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Impact of ChatGPT on students' learning vs assistance

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CHAPTER 1 INTRODUCTION

Background of the Study

The education sector is undergoing a digital transformation, and artificial intelligence (AI) has emerged as one of the most influential technologies driving this change. Among the most visible tools in this transformation are AI chatbots—particularly **ChatGPT**, developed by OpenAI—which are increasingly being used by students across the world, including India. These tools offer real-time, personalized assistance for a range of academic tasks, from explaining complex concepts to generating structured reports.

India's higher education system is one of the largest in the world, yet it faces several challenges—large class sizes, limited teacher availability, and inconsistent academic support. As a result, students often struggle to get timely help with their coursework, especially outside the classroom. AI-powered chatbots present a scalable and cost-effective way to address this issue. Tools like ChatGPT can support students with content summaries, revision tips, idea generation, and even task automation. This on-demand nature of AI tools makes them highly attractive to students under academic pressure.

However, while the benefits seem promising, there is an important question that needs to be addressed:

Are students learning better using ChatGPT, or are they just completing their academic tasks more efficiently without developing deeper understanding?

This is the core issue that this research focuses on. Many students use AI tools not only for learning but also for routine academic assistance—such as formatting documents, summarizing articles, or answering factual questions. In this context, the difference between **"learning enhancement"** and **"task assistance"** becomes very important.

As AI continues to influence education, academic institutions, faculty, and policymakers must understand how these tools are being used in practice. If ChatGPT is being used primarily for task automation rather than critical thinking or conceptual clarity, then this has significant implications for curriculum design, assessment methods, and even academic integrity policies.

This research aims to evaluate how Indian university students perceive and use ChatGPT. By identifying the nature of their engagement with the tool, the study seeks to provide practical

Research questions and hypothesis

1. **General Research Question**

We want to understand **how ChatGPT affects students' academic involvement** in Indian colleges and universities. Specifically, does ChatGPT help students learn better, or do they mostly use it just to get assistance with their work?

2. **Specific Research Questions and Hypotheses**

Specific Research Question (SRQ)	Hypothesis (H)
SRQ1: Are students using ChatGPT mainly to understand concepts or just to get help with tasks like formatting or content writing?	**H1:** Most students use ChatGPT for assistance tasks (like content generation or formatting) more than for actual learning (like understanding concepts or critical thinking).
SRQ2: How do students in Indian universities feel about the learning benefits of ChatGPT?	**H2:** Students see ChatGPT as a useful tool to support learning but don't consider it a replacement for teachers or deep study.
SRQ3: Do students in different fields (like engineering or business) use ChatGPT differently?	**H3:** Yes, students in technical fields use ChatGPT more for solving problems, while business students use it more for report writing.

SRQ4: What concerns do students have about using ChatGPT in their studies?	**H4:** Students worry that using ChatGPT too much might make them rely on it too much, cause mistakes due to inaccurate info, and reduce their own critical thinking skills.

CHAPTER 2 LITERATURE REVIEW

The use of AI in education is not a new concept, but its application has evolved rapidly in recent years—especially with the development of conversational agents like ChatGPT. These tools are designed to simulate human-like interactions, offering personalized responses to user queries. Their growing popularity in educational settings is reshaping how students engage with academic material.

ChatGPT's Role in Learning

Recent research highlights that ChatGPT can be a valuable learning aid. For example, **Tlili et al. (2023)** showed that students who used ChatGPT for concept clarification and practice questions reported higher levels of confidence and improved understanding. Similarly, **Ngo (2023)** found that ChatGPT helped students prepare better for exams by offering quick summaries and simplified explanations of complex topics.
ChatGPT is especially useful for students in technical and business fields. In programming courses, for example, it can help students debug code and understand syntax. In business management courses, students use it for writing reports, drafting business plans, and solving case studies. This flexibility has made ChatGPT a popular tool across disciplines.

ChatGPT's Role in Academic Assistance

On the other hand, many students also use ChatGPT for non-cognitive tasks. **Jing et al. (2024)** found that more than 60% of students in their study used ChatGPT primarily for generating answers to assignments or preparing presentations quickly. This highlights a growing trend where students use AI to save time and effort rather than to improve understanding.
ChatGPT also assists in organizing tasks—such as creating schedules, setting reminders, and formatting content. While these features increase productivity, they do not necessarily contribute to academic development. As a result, there's a risk that students may become overly dependent on AI for academic completion without engaging in deeper learning.

CHAPTER 3 RESEARCH METHODOLOGY

This study adopts a **combination of exploratory and descriptive research designs** to examine the impact of ChatGPT on students in Indian universities, specifically focusing on its role in learning enhancement versus academic assistance.

