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AI Awareness and Utilization among Undergraduate Students: A Study from North Andhra Region

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Abstract - Artificial Intelligence (AI) is increasingly transforming the educational landscape by enabling students to access information, generate content, and enhance learning efficiency through tools such as ChatGPT and Google Gemini. While AI offers significant academic support, it also raises concerns related to over-dependence, academic integrity, and critical thinking skills. With the rapid global growth of AI, it is important to examine its penetration among students in less developed regions such as the North Andhra region, India. The present study aims to assess the level of awareness, patterns of utilization, and perceptions of AI among undergraduate students in this region, focusing on academic usage and ethical considerations.

A descriptive survey was conducted among approximately 350 undergraduate students (aged 17–18 years) using a structured questionnaire covering AI awareness, usage patterns, ethical perceptions, and training needs. The sample included a significant proportion of rural students (63.43%), providing insights into AI adoption in less developed contexts. Data were analyzed using percentage and frequency methods. The results indicate a high level of awareness and frequent use of AI tools among students, with platforms like ChatGPT being the most commonly used. AI is primarily utilized for understanding concepts and saving time in academic work. However, the findings also reveal concerns regarding over-dependence, instances of direct use of AI-generated content without modification, and limited clarity about academic ethics and plagiarism. The study concludes that while AI has become an integral part of students' academic activities, there is a significant need for structured guidance and training to promote its responsible and ethical use, highlighting the importance of integrating AI literacy and ethical guidelines into higher education practices.

Keywords: Artificial Intelligence (AI), AI in Education, Undergraduate Students, AI Awareness, AI Utilization, Academic Ethics, North Andhra Region, India.

INTRODUCTION

Artificial Intelligence (AI) has emerged as one of the most influential technological developments of the 21st century, with significant impact across sectors such as healthcare, industry, communication, and education. In the field of education, AI is increasingly being used to support teaching and learning through intelligent tutoring systems, personalized learning platforms, automated content generation, language assistance, assessment support, and academic problem-solving tools. At the global level, the growing accessibility of AI-based applications has changed the way students interact with knowledge, making learning more immediate, interactive, and technology-driven.

In the Indian context, the adoption of AI in education has also grown rapidly in recent years, particularly with the increasing availability of smartphones, internet connectivity, and digital learning platforms. Students at the school and higher education levels are now using AI tools for understanding concepts, improving communication skills, preparing assignments, and exploring career-related information. This growing presence of AI in Indian education reflects both new opportunities for learning enhancement and new challenges related to responsible and ethical use.

As the use of Artificial Intelligence in education continues to expand, the concept of AI literacy has become increasingly important. AI literacy refers to the ability of students to understand, use, and critically evaluate AI tools in an informed and responsible manner. It is not sufficient for students to merely use AI technologies; they must also be aware of their limitations, potential biases, and ethical implications. Without proper AI literacy, there is a risk of over-reliance on AI-generated content, reduced independent thinking, and misuse in academic work, including issues related to plagiarism.

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In the context of higher education, developing AI literacy among students is essential for promoting effective learning, critical thinking, and academic integrity. It also prepares students for future careers where AI skills are becoming increasingly important. Therefore, educational institutions have a crucial role in guiding students toward the responsible and ethical use of AI tools, ensuring that technology acts as a support for learning rather than a substitute for intellectual effort.

Despite the rapid growth of Artificial Intelligence in education and its increasing adoption among students, there remains a lack of clear understanding regarding how effectively students are using these tools in their academic activities. While many studies have explored AI integration in developed and urban contexts, limited attention has been given to its penetration and impact in less developed regions. In such areas, variations in digital access, guidance from institutions, and awareness of ethical practices may influence how students interact with AI technologies.

Moreover, although students are actively using AI tools, concerns persist regarding over-dependence, direct use of AI-generated content, and insufficient awareness of academic integrity and plagiarism. There is also a gap in structured institutional guidance on the responsible use of AI in learning. Therefore, it becomes essential to examine not only the level of awareness and usage of AI among students but also their perceptions, practices, and preparedness for ethical and effective use, particularly in region-specific contexts such as the North Andhra region, India.

