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Knowledge of PG students regarding selected Artificial Intelligence tools

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Abstract

The present study was conducted to analyse postgraduate students' knowledge of selected artificial intelligence (AI) tools at MPUAT in Udaipur, Rajasthan. The AI tools chosen were ChatGPT, Grammarly, QuillBot, Mendeley and Meta AI, all of which are popular for academic writing, research support and content management. Data were collected from 120 PG students using a questionnaire and the results showed that 48.33 per cent of respondents had strong knowledge of AI tools, 45 per cent had average knowledge and only 6.66 per cent had a poor understanding. The data show that the majority of PG students have moderate to good awareness of AI tools, indicating a positive degree of familiarity, albeit there is still room for additional progress. The study emphasises the need of fostering AI literacy among students in order to improve academic achievement and research efficiency.

Keywords: Artificial Intelligence, knowledge, ChatGPT, Grammarly, QuillBot, Mendeley, Meta AI

Introduction

Artificial intelligence (AI) tools have become a vital part of modern education, providing students with new opportunities for learning, research and academic productivity. PG students, in particular, frequently use AI tools like ChatGPT, Grammarly, QuillBot, Mendeley and Meta AI to complete activities ranging from content production and language editing to literature management and data analysis. ChatGPT is an AI-powered language model that assists students with writing, content creation, summarization and problem-solving through conversational engagement. Grammarly is an AI-powered writing helper that helps you correct grammar errors, improve sentence structure and improve overall writing clarity. QuillBot is often used for paraphrasing and summarising, assisting students in rephrasing text while retaining original meaning, which is notably effective in academic writing and plagiarism prevention. Mendeley is an AI-powered reference management application that helps you organise research articles, create citations and manage bibliographies. Finally, Meta AI offers cutting-edge tools for language processing, information retrieval and content analysis, enabling sophisticated research activities. However, PG students' awareness of these tools differs depending on factors such as exposure, academic subject and technological proficiency. Understanding their level of knowledge and familiarity with such AI tools is essential for promoting their effective utilization in higher education

settings. This study aims to assess the Knowledge of Artificial Intelligence tools among PG Students of MPUAT, Udaipur, Rajasthan, providing insights that can guide educational institutions in designing appropriate training and support mechanisms.

Methodology

In MPUAT, Udaipur, there are four colleges presently offering PG programmes viz. College of Community and Applied Sciences (CCAS), Rajasthan College of Agriculture (RCA), College of Dairy and Food Technology (CDFT) and College of Technology and Engineering (CTAE). In order to select the sample, a list of PG students enrolled in academic years 2023-24 and 2024-25 was collected from all the colleges at Udaipur campus. A total of 120 students were selected from these colleges by using Probability Proportional to Size sampling method. Data were collected with the help of questionnaire. Frequency, percentage and Mean Percent Score were used for analyzing the data.

Results and Discussion

1. Knowledge of the students regarding ai tools

This section offers the findings on PG students' knowledge of chosen artificial intelligence tools, including ChatGPT, Grammarly, QuillBot, Mendeley and Meta AI. The findings indicate the degree to which students understand the functions, characteristics and applications of these tools in their academic and research pursuits. The collected data was

thoroughly analysed to identify the overall knowledge level and differences among respondents.

a) Chat GPT

ChatGPT is a dynamic artificial intelligence tool that supports students' research and academic endeavours. It

helps with idea generation, report writing, article summarisation and enhancing academic writing quality. Many students utilize ChatGPT to make difficult subjects easier to understand and to enhance their research process. Data in Table 1 illustrate the knowledge of the respondents regarding ChatGPT.