Exploratory Research Design

Exploratory research was used in the initial stages of the study to gain background understanding of the topic, refine the research problem, and frame appropriate research questions and hypotheses. This involved:

- Reviewing existing literature on AI tools in education.
- Conducting informal discussions and pilot surveys with a small group of students.
- Identifying the main dimensions of ChatGPT usage (learning vs. assistance).

Since the research topic is relatively new in the Indian education context, exploratory research helped in identifying relevant variables and shaping a meaningful survey instrument.

Descriptive Research Design

The main phase of the study employs a descriptive research design, which involves collecting and analyzing data to describe the current patterns, behaviors, and perceptions of students using ChatGPT.

A structured questionnaire was distributed to a sample of 200 university students across different academic backgrounds. The data collected was used to:

- Quantify the frequency and nature of ChatGPT usage.
- Measure students' perceptions of its effectiveness for learning and assistance.
- Compare usage patterns across fields of study (e.g., business vs. engineering).
- Identify concerns and satisfaction levels related to ChatGPT usage.

Descriptive research is appropriate because the study aims to present a clear picture of how ChatGPT is currently being used in academic settings without altering or controlling any

DATA ANALYSIS AND INTERPRETATION

This section outlines the procedures used to prepare and analyze the collected data, along with the interpretation of key findings in relation to the research objectives and hypotheses. It includes summaries and insights from the student survey responses, which are visually supported by tables and charts in the report body, while comprehensive data tables are preserved in the appendix.

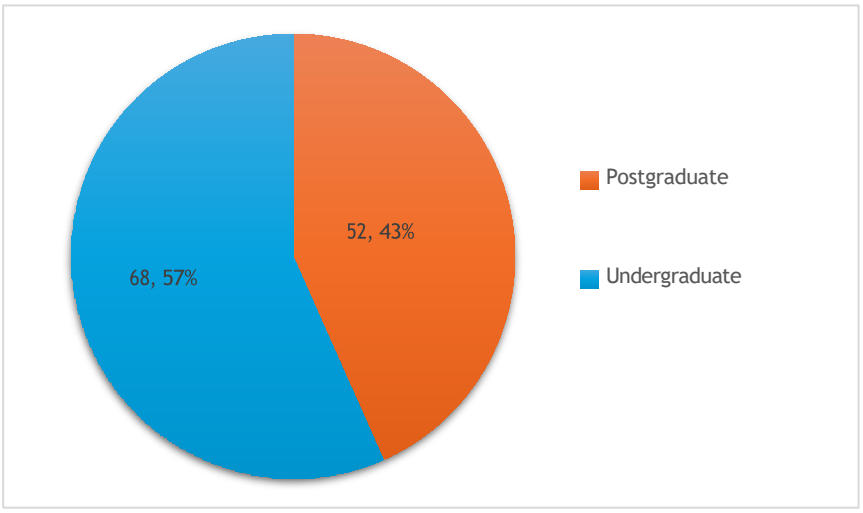
Statistical Methods Used

The following descriptive statistical methods were used:

- Frequency distributions and percentages
- Bar charts and pie charts for visual presentation

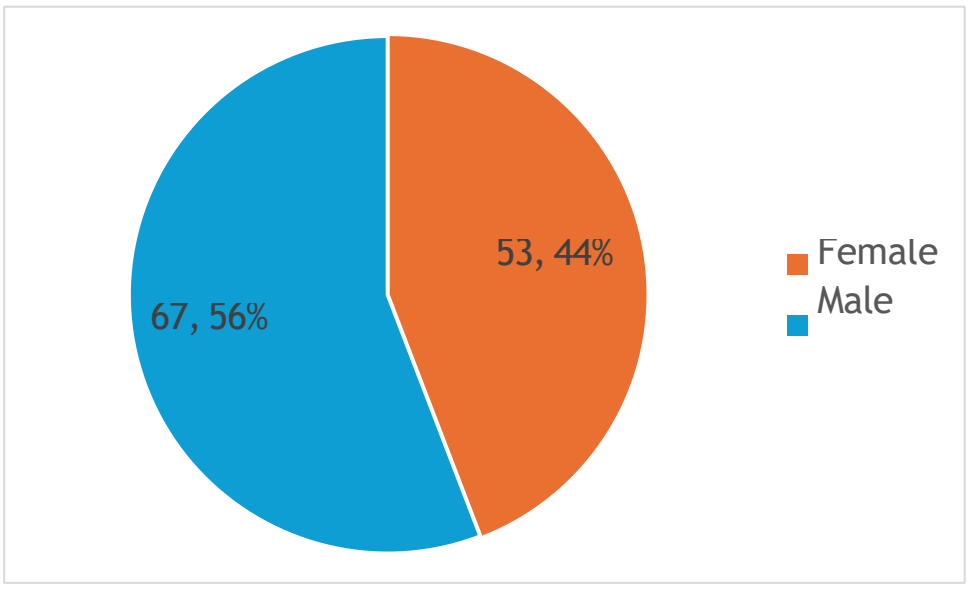
These tools were chosen to summarize patterns of responses, compare subgroups (e.g., undergraduate vs postgraduate), and align results with hypotheses.

