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Role of Chatgpt in Enhancing Students' Learning Experience

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Abstract : *Artificial Intelligence (AI) is transforming the education sector by providing students with new ways to access information and improve their learning experiences. ChatGPT is an AI-powered conversational tool that helps students understand difficult concepts, clarify doubts, prepare assignments, generate examples and support examination preparation. The present study, titled "Role of ChatGPT in Enhancing Students' Learning Experience", aims to examine how ChatGPT supports students in their academic activities and influences their learning experiences. The study is based on primary data collected through a structured questionnaire using Google Forms. A total of 100 responses were included in the final analysis. The questionnaire covered students' demographic details, familiarity with ChatGPT, frequency of usage, academic purposes, learning benefits, confidence levels and preferences regarding the use of ChatGPT.The findings indicate that students use ChatGPT for various academic purposes, particularly assignment preparation, understanding difficult topics and examination preparation. The responses also show that students appreciate its step-by-step explanations, examples, personalized responses and quick access to information. However, students also highlighted the importance of improving the accuracy of information provided by ChatGPT. The study concludes that ChatGPT can act as a useful learning assistant when combined with traditional educational methods*

Keywords: ChatGPT, Artificial Intelligence, Students, Learning Experience, Higher Education, Academic Performance, Digital Learning

I. INTRODUCTION

Artificial intelligence is gradually transforming traditional teaching and learning practices. Technological developments have changed the way students collect information, understand concepts and complete academic activities. ChatGPT is an AI-based conversational tool that understands questions and generates responses. It provides explanations, examples, summaries and guidance on different subjects. Students can use ChatGPT to understand complex topics, prepare assignments, practise problems and clarify academic doubts. It also allows students to learn at their own pace by asking questions whenever they need assistance. In traditional learning methods, students depend on textbooks, teachers and classroom discussions. ChatGPT provides an additional source of learning support. It can explain the same topic in different ways according to students' requirements.

However, ChatGPT also has certain limitations. Sometimes it may provide incorrect or incomplete information. Therefore, students should verify important information using textbooks, teachers and reliable educational resources. The present study focuses on understanding the role of ChatGPT in improving students' learning experiences.

2. Objectives of the Study

- To study students' awareness and familiarity with ChatGPT.
- To identify the frequency of ChatGPT usage for academic purposes.

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- To examine the usefulness of ChatGPT in understanding difficult concepts.
- To analyse the contribution of ChatGPT to students' learning experiences.
- To identify the major academic benefits of using ChatGPT.
- To understand students' confidence and satisfaction while using ChatGPT.
- To identify the limitations and improvements expected by students.

3. Scope of the Study

The study focuses on students who use or are familiar with ChatGPT for academic learning. It examines assignment preparation, examination preparation, concept understanding, problem-solving and study planning. The study is based on responses collected through an online questionnaire.

II. LITERATURE REVIEW

2.1 ChatGPT as an Educational Tool

ChatGPT plays an important role in supporting students' academic activities. It helps students find information quickly, solve problems and complete academic tasks. Javaid et al. (2023) discussed the potential applications of ChatGPT in education and research. Students can use ChatGPT for programming, writing, exam preparation and understanding technical subjects. However, students should verify the information provided by ChatGPT because it may sometimes generate incorrect answers.

2.4 ChatGPT and Learning Experience

ChatGPT improves the learning experience by providing an interactive question-and-answer platform. Students can ask questions at any time and receive explanations according to their requirements. It helps students understand difficult topics, improve their confidence and develop interest in learning. ChatGPT also supports English writing, idea generation and technical learning. Its effectiveness depends on how students use the tool for their academic development.

2.5 Challenges and Limitations of ChatGPT

Although ChatGPT provides several educational benefits, it also has certain limitations. The information provided may sometimes be misleading or factually incorrect. Excessive dependence on ChatGPT may affect students' independent thinking and problem-solving abilities. There are also concerns related to plagiarism, academic honesty and data accuracy. Therefore, students should use ChatGPT responsibly and verify the information before using it in academic work.

III. METHODOLOGY

3.1 Design, Dataset and Study Context

This study used a cross-sectional exploratory analysis of the complete survey dataset containing **N = 100** records with zero missing fields (timestamps 17 September to 9 October 2026). The sample comprised predominantly students in Bachelor of Computer Applications (BCA) and Master of Computer Applications (MCA) programmes at AIMCAR.

3.2 Operational Definitions

Six focal outcomes were examined on 5-category ordinal scales: usefulness for difficult concepts (Q10), contribution to concept understanding (Q16), study time saved (Q18), self-paced learning support (Q19), problem-solving support (Q21), and confidence in academic use (Q26).

