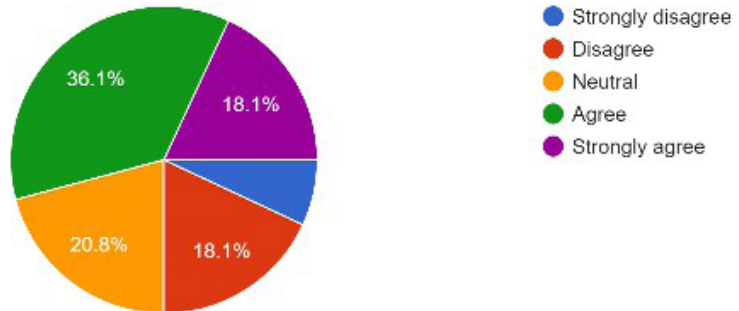


Figure 10

Majority of the student-teachers agree that AI will affect the employment opportunities in the teaching profession

Interpretation - 36.1% students agree and 18.1% are strongly agree. It means together 54.2% of students are agree that AI will affect the employment opportunity whereas 20.8% are neutral. 18.1% disagree and 6.9% strongly disagree. This shows there are different parallel trends among the students which is shows the

students are not sure convincingly that AI will impact or not on employment in teaching jobs.

Q11. Use of AI would affect the human intelligence negatively?

Use of AI would affect the human intelligence negatively?

72 responses

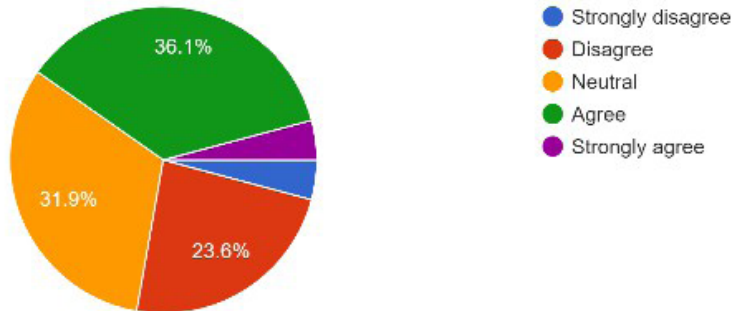


Figure 11

There is no significant agreement or disagreement of the student-teachers about the negative impact of use of AI on human intelligence

Interpretation - There are variety of responses regarding the negative effect of AI on human intelligence. It can be interpreted that there is a variety of perspectives existing among students.

Q12. Use of AI should be banned in education?

Use of AI should be banned in education?

72 responses

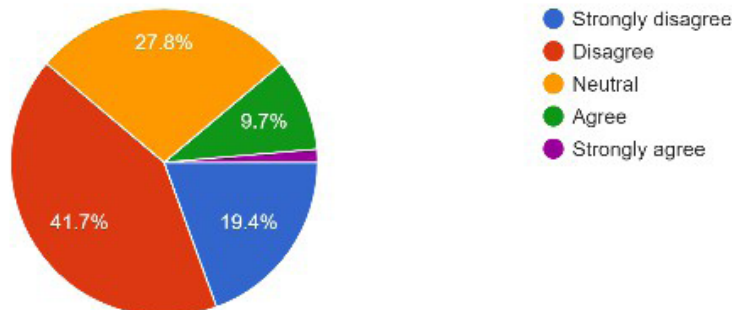


Figure 12

Majority of the student-teachers are against the ban of use of AI in education

FINDINGS OF THE STUDY

- Most of the student-teachers use ChatGPT.

Research Insight: Studies show a growing adoption of AI tools like ChatGPT among students for various academic purposes due to their ease of use and ability to provide quick information. This aligns with the survey result indicating widespread usage of ChatGPT among student- teachers.

- Chatbots and content creation tools are mostly used by the student-teachers.

Research Insight: Research highlights that chatbots and AI-powered content creation tools are popular in educational settings for their ability to assist with homework, generate ideas, and provide instant feedback. This is consistent with the survey's finding that these tools are predominantly used by student-teachers.