1. ***Education Level and Gender Distribution***



a. Education Level

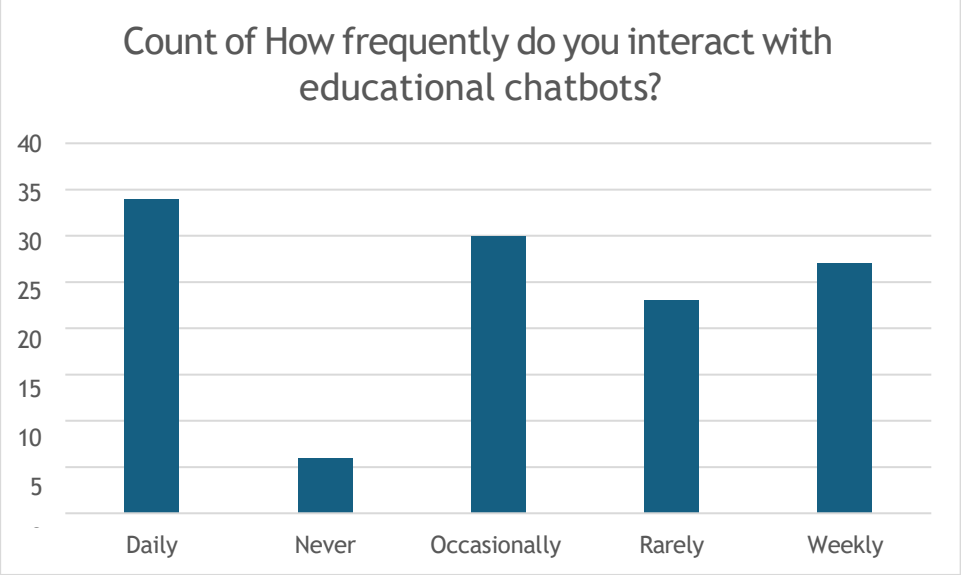
- 56.7% respondents were undergraduate students, and 43.3% were postgraduates.



b. Gender Distribution

- Gender split was 55.8% male and 44.2% female.

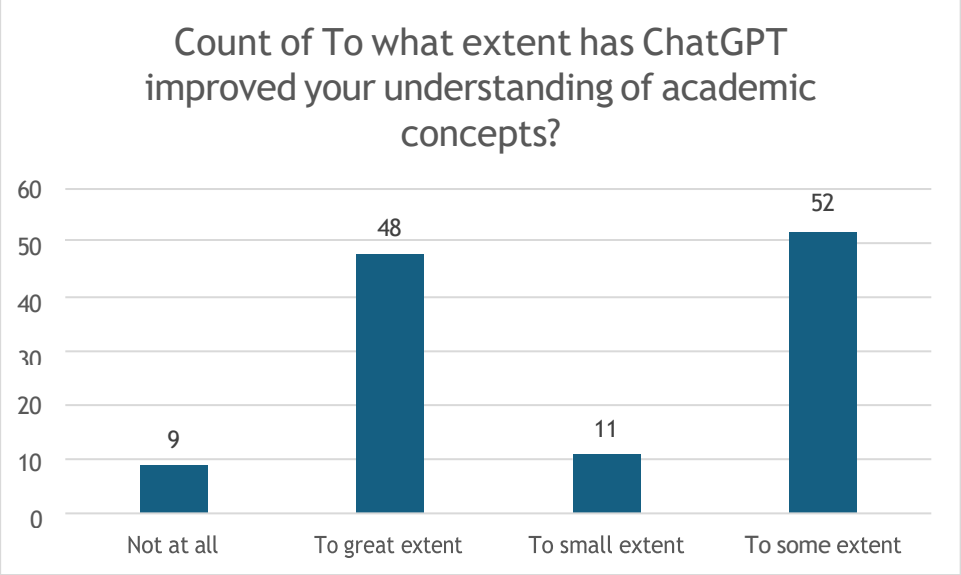
2. ***Usage Frequency of Educational Chatbots***



c. Usage Frequency of Educational Chatbots

- 28.3% of students use chatbots daily; 25% use them occasionally, and 22.5% use them weekly.
- This indicates high engagement, supporting the relevance of AI tools in daily academic tasks.