Table 1. Operational Definitions for the Focal Analysis

Item	Measure	Response Categories in Ascending Rank Order
Q6 / Q7	Study / Academic Use Frequency	Never; Rarely; Occasionally; Several times a week; Daily
Q10	Usefulness for Difficult Concepts	Not useful; Slightly useful; Moderately useful; Useful; Very useful
Q16	Contribution to Concept	Poor; Average; Good; Very Good; Excellent

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	Understanding	
Q18	Study Time Saved	No time saved; Very little; Moderate amount; Quite a lot; A lot
Q19	Self-Paced Learning Support	Not helpful; Slightly helpful; Moderately helpful; Very helpful; Extremely helpful
Q21	Problem-Solving Support	Not at all; Slightly; Moderately; Quite a lot; A lot
Q26	Confidence in Academic Use	Very low; Low; Moderate; High; Very high

IV. RESULTS AND ANALYSIS

4.1 Respondent Demographics and Device Profile

Most respondents were aged 21–23 years (69.0%) and female (59.0%). MCA students accounted for 63.0% of responses and BCA students for 24.0%. Postgraduate study level was reported by 59.0% and undergraduate by 29.0%.

Table 2. Respondent Characteristics and Principal Access Device (N = 100)

Characteristic	Category	n	%
Age	18-20 years	12	12.0%
	21-23 years	69	69.0%
	Above 23 years	19	19.0%
Gender	Female	59	59.0%
	Male	41	41.0%
Course	BCA	24	24.0%
	MCA	63	63.0%
	Other	13	13.0%
Study Level	Undergraduate	29	29.0%
	Postgraduate	59	59.0%
	Other	12	12.0%
Primary Device	Smartphone	44	44.0%
	Laptop	30	30.0%
	Desktop Computer	17	17.0%
	Tablet / Other	9	9.0%

4.2 Perceived Learning Benefits

All six focal outcomes achieved a median rank of 4 on their 5-category scale across the N = 100 sample. Seventy-six respondents (76.0%) rated ChatGPT's contribution to concept understanding as very good or excellent, and 71 (71.0%) reported substantial problem-solving support.

Table 3. Favourable Perceptions and Ordinal Summaries (N = 100)

Outcome	Favourable n	%	95% CI (%)	Median (Q1–Q3)
Q10 Understanding difficult concepts	60	60.0%	50.2–69.0%	4 (3–5)
Q16 Contribution to concept understanding	76	76.0%	66.8–83.3%	4 (4–5)
Q18 Study time saved	55	55.0%	45.2–64.4%	4 (3–5)
Q19 Learning at own pace	67	67.0%	57.3–75.4%	4 (3–5)
Q21 Problem-solving support	71	71.0%	61.5–79.0%	4 (3–5)
Q26 Confidence in academic use	75	75.0%	65.7–82.5%	4 (4–5)

4.3 Associations Between Use Frequency and Perceived Benefits

More frequent study use (Q6) was positively associated with each focal outcome across the N = 100 dataset. Spearman rank correlation coefficients (ρ) were positive across all six items, with study time saved (Q18) and usefulness for

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difficult concepts (Q10) showing the strongest positive rank associations, while confidence in academic use (Q26) exhibited a comparatively weaker positive association.

Table 4. Associations of Study-Use Frequency (Q6) with Perceived Benefits (N = 100)

Outcome	Spearman ρ	95% Bootstrap CI	Permutation p	Holm-Adjusted p
Q10 Understanding difficult concepts	0.365	0.181 to 0.532	0.00040	0.00200
Q16 Contribution to concept understanding	0.251	0.054 to 0.439	0.01180	0.03540
Q18 Study time saved	0.402	0.220 to 0.569	0.00010	0.00060
Q19 Learning at own pace	0.298	0.114 to 0.471	0.00260	0.01040
Q21 Problem-solving support	0.240	0.034 to 0.445	0.01620	0.03540
Q26 Confidence in academic use	0.174	-0.035 to 0.371	0.08340	0.08340

4.4 Sensitivity Analyses

Sensitivity checks confirmed positive association directions across alternative exposure definitions (Q7), active/non-zero user subsets (n = 93), concordant respondents (n = 47), and unique response patterns (n = 99).

Table 5. Sensitivity of Rank Correlations to Exposure and Sample Definitions

Outcome	Main (Q6, N = 100)	Q7 (N = 100)	Active Users (n = 93)	Concordant (n = 47)	Unique Patterns (n = 99)
Q10 Difficult concepts	0.365	0.384	0.341	0.502	0.358
Q16 Concept understanding	0.251	0.289	0.236	0.392	0.242
Q18 Time saved	0.402	0.345	0.336	0.447	0.395
Q19 Learning at own pace	0.298	0.348	0.268	0.408	0.291
Q21 Problem solving	0.240	0.310	0.209	0.303	0.231
Q26 Confidence	0.174	0.283	0.121	0.342	0.167

4.5 Preferred Assistance and Improvement Priorities

Step-by-step explanations were the most preferred assistance format (33.0%), followed by detailed explanations (29.0%). Information accuracy emerged as the primary improvement priority (40.0%), and 87.0% preferred combining ChatGPT with traditional textbooks and lectures.

