Exploring the Role of Artificial Intelligence Tools in Enhancing Academic Performance of Postgraduate Students

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Abstract

The study explores the impact of AI on postgraduate students' academic performance at KLE's G. I. Bagewadi College, Nipani, Karnataka. The survey-based approach revealed that AI tools significantly improve efficiency, creativity, and understanding. The high engagement with AI tools (68.11%) and increased confidence (84.06%) in their academic work indicate the importance of these technologies in the academic community. However, there is a need for more comprehensive training and awareness programs.

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Keywords
Artificial Intelligence; Academic Performance; ChatGPT; PaperPal; Quillbot; Consensus;

Electronic access
The journal is available at www.jalis.in
DOI: **10.5281/zenodo.14890485**

Journal of Advances in Library and Information Science
ISSN: 2277-2219 Vol. 14. No.1. 2025. pp.76-83

1. Introduction

The development of the Web is changed to be an entire improvement in the present world. As the prevalent information construct, the World Wide Web has progressed much since its initiation (Hiremath & Kenchakkanavar, 2016). Artificial Intelligence (AI) tools are increasingly pivotal in the academic landscape, particularly for postgraduate students. These tools offer a range of capabilities that enhance learning, streamline research processes, and improve overall academic performance. Recent studies highlight the significant impact of artificial intelligence (AI) tools on postgraduate students' academic performance. AI technologies like ChatGPT assist students in refining research topics, improving writing skills, and enhancing overall academic success (Chauke et al., 2024). These tools offer personalised learning experiences, intelligent tutoring, and automated assessments, improving learning outcomes and engagement (Abbas et al., 2023). AI effectively targets specific learning needs, identifies struggling learners, and provides necessary interventions to boost academic performance (Mallillin, 2024). Students using AI tools perform better in research work, examinations, assignments, and overall coursework, enhancing critical thinking and self-efficacy (Zia et al., 2024). However, integrating AI in education requires careful consideration of ethical guidelines, implementation strategies, and teacher training to ensure responsible and effective use (Abbas et al., 2023; Chauke et al., 2024). These findings underscore the potential of AI to revolutionise teaching and learning approaches in higher education.

Recent research highlights the transformative role of Artificial Intelligence (AI) in education, emphasising its applications and implications. (Yousuf and Abdul Wahid, 2021) discuss various AI tools, including intelligent tutoring systems and sentiment analysis, while identifying challenges and opportunities for future research. (Bilad et al., 2023) focus on cognitive tutors and the balance between instructional support and self-directed learning, noting the ethical considerations and job displacement concerns associated with AI tools. (Kruglyk et al., 2024) classify AI technologies based on their functionalities in learning, teaching, assessment, and administration, advocating for personalized and adaptive learning environments. Additionally, (Delgado et al. 2020) explore adaptive learning tools in English Language Teaching, highlighting their potential to tailor instruction to individual student needs while

emphasizing the importance of teacher autonomy. Collectively, these studies underscore the need for ongoing research and ethical frameworks to effectively integrate AI into educational practices. The integration of Artificial Intelligence (AI) in education has emerged as a transformative force, reshaping traditional teaching and learning practices globally.

AI-powered solutions such as adaptive learning platforms, virtual tutors and automated administrative processes are fostering personalized learning experiences and reducing the workload of educators. Challenges and harness AI's potential to revolutionize teaching and learning in India, ensuring an equitable and future-ready education system (Kenchakkanavar et al., 2024). Generative artificial intelligence significantly improves college students' academic achievement, with text-based generated content and independent learning styles showing the most significant improvements (Sun & Zhou, 2024). Collaborative tasks with Generative Artificial Intelligence significantly improve instructional design quality in an authentic classroom setting, with high-performance groups adhering to a structured framework and engaging in cognitive agency (Liu et al., 2024). Artificial intelligence will play a role in research by enabling independent learning, helping teachers and students search for information and find better ways to access it, and creating tedious tasks such as searching to find information quickly. Artificial intelligence has become a major challenge in the era of rapid and transparent technological progress (Kenchakkanavar, 2023).

2. Objectives

The main objective of the study is to examine the exploring the role of artificial intelligence tools in enhancing academic performance of postgraduate students. The specific objectives of the study are.

I. To know the awareness of artificial intelligence tools among the postgraduate students;
II. To study the use of artificial intelligence tools among the postgraduate students;
III. To examine the knowledge of using artificial intelligence tools;
IV. To ascertain the frequency of using artificial intelligence tools;
V. To evaluate for what purposes the postgraduate students are using artificial intelligence tools;
VI. To study the how artificial intelligence tools helped in academic studies;
VII. To find out the challenges faced by the postgraduate students while using artificial intelligence tools; and
VIII. To know the confident about academic work after using artificial intelligence tools.

3. Methodology

The present study is used survey research method. The study tool used was prepared questionnaire method to use for primary data collection. A study included Postgraduate Students from KLE's G. I. Bagewadi College, Npani Karnataka. The researchers distributed 76 questionnaires in college and received 71 questionnaires from students. The data were summarized and percentages were calculated.