OBJECTIVES OF THE STUDY

The present study is undertaken with the following objectives:

1. To assess the level of awareness of Artificial Intelligence (AI) among undergraduate students in the North Andhra region, India.
2. To examine the patterns of utilization of AI tools for academic and non-academic purposes.
3. To identify the most commonly used AI tools and their primary applications in student learning.
4. To analyze students' perceptions regarding the benefits and limitations of AI in education.
5. To evaluate students' awareness and practices related to academic ethics, including plagiarism and responsible use of AI.
6. To explore the need for training and institutional guidance on the effective and ethical use of AI tools.

Research Questions

1. What is the level of awareness of Artificial Intelligence among undergraduate students in the North Andhra region, India?
2. What are the patterns of utilization of AI tools among students, including frequency and purposes of use?
3. Which AI tools are most commonly used by students for academic activities?
4. What are students' perceptions regarding the benefits, limitations, and risks of AI in education?
5. To what extent are students aware of academic ethics and the responsible use of AI, and what challenges do they face in its usage?

METHODOLOGY

Research Design

The present study adopts a descriptive survey research design to examine the awareness, utilization, and perceptions of Artificial Intelligence (AI) among undergraduate students. This design is appropriate as it enables the systematic collection and analysis of data related to students' knowledge, usage patterns, and attitudes toward AI without manipulating any variables.

Sample and Study Area

The study was conducted among undergraduate students in the North Andhra region, India. A total of approximately **350 students**, primarily in the age group of **17–18 years**, participated in the survey. Among them, **222 students belonged to rural areas**, while the remaining participants were from **urban and semi-urban backgrounds**. The sample thus represents a diverse student population, providing insights into AI awareness and usage across different residential contexts.

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Table 1: Demographic Profile of Respondents

Category	Number (n)	Percentage (%)
Total Students	350	100
Rural	222	63.43
Urban & Semi-urban	128	36.57

DATA COLLECTION TOOL

Data were collected using a structured questionnaire consisting of multiple-choice, Likert-scale, and a few open-ended questions. The questionnaire was designed to capture information across the following key areas:

- Digital access and device usage
- Awareness of Artificial Intelligence
- Usage patterns of AI tools
- Academic purposes of AI utilization
- Ethical awareness and practices (including plagiarism)
- Perceptions and attitudes toward AI
- Challenges faced in using AI tools
- Training needs and expectations

Data Collection Procedure

The questionnaire was administered to students in a systematic manner, ensuring clarity of questions and voluntary participation. Respondents were informed about the purpose of the study, and their responses were collected anonymously to maintain confidentiality and encourage honest feedback.

Data Analysis Techniques

The collected data were analyzed using descriptive statistical methods, primarily percentage analysis and frequency distribution. The results were organized and interpreted according to the predefined research questions to identify patterns, trends, and key insights related to AI awareness and utilization. No inferential statistical methods were employed as the study focuses on descriptive insights.

Scope and Limitations

The study is limited to undergraduate students from the North Andhra region and is based on self-reported data. Therefore, the findings may not be fully generalizable to other regions or populations. However, the study provides valuable insights into AI adoption in less developed regional contexts.

Results and Analysis

Digital Access and Readiness

The analysis of digital access among undergraduate students indicates a high level of technological readiness in the North Andhra region, India. A significant majority of students (approximately **92.8%**) reported using **smartphones** as their primary device for learning, while a smaller proportion used laptops (**5.7%**) and very few relied on desktops or tablets as shown in Figure 1. Only a negligible percentage of students reported not having a personal device.

