

A Study On The Impact Of Artificial Intelligence Tools Among Students With Special Reference To Thoothukudi City

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Citation: Dr. Cisma. F, et al (2024), A Study On The Impact Of Artificial Intelligence Tools Among Students With Special Reference To Thoothukudi City, *Educational Administration: Theory and Practice*, 30(5), 7285-7289, Doi: 10.53555/kuey.v30i5.4154

ARTICLE INFO

ABSTRACT

AI has the potential to provide far-reaching benefits to education. One of the most important is the ability to personalise the learning experience for each student. The scope of the study is to focus how AI tools has impacted students in their education and learning styles in Thoothukudi city. 50 samples have been selected throughout the thoothukudi city and the following findings have been made that majority of the respondents are familiar with AI tools and majority of the respondents are using AI tools in education. By using AI tools majority of the respondents agreed that they have improved in facilitating better understanding of concepts. Chat GPT is the most used AI tool by 80% of the respondents. Offline functionality is the needed feature in AI tools by majority of the respondents. As per the improvements needed in education institutions majority of the respondents (34%) were in need of automated attendance in their educational institution.

Keywords: AI tools, Artificial intelligence, Impact

Introduction

Artificial intelligence (AI) is the simulation of human intelligence in machines programmed to think and act like humans. This involves the development of algorithms and computer programs that can perform tasks that typically require human intelligence, such as visual perception, speech recognition, decision-making, and language translation. AI has the potential to provide far-reaching benefits to education. One of the most important is the ability to personalise the learning experience for each student. Using artificial intelligence educators can analyze student performance data and preferences to create personalized lesson plans and assessments tailored to each student's unique strengths and weaknesses. AI can also automate administrative tasks like grading, freeing up teachers' time to focus on other important aspects of teaching. AI-powered tools and technologies can also enhance the learning experience for students in a number of ways. For example, virtual and augmented reality can make learning more interactive and immersive, while chatbots and other AI-powered tools can provide 24/7 student support. Personalized learning is one of the most exciting potential benefits of AI in education. With the ability to analyse data on student performance and preferences, AI can help educators to create customized lesson plans and assessments that align with each student's unique strengths and weaknesses. This can improve students experience and motivation, and ultimately lead to better academic outcomes. ChatGPT can assist researchers in writing papers by providing feedback and suggestions, and even generate parts of the text. Additionally, it can be used in natural language processing such as text summarization, sentiment analysis, and language translation for analysing unstructured data. However, it's important to note that these capabilities must be used in conjunction with human intelligence, as AI and ChatGPT can only provide suggestions and support, and the final decision and responsibility of the results are still on the researchers.

Review of Literature

Vojt et al. (2021) examined the effectiveness of AI-driven grading systems in providing objective and consistent evaluation of student work, reducing teachers' grading burden and offering students actionable feedback for growth.

Hsu et al. (2020) demonstrated how AI-driven recommendation systems enhance students' ability to discover relevant educational content tailored to their interests and learning goals.

Wang et al. (2019) showed that AI algorithms can analyze student data to personalize learning paths, resulting in improved learning outcomes and increased engagement.

Anderson and Rainie (2018) found that AI-powered educational platforms increase access to diverse learning resources, empowering students to explore topics beyond traditional curriculum constraints.

Baker and Inventado (2014) explored how adaptive learning technologies adjust instructional content and pace in real-time based on students' performance, catering to individual learning needs and preferences.

Shute and Ventura (2013) discussed how AI-based assessment tools provide immediate and detailed feedback to students, enabling them to identify areas for improvement and take proactive steps to enhance their learning.

Objectives of the Study

- 1.To find out the awareness level of students towards AI tools
- 2.To identify the reasons for using AI technology in their education
- 3.To find out various AI learning tools available to the students
- 4.To find out various challenges faced by students
- 5.To analyse whether AI technology has brought a different impact on present education system

Statement of the Problem

In this context of study, it has been made to know how far the AI tools have impacted students in their education and learning styles. Though these AI tools are a blooming sector among the students and education, we need to make research on the usefulness, challenges awareness and the impact these AI tools has created in the present education system. While some say AI helps students learn better by personalizing lessons and giving access to more resources, we need more research to know for sure. Also, we need to make sure these AI tools are fair and don't invade students' privacy. So, we need studies to figure out how AI impacts students and what challenges might interrupt their learning. It is hoped that such a study will help to gain understanding on how the AI tools has impacted students in their education and learning styles of Thoothukudi city.

Research Methodology

Area of the study

This study was conducted in Thoothukudi city.

Sampling techniques

Convenient sampling technique was adopted for selecting respondents. The researcher has taken 50 students throughout thoothukudi city.

Sources of data

The study is based on both primary and secondary data. The primary data were collected through structured questionnaire. The required secondary was collected from books, magazines and web-sites.

Tools Used

- 1.Percentage analysis
- 2.Weighted mean score analysis

Limitation of the Study

The study is confined with the following limitations:

- The study is limited to Thoothukudi city only and conclusions drawn may not be applicable to other areas.
- Time and cost are the others factors limiting the study sample to 40 respondents.
- Present study is mainly based on primary data. Hence the possibility of sampling error is inevitable.
- It is difficult to know whether the willing respondents are truly representative.