- The student-teachers sometimes use AI tools.

Research Insight: Studies suggest that while AI tools are increasingly integrated into education, their usage frequency can vary based on individual needs, technological access, and familiarity. The survey's finding that student-teachers sometimes use AI tools reflects this variability in usage.

- The student-teachers think that their peers use AI tools sometimes.

Research Insight: Perception studies indicate that students often believe their peers are using AI tools similarly or less frequently than they are. This survey result aligns with the common perception patterns observed in research.

- The student-teachers uses AI tools for different academic activities.

Research Insight: Research supports that AI tools are versatile and used for a range of academic activities, including research, writing, and study assistance. This is in line with the survey finding of diverse academic uses of AI by student-teachers.

- Student-teachers use AI to find answers easily and quickly.

Research Insight: Studies confirm that one of the primary attractions of AI tools for students is their ability to provide quick and easy access to information, aiding in efficiency and time management. This matches the survey observation about the use of AI for quick answers.

- The student-teachers feel that they should receive training and guidance to make use AI in education.

Research Insight: Research emphasises the importance of training and professional development for effective AI integration in education. The survey result mirrors this need for guidance and training among student-teachers.

- Most of the student-teachers agree to the need of the guidelines issued by government and university.

Research Insight: Studies indicate a strong demand for clear guidelines and policies to ensure the ethical and effective use of AI in education. This is consistent with the survey finding of student-teachers supporting the need for such guidelines.

- Most of the student-teachers agree to include the AI and related technology in teacher- education curriculum.

Research Insight: There is growing advocacy in research for integrating AI education in teacher-training programmes to prepare future educators for technological advancements. This survey result aligns with the research trend.

- Majority of the student-teachers agree that AI will affect the employment opportunities in teaching profession.

Research Insight: Research acknowledges concerns about AI's impact on employment, with mixed views on whether it will create or displace jobs in education. The survey finding reflects the common concern among student-teachers about AI's effect on employment.

- There is no significant agreement or disagreement of the students about the negative impact of use of AI on human intelligence.

Research Insight: The academic community is divided on whether AI positively or negatively impacts human intelligence, leading to mixed opinions. This lack of consensus is reflected in the survey's result.

- Majority of the student-teachers are against the ban on the use of AI in education.

Research Insight: Research generally advocates for the responsible use of AI in education rather than outright bans, emphasising its potential benefits. This aligns with the survey finding where most student-teachers oppose banning AI in education.

ANSWERS TO THE RESEARCH QUESTIONS

Q1. Which are AI tools used by student-teachers?

Ans. Student-teachers use ChatGPT.

Q2. What is purpose of the use of AI by student-teachers?

Ans. Student-teachers uses the AI for lesson, practical, reports, presentations etc.

Q3. What is the frequency of the use of AI by student-teachers?

Ans. Student-teachers use AI sometimes.

Q4. What is the opinion of student-teachers about the use of AI in education?

Ans. Student-teachers agree to have training on how to use AI, to set guidelines by government and or universities and to add the AI tools in teacher education curriculum and they disagree to ban use of AI in education and there is no significant agreement or disagreement of the negative impact of AI on human intelligence.

Q5. What are the implications of the results?

The findings from this study provide compelling evidence of the regular use and positive reception of Artificial Intelligence (AI) technologies among students. They are not in the favour of banning the use of AI in education, in fact they

agree to have the guidelines and training to make use of AI in the academically right way. The results show that there is a need to integrate AI in teacher education programme.

Given these insights, educational institutions, policymakers, and educators are presented with a clear mandate to integrate AI training and literacy into teacher training curriculum. Such initiatives should aim not only to equip students with the technical skills to use AI effectively, but also to foster critical thinking about the ethical, social, and professional implications of AI technologies. By doing so, educational systems can ensure that students are not only consumers of AI but also informed participants in shaping its evolution and impact.

CONCLUSION

Thus, this study endeavours to provide valuable insights that contribute to the ongoing discourse on AI integration in teacher education and inform efforts to prepare the next generation of educators for the challenges and opportunities of an AI-enhanced education.

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