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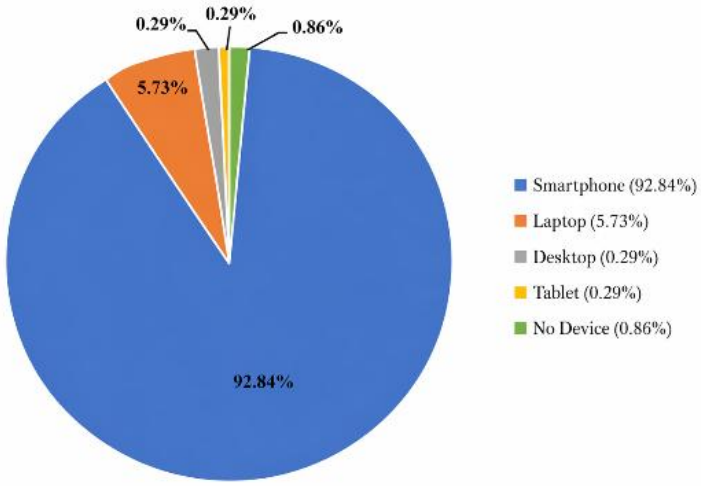
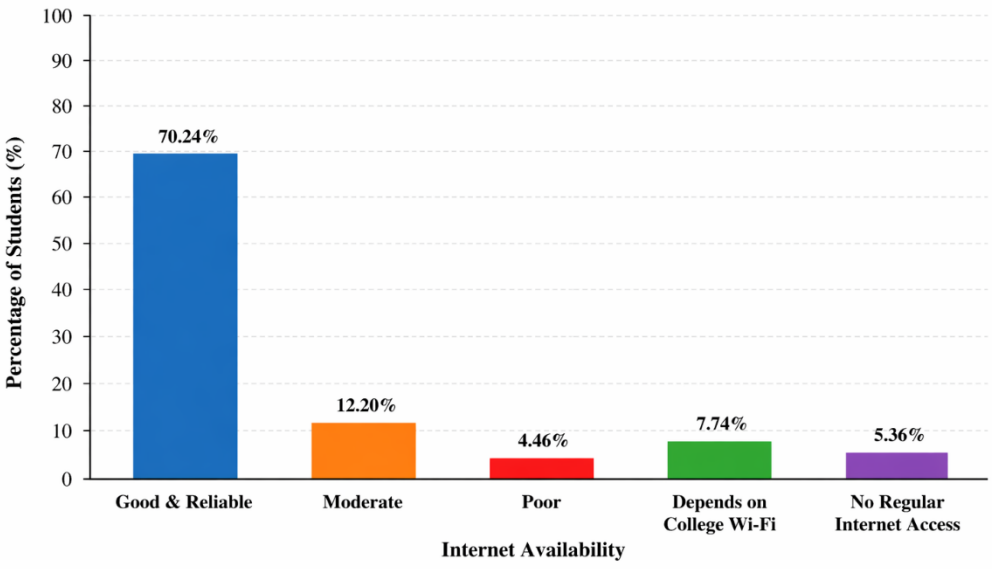
Figure 1: Primary Device Used by Students for Learning



The figure shows the distribution of devices used by students for learning.

In terms of internet availability, about **70.2%** of students indicated having **good and reliable internet access**, whereas others reported moderate or limited connectivity, often depending on institutional Wi-Fi facilities as shown in Figure 2. A small proportion of students also indicated poor or irregular access to the internet.

Figure 2: Internet Availability among Undergraduate Students



Note. *The figure shows the distribution of students based on the availability and reliability of internet access.*

Regarding time spent online for academic purposes, most students reported spending **1–2 hours daily (43.4%)**, followed by less than 1 hour (**34.8%**). A smaller percentage of students spent more than 2 hours per day on academic activities online. For non-academic purposes, students tended to spend comparatively more time online, indicating a broader engagement with digital platforms beyond academics.

Overall, these findings suggest that students in the study region possess adequate digital access and infrastructure to engage with AI-based tools. The widespread use of smartphones and reasonably good internet availability provide a strong foundation for the adoption and integration of AI in educational practices. The predominance of rural students in the sample further emphasizes the significance of the findings, as it reflects AI adoption even in less developed and rural contexts.

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AWARENESS OF ARTIFICIAL INTELLIGENCE

