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## ARTIFICIAL INTELLIGENCE IN THE CLASSROOM AND ITS EFFECT ON ACADEMIC PERFORMANCE

Shruti Hargude

MSC Computer Application

H.V. Desai College Pune India

**Abstract:** Artificial Intelligence (AI) is becoming an important part of modern education. In recent years, the use of AI tools in classrooms has increased rapidly. Students and teachers are using applications such as chatbots, learning platforms, and smart systems in their daily academic work. These tools help students understand concepts more clearly and complete their work faster.

This study focuses on how AI is used in classrooms and how it affects students' academic performance. The research is based on both secondary data and a small survey conducted among students. The findings show that AI helps students learn better by providing personalized support, quick feedback, and easy access to information. However, it also creates some problems such as overdependence, reduced thinking ability, and lack of originality. The study concludes that AI has a positive impact on academic performance if it is used in a proper and balanced way along with traditional teaching methods.

Index Terms – Artificial Intelligence, Education, Academic Performance, Learning, Students

### I. INTRODUCTION

In today's world, technology is playing an important role in almost every field, including education. One of the most important technologies is Artificial Intelligence (AI). AI is changing the way students learn and teachers teach. It has made education more flexible, interactive, and accessible.

In traditional classrooms, all students are taught in the same way. However, every student has a different learning speed and understanding level. Some students understand quickly, while others need more time. AI helps solve this problem by providing personalized learning. It allows students to learn according to their own pace and comfort.

Many students today use AI tools such as ChatGPT, Grammarly, and other applications for their studies. These tools help them understand difficult topics, correct grammar, and complete assignments. AI also helps teachers by reducing their workload, checking assignments, and providing better teaching methods. However, along with benefits, AI also has some drawbacks. Some students depend too much on AI and stop thinking on their own. This may affect their creativity and problem-solving skills. This study aims to understand how students use AI tools in their daily learning and how it affects their academic performance in a real classroom environment.

This change in education is not only limited to urban areas but is slowly reaching smaller towns and colleges as well. Students are becoming more dependent on digital tools for learning. AI has made it possible for students to learn anytime and anywhere. For example, students can revise topics using AI tools even after classroom hours. This flexibility is one of the main reasons why AI is becoming popular in education.

At the same time, it is important to understand whether this change is actually improving academic performance or just making students dependent on technology. This study tries to understand this situation in a simple and practical way.

## II. LITERATURE REVIEW

Many researchers have studied the role of AI in education and its impact on learning.

Holmes et al. (2019) explained that AI supports personalized learning and helps students understand concepts more effectively [1]. They stated that AI can improve the quality of education by providing customized learning experiences.

Zawacki-Richter et al. (2019) found that AI improves student engagement and helps teachers in managing their work [2]. Their study showed that AI tools make learning more interactive and interesting.

Luckin et al. (2016) stated that AI enables adaptive learning, where students get content based on their needs and performance [3]. This helps students improve their weak areas.

Kruk (2017) observed that students use digital tools mainly for quick learning and easy access to information [4]. This shows that technology is becoming a regular part of student life.

Chen et al. (2020) found that AI-based systems improve student motivation and academic performance [5]. However, Selwyn (2019) pointed out that too much use of AI may reduce independent thinking and creativity [6].

Most researchers agree that AI improves learning and engagement. However, they also highlight some negative effects such as reduced thinking ability and overdependence.

This shows that AI should not be used blindly. Instead, it should be used in a controlled and balanced way so that students can get maximum benefit without losing their basic learning skills.

## III. RESEARCH METHODOLOGY

### 3.1 Sample and Data

For this study, a survey was conducted among 30 students from different academic backgrounds such as science, commerce, and computer applications. The students were selected randomly to avoid bias and to get general responses.

The aim of selecting different students was to understand how AI is used across different subjects. This helps in getting a better idea of how AI affects learning in various fields.

### 3.2 Data Collection

Primary data was collected through a simple questionnaire. Students were asked about their usage of AI tools, benefits, and challenges. Secondary data was collected from research papers, journals, and online articles.