Table 1: Knowledge of the respondents by their knowledge regarding ChatGPT n=120

S. No	Items	Frequency	Percentage
1.	Concept	100	83.3
2.	Primary purpose	81	67.5
3.	Advantages		
i.	Explains topics in a simplified and interactive way	89	74.2
ii.	Offers recommendations and improvements to academic writing.	72	60
iii.	Generates idea and helps in drafting	97	80.8
iv.	Helps in research subject brainstorming	93	77.5
v.	Provides multilingual support	103	85.8
vi.	Refines results through ongoing analysis of large-scale textual data	81	67.5
4.	Procedure to produce answer	75	62.5

It can be seen from the table that majority of respondents (83.3%) were aware that ChatGPT is a conversational artificial intelligence program, indicating a thorough comprehension of its basic concept. When asked about the primary purpose of using the tool, around two third of the respondents (67.5%) stated that it is intended to generate human-like responses in prose, demonstrating their comprehension of its core operations. Regarding its advantages, most of the respondents knew that ChatGPT aids in idea generation and drafting (80.8%) and offers multilingual support (85.8%) making it suitable for a wide range of academic users. Majority of the respondents knew that ChatGPT aids in brainstorming research concepts (77.5%) and presents concepts in a simple and interactive way (74.2%), making learning easier and more engaging. A substantial majority of the respondents (67.5%) were aware that ChatGPT can refine outcomes through continuous analysis of large-scale textual data. This indicates that

students recognise its significance in the early phases of academic work. Regarding the procedure ChatGPT uses to produce answers i.e. use of massive text datasets for machine learning was known to 62.5 per cent respondents. A comparable study conducted by Abdelhafiz *et al.* (2024) [1] discovered that, while 67% of researchers were aware of ChatGPT, just a small proportion had utilized it in academic work. This suggests a lack of practical knowledge despite a high level of awareness.

b) Grammarly

Grammarly is an AI-powered writing aid that helps users improve their grammar, spelling and clarity. For students, particularly those active in research, it guarantees that their academic writing is coherent, error-free and professionally structured, allowing them to confidently compose research papers, thesis and assignments.

Table 2: Knowledge of the respondents by their knowledge regarding Grammarly n=120

S. No	Items	Frequency	Percentage
1.	Concept	110	91.7
2.	Primary purpose	98	81.6
3.	Advantages		
i.	Increase the calibre of writing	88	73.3
ii.	Useful for potential authors and learners	77	64.2
iii.	Gives recommendations while writing in real time	74	61.7
iv.	Enhances writing clarity by making recommendations for phrasing and style	85	70.8
v.	Supports professional and scholarly material	88	73.3
vi.	Verify and improve written content	87	72.5
vii.	Error reduction by giving immediate remedial feedback	77	64.2
4.	Procedure to produce output	89	74.2
5.	The primary language supported by the tool	87	72.5
6.	Feedback offered by the tool	82	68.3

The data in Table 2 indicates respondents' knowledge about Grammarly. It includes understanding its basic concept, primary purpose, working procedure, supported language and several academic advantages. The table shows that the most of respondents (91.7%) were aware that Grammarly is an AI-powered writing assistance, suggesting a clear comprehension of the basic concept. When questioned about the tool's primary purpose, the majority of the respondents (81.66%) indicated that it is intended to detect and fix

grammar, spelling and style issues, demonstrating a solid understanding of its basic functionality in academic and professional writing.

Regarding its advantages, Majority of the respondents (73.3%) believed that Grammarly improves overall writing quality and supports professional and scholarly content. Additionally, most of the respondents knew that Grammarly is useful in verifying and improving written material (72.5%) and writing clarity by providing suggestions for

phrasing and style (70.8%). A total of 64.2 per cent appreciated its real-time recommendations while writing, noting its value for potential authors, learners and other users.

In terms of technical understanding, the majority of respondents (74.2%) were aware of Grammarly's output generation technique, which includes text analysis using linguistic rules and vast datasets. Furthermore, 72.5 per cent said that English is the principal language supported by the product. Finally, 68.3% of students said Grammarly delivers structured feedback reports that assist users improve the correctness, clarity and engagement of their writing. These data indicate that the majority of students understand Grammarly's functionality and academic relevance, making it an important resource in research writing and higher education.

A similar investigation conducted by Rejeki (2023) [2] discovered that students improved their grasp of grammatical rules, punctuation and sentence structure through regular usage of Grammarly. The tool increased their understanding of writing mechanics and improved their ability to identify and rectify problems on their own.

c) Quill bot

QuillBot is an AI-powered paraphrase and writing tool that helps students enhance the clarity and originality of their academic writing. It helps to rephrase sentences, summarise long materials and refine language without changing the intended meaning. Students frequently use QuillBot to avoid plagiarism, simplify difficult information and improve the quality of their research papers, assignments and thesis projects.