4. Scope and Limitation

The scope of the present study is confined to postgraduate students of KLE's G. I. Bagewadi College, Nipani, Karnataka. The colleges PG center offers programs in three disciplines MA in English, MSc in Mathematics and M.Com. The study encompasses students from all these departments.

5. Data Analysis and Interpretations

The study employs a simple percentage method for data analysis and interpretation, providing a clear and concise understanding of the collected data.

Table 1: Department wise distribution of questionnaires

Sl No	Department	Distribution	Received & Percentage
1	MA	07	06 (85.71)
2	MSc	27	24 (88.89)
3	M.Com	42	41 (97.62)
Total / Overall		**76**	**71 (93.42)**

Table one presents the department-wise distribution of questionnaires and corresponding responses. A total of 76 questionnaires were distributed across three departments, yielding 71 responses. The MA department exhibits a relatively high response rate of 85.71%, though it is the lowest among the three departments. MSc demonstrates a strong response rate is 88.89%, slightly better than MA but still below

M.Com. The M.Com department showcases the highest response rate is 97.62%, indicating a very engaged group of respondents. The overall response rate is 93.42% excellent, reflecting high participation across all departments.

Table 2: Knowledge of AI tools

Sl No	Knowledge	Respon-dents	Perce-ntage
1	I have only heard about them but never used them.	02	2.81
2	I have limited knowledge and have used them occasionally.	07	9.85
3	I am moderately knowledgeable and use them regularly.	19	26.77
4	I have in-depth knowledge and actively explore new tools.	43	60.57
Total		**71**	**100%**

Table 2 describes the data about the respondent's knowledge and usage of certain tools. A total of 71 respondents were surveyed and categorized into four groups based on their level of knowledge and usage. The largest group (60.57%) comprises respondents with in-depth knowledge who actively explore new tools. This reflects a strong inclination toward advanced engagement and expertise within the surveyed population. Approximately one-quarter (26.77%) of respondents are moderately knowledgeable and use these tools regularly. This suggests a solid intermediate level of familiarity and application. A combined 12.66% of respondents (categories 1 and 2) either have minimal or limited knowledge of the tools. This minority indicates potential areas for training or awareness initiatives.

Table 3: Awareness of AI Tools

Sl No	Awareness	Respondents	Percentage
1	Yes	69	97.19
2	No	02	2.81
Total		71	100%

The table three explains that a vast majority of respondents 97.19% are aware of AI tools, showcasing widespread familiarity and engagement with AI-driven technologies in the surveyed population. Only a small fraction 2.81% reported being unaware of AI tools, which could indicate either limited exposure to technology or a lack of interest. This analysis demonstrates that the surveyed group is highly receptive to AI technologies, providing an excellent foundation for further integration and skill development.

Table 4: Use of Different AI Tools

Sl No	AI Tools	Respondents (n=)	Percentage
1	ChatGPT	57	82.60
2	Semantic Scholar	22	31.88
3	HyperWrite	34	49.27
4	Scite.ai	16	23.18
5	PaperPal	34	49.27
6	Scholarcy	12	17.39
7	Lateral	14	20.28
8	Consensus	27	39.13
9	Grammarly	45	57.97
10	Quillbot	43	62.31
11	Others	07	10.14

The table four presents that ChatGPT is the most widely used tool with 82.60% of respondents utilizing it, indicating its popularity for diverse academic and professional tasks. Quillbot 62.31% and Grammarly 57.97% follow closely, reflecting their significance for language and writing-related tasks. Followed by HyperWrite 49.27%, PaperPal 49.27% and Consensus 39.13% are moderately popular, suggesting a balanced usage pattern for writing and research purposes. Scholarcy 17.39%, Lateral 20.28% and Scite.ai 23.18% have relatively low adoption, which may reflect either limited awareness or functionality that is less relevant to users' needs. A small percentage reported using other tools, highlighting opportunities for specialized AI tools to gain traction. This data reflects a strong inclination toward versatile and writing-focused AI tools, with opportunities for broader adoption and optimization of lesser-used tools.

Table 5: Respondents of using AI Tools in per week

Sl No	Respondents	Respondents	Percentage
1	Less than 2 hours	03	4.34
2	2–5 hours	08	11.60
3	5–10 hours	11	15.95
4	More than 10 hours	47	68.11
Total		69	100%

The table five presents that majority of respondents 68.11% reported using AI tools for more than 10

hours per week, indicating extensive reliance on AI tools in their academic or professional workflows. A smaller group of respondents uses AI tools for 5–10 hours 15.95% and 2–5 hours 11.60% weekly. This suggests that while some users integrate AI into their routines, their reliance is less intensive. Only 4.34% of respondents use AI tools for less than 2 hours per week. This group might consist of beginners, casual users or individuals with limited access or understanding of AI tools. Given that the largest proportion uses AI tools for more than 10 hours, the average weekly usage skews towards the higher end, reflecting the importance of these tools in user's daily activities. This analysis highlights the widespread and intensive use of AI tools among respondents, while also identifying opportunities to engage less frequent users and improve their adoption rates.

