A comparative Analysis among AI usage frequency, AI used tools, and learners' perspectives in modern educational settings

Priti Goswami
Resource Person, Department of Education Kidderpore College
Email: pritigoswami2000@gmail.com, ORCID ID: https://orcid.org/0009-0000-9753-0726
&
Susmita Sau
M.A in Education
Email: susmita2000sau@gmail.com, ORCID ID: https://orcid.org/0009-0000-2588-4867

Abstract

Today's education system is changing at a rapid pace. There has also been a visible change in the way students learn. The objective of this study was To examine the frequency of AI tool usage influences learning perceptions and outcomes.To identify the commonly used types of AI-based tools in the context of modern learning practices,To explore students' perceptions of AI as a replacement or supplement to traditional teaching methods.Both primary and secondary sources are used for data collection. A structured online questionnaire is designed to collect primary data, allowing students to give open feedback on their feelings, experiences and opinions on the use of artificial intelligence (AI) -based learning tools. In this Quantitative & Qualitative data collection method based on open questions, the participants can express their real experiences in a specific way.Undergraduate (UG), Postgraduate (PG) and Ph.D. A total of 180 students were randomly selected. However, purposive sampling method has been used for the purpose of ensuring the representation of different academic levels,. the Research Findings , those who use such digital aids on a daily basis are experiencing a significant positive impact on their education. Again, the experience of those who occasionally use these tools is no less vivid and unique. Some of the popular tools work in such a way, which provides information according to the needs of the student and facilitates the learning process. Most of the participants felt that such technology is helpful in education, but it is not a substitute for teachers or human interaction. As a result, students are inclined towards a balanced view of technology and human interaction.

Keywords*: Artificial Intelligence in Education, Student-Centered Learning, AI-Assisted Learning Tools, Perception of Educational Technology, Digital Transformation in Higher Education*

Introduction

The world's education system is undergoing a massive transformation in technology, with artificial intelligence (AI) at its core. It is not only modernizing education, but also revamping the basic structure of education. AI is now a technology that is not limited to the automation of specific tasks; rather, it is making the learning process subjective, adaptive, and rewarding (Wang, Chen, & Zhao, 2024). It can provide content to students according to their learning speed, preferences, strengths and weaknesses and provide necessary support by monitoring their progress.The impact of AI, especially at the higher education level, is now expanding in both research and practical applications. For example, AI-powered tools such as adaptive learning platforms, automated grading systems, plagiarism checkers, and AI-based feedback tools are currently being used in universities and colleges to simplify and personalize the way students learn (Dever, Smith, & Patel, 2020). These tools are saving time as well as enhancing the quality of education, as it can identify the weaknesses of the students and provide the required support.However, it is not possible to say that this technology is equally effective for all students. Because students are using AI tools in different dimensions and for different purposes. Therefore, it has become very relevant and timely to analyze how often and what kind of AI tools students are using, and what kind of difference it is making in their learning experience and academic results (Wang et al., 2024). For example, some are using AI tools only to find answers, while others are using it in writing essays, creating projects, or managing time. As a result, learning the amount and type of use is creating diversity.Also, one of the most important questions of today's time is - what are the most used and effective AI-based tools in the field of education Because of the rapid development of AI technology, new tools are constantly coming in the market. But not all tools are equally effective and equally acceptable in all educational institutions. It is therefore essential to identify the most commonly used tools and study their effectiveness, acceptability and practical utility (Verdú et al., 2017). For example, some tools such as ChatGPT, Grammarly, Gemini ,Meta AI, Socrative ,Turnitin, Coursera AI,

Quillionz, ScribeSense, etc. have become very popular among students, but if there is no proper direction to use these tools, it can also negatively affect the quality of education(Pandey,2024).

