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## Artificial Intelligence On Academic Performance Among Undergraduates In Imphal Valley Of Manipur

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### Abstract

This study examines the measurable impact of Artificial Intelligence (AI) tools on the Academic Performance of undergraduate students in the Imphal Valley of Manipur. Unlike earlier research that primarily focused on perceptions, this investigation emphasizes outcomes such as grades, study habits, and assignment quality. Using a Descriptive survey method, data were collected from 40 students at Imphal College and G.P. Women's College using structured questionnaires that combined quantitative and qualitative responses. Results show that AI tools - particularly ChatGPT, Google Gemini, and Grammarly - are widely used, improving exam preparation, time management, and the quality of academic work. At the same time, challenges such as overdependence, reduced originality, and weakened critical thinking were identified. The study concludes that AI can enhance academic performance when used responsibly, serving as a supportive companion rather than a replacement for creativity and independent effort. It recommends that educators and institutions promote AI literacy and ethical integration to ensure balanced learning, where technology complements human abilities and fosters confident, thoughtful, and independent learners.

**Keywords:** Artificial Intelligence (AI), Educational Technology, Academic Performance, Critical Thinking, Responsible Integration

### Introduction

Traditional learning occurs in classrooms, lecture halls, or labs where teachers and students meet face-to-face. It has been the most common form of education, emphasizing discipline, teamwork, and direct interaction. Over time, technology has changed this system; chalkboards have been replaced by digital screens, and students now use online videos, e-books, and platforms like Google Classroom and YouTube. These tools have made learning more flexible and accessible. Artificial Intelligence (AI) takes this change further. AI refers to computer systems that can perform tasks requiring human intelligence, such as problem-solving, reasoning, and creativity. Today, AI is part of daily life through tools like Siri, Alexa, Netflix recommendations, self-driving cars, and medical tools. In education, AI is rapidly growing, especially among undergraduate students. Tools like ChatGPT, Grammarly, Liner, Deepseek, and Google Gemini assist with writing, editing, explaining concepts, and completing assignments. ChatGPT is the most popular, as it can draft essays, simplify topics, and even provide emotional support during stressful times. Grammarly enhances writing quality by checking grammar and clarity, while Google Gemini helps students quickly search for and summarize information. In India, AI usage is increasing, particularly in urban areas with better internet access and smartphones. Students in Manipur are also adopting these tools for assignments, grammar correction, and study support, though access

varies among institutions. AI makes learning more interactive and self-directed, but students need to use it wisely. Relying too much on AI can weaken critical thinking and problem-solving skills. True learning happens when students think independently and develop a deep understanding of subjects. AI should serve as a helpful assistant rather than a complete replacement. This study examines how undergraduate students in Manipur, especially those in the Imphal Valley, utilize AI and how it impacts their academic performance.

## Review of Literature

Crisha Mae B. Peras et al. (2023) conducted a study titled "Artificial Intelligence as a Tool in Increasing Academic Performance". The findings revealed a strong and significant correlation between Artificial Intelligence involvement and improved academic performance. Students who actively engaged with Artificial Intelligence tools, such as virtual trainers and Artificial Intelligence-assisted lesson planning, tended to perform better academically.

Leovigildo Lito Mallillin (2024) conducted a study titled "Artificial Intelligence (AI) Towards Students' Academic Performance". The findings revealed that Artificial Intelligence significantly enhances personalized learning, identifies struggling learners for intervention, and boosts students' motivation and study habits. It also encourages critical thinking, streamlines educational tasks and provides adaptive learning paths.

Liu Dong, Xiuxiu Tang et al. (2025) conducted a study titled "Examining the Effect of Artificial Intelligence in Relation to Students' Academic Achievement: A Meta-Analysis". The research emphasized the importance of context, methodology, and Artificial Intelligence integration strategy in achieving effective learning outcomes.

## Significance of Study

The use of Artificial Intelligence (AI) in higher education has been widely studied, but most existing research focuses on students' perceptions and experiences rather than measurable academic outcomes such as grades or GPA. While students often claim that AI tools like ChatGPT, Grammarly, Liner, Deepseek, and Google Gemini enhance their learning, these claims are rarely validated against actual performance data. Furthermore, much of the current scholars examine AI's role in teaching and learning processes at a general level, leaving a gap in understanding its direct impact on undergraduate academic achievement.