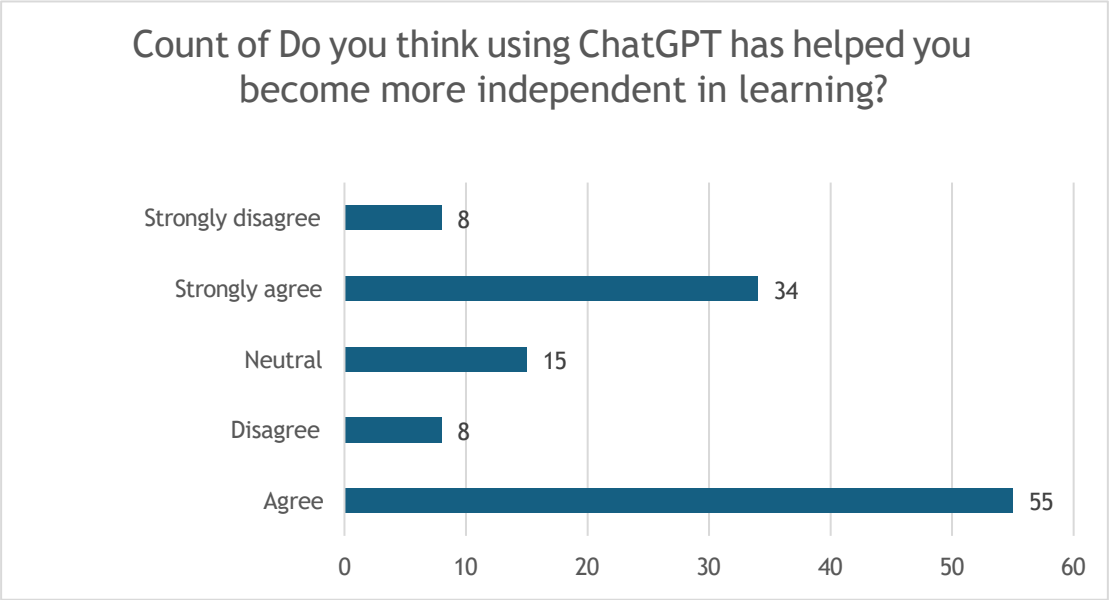
3. ***Learning Improvement (RQ2 & H2)***



d. Learning Improvement (RQ2 & H2)

- 40% of students reported that ChatGPT improved their understanding to a "great extent," and 43.3% to "some extent."
- Interpretation: A majority experience meaningful academic support from ChatGPT, supporting Hypothesis 2 (H2).

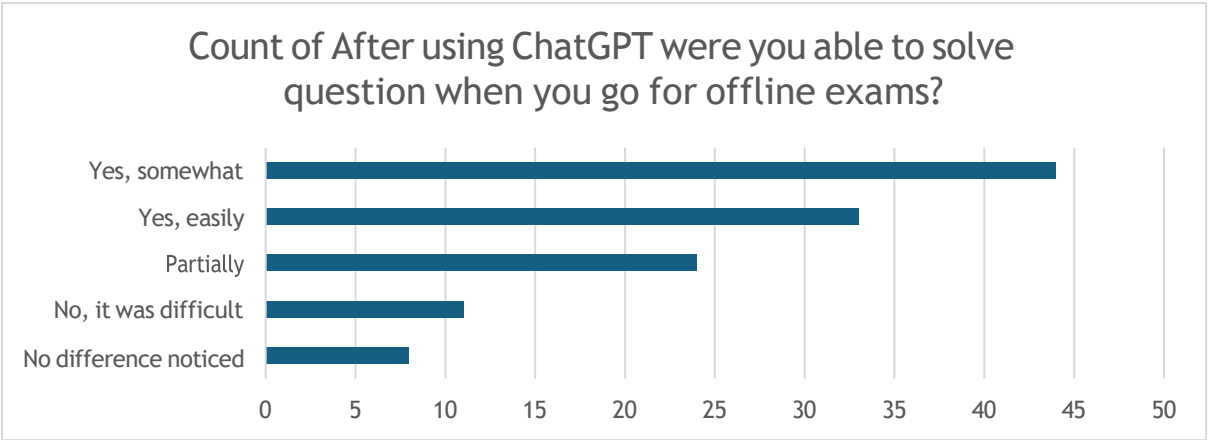
4. ***Academic Independence***



e. Academic Independence

- Over 74% of students agree or strongly agree that ChatGPT has made them more independent learners.
- This suggests ChatGPT not only supports knowledge access but also encourages self- directed study behaviors.