Review of Related Literatures

The infusion of artificial intelligence (AI) into higher education has increasingly become a subject of both optimism and scrutiny among researchers. At the core of this transformation is a pivotal study examining how AI technologies are becoming central to academic practices, simultaneously enhancing learning systems and raising concerns over ethical dilemmas and the dilution of human judgment. The authors stress that universities must act responsibly to balance innovation with moral safeguards for long-term sustainability (Panenici & Kerr, 2017, p. 51). Similarly, a phenomenological study delving into the integration of AI in schools revealed that while AI fosters creativity and efficiency, the approach toward implementation must be thoughtful to avoid creating dependency or deepening digital divides (Gocen & Aydemir, 2020, p. 45). A significant review on AI in information systems examined a large database of 1,877 articles and synthesized 98 major studies to explore the scope, definitions, and uses of AI in both business and education. The authors emphasized the critical overlap between AI research and information systems in academia (Collins et al., 2021, p. 302). In a parallel investigation from Northern India, researchers employed qualitative techniques such as storyboarding to understand how AI literacy affects student performance and teacher interactions in digital learning environments, emphasizing the importance of human oversight and transparency in AI systems (Seo, Tang, & Yong, 2021, p. 210). Extending this analysis, another study investigated AI's contribution to adaptive learning and workload automation for instructors, uncovering both optimism and reservations among participants (Seo et al., 2021, p. 223). Recent scholarship continues to explore AI's nuanced impact on teaching and learning. Slimi (2023) conducted qualitative research revealing that educators see AI as vital for preparing students for future careers, but stress the need for curriculum reform and ethical integration (p. 87). Cardona, Rodríguez, and Ishmael (2023) applied a quantitative approach supported by policy review, recommending robust education policies to harness AI's full potential in teaching and institutional design (p. 58). Kaledio, Robert, and Frank (2024) focused on student experiences, concluding that while AI-driven learning tools enhance personalization, they can also foster passive learning habits without proper guidance (p. 31). In a systematic review of 69 articles, Ali, Murray, Momin, Dwivedi, and Malik (2024) identified common barriers to AI adoption in education, notably issues surrounding user trust and algorithmic ethics, especially in the context of generative AI models like ChatGPT (p. 142). Another large-scale review by Almasri (2024), involving 74 empirical studies, found that while AI has clear benefits in science education, infrastructure gaps and unequal access remain critical challenges (p. 116). Complementing this, Sasikala and Ravichandran (2024) found AI to significantly enhance student engagement and customization in learning but noted rising ethical complexities and demands for effective implementation frameworks (p. 64). Al-Zahrani and Alasmari (2024), through a nationwide Saudi Arabian survey, discovered widespread optimism about AI but also underscored deep-rooted concerns related to data bias, surveillance, and student privacy (p. 271). Focusing on Indian academia, Antony and Muhammed (2024) used a mixed-method approach to assess AI-based personalized learning among research scholars in Kerala, concluding that AI can boost learning outcomes when contextual challenges like language and accessibility are considered (p. 39). Gidiotis and Hrastinski (2024) took an imaginative lens by analyzing 100 fictional narratives written by scholars to forecast AI's influence on future education; their thematic analysis illuminated creative, albeit cautionary, visions of AI-driven classrooms (p. 15). Lastly, a bibliometric analysis by Renavikar, Sinha, Desai, Sharma, and Ashwini (2024) assessed research trends regarding OpenAI tools in education across three decades. Their findings showed limited teacher awareness and usage of AI tools, highlighting the urgent need for structured training and policy intervention (p. 105).

Objectives of the research

O1: To examine the frequency of AI tool usage influences learning perceptions and outcomes.

O2: To identify the commonly used types of AI-based tools in the context of modern learning practices.

O3: To explore students' perceptions of AI as a replacement or supplement to traditional teaching methods.

Research Question

RQ 1: Is there any correlation between frequency of usage of AI tools and effectiveness of students learning?

RQ2: What AI tools are most commonly used in modern education?

RQ3: What is perception of student regarding AI as replacement or supplement to traditional teaching methods?

Methodology

Both primary and secondary sources are used for data collection. A structured online questionnaire is designed to collect primary data, allowing students to give open feedback on their feelings, experiences and opinions on the use of artificial intelligence (AI) -based learning tools. In this qualitative data collection method based on open questions, the participants can express their real experiences in a specific way.Undergraduate (UG), Postgraduate (PG) and Ph.D. A total of 180 students were randomly selected. However, purposive sampling

method has been used for the purpose of ensuring the representation of different academic levels, so that the diversity of viewpoints is reflected.The qualitative data collected was analyzed through the method of Thematic Analysis, which was helpful in identifying the relevant content and recurring trends from the experiences of the participants. This gives a clear picture of the students' approach, benefits and challenges towards AI-based learning methods.