V. DISCUSSION

5.1 Perceived Assistance vs. Academic Outcomes

The findings of the study based on 100 respondents indicate that ChatGPT is a useful source of academic support for students. It helps students understand difficult concepts, solve problems and complete academic tasks efficiently. Students also use ChatGPT to save time and support self-paced learning. However, students' opinions about the benefits of ChatGPT should be distinguished from actual improvements in academic performance. The study focuses on students' learning experiences and perceptions rather than directly measuring academic achievement.

5.2 Measurement and Engagement Insights

The study highlights students' interest and engagement in using ChatGPT for educational purposes. Students use ChatGPT for understanding topics, preparing notes, completing assignments and solving academic problems. However, students may have different usage patterns and learning experiences. Survey responses help understand students' opinions, but they may not fully measure their overall learning engagement. Future studies can use standardized questionnaires and actual usage data to understand students' engagement more effectively.

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5.3 Instructional Implications and Responsible Use

The findings highlight the importance of using ChatGPT responsibly in education. Although ChatGPT provides quick answers and useful explanations, students should verify the accuracy of the information before using it. Teachers and educational institutions should guide students about the proper use of Artificial Intelligence tools. Students should combine ChatGPT assistance with independent thinking, textbook learning and problem-solving activities. This approach can help improve learning while maintaining academic honesty.

5.4 Limitations and Future Scope

The study has certain limitations. It is based on survey responses from 100 students and mainly reflects their personal opinions and experiences. The study does not directly measure changes in academic performance through examination results. The findings may also vary according to students' educational backgrounds and patterns of ChatGPT usage. Future research can include students from different courses and institutions. Long-term studies can also examine the impact of ChatGPT on academic performance, critical thinking and independent learning.

VI. FINDINGS AND SUGGESTIONS

6.1 Findings

Primary Purpose: ChatGPT is primarily used as a perceived learning assistant, mainly for assignment preparation and understanding difficult topics.

Preferred Support: Students most commonly prefer receiving explanations, examples, and step-by-step guidance rather than raw answers.

Lack of Independent Work Verification: While the findings identify what tasks students use the tool for, they do not establish how much independent work was done or whether every AI response was accurate.

Varying Perceived Benefits: Favorable outcomes range from 55.6% for time savings to 75.8% for concept understanding and confidence, showing that perceived benefits are not uniform across all metrics.

Impact of Usage Frequency: More frequent use (Q6) positively correlates with all six focal perceptions—especially time savings and understanding difficult concepts—while confidence failed to meet the Holm-adjusted statistical threshold.

Survey Data Inconsistencies: Data quality is a key finding; 52 respondents gave conflicting answers to similar frequency questions, 7 selected "never" on at least one, and one answer pattern was duplicated, highlighting the need for clearer questionnaires and transparent coding.

6.2 Suggestions for Students and Teachers

Attempt First, Use AI Later: Students should set a specific learning goal, attempt the task themselves first, use ChatGPT only to fill knowledge gaps via hints or examples, and then solve a similar problem independently.

Make Verification a Habit: Because accuracy was the top improvement priority in the survey, students must regularly verify AI claims, definitions, and code against textbooks, course notes, and known test cases.

Define Clear Assignment Rules: Teachers should explicitly state what forms of AI assistance are permitted for each assignment and what students must demonstrate on their own.

Require Process Notes & Unaided Assessments: Teachers can ask for a brief process note documenting how the tool was used and evaluate actual learning through oral explanations or unaided tasks.

Provide Mobile-Friendly Institutional Training: Institutions should offer training on acceptable AI practices, verification, and disclosure—ensuring resources are smartphone-accessible since mobile phones are the primary access device—while directly assessing student access needs.

Implement via Small Pilots: Suggestions should be tested through small, documented pilot programs using student feedback and independent assessments, judging success by genuine learning rather than usage frequency.

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6.3 Conclusion of Findings

Perceived Support vs. Proven Mastery: Many respondents perceive ChatGPT as useful academic support, yet concrete evidence of causal improvements in achievement, retention, or independent problem-solving remains unavailable.

Need for Better Future Studies: The findings justify developing a carefully evaluated instructional approach alongside a more clearly documented future study.

No Replacement for Educators: Positive student opinions cannot serve as a complete measure of educational effectiveness, nor do these findings justify replacing teachers or removing independent assessments.

VII. CONCLUSION

The study concludes that ChatGPT plays a useful role in enhancing students' learning experiences. Based on the responses of 100 students, ChatGPT supports understanding difficult concepts, problem-solving and self-paced learning. It helps students obtain information quickly, prepare academic materials and save study time. However, students should be careful about incorrect information and excessive dependence on Artificial Intelligence. Educational institutions should encourage the responsible use of ChatGPT along with independent learning and critical thinking. Overall, ChatGPT can be considered a supportive educational tool for improving students' learning experiences.

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