### 3.3 Research Approach

The study uses a descriptive approach to analyze how AI affects students learning and performance. The data is presented in simple form for better understanding.

## IV. DATA ANALYSIS AND RESULTS

Table 1: survey results

Factor	Percentage
AI Usage	90%
Improved Understanding	85%
Dependence on AI	70%
Reduced Thinking Ability	60%

The results show that most students are using AI tools regularly in their studies. A large number of students believe that AI helps them understand topics better and complete work faster.

At the same time, many students also depend on AI tools for assignments and problem solving. This shows that while AI is helpful, it may reduce independent thinking if used too much. It can also be observed that students who use AI tools regularly tend to complete their work faster compared to others. Many students also mentioned that AI helps them revise topics before exams.

However, some students also said that they sometimes copy answers directly from AI tools without understanding the concept. This shows that AI can affect learning quality if not used properly.

## V. ADDITIONAL ANALYSIS

To understand the impact more clearly, students were also asked about their experience with AI tools.

- Most students said AI helps in saving time
- Many students feel more confident while studying
- Some students use AI for quick answers without understanding
- Few students said they depend on AI for almost all assignments

These responses show that AI is becoming a strong support system for students. However, it also shows that students need proper guidance to use AI in the right way. Another important observation from the survey is that students prefer AI tools because they are easy to use and provide quick answers. Unlike books or lectures, AI tools give instant responses, which saves time.

However, this quick access to answers may reduce patience among students. They may not spend enough time thinking or solving problems on their own.

## VI. DISCUSSION

Based on the findings of this study, it can be clearly seen that AI has a strong impact on education. It improves learning, saves time, and helps students perform better academically.

However, overdependence on AI tools is a serious concern. Students should use AI as a support tool and not as a replacement for their own thinking. If students depend too much on AI, they may lose their ability to think critically.

Teachers also play an important role in guiding students. They should teach students how to use AI tools responsibly and effectively. The discussion also shows that AI is helpful for both students and teachers. Students get better support, and teachers can manage their work easily.

However, the main concern is maintaining balance. If AI is used too much, it can reduce creativity and originality. Students should be encouraged to use AI only as a guide, not as a complete solution.

## VII. CHALLENGES

There are several challenges in using AI in education:

- High cost of technology and software
- Data privacy and security issues
- Lack of proper training for teachers
- Unequal access to devices and internet

These challenges can affect the proper use of AI in classrooms. Another challenge is that not all students have equal access to technology. Some students may not have proper devices or internet connection. This creates a gap between students.

Also, there is a risk of misuse of AI tools. Students may use AI for copying assignments instead of learning. This can affect their overall development.

## VIII. SUGGESTIONS

Based on the study, the following suggestions are given:

- AI should be used along with traditional teaching methods
- Students and teachers should be trained properly
- Responsible use of AI should be encouraged
- Students should focus on understanding concepts
- Colleges should provide equal access to technology
- Educational institutions should create clear rules for the use of AI tools.
- Students should be guided on how to use AI in a responsible way.
- Workshops and training sessions can be conducted to teach students and teachers about the correct use of AI. This will help in improving learning outcomes.

## IX. CONCLUSION

From this study, it can be concluded that Artificial Intelligence is playing an important role in improving education. It has changed the way students learn and teachers teach by making the learning process more flexible, faster, and easier to understand. AI helps students understand concepts clearly, complete tasks efficiently, and perform better academically. At the same time, the study also highlights that overdependence on AI can reduce independent thinking and creativity, as students may rely too much on technology instead of using their own knowledge. Therefore, it is important to maintain a proper balance between AI tools and traditional teaching methods so that learning remains effective. AI should be used

as a support system and not as a replacement for human thinking. This study is based on both research and survey responses, which makes the findings practical and realistic. In the future, more detailed studies can be conducted to understand the long-term impact of AI in education and how it can be used in a more responsible and effective way.

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