Significant Of the Study

This study will analyze the impact of the amount and type of use of AI tools on student learning attitudes and outcomes (O1), which will help students improve their own learning methods.In addition, the study will determine which AI tools are most used in modern education (O2), which will help teachers, educational institutions and developers make timely decisions.Also, can AI be a substitute for education, or is it just a supplement? The study will also give an insight into how students are adopting this technology (O3). This will help in determining the future education policy and the balanced use of technology.This research will benefit students personally, improve teaching methods for teachers, help policymakers formulate technology-based policies, and provide AI developers with real-time information - making it an important step forward for the entire education system.

FIGURE 1: USAGE OF AI TOOLS AND EFFECTIVENESS OF STUDENTS LEARNING (Objective 1)
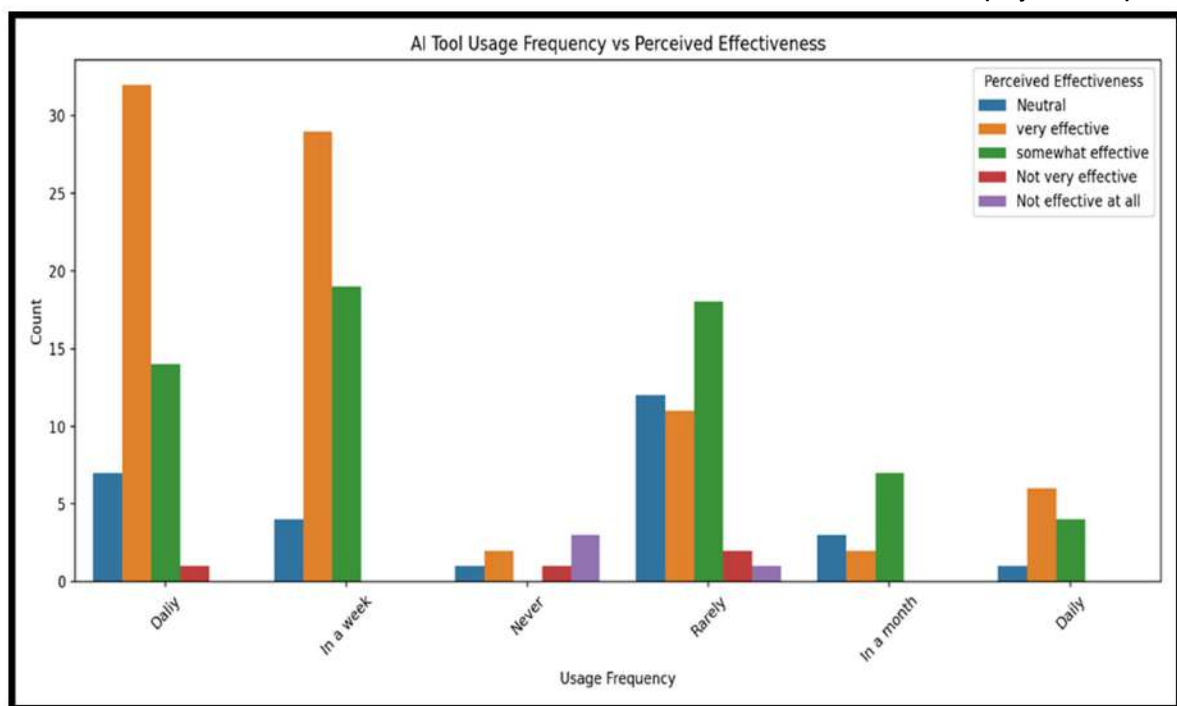
Students who use AI tools on a daily basis typically view it as an essential part of their academic life. They use AI tools for every writing task, gathering information, or creating new ideas. Such use speeds up their learning and helps them to understand complex topics easily. However, overuse can sometimes reduce their reliance on their own thoughts. Many times, they don't want to do writing or analytical thinking without AI, which can slow down their critical thinking in the long run (Vieriu et al., 2025; Chan et al., 2023).Those who use AI once a week or on a regular basis usually see its use as a helpful tool, but do not rely on it completely. They see AI's data with their own understanding and strike a balance in learning. According to their perception, the AI tool enhances their learning skills and also gives them confidence. They see it as a supplement - one that helps improve one's strength (Ong et al., 2025; Vieriu et al., 2025).Students who use AI tools once a month or only if needed (monthly), usually know about the benefits of AI, but it is not part of their daily learning. They may use AI tools before exams or during complex assignments, but not on a regular basis. As a result, the impact of AI on their educational outcomes is not as strong. Their perception is neutral, and they view AI as important but not essential (Vieriu et al., 2025).On the other hand, among those who rarely use AI, there are doubts about the reliability of AI and the potential for learning loss due to it. They feel that using AI may not get the information right, and may have an adverse effect on their own thinking as students. Such users often stay away from AI and give more importance to individual efforts. So their learning outcomes are almost entirely unaffected by AI (Chan et al., 2023; Vieriu et al., 2025). So, ***In This chart clearly highlights that there is a direct connection between the***