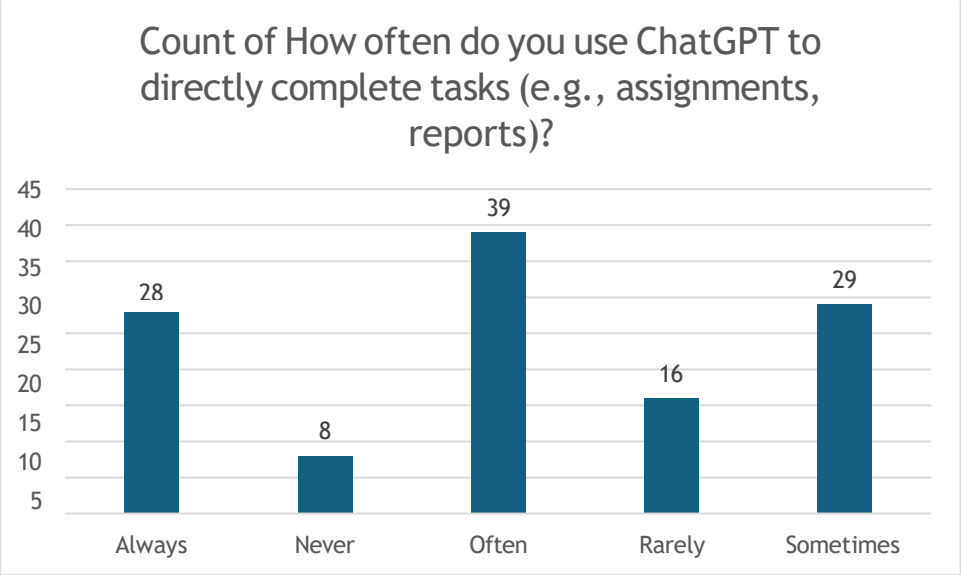
5. ***Offline Exam Confidence (RQ1 & H1)***



f. Offline Exam Confidence (RQ1 & H1)

- 64.2% said they could solve offline exam questions “somewhat” after using ChatGPT.
- However, only 27.5% found it “easy,” which implies while it helps with surface understanding, it may fall short in deep conceptual preparation.

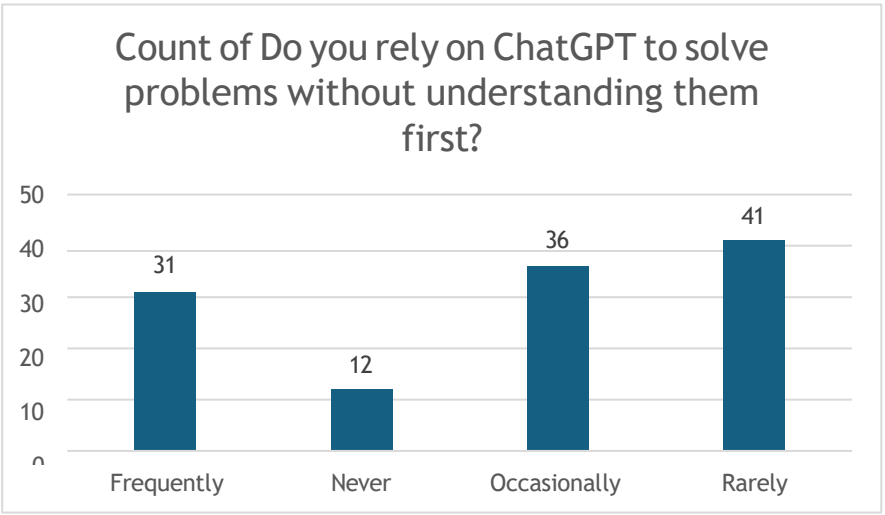
6. ***Direct Task Completion***



g. Direct Task Completion

- 32.5% use ChatGPT "often" to complete assignments, 23.3% always, and 24.1% sometimes.
- Interpretation: Majority usage leans toward assistance, confirming Hypothesis 1 (H1) that students primarily use ChatGPT for task execution.

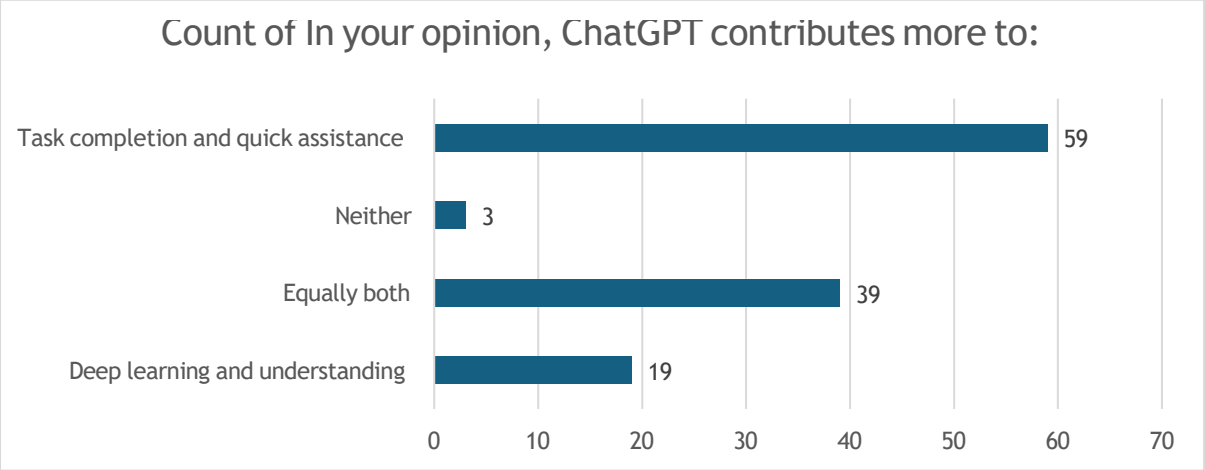
Over-reliance and Problem Solving



h. Over-reliance and Problem Solving

- 25.8% admitted to frequent reliance on ChatGPT without understanding the material first.
- Combined with 30% occasional and 10% never, this suggests a concerning level of dependence, validating Hypothesis 4 (H4).