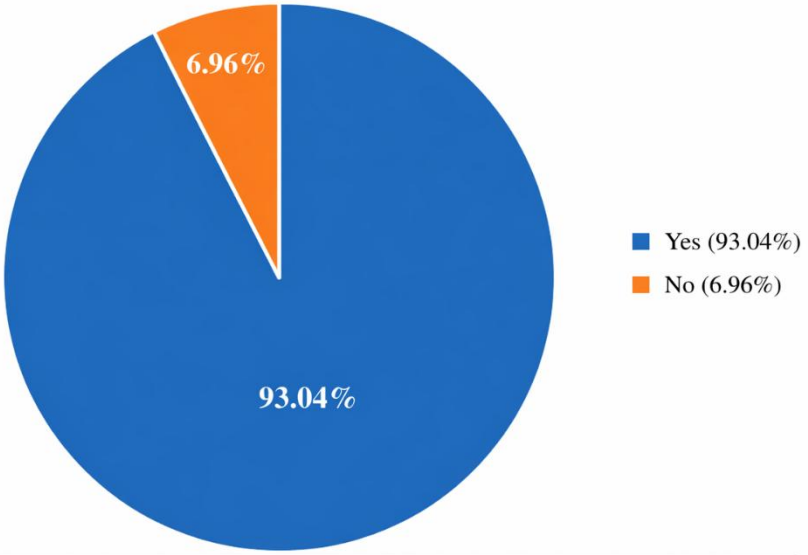
The findings reveal a **high level of awareness of Artificial Intelligence (AI)** among undergraduate students in the study region. A substantial majority of students (**93.0%**) reported that they had heard of AI prior to the survey, indicating that the concept has reached a wide student population as shown in Figure 3.

Regarding the sources of awareness, **teachers and colleges (53.2%)** emerged as the primary source through which students first learned about AI. This was followed by **social media (35.2%)**, while smaller proportions of students reported learning about AI from friends, news media, or other sources.

In terms of self-assessed knowledge, a majority of students rated their understanding of AI as **"good" (57.9%)**, while others reported moderate or lower levels of knowledge. Only a small fraction of students considered their knowledge to be very low.

These findings indicate that AI awareness is widespread among students, with educational institutions playing a significant role in introducing AI concepts. However, the variation in self-rated knowledge levels suggests that while students are familiar with AI, the depth of understanding may differ, highlighting the need for structured learning and guidance.

Figure 3: Awareness of Artificial Intelligence among Undergraduate Students



Note. *The figure represents the percentage of students who are aware of Artificial Intelligence.*

USAGE OF AI TOOLS

The analysis indicates that AI tools are **frequently used by undergraduate students** in their daily academic activities. A majority of students (**56.9%**) reported using AI tools on a **daily basis**, while others used them **2–3 times per week (27.6%)** or less frequently as shown in Figure 4. This demonstrates that AI has become a regular part of students' learning routines.