This study, titled Artificial Intelligence on Academic Performance Among Undergraduate Students in Imphal Valley of Manipur, seeks to address these gaps by analyzing the measurable impact of AI tools on undergraduate performance across disciplines and over time. The choice of Imphal Valley is especially relevant, as undergraduate students here are among the most active users of AI for research, assignments, writing, tutoring, time management, and exam preparation. The research emphasizes that while AI can provide support, guidance, and instant answers, students must avoid over-reliance. Human creativity, critical thinking, and problem-solving remain essential. AI should serve as a supportive companion rather than a replacement for independent thought. By examining AI's role in academic life, this study aims to show how AI can be used positively and responsibly. It encourages a mindset where students trust their own abilities first and use AI as a guide, not a shortcut. The goal is to help shape a generation of learners who are skilled in using AI but also thoughtful, creative, and independent. Such students will be better prepared to succeed in a technology driven world while maintaining balance, originality, and control over their learning journey.

## Objectives of the study

1. To identify the most used Artificial Intelligence tools among Undergraduate students
2. To find out how Artificial Intelligence can be used as a supportive tool for learning without replacing critical thinking and personal efforts
3. To find out how frequently undergraduate students use Artificial Intelligence tools in their academic activities
4. To find out the influence of Artificial Intelligence tools on students, academic efforts and

study habit.

## Research Questions

1. What are the most used Artificial Intelligence tools among undergraduate students for Academic purposes?
2. How frequently do undergraduate students rely on Artificial Intelligence tools for learning and completing academic tasks?
3. What challenges do students face when using Artificial Intelligence for their academic work?
4. To what extent does the use of Artificial Intelligence affect students' critical thinking and their own learning skills?

## Operational Definition of the Terms Used

**Artificial intelligence (AI):** In this study, Artificial Intelligence refers to digital tools, systems and platforms that mimic human intelligence. This includes applications like ChatGPT, Grammarly, Liner, and other smart platforms used by students for studying, writing, problem-solving and academic support.

**Academic Performance:** Academic performance refers to the level of success a student achieves in their studies. This research includes outcomes such as grades, assignment quality, test results, and the ability to understand and apply academic content.

**Undergraduate students:** Undergraduate students in this research refer to individuals enrolled in a bachelor's degree programme at a university between 20 and 24 years.

## Delimitations of the study

This study was delimited to 40 undergraduate students, 20 from each college and aged between 20 to 24 years from Imphal College and G.P Women's College, both located within a specific Block of Manipur. Only undergraduate students are considered in this study. The geographical scope is limited to two Government Colleges within a specific Block-level area, which is a smaller administrative unit compared to a District. This boundary helps keep research focused and manageable within the available time and resources.

## Research Methodology

The researchers used the Descriptive Survey Method for the present study. A structured questionnaire was administered to collect data from Undergraduate students. Both quantitative and qualitative responses were gathered to examine the impact of Artificial Intelligence on Academic Performance.

## Sample Size and Sampling Techniques used

The sample for this study consisted of 40 Undergraduate students selected from 2 colleges in Manipur: Imphal College and G.P Women's College, with 20 participants from each institution. The students were selected from mixed semesters, allowing for a more diverse and representative understanding of Artificial Intelligence usage across various academic levels.

The study used a Simple Random Sampling Technique, where each student had an equal chance of being selected. This method ensures fairness and reduces bias in the selection process, leading to more reliable and generalizable results.

## Tools used

The researchers developed a self-structured questionnaire for the present study. The tool consists of close-ended questions to collect measurable data, along with a few open-ended questions, to gather

detailed insights and opinions from the participants.

### **Procedure for Data Collection**

The researchers visited Imphal College and G.P Women's College to personally distribute the printed questionnaires to the selected students. Participants were undergraduate students aged between 20 and 24 years. After responding to the Yes/No questions, students were required to answer open-ended questions at the end, where they shared their opinion or personal experiences related to the use of Artificial Intelligence in academics. The completed questionnaires were collected directly by the researchers after completion.

### **Statistical Technique**

The researchers used the Percentage Method to study answers from Yes/No questions. This helped show how many students agreed or disagreed about using Artificial Intelligence and how it affects their studies.