Table 3: Knowledge of the respondents by their knowledge regarding Quill bot n=120

S. No	Items	Frequency	Percentage
1.	Concept	84	70
2.	Primary purpose	82	68.3
3.	Advantages		
i.	Offers different language constructions	80	66.7
ii.	Helps in paraphrasing text	79	65.8
iii.	Offers more lucid substitutes	61	50.8
iv.	Works best with textual content	81	67.5
v.	Summarise text to help shorten lengthy passages	48	40
vi.	Helps in rewording the sentences in a unique way	91	75.8
vii.	Makes document easier to read by crafting more eloquent sentences	93	77.5
viii.	Helps with academic writing assignments by coming up with different sentence constructions	88	73.3
4.	Procedure to produce output	87	72.5

The data in Table 3 represent the respondents' knowledge about QuillBot. The table shows that the majority of the respondents (70%) were aware that QuillBot is an AI-based paraphrase tool, suggesting a good knowledge of its main concept. When asked about the tool's primary purpose, 68.3 per cent correctly stated that it is used to rewrite and paraphrase content to improve originality and clarity. Regarding its advantages, Majority of the respondents (77.5%) knew that the technology makes texts simpler to read by generating more refined and flowing sentences and 75.8% praised its capacity to restate content in a unique way. Similarly, (73.3%) agreed that it encourages academic writing by providing various sentence structures. Approximately two-thirds of respondents reported that QuillBot works best with textual information (67.5%) and offers a variety of linguistic constructions features that aid in clarity and expression (66.7%). In contrast, fewer students were aware of its more particular tasks, such as summarising lengthy text (40%) providing clearer substitutes for complex phrases (50.8%), implying that these

advanced aspects were less familiar to users. Furthermore, 72.5 per cent of the respondents understood how to use the tool's synonym slider to control the amount of vocabulary change. It can be said that postgraduate students have a high level of understanding about QuillBot's features, functioning and academic uses. A comparable study conducted by Xuyen (2023) [3] discovered that English majors were well-versed in QuillBot's functions, which included language replacement, sentence restructuring and synonym selection. They were aware of how the program improves grammar and paraphrasing correctness in academic writing.

d) Mendeley

Mendeley is a digital tool that enables students and researchers to manage and organise their study resources. It is mostly used to save research papers, establish citations and generate reference lists. Mendeley also allows users to highlight and annotate PDFs, as well as share papers with others. It is extremely beneficial to postgraduate students while writing assignments, research papers and thesis.

Table 4: Knowledge of respondents by their knowledge regarding Mendeley n=120

S. No	Items	Frequency	Percentage
1.	Concept	84	70
2.	Primary purpose	83	69.2
3.	Advantages		
i.	Automatic citation generation	78	65
ii.	Arrange references and citations.	88	73.3
iii.	References can be stored in a digital library	75	62.5
iv.	Helps in Scholarly investigation	92	76.7
4.	Users access their saved desktop software and an online library	89	74.2
5.	Compatible with recommended citation format	87	72.5
6.	Frequently used format	20	16.7
7.	Type of documents handled	87	72.5

8.	Type of file capable of holding (PDF format)	106	88.3
9.	It aids reference organisation by categorizing them into folders	44	36.7
10.	Process of accessing references	93	77.5

Table 4 depicts the knowledge of postgraduate students of Mendeley. Majority of the respondents (70%) were familiar with the concept of Mendeley and (69.2%) knew that primary purpose as a platform for storing, organising and citing research sources.

In terms of academic advantages, Majority of the respondents (76.7%) knew that Mendeley facilitates scholarly research and it aids in the organisation of references and citations (73.3%). Approximately (74.2%) of respondents were aware that users may access their saved documents via both desktop software and an online library and 72.5 percent were aware of its compatibility with preferred citation formats like APA, MLA and Chicago. A significant number of respondents (88.3%) acknowledged that Mendeley enables PDF file handling, making it easier to manage and annotate research materials. However, just 36.7 per cent were aware of the folder-based organising option.