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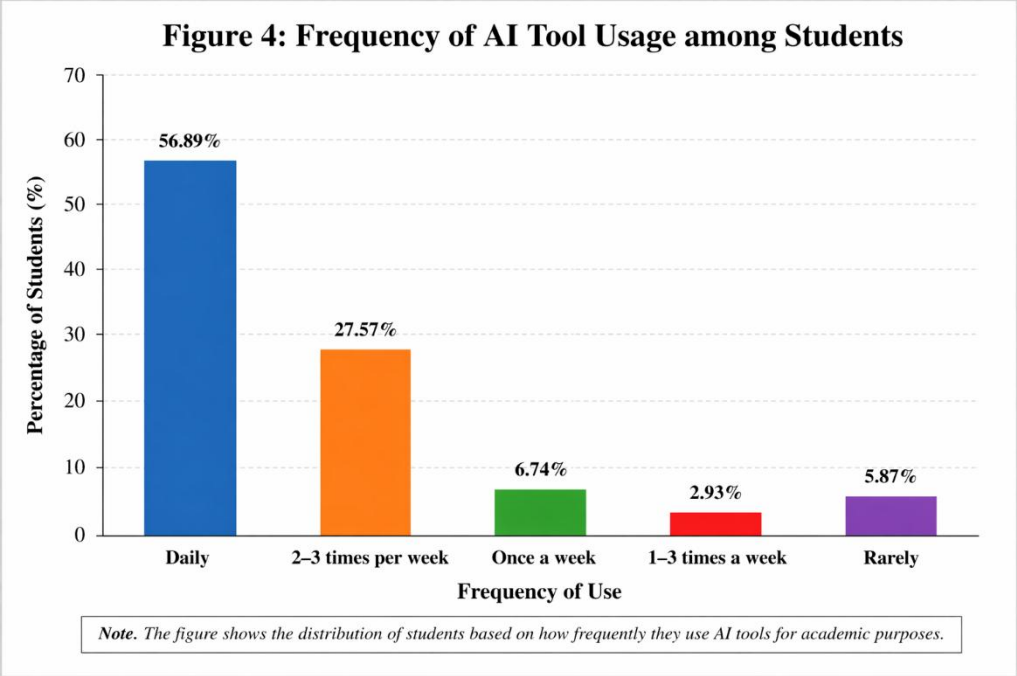
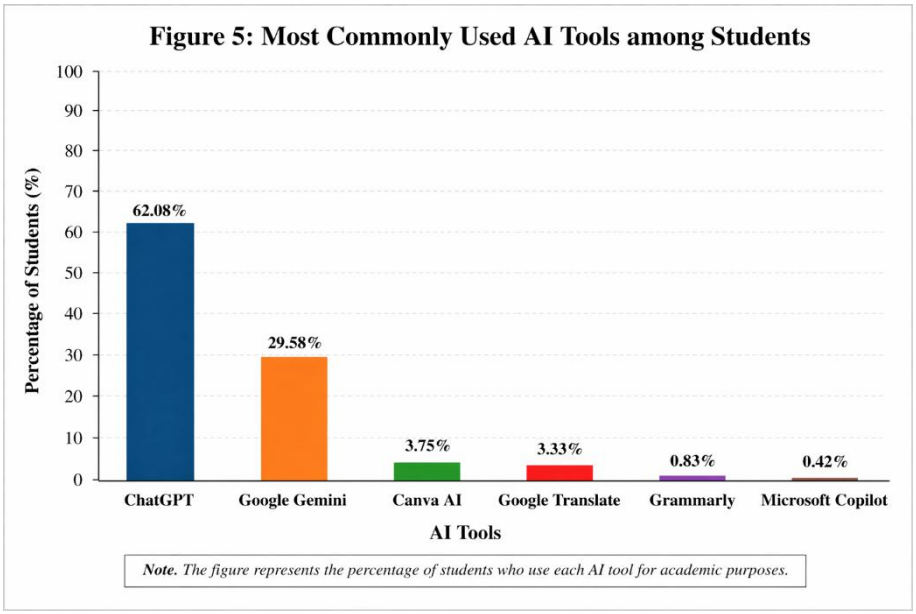


In terms of specific tools, ChatGPT emerged as the **most commonly used AI platform (62.1%)**, followed by Google Gemini (29.6%). Other tools such as Microsoft Copilot, Grammarly, translation tools, and Canva AI were used by comparatively smaller proportions of students as shown in Figure 5.



These findings highlight that students are not only aware of AI but are also actively engaging with it on a regular basis. The dominance of conversational AI tools suggests a preference for platforms that provide quick explanations, content generation, and interactive learning support.

PURPOSE OF AI USAGE

The analysis of students' responses reveals that AI tools are primarily used for **academic support and learning enhancement**. A majority of students (**41.9%**) reported using AI for **understanding concepts and explanations**, making it the most common purpose of usage. This was followed by **writing notes and summaries (12.8%)** and **preparing for examinations (11.0%)** as shown in Figure 6.

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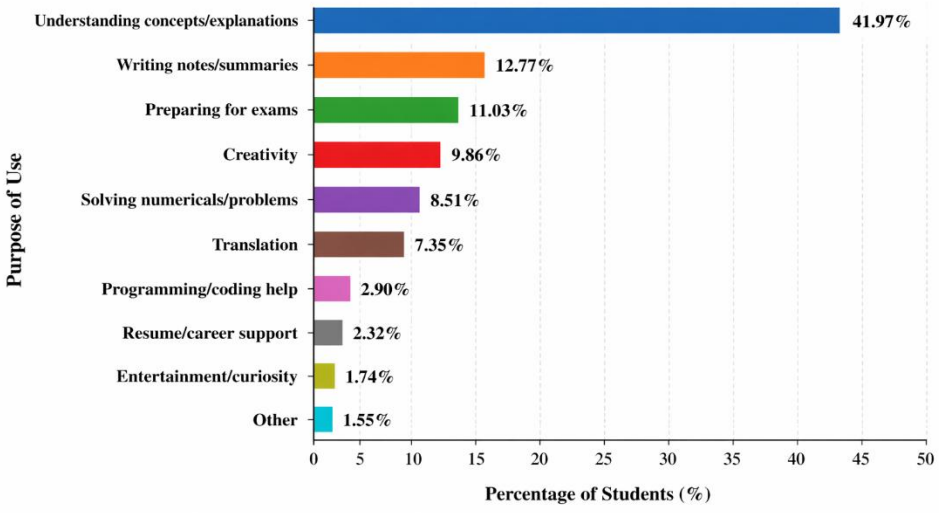
Other notable uses include **solving numerical problems (8.5%)**, **translation (7.4%)**, and **creative tasks (9.9%)** such as preparing presentations or generating ideas. A smaller proportion of students reported using AI for programming support, resume preparation, and general curiosity or entertainment.