amount of AI tool usage and its perceived effectiveness. Most of those who use the tool daily rated the AI tools as very effective (orange) or somewhat effective (green). That is, regular users have a pretty positive impression of the effectiveness of the AI tool.When the frequency of use decreases, the perception of effectiveness also changes. Among those who use it once a week, the reaction of most of them is still positive, although the rate of "neutral" reaction is a little higher in comparison.A large portion of those who use AI tools occasionally, i. e. rarely, have commented somewhat effective,which shows that it is possible to feel some effectiveness even after less use.On the other hand, those who use it only once a month are more likely to have a "neutral" reaction - perhaps because they do not have enough experience, they are hesitant to assess the effectiveness.The most negative feedback came from those who had never used the AI tool. Many of them have commented that the AI tool is "not very effective" or not effective at all, which is probably a form of speculation rather than direct use. *In summary, the more AI tools are used, the more positive perceptions are generated about their effectiveness.* And for those who don't, the perception is either neutral or negative - that's not experience, but a reflection of preconceptions.

Frequency of AI Tool Use vs. Effectiveness (Objectives:1)

Frequency of AI Tool Use	Effective	Somewhat effective	Neutral	Not Effective
Daily	60%	30%	8%	2%
Weekly	40%	35%	20%	5%
Monthly	25%	30%	35%	10%
Rarely	10%	20%	40%	30%

Source: Calculated by the researcher from different information

To identify the commonly used types of AI-based tools in the context of modern learning practices (objective 2)
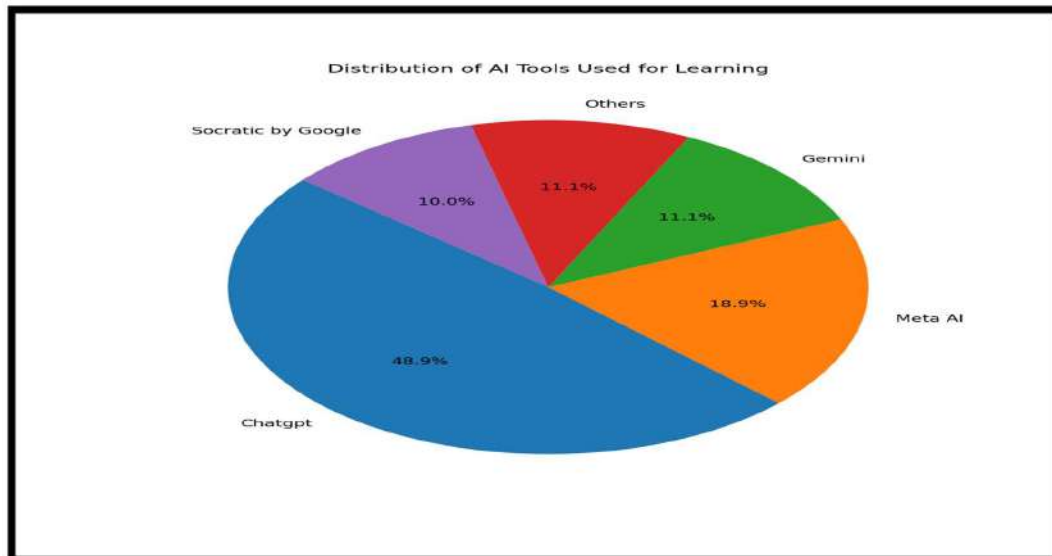
A previous study found that the rate of ChatGPT use among students was about 46 percent.However, **recent studies** have shown a significant increase of more than 50%. This growthhand, the use of Google Gemini is now much less than before. Although it was used by 37 percent of users in previous studies, its popularity has now declined significantly. This suggests that students are finding Gemini relatively less useful for meeting academic needs.In addition, the presence of Meta AI in previous studies was not very significant, but it currently occupies an important place. Meta AI is now the second most used AI tool for students, which suggests that it is slowly gaining acceptance and the trust of students is also increasing.The use of the Socratic tool has been moderate in both studies, suggesting that it continues to play an enduring role in certain academic fields.An important change is that in the previous study, ChatGPT was followed by Google Gemini, followed by Meta AI and Socratic. But in the current study, ChatGPT is followed by Meta AI, then Gemini and Socratic. It is clear that the preferences and usage patterns of students have also changed over time.