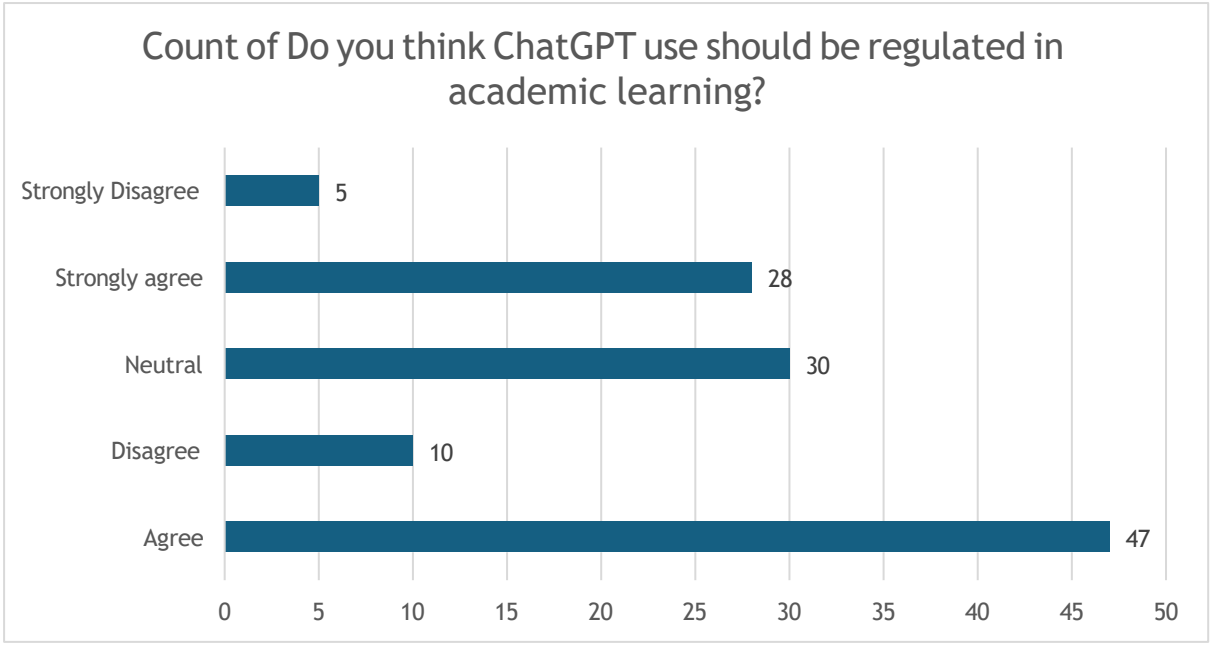
Perceived Contribution of ChatGPT



i. Perceived Contribution of ChatGPT

- 49.1% believe it contributes more to task completion, while 15.8% say it supports deep learning.
- 32.5% chose both equally, showing nuanced views but again pointing to a dominance of assistance-related use.

Views on Regulation



j. Views on Regulation

- 62.5% of students agree or strongly agree that ChatGPT use should be regulated in academics.
- This indicates awareness about ethical concerns, in line with your literature review.

Summary Tables and Charts

Question	Most Common Response	%
Purpose of ChatGPT Use	Task completion and summaries	49.1%
Use Frequency	Daily	28.3%
Learning Impact	To some/great extent	83.3%
Confidence in Exams	Somewhat/Easily	64.1%
Academic Independence	Agree/Strongly Agree	74.1%
Reliance without Understanding	Frequently/Occasionally	55.8%
View on Regulation	Agree/Strongly Agree	62.5%

