

A Study on Awareness of Artificial Intelligence (AI) Tools among Prospective Teachers of Namakkal District

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Abstract- Current study is aims to examine the awareness of Artificial intelligence (AI) tools that helps in the teaching learning process among the prospective teachers. AI technologies are increasingly being integrated into various aspects of teaching and learning, promising personalized learning experiences, enhanced administrative efficiency, and new opportunities for educational innovation. So it is important that teachers must be aware about recent trends like AI, for this study descriptive survey method is used and 300 prospective teachers of Namakkal district of Tamilnadu were selected as samples. The data was analyzed by using descriptive statistical analysis and level of awareness was calculated. The results shows that prospective teachers of Namakkal district have moderate level of awareness on AI Tools.

Keywords:- Artificial Intelligence, AI Tools, Prospective Teachers.

I. INTRODUCTION

Education systems urgently need assistance in managing new opportunities and hazards as technology transformation picks up speed. When used effectively, technology, especially artificial intelligence (AI), presents a special chance to support education systems in implementing new applications, a teaching and learning methodology that places a strong emphasis on equipping students with the knowledge, skills, attitudes, and values they will need in the future. Artificial Intelligence (AI) has the potential to increase the efficacy of education systems designed to prepare students for the future by expanding their reach. However, there are hazards and difficulties for both educators and students. The potential benefits of using AI in education are significant. Personalized learning, one of the most significant advantages of AI in education, can lead to better student outcomes, as students can learn at their own pace and in a way that suits their learning style [4].

AI encompasses a range of technologies that enable machines to perform tasks that typically require human intelligence. This includes capabilities such as learning from data, understanding natural language, recognizing patterns, and making decisions. In education, AI can be applied in various ways to support both teachers and students. As AI continues to evolve, its role in education is likely to expand.

Future developments may include more sophisticated AI systems that further personalize learning experiences, improve educational outcomes, and support teachers in new and innovative ways. Ongoing research, ethical considerations, and collaboration among educators, technologists, and policymakers will be key in shaping the future of AI in education.

Artificial intelligence in education represents a promising frontier that has the potential to enhance learning experiences, streamline educational processes, and support both educators and students. As we navigate this evolving landscape, it is essential to address challenges and embrace opportunities to maximize the benefits of AI in creating a more effective and equitable educational environment.

II. IMPORTANCE OF AI TOOLS IN TEACHING AND INDIVIDUALIZED LEARNING

AI enables individualized learning experiences by adapting content, pace, and style to individual student needs and preferences. This approach caters to diverse learning abilities and enhances engagement and comprehension.

➤ Developed Teaching Efficiency:

AI automates administrative tasks such as grading, attendance tracking, and lesson planning, freeing up teachers' time to focus on designing engaging lessons and providing personalized support to students.

➤ Facilitate Student Engagement:

AI-powered tools such as interactive simulations, virtual tutors, and gamified learning platforms can significantly increase student engagement by offering interactive and immersive learning experiences.

➤ Accessibility and Inclusivity:

AI technologies, such as speech recognition and text-to-speech capabilities, can help students with disabilities access educational content more easily. AI-driven translation tools also support students learning in their native languages.

➤ *Continuous Learning and Adaptation:*

AI systems can provide ongoing feedback to students, highlighting areas of improvement and suggesting personalized learning paths. Similarly, AI can support educators by recommending professional development opportunities based on their teaching practices.

➤ *Advanced Teaching Methods:*

AI enables the creation of innovative teaching methods, such as adaptive learning systems that adjust content in real-time based on student responses. This flexibility allows educators to tailor instruction to meet individual learning needs effectively.

➤ *Preparing Students for the Future:*

• *As AI becomes Learning*

Artificial Intelligence (AI) holds significant importance in education due to its transformative potential across various aspects of teaching and learning. Here are some key reasons why AI is important in education:

increasingly prevalent in various sectors, including education, integrating AI tools into classrooms helps prepare students for future careers by equipping them with essential digital literacy and problem-solving skills.

• *Ethical Considerations and Responsible use:*

Understanding AI in education involves addressing ethical concerns, such as data privacy, algorithmic bias, and ensuring equitable access to AI-driven educational resources. Educators and policymakers play a crucial role in ensuring the responsible integration of AI technologies in educational settings.

III. NEED AND IMPORTANCE OF THE STUDY

AI has the potential to revolutionize education by enhancing personalized learning experiences, improving teaching efficiency, fostering innovation in pedagogy, and preparing students for the evolving demands of the digital age. However, it is essential to approach AI adoption in education thoughtfully, considering both the opportunities and challenges it presents.

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” [7]. So the evolving importance in the Artificial intelligence tools the current study is entitled as “A study on awareness of Artificial intelligence (AI) tools among the prospective teachers of Namakkal district”

IV. DEFINITION OF KEY TERMS

➤ *Artificial Intelligence:*

"Artificial intelligence tools" refer to software applications, platforms, or systems that leverage artificial intelligence (AI) technologies to perform tasks, solve problems, or assist with decision-making. These tools can range from simple algorithms to complex systems and can be applied across various domains.