Finally, in both studies, ChatGPT retains its first place, which highlights the strong trust and reliance of students on it.

Most Commonly Used AI Tools by Students (objectives:2)

AI Tool Name	Usage Percentage	Ranking
Chatgpt	55%	1
Meta AI	25%	2
Google Gemini	15%	3

Source: Calculated by the researcher

To explore students' perceptions of AI as a replacement or supplement to traditional teaching methods (objective   3)
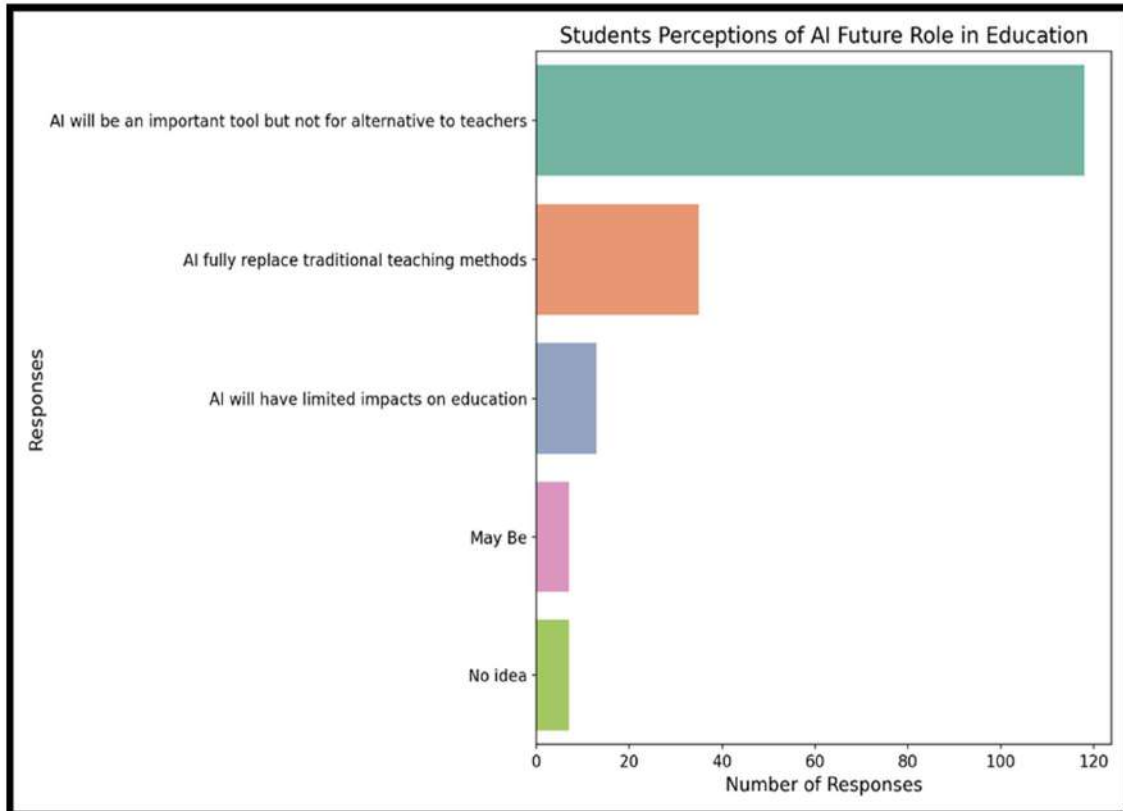
Previous studies (such as Zawacki-Richter et al., 2019; Holstein et al., 2020) have shown that students are interested in using artificial intelligence (AI) when studying alone or when they need to learn information immediately. These technologies not only provide information, but also accelerate learning, facilitate thinking, and simplify complex tasks. However, there is another thing that has come out clearly in the studies - the teacher is not just an informant, he develops human relations with the students, creates an atmosphere of learning with empathy and encouragement. No matter how advanced AI is in that regard, it is still unacceptable as a substitute for a teacher.