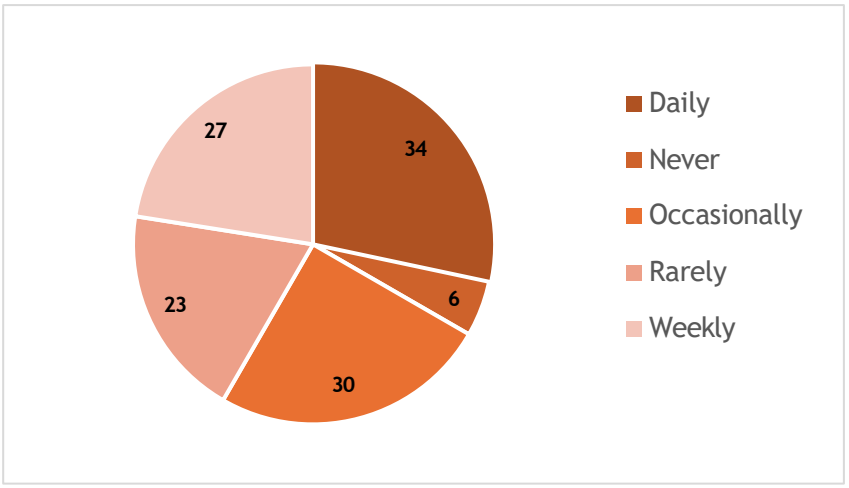
Interpretation of Findings

This section presents a detailed interpretation of the data collected across five thematic sections: demographics, usage patterns, perceived learning impact, perceived assistance impact, and the overall balance between learning and task completion.

Section 1: Demographics

Education Level: Out of the 120 respondents analyzed, 56.7% were undergraduate students, and 43.3% were postgraduate students. This distribution ensures a balanced view across academic stages.

Section 2: Usage Patterns



k. Usage Patterns

Frequency of Use:

- 28.3% use ChatGPT daily
- 25% occasionally
- 22.5% weekly
- Fewer students report using it rarely or never

Purpose of Use:

- High usage was seen for "Completing assignments," "Writing essays or reports," and "Generating answers" — all classified under academic assistance.
- "Understanding concepts," "Practicing questions," and "Getting explanations" were also

popular, suggesting notable use for learning purposes as well.

Interpretation: The data supports Hypothesis 1 (H1) — students use ChatGPT more frequently for academic assistance than for deep learning. Although many still use it for understanding and revision, task-completion utilities dominate usage patterns.

Section 3: Perceived Impact on Learning

Improved Understanding:

- 40% said ChatGPT improved their understanding to a great extent
- 43.3% said it helped to some extent Independence in Learning:
- 74.1% of respondents agreed or strongly agreed that ChatGPT made them more independent learners

Exploring Beyond Class:

- 70.8% said ChatGPT encouraged them to explore beyond the curriculum

CHAPTER 5 KEY FINDINGS

Widespread Adoption and Usage Patterns

The study found a high level of awareness and use of ChatGPT among Indian university students, indicating the growing role of AI in education. All respondents had interacted with ChatGPT or similar AI tools, signifying its mainstream adoption in academic activities. This section highlights how often students use ChatGPT and for what purposes.

- 100% of students reported using ChatGPT or another AI chatbot for academic work.
- 28.3% use ChatGPT daily, indicating routine dependence.
- 25% reported using it occasionally, and 22.5% said they use it weekly.
- ChatGPT is frequently used for:
  - Completing assignments
  - Writing essays and reports
  - Generating content or solutions
- These uses reflect its prominence in academic task management and productivity enhancement, rather than only for learning.

Learning Enhancement Observed, but Limited

While ChatGPT contributes to learning, especially in understanding complex topics or revising concepts, the depth of this impact varies. Students benefit from structured and fast responses but often do not achieve deep conceptual mastery solely through the tool.

- 40% of respondents said it helped improve understanding to a great extent.
- 43.3% said it helped them to some extent, indicating a moderate level of academic support.
- 74.1% agreed or strongly agreed that ChatGPT has helped them become independent learners.
- 70.8% said it encouraged them to explore beyond the syllabus, showcasing some stimulation of intellectual curiosity.

LIMITATIONS OF THE STUDY

Every research project is subject to certain limitations, and it is important to acknowledge and discuss them transparently. While this study offers valuable insights into students' use of ChatGPT for academic learning and assistance, several constraints and assumptions must be considered when interpreting the results.

Results considering Limitations and Assumptions

Validity and Reliability Concerns

Validity:

- The sample size (n = 120), while sufficient for descriptive analysis, is still relatively small compared to the large and diverse population of Indian university students.
- Non-probability sampling (convenience + snowball) may lead to non-representative samples, particularly skewed toward students with higher digital access and awareness.
- Nonresponse error may exist, especially among students who are unaware of ChatGPT or do not use it regularly.
- Some response bias is possible, as students may not openly admit to over-reliance or unethical use (e.g., copying assignments).

Problems Encountered and Efforts Made

- Problem: Students in some groups were reluctant to complete the full questionnaire.
  - Solution: Questions were simplified during the pretesting phase and reshared with a clearer explanation of the research's academic purpose.
- Problem: Difficulty in reaching students from diverse academic backgrounds and regions.
  - Solution: Snowball sampling was used to expand reach through peer-sharing on social media and messaging platforms.