➤ *Prospective Teachers:*

The raw graduate students who are transformed as an efficient teacher through teacher education course or programme are called prospective teachers. Also, the candidates who are enrolled in teacher education course to become a teacher are known as prospective teachers.

V. OBJECTIVES OF THE STUDY

- To find out the awareness of AI tools among prospective teachers of Namakkal district
- To find out there is any significant difference between the mean scores AI tools awareness among the prospective teachers of with respect to their demographic variables such as gender, locality and qualification.

VI. HYPOTHESES OF THE STUDY

- *Prospective teachers of Namakkal district have high awareness on artificial intelligence tools.*
- There is no significant difference between male and female prospective teachers of Namakkal district in their awareness on AI tools.
 - There is no significant difference between rural and urban prospective teachers of Namakkal district in their awareness on AI tools.
 - There is no significant difference between UG and PG qualified prospective teachers of Namakkal district in their awareness on AI tools.

VII. METHODOLOGY OF THE STUDY

The investigator has adopted descriptive survey method for this study. Prospective teachers studying B.Ed. from teacher education colleges of Namakkal district were considered as population. 300 prospective teachers considered as sample by using simple random sampling technique.

➤ *Tools used for the Study:*

The investigator selected questionnaire as a tool. It has about 45 items with multiple choices. The correct response of every item carried one point score. The self-made tool was used to collect data.

VIII. DATA ANALYSIS AND INTERPRETATION

Mean, SD and 't' test were computed to know the significant difference between the means of the demographic variables such as gender, locality and qualification of the prospective teachers in Namakkal district.

Table 1 Prospective Teachers of Namakkal District have High Awareness on Artificial Intelligence Tools

Score Range 0-45				
S.No	Variables		Sample	Mean
Variables	Sex	Male	114	17.74
		Female	186	18.71
	Locality	Rural	146	17.84
		Urban	154	18.82
	Qualification	Undergraduate	185	18.2
		Post Graduate	115	18.47
Mean average				18.3

From the above table (1) it is inferred that the average mean value is 18.3 (Score range 0-45) it indicates that prospective teachers of Namakkal district possess Moderate level of awareness about artificial intelligence tools.

Table 2 There is no Significant Difference between Male and Female Prospective Teachers of Namakkal District in their Awareness on AI Tools

S.No	Gender	N	Mean	SD	't' value	Level of significance (0.05)
1	Male	114	17.74	6.57	0.97	Not Significant
2	Female	186	18.71	6.46		

The above Table (2) reveals that the calculated 't' Value 0.97 is less than the table value 1.96 at 0.05 level of significance. Hence the null hypothesis is accepted. There is no significant difference between male and female prospective teachers of Namakkal district in their awareness on AI tools. In addition to that the mean scores of female (18.71) is higher than the male (17.74).

Table 3 There is no Significant Difference between Rural and Urban Prospective Teachers of Namakkal District in their Awareness on AI Tools

S.No.	Locality	N	Mean	SD	't' value	Level of significance (0.05)
1	Rural	146	17.84	6.31	1.32	Not significant
2	Urban	154	18.82	6.68		

From the above Table (3) reveals that the calculated 't' Value 1.32 is less than the table value 1.96 at 0.05 level of significance. Hence the null hypothesis is accepted. There is no significant difference between rural and urban prospective teachers of Namakkal district in their awareness on AI tools. In addition to that the mean scores of urban (18.82) prospective teachers is higher than the rural (17.84) prospective teachers.

Table 4 There is no Significant Difference between Undergraduate and Post Graduate Prospective Teachers of Namakkal District in their Awareness on AI Tools

S.No	Qualification	N	Mean	SD	't' value	Level of significance (0.05)
1	Undergraduate	185	18.2	6.58	1.28	Not significant
2	Postgraduate	115	18.47	6.43		

The above table (4) reveals that the calculated 't' Value 1.32 is less than the table value 1.96 at 0.05 level of significance. Hence the null hypothesis is accepted. There is no significant difference between postgraduate students and undergraduate students prospective teachers of Namakkal district in their awareness on AI tools. In addition to that the mean scores of post graduate (18.47) prospective teachers is higher than the undergraduate (18.2) prospective teachers.

IX. FINDINGS OF THE STUDY

The present study concluded that the prospective teachers of Namakkal district possess moderate level of awareness on AI tools, additionally there is no significant difference in the demographic variables such as Gender, Locality and qualification of the prospective teachers.

X. CONCLUSION

The study on the awareness of artificial intelligence (AI) tools among prospective teachers of Namakkal District has provided valuable insights into the current state of AI knowledge and its perceived relevance in the field of education. The findings reveal that while there is a growing recognition of AI's potential to enhance teaching and learning, there remains a significant gap in the depth of understanding and practical application among future educators. More over the policy makers and stake holders of teacher education programme needs to concentrate on incorporating AI tools in the curricula of teacher education programmes.

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