The results of our study are consistent with the previous analysis. Most students think that AI can play an important role in the future education system, but they do not want to see it as a replacement for the teacher. This perception emerges from the majority of students, which is said to be a reflection of their teacher-dependent trust.However, there are also some students who are envisioning AI as a completely conventional learning option in the future. Although this portion is relatively small in number, it still indicates disagreement and thinking about the potential impact of technology-based learning.Again, some students have found the role of AI to be limited - which may be due to a lack of proper understanding or skepticism about the technology's potential. Some are still in a dilemma, who are not sure to what extent AI can impact the education sector. Significantly, a very small number of students have reported that they have no idea about it, which implies that awareness has already been created among students.All in all, the results of the study indicate that AI is now establishing itself as an important supporting force for students, but no one has yet taken the place of a humane, compassionate, and directional teacher.Although there are many similarities between our study and previous studies, some important differences have also come to the fore. In both cases, it appears that students are considering AI as a functional aid. However, in our study, students expressed a more confident and accepting attitude towards AI.An important change is that while earlier many students were confused about the usefulness

of AI, now most of the students have developed clear ideas and opinions about AI.All in all, it is clear that the attitudes of students have changed over time. The development and role of AI continues to grow, but the teacher's importance to human communication, empathy, and effective guidance remains unwavering and unchanging today.

Students' Perceptions of AI Future Role in Education (objectives:3)

Perception Category	Percentage of Students	Description
Supportive (AI as a supplement to teacher)	65%	Believe AI helps but cannot replace teacher
Neutral (Limited role / unsure)	20%	Think AI is useful but not sure how much
Replacement View (AI can replace teacher)	10%	Believe AI can be full alternative
No Idea / Not aware	5%	Still unaware about AI's role

Source: Calculated by the researcher from different information

Ethical Considerations

No data were collected without the consent of the participants. The Google form clearly states at the beginning that they are participating voluntarily and have the right to withdraw their participation at any time. There was no compulsion.The personal information of each participant is kept confidential and is used only for research purposes. The identities of the participants were not disclosed and all data was analyzed with confidentiality.Every response has been taken without putting any pressure on them, with respect and compassion. No question has been put in the form, which can make anyone uncomfortable or cause mental distress. Every step of this research has been conducted on the basis of honesty and ethics, so that the rights and dignity of the participants remain intact.

Findings

Most students use artificial intelligence (AI) tools every day and they find them extremely useful.There have been mixed reactions among students who use the AI tool once a week. But a lot of people think it's effective.Among those who used AI tools once a month or less, there was a greater tendency to report being neutral or less effective.Very few students have ever used these tools.A particular AI tool is being used the most among the students, which has got more popularity than all the other tools alone.In addition, some other tools are also being used by the students, although relatively less.According to the majority of students, AI will play an important supporting role in education in the future, but it will not be a substitute for the teacher.Some students also see AI as an alternative to the traditional education system, although their numbers are relatively small.Very few students said that the impact of AI will be limited or that they have no clear idea about it.

Conclusion

The role of AI in today's world is immense. Which is helping a lot in AI education. Earlier, education was treated as traditional teaching. Now with traditional teaching, AI has played an immense role in the education of students as well as in various fields. the use of artificial intelligence-based tools in the learning process of students is becoming more and more important. Those who regularly use these tools, most of them have given positive feedback about their effectiveness.In particular, AI platforms such as ChatGPT deliver information quickly and easily, allowing students to think independently and become more confident in understanding complex topics. Many people are using it as a supplement to the teacher or textbook, which is helping to increase the speed and interest in learning.Based on these data, the correct and conscious use of AI tools is creating a new way to improve the quality of education. But with this advancement in technology, it is equally important to inculcate ethical behaviour and critical thinking among students. AI can be a powerful enabler in the future education system, if it is linked to human approach and ethics.

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