Further analysis shows that, in academic contexts, students perceive AI as particularly helpful in **understanding topics (56.6%)** and **saving time (25.9%)**, while a smaller percentage rely on AI for generating ready-made answers or improving language skills.

These findings suggest that students primarily use AI as a **learning assistant rather than a replacement for learning**, with a strong emphasis on conceptual understanding and efficiency. However, the presence of some reliance on ready-made answers indicates the need for guidance to ensure responsible and effective use.

Figure 6: Purpose of AI Usage among Undergraduate Students



Note. The figure shows the distribution of students based on the primary purpose for which they use AI tools.

ACADEMIC ETHICS AND RESPONSIBLE USE OF AI

The findings indicate **mixed levels of awareness and practice regarding academic ethics** among students using AI tools. A considerable proportion of students reported that they have **sometimes (54.3%)** or **rarely (21.4%)** copied AI-generated content directly into their assignments without modification, while a smaller percentage indicated that they had never done so as shown in Figure 7.

When asked about the acceptability of using AI-generated content without acknowledgment, responses were divided: **45.9%** considered it acceptable, while others disagreed or remained uncertain. This variation suggests a **lack of clear understanding of ethical boundaries** in the use of AI for academic purposes.

Awareness of plagiarism also showed inconsistency, with a significant number of students either lacking clarity or having only partial understanding of the concept. Additionally, although a majority of students reported receiving some form of guidance from teachers or institutions (**77.3%**), much of this guidance was not clearly defined or structured.

In terms of handling AI-generated information, students adopted different approaches: some verified answers using textbooks or online sources, while others relied on AI responses without further validation.

Overall, these results highlight a **critical gap between AI usage and ethical awareness**, emphasizing the need for structured guidelines and educational interventions to promote responsible and academically appropriate use of AI tools.

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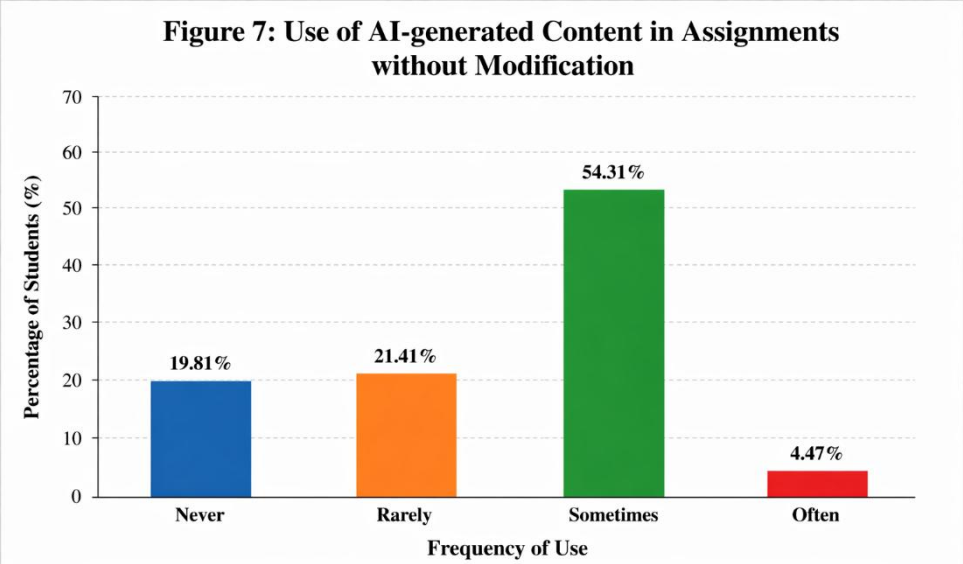

STUDENTS' PERCEPTIONS OF AI IN EDUCATION

The analysis of students' perceptions using Likert-scale responses indicates a generally **positive attitude toward the use of AI in education**, along with certain concerns. A large proportion of students expressed agreement that AI can **improve learning effectiveness**, with most responses concentrated in the higher agreement levels (ratings 4 and 5).