### **Main Findings of the Study**

1. All respondents 100% reported that they have used Artificial Intelligence tools for Academic purposes, and most students, 77.5% preferred using Artificial Intelligence tools on their phones.
2. ChatGPT was the most used Artificial Intelligence tool, with 92.5% respondents, followed by Google Gemini and Grammarly. It is found that 77.5% reported using more than one Artificial Intelligence tool at the same time for academic work, and 65% of students use Artificial Intelligence as the first option when they do not understand the topic.
3. It also revealed that 70% of students stated they do not completely rely on Artificial Intelligence tools to complete assignments, and 50% of the respondents used Artificial Intelligence mainly for explanation and summaries.
4. It also indicated that 70% believe that Artificial Intelligence users can affect their ability to think critically, and 77.5% of students felt confident in their own thinking without using Artificial Intelligence.
5. The data indicates that AI use has reshaped students' study behaviors: 85% reported developing new study habits, 42.5% felt motivated to put in greater effort, while 27.5% believed it reduced the effort required. This highlights both the supportive role of AI in fostering improved practices and the risk of over-reliance, underscoring the need for balanced integration.
6. It also showed that 92.5% of students prepare better for exams with the help of Artificial Intelligence, and 77.5% rely more on Artificial Intelligence tools during urgent deadlines than during regular study. It also indicated that 97.5% said Artificial Intelligence tools have improved the quality of their work, such as writing and presentation.
7. It is also found that 45% rely less on textbooks or class notes because of Artificial Intelligence, while 55% still rely on traditional sources, and students share that Artificial Intelligence tools have helped them manage time better, complete assignments quickly, and understand difficult topics. Many students also mention using Artificial Intelligence for summarizing lessons, creating notes, and reducing academic stress.
8. It also reflected disadvantages, including overdependence, loss of originality, and reduced critical thinking. Some students also mentioned risks of inaccuracy, plagiarism and a tendency to avoid traditional learning methods. Students described how Artificial Intelligence tools support them during exam preparations, urgent assignments and when they need concept clarification. Some also noted that Artificial Intelligence offered motivation and guidance when no one else was available.

### **Implications of the study**

The present study highlights the growing role of Artificial Intelligence tools in shaping the academic experience of Undergraduate students in the Imphal Valley of Manipur. The findings suggest that Artificial Intelligence tools are not only being widely used but are also influencing how students learn, revise and complete their academic tasks. This has important implications for students, educators and institutions to integrate Artificial Intelligence ethically and effectively into their Academic routines. Teachers may consider incorporating Artificial Intelligence literacy into classroom discussions to help students critically evaluate and verify Artificial Intelligence-generated content. Institutions can play a role by providing structured awareness about the benefits and limitations of Artificial Intelligence in academics. Overall, this study implies that while Artificial Intelligence can greatly benefit Undergraduate learners, it should be used in a way that encourages balanced learning, supports academic growth, and promotes responsible use.

### **Suggestions**

1. **Balance Learning Approach:** Proper balance between AI support and human effort ensures better academic performance.
2. **Skill Based Education:** Focus should be on developing analytical, creative and problem-solving skills.
3. **Improved Accessibility:** AI helps students access study materials quickly, but they should ensure quality and accuracy of information.
4. **Ethical concerns:** Students should avoid plagiarism and follow academic honesty while using AI
5. **Comparative Effectiveness of Artificial Intelligence tools:** This would help students and educators make informed decisions about which tools are best suited for specific academic purposes, such as writing comprehension or exam preparation.

### **Conclusion**

This study demonstrates that Artificial Intelligence (AI) tools have become integral to the academic practices of Undergraduate students in the Imphal Valley of Manipur, offering both significant benefits and notable challenges. Widely used platforms such as ChatGPT, Google Gemini, and Grammarly were found to enhance exam preparation, study habits, time management, and the overall quality of academic work. At the same time, risks such as overdependence, diminished originality, and weakened critical thinking highlight the need for responsible integration. The findings emphasize that AI should function as a supportive aid rather than a substitute for creativity, independent effort, and human problem-solving. By fostering AI literacy and encouraging ethical use, educators and institutions can help students harness technology effectively while preserving confidence in their own abilities. Balanced use of AI can nurture learners who are technologically skilled yet remain thoughtful, creative, and independent in their academic journey. Furthermore, the study underscores the importance of long-term research to assess how sustained AI usage shapes critical thinking, originality, and self-reliance. It also calls for comparative studies across disciplines to identify subject-specific benefits and limitations, recognizing that AI may not be equally effective in all fields. Finally, the research advocates a collaborative approach where technology and human effort work hand in hand to build resilient, confident, and future-ready learners.

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