Lessons for Future Research

This study provided valuable learning experiences in terms of both design and execution:

- Broader sampling across universities and inclusion of non-users would improve generalizability.
- Longitudinal data collection could help capture evolving behaviour over time, especially with rapid AI advancements.
- Future research should consider experimental designs or mixed methods that combine qualitative

CHAPTER 7 RECOMMENDATIONS

ChatGPT is being embedded in students' academic routines more as a productivity enhancer than a pedagogical substitute. While it supplements learning in meaningful ways, its primary contribution— at present—is streamlining educational workloads. This has significant implications for curriculum design, academic integrity policies, and teacher training in AI literacy.

Based on the data analysis and conclusions above, this study proposes the following practical recommendations for educators, academic administrators, and future researchers:

Managerial Recommendations for Academic Institutions

1. **Integrate ChatGPT into Curriculum with Guidance**

   Institutions should not resist ChatGPT's use but embrace it strategically. Faculty should introduce structured assignments where students must use ChatGPT for one part (e.g., idea generation) and then critically reflect on its accuracy and relevance. This promotes both engagement and critical thinking.

2. **Introduce Mandatory AI Literacy Workshops**

   Students and faculty alike should undergo periodic workshops that explain ChatGPT's strengths and limitations, ethical usage, and verification practices. Emphasizing that ChatGPT is a starting point—not the final answer—can reduce over-reliance and misuse.

3. **Develop Policies for Ethical Use**

   Universities should update their academic integrity policies to include acceptable and unacceptable AI use cases. A clear distinction must be made between support (e.g., proofreading) and misconduct (e.g., submitting AI-generated assignments as original work).

4. **Use ChatGPT for Administrative Automation**

   ChatGPT can be employed for operational activities—like creating study reminders, FAQs for student support desks, or summarizing lecture notes—freeing up human resources for more personalized teaching roles.

5. **Encourage Research-Backed AI Integration**

   Any technological adoption should be evidence-based. Institutions are advised to invest in internal research cells to monitor the pedagogical outcomes of AI tools in their campuses.

CHAPTER 8 CONCLUSION

This study set out to explore the growing influence of AI—specifically ChatGPT—on academic behavior among students in Indian universities. It focused on assessing whether students primarily use the tool for learning enhancement or task assistance and the implications of this usage on academic development, independence, and institutional policymaking.

The rising influence of ChatGPT on academic behavior among students in Indian universities, focusing on whether it serves more as a tool for learning enhancement or task assistance. The findings indicate that while ChatGPT is widely adopted—used regularly by over 75% of respondents—its primary utility lies in academic assistance such as assignment completion, content summarization, and quick information retrieval. Although a significant majority of students (83.3%) acknowledged improved understanding and 74.1% reported greater learning independence, only a small fraction (15.8%) viewed it as a deep learning enhancer. This suggests that while ChatGPT facilitates surface-level learning and academic productivity, it often does so at the expense of critical engagement. Additionally, the study uncovered a growing concern regarding over-reliance, with over half of the respondents admitting to using ChatGPT without fully understanding the content. Ethical concerns were also prominent, with 62.5% of students supporting regulated use to uphold academic integrity. Finally, differences in usage patterns were observed across academic disciplines—technical students favored problem-solving functions, while business students leaned toward report writing—pointing to the need for further field- specific investigation. Overall, the study highlights that while ChatGPT offers meaningful academic support, its strategic integration into education systems requires careful planning, ethical oversight, and targeted pedagogical frameworks.

Key conclusions drawn from the study are:

1. ChatGPT is Widely Used, Predominantly for Academic Assistance Over 75% of respondents regularly engage with ChatGPT, with approximately 32.5% reporting they “often” use it for task completion and 23.3% stating they “always” do. The most common activities include writing assignments, summarizing articles, and solving queries. This confirms that ChatGPT has emerged as a practical support tool rather than an exclusive learning enhancement resource.
2. Learning Value Is Recognized but Secondary A combined 83.3% of students acknowledged that ChatGPT helped improve their understanding of topics to “some” or a “great” extent. Additionally, 74.1% agreed it supported independent learning. However, when asked to compare its contribution to learning versus assistance, 49.1% favored assistance and only 15.8% leaned toward deep learning.
3. Students Feel More Independent Yet Vulnerable to Over-Reliance The dual narrative emerged where ChatGPT was praised for promoting independence (self- paced learning, 24/7 access), yet 55.8% admitted to relying on it without first understanding the content. This highlights a possible contradiction—students feel empowered but may
4. Ethical Awareness and Demand for Regulation Are Growing A significant 62.5% of respondents supported regulating the use of ChatGPT in academic settings. Students voiced concerns about ethical integrity, plagiarism, and the risk of replacing intellectual effort with algorithmic shortcuts. This aligns with global discussions on AI and ethics in education.
5. Disciplinary Differences Exist in ChatGPT Utilization While not deeply segmented in the current sample, anecdotal trends suggest that engineering students leaned toward technical problem-solving, whereas business students favored content generation and report structuring. This partially supports Hypothesis 3 and could be explored in future work with stratified sampling.