At the same time, students also acknowledged potential drawbacks. A considerable number of respondents agreed that excessive use of AI may **reduce independent thinking**, reflecting an awareness of its possible negative impact on cognitive development.

Furthermore, there was strong agreement among students that **guidelines are necessary for the use of AI in academic settings**, and that AI tools should be used for learning purposes rather than for direct copying of content. Students also recognized the growing importance of AI skills for future employment, with many indicating that AI competency will be essential in the job market.

Overall, these findings suggest that students maintain a **balanced perspective toward AI**, recognizing both its benefits and limitations. While they appreciate AI as a powerful learning tool, they also express concerns about its misuse and long-term implications, reinforcing the need for proper guidance and ethical frameworks.

CHALLENGES, BARRIERS, AND TRAINING NEEDS

The study also explored the challenges faced by students in using AI tools and their need for further training. The findings indicate that, despite widespread usage, students encounter several barriers in effectively utilizing AI. The most common challenge reported was **internet-related issues (23.5%)**, followed by **lack of awareness of AI tools (19.2%)** and **lack of knowledge on how to use them effectively (9.6%)**. Other concerns included language difficulties, fear of misuse or plagiarism, limited access to personal devices, and lack of interest among a small group of students.

In addition to these challenges, students expressed a clear need for structured training. Nearly **47.6%** of respondents indicated that they would like to participate in workshops or training programs on the responsible use of AI, while a significant proportion remained open to the idea as shown in Figure 8.

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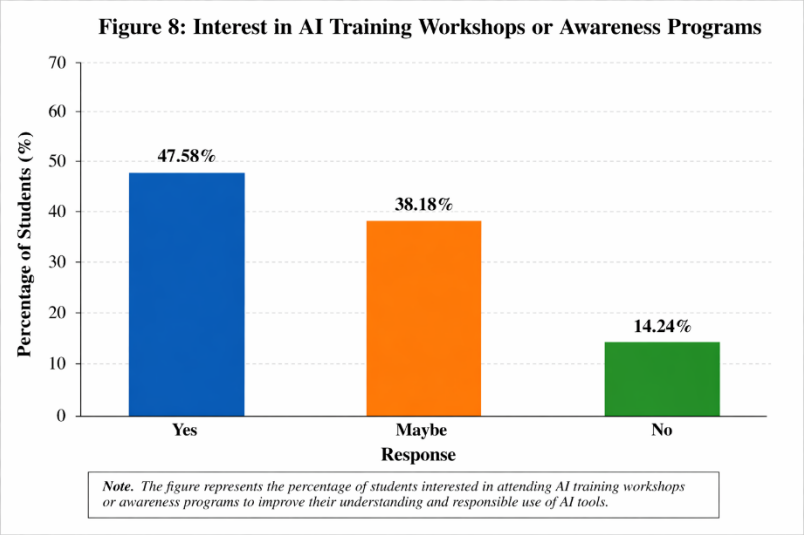

Regarding the type of training required, students showed the highest preference for **practical applications of AI in studies (42.8%)**, followed by **basic understanding and safe usage (26.8%)** and **skill development (20.7%)**, such as resume building and coding support. A smaller proportion emphasized the need for training in creativity and ethical aspects.

These findings highlight that while students are actively using AI tools, there is a **significant demand for structured learning opportunities** to enhance their skills and ensure responsible usage. Addressing these challenges through targeted training programs can improve both the effectiveness and ethical application of AI in education.