When it comes to process of accessing and sharing references, 77.5 per cent of respondents were aware Mendeley allows users to retrieve saved references and share them with others using its desktop and web platforms. This demonstrates that most students are aware of Mendeley's reference access and collaborative features. Overall, the data show that most students have a solid comprehension of Mendeley's essential capabilities, particularly reference management and file handling, but awareness of its advanced organisational tools is limited.

a) Meta AI

Meta AI is an emerging artificial intelligence tool created by Meta AI that helps users with information retrieval, content development and natural language interaction. Meta AI may assist students in answering academic questions, researching topics and creating brief summaries, making it a valuable assistance tool for research and study.

Table 5: knowledge of respondents by their knowledge regarding Meta AI n=120

S. No	Items	Frequency	Percentage
1.	Concept	96	80
2.	Primary purpose	96	80
3.	Advantages		
i.	Useful in Research and education	82	68.3
ii.	Handles voice and text commands as input	66	55
iii.	capable of offering insights and suggestions	93	77.5
iv.	It can be accessed through internet-based platforms	64	53.3
v.	It is useful for learners and instructors	61	50.8
4.	Its language processing capability includes reading, producing and translating text	78	65
5.	Process of offering responses produced by AI	85	70.8
6.	key features of the tool is Chatbot interactions driven by AI	88	73.3
7.	It enhances communication by providing recommendations created by AI.	81	67.5

Table 5 describes the knowledge of postgraduate students about Meta AI. The majority of the respondents (80%) were familiar with both the concept and the primary purpose of Meta AI, indicating a clear understanding that it is an artificial intelligence tool designed to assist users through AI-driven interactions such as answering questions, generating content and assisting with learning.

Regarding the advantages, Majority of the respondents (77.5%) acknowledged that Meta AI is capable of offering insights and suggestions and two third of the respondents (68.3%) found it useful in research and education. Additionally, 73.3 per cent recognised chatbot-based interaction as one of its key features and 67.5 per cent noted that the tool helps enhance communication through AI-generated recommendations.

Regarding its technological functions, 70.8 per cent were aware that Meta AI's responses are generated utilising artificial intelligence methods. Furthermore, 65 per cent of respondents were aware that its language processing abilities included reading, creating and translating text. More over half of the respondents (55%) were aware that Meta AI accepts both voice and text inputs and 53.3% were aware that it may be accessed via internet platforms. However, just 50.8 per cent saw its value for both learners and instructors.

The findings indicate that students have a good

understanding of Meta AI's idea, key functionalities and academic utility, although their awareness of certain of its access mechanisms and instructional relevance is moderate.

Table 6: Overall knowledge of the respondents regarding AI tools n= 120

S. No.	Category	f	%
1	Poor	8	6.66
2	Average	54	45.00
3	Good	58	48.33

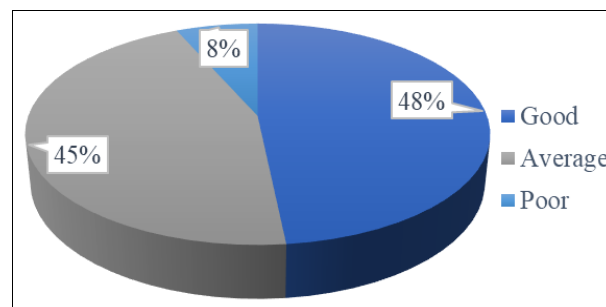


Fig 1: Overall knowledge of the respondents regarding AI tools

The data presented in Table 6 and Figure 1 show respondents' overall knowledge of AI tools. Out of 120

responses, 48.33 per cent fall into the 'Good' knowledge category. This indicates that the respondents have a good understanding of AI tools and their applications. Furthermore, 45 per cent of respondents indicated a 'Average' level of knowledge, showing reasonable awareness but possibly lacking of in-depth acquaintance with sophisticated features or specialised tools. Only 6.66% were rated as 'Poor', indicating that relatively few respondents have limited or nonexistent expertise of AI tools.

Conclusion

In conclusion, the findings show that the majority of PG students at MPUAT, Udaipur have moderate to good knowledge of specific AI tools such as ChatGPT, Grammarly, QuillBot, Mendeley and Meta AI. While over half displayed strong awareness, a significant number had average knowledge and only a few people had poor knowledge. This indicates a promising trend, but it also emphasises the importance of focused awareness initiatives and training to improve AI tool proficiency among PG students for better academic and research outcomes.

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