Analysis and Interpretation

Table 1: Demographic profile of the respondents

Sl. No	Particulars	No. of Respondents	Percentage
Age of the respondents			
1	15-20	3	6%
2	21-30	47	94%

Gender of the respondents			
3	Male	19	38%
4	Female	31	62%
Educational qualification of the respondents			
5	Higher secondary	1	2%
6	Graduate	14	28%
7	Post graduate	35	70%
Occupation of the respondents			
8	Only Studying	38	76%
9	Partly employed	12	24%
Nature of the family of the respondents			
10	Nuclear	46	92%
11	Joint	4	8%
Monthly family income of the respondents			
12	Up to 25000	10	20%
13	25000-50000	30	60%
14	50000-75000	10	20%

Interpretation

The above table reveals the demographic profile of the respondents that majority were under the age group of 21-30 (94%), majority of the students selected were female (62%), majority of the respondents were post graduate (70%), most of the students were only studying (76%) and living in nuclear family and majority (60%) of the respondents were having family monthly income between 25000-50000.

Table 2: Factors related to Artificial Intelligence

Sl.No	Particulars	No. of Respondents	Percentage
Familiarity of AI tools			
1	Yes	49	98%
2	No	1	2%
Usage of AI tools in Education			
3	Yes	46	92%
4	No	4	8%
Specific AI tools			
5	CHATGPT	40	80%
6	BARD AI	4	8%
7	Perplexity AI	2	4%
8	Others	4	8%
Factors improved through AI tools			
9	Providing personalizes learning	6	12%
10	Smart content creation	12	24%
11	Facilitating quick understanding	16	32%
12	Instant feedback	7	14.3%
13	Enhancing engagement through interactive learning	9	14.3%
Additional features needed with AI tools			
14	Offline functionality	28	56%
15	Multi modal learning	12	24%
16	Gamification elements	8	16%
17	Collaborative features	2	2%
Improvements needed in Educational institution with AI			
18	Automated grading & feedback	12	24%
19	Automated attendance	17	34%
20	Universal access	10	18%
21	Real time interaction	11	24%

Interpretation:

The above table reveals that majority (98%) of the respondents are familiar with AI tools and majority of the respondents are using AI tools in education. By using AI tools majority (32%) of the respondents agreed that they have improved in facilitating better understanding of concepts. Chat GPT is the most used AI tool by 80% of the respondents. Offline functionality is the needed feature in AI tools by majority of the respondents (56%). As per the improvements needed in education institutions majority of the respondents (34%) were in need of automated attendance, followed by automated grading and feedback and real time interaction by 24% of the respondents each.

Table 3: Reason For Using AI Tools In Learning And Education

Factors	I	II	III	IV	Totalscore	Meanscore	Rank
Accessibility	15	5	10	20	2355	47.1	IV
Personalized learning	20	10	10	10	2730	54.6	I
Cost Savings	5	20	15	10	2415	48.3	III
Customized Feedback	10	15	15	10	2500	50	II

Interpretation:

The respondents were asked to rank the reason for using AI tools in learning and education. By multiplying these weights with the corresponding number of respondents; the researchers arrived at individual scores and the total score for the concerned factors. Personalized learning had a highest score (54.6) and is therefore ranked 1st, followed by Customized feedback gets the 2nd rank, Cost savings gets the 3rd rank, Accessibility gets the 4th rank.

Table 4: Challenges faced while using AI tools

Factors	I	II	III	IV	V	Totalscore	Mean score	Rank
Technical issues	12	8	12	10	8	2572	51.44	II
Privacy concerns	8	7	12	8	15	2230	44.6	V
Lack of training	10	11	10	14	5	2590	51.8	III
Reduce analytical thinking	15	10	6	8	11	2609	52.18	I
Resistance to change	5	14	10	10	11	2379	47.58	IV

Interpretation:

The respondents were asked to rank the challenges faced while using AI tools. By multiplying these weights with the corresponding number of respondents; the researchers arrived at individual scores and the total score for the concerned factors. Reduce analytical thinking had a highest score (52.18) and is therefore ranked 1st, followed by Technical issues gets the 2nd ranked (51.44), Lack of training gets the 3rd rank (51.8), Resistance to change gets the 4th rank (47.58), Privacy concerns has been ranked 5 (44.6).

Suggestions of the study:

From the above analysis and findings the following suggestions have been made from the study. Many students suggested that AI tools should be cost free to use as many AI tools are subscription-based AI tools. The educational institutions must incorporate with more AI tools to the students for learning and for academic purpose making it easier and accessible to students in future. The students must be need to educate and create awareness to students about various AI tools available for their learning and education purpose apart from CHATGPT. Many students preferred that AI tools has personalized their learning experience by providing them with quality feedback regarding their strength and weakness of each individual personally.

Conclusion:

As AI technology has become a transformative force in numerous sectors, including education. AI tools have significantly enhanced the learning experience for students, offering personalized learning, immediate feedback, and interactive resources. This has led to improved engagement, comprehension, and knowledge retention. AI tools enable adaptive learning pathways based on individual student needs and learning styles. They provide customized content, pacing, and methods, catering to diverse abilities and interests. AI-powered assessment tools offer instant feedback, allowing students to identify and rectify mistakes promptly. It is the duty of Educators and policymakers should prioritize training and awareness programs to build proficiency in utilizing AI tools effectively. Though these AI tools provide numerous benefits to students there some certain drawbacks such as technical issues, resistance to change, lack of critical thinking and problem-solving skills, making the students more reliable towards AI driven technology. Overall, AI tools have the potential to revolutionize education by adapting to individual student needs and fostering a more engaging and effective learning environment.

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