DISCUSSION

The findings of the present study highlight the growing integration of Artificial Intelligence (AI) in undergraduate education, even in less developed regions such as the North Andhra region, India, **with a majority of respondents coming from rural backgrounds**. The high level of awareness and frequent usage of AI tools among students indicate that AI has already become a mainstream component of the learning environment, reflecting broader global trends in digital education.

A key observation of the study is the widespread use of AI tools for academic purposes, particularly for understanding concepts, preparing notes, and saving time. This suggests that students primarily perceive AI as a learning support system. The dominance of platforms such as ChatGPT further indicates a shift toward interactive and on-demand learning practices.

At the same time, the study reveals a notable gap between AI usage and ethical awareness. A considerable number of students reported directly using AI-generated content in academic work without modification, and many demonstrated limited clarity regarding plagiarism and responsible usage. This reflects a situation where students are active users of AI but may not fully understand its academic and ethical implications.

Students' perceptions of AI also show a balanced outlook. While they recognize its benefits in improving learning efficiency, they also express concerns regarding reduced independent thinking and potential misuse. This indicates an emerging awareness of both the advantages and limitations of AI in education.

Overall, the findings suggest that the current stage of AI adoption among students can be characterized as **high usage with moderate understanding**, pointing to the evolving nature of AI integration in higher education.

These findings are consistent with global trends indicating increasing student dependence on AI tools, while also highlighting the need for localized educational interventions in emerging regions.

IMPLICATIONS AND RECOMMENDATIONS

The findings of the study highlight the need for strengthening AI literacy among undergraduate students. Educational institutions should provide structured guidance on the effective and ethical use of AI tools in academic work.

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It is recommended that colleges introduce **training programs and workshops** on AI applications in learning, with emphasis on academic integrity, plagiarism awareness, and responsible usage practices. In this context, the role of teachers is evolving from traditional knowledge providers to **facilitators and mentors**, guiding students in the critical and ethical use of AI tools.

Additionally, institutions may consider developing **clear guidelines or policies** for AI usage in academic assignments to ensure transparency and accountability. Integrating AI literacy into the curriculum can further help students develop critical thinking skills and prepare them for future academic and professional environments.

CONCLUSION

The present study examined the awareness, utilization, and perceptions of Artificial Intelligence (AI) among undergraduate students in the North Andhra region, India. The findings reveal that AI has achieved a high level of penetration in students' academic activities, with widespread awareness and frequent usage of AI tools, particularly for understanding concepts and improving learning efficiency.

At the same time, the study identifies important concerns related to over-dependence on AI, direct use of AI-generated content without modification, and limited awareness of academic ethics and plagiarism. These findings indicate that while students are active users of AI technologies, their depth of understanding regarding responsible and ethical usage remains moderate.

The study highlights the need for a balanced approach toward AI integration in education, where students are encouraged to use AI as a supportive learning tool while maintaining academic integrity and independent thinking. Strengthening AI literacy through structured guidance, training programs, and institutional policies can play a crucial role in ensuring effective and responsible use.

Overall, the study contributes to understanding AI adoption in less developed regional contexts and emphasizes the importance of guiding students toward informed and ethical engagement with emerging technologies.

LIMITATIONS OF THE STUDY

The present study has certain limitations that should be considered while interpreting the findings. First, the study is confined to undergraduate students from the North Andhra region, India, and therefore the results may not be fully generalizable to other regions or populations. Second, the study is based on **self-reported responses**, which may be subject to response bias or inaccuracies. Third, the analysis is primarily descriptive in nature, relying on percentage and frequency distributions, and does not include advanced statistical testing to establish relationships between variables. Additionally, while the sample includes students from rural, urban, and semi-urban backgrounds, the predominance of rural participants may influence the overall findings.

FUTURE SCOPE OF THE STUDY

The study opens several avenues for future research. Further studies can be conducted with a larger and more diverse sample across different regions to enhance generalizability. Comparative studies between rural and urban students can provide deeper insights into differences in AI awareness and usage. Future research may also employ inferential statistical methods to examine relationships between variables such as AI usage, academic performance, and ethical awareness. In addition, longitudinal studies can be undertaken to assess how AI adoption and its impact on learning evolve over time. Exploring discipline-specific usage patterns and the effectiveness of AI literacy programs can also contribute to a better understanding of AI integration in education.

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