Table 6: First learn about AI tools

Sl No	Opinion	Respondents (n=69)	Percentage
1	Teachers	29	42.02
2	Library staff	27	39.13
3	Friends/Colleagues	16	23.18
4	News Papers/Magzines	07	10.14
5	Through social media	04	5.79
6	Through academic courses	03	4.34
7	During workshops/seminars	07	10.14
8	Others	03	4.14

The table six describes significant role of Teachers and Library staff reflects the importance of institutional settings in promoting AI awareness among users. Teachers 42.02% and Library staff 39.13% are the primary sources through which respondents first learned about AI tools. This indicates a strong role played by institutional support in introducing AI tools to learners. Friends/Colleagues 23.18% also contributed significantly, highlighting the impact of informal networks in spreading awareness. Social Media 5.79%, Academic Courses 4.34% and others 4.14% had minimal influence, which could suggest limited integration of AI tools in non-traditional or extracurricular channels. Workshops/Seminars 10.14% and Newspapers/Magazines 10.14% played a moderate role in creating awareness, indicating room for expanding outreach via these platforms.

Table 7: Purpose of using AI tools

Sl No	Purpose of using AI tools	Respondents (n=69)	Percentage
1	Drafting essays, reports, or research papers	39	56.52
2	Improving grammar, spelling and structure	43	62.31
3	Generating ideas for research topics	19	27.53
4	Clarifying subject-related concepts or theories	47	68.11
5	Solving academic queries or problems	34	49.23
6	Generating sample questions and answers	41	59.42
7	Revising key topics or concepts	14	20.28
8	Generating creative ideas for projects, assignments, or presentations	31	44.92
9	Career and Skill Development	16	23.18
10	Others	11	15.95

Table seven shows that many users rely on AI tools for grammar, spelling and structure improvements, indicating that AI is an essential tool for polishing academic writing. improving grammar, spelling and structure 62.31% and Clarifying subject-related concepts or theories 68.11% are the most common reasons for using AI tools. These tools are used to enhance the quality of academic writing and to clarify complex academic material. Writing essays, reports, or research papers 56.52% and Generating sample questions and answers 59.42% highlight the role of AI tools in content creation and preparation for academic tasks. Generating ideas for research topics 27.53% and Generating creative ideas for projects, assignments, or presentations 44.92% show that AI tools are also used to support creative and intellectual thinking in research and presentations.

Solving academic queries or problems 49.23% is another key reason, indicating that AI tools are relied upon to answer specific academic questions and assist with problem-solving. Revising key topics or concepts 20.28% and Career and Skill Development 23.18% have lower usage percentages, suggesting that AI tools are less frequently used for revision or personal skill development than academic tasks. Others refers to additional, unspecified purposes, showing that while AI tools have widespread academic applications, they also serve more personalised or niche needs. This analysis underscores the versatile applications of AI tools,

particularly in academic writing, research and problem-solving, while pointing to areas where more engagement or support could further improve their effectiveness.

Table 8: Benefits of using AI tools

Sl No	Benefits of using AI tools	Respondents (n=69)	Percentage
1	Saves time	43	62.31
2	Increases accuracy	19	27.53
3	Improves creativity	27	39.13
4	Helps in decision-making	13	18.84
5	Simplifies complex tasks	06	8.69
6	User-friendliness	19	27.53
7	Speed of response	37	53.62
8	Data privacy and security	21	30.43
9	Other	02	2.89

The table eight ravels that Saves time 62.31% emerges as the most significant benefit, indicating that AI tools are seen as a major time-saving resource. Users rely on AI tools to reduce the time spent on various academic tasks, enhancing overall productivity. Speed of response 53.62% is another prominent benefit, reinforcing that users value AI tools for quick and efficient responses, which is crucial for academic tasks requiring rapid feedback. Improves creativity 39.13% shows that AI tools are viewed as helpful in fostering creative ideas for academic work. It helps in decision-making 18.84%, while less commonly mentioned, suggesting that users also rely on AI for more analytical tasks requiring judgment or decision support. Increases accuracy 27.53% highlights that AI tools are trusted for improving the precision of academic work. In comparison, User-friendliness 27.53% shows that ease of use is a valued feature, especially among users with varying levels of technical expertise. Data privacy and security 30.43% is a notable concern, indicating that users are cautious about their data security when using AI tools, which is an important consideration in academic environments. Simplifies complex tasks 8.69% is the least cited benefit, suggesting that while AI is helpful in various areas, its role in simplifying complex tasks might not be as pronounced in the users experiences. A small percentage of users 2.89% cited other benefits, suggesting additional, perhaps more personal, uses for AI tools that were not covered in the listed options. This analysis shows that while AI tools are highly valued for their efficiency and time-saving features, there are opportunities to enhance further their capabilities, particularly regarding creative support, decision-making and data security.

Table 9: AI tools helped in studies

Sl No	AI tools helped in studies	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	AI tools have enhanced my understanding of difficult concepts.	83 (76.81%)	12 (7.39%)	3 (4.34%)	1 (1.44%)	00 (00%)
2	AI tools have improved my efficiency in completing academic tasks.	41 (59.42%)	17 (24.62%)	7 (*10.14%)	3 (4.34%)	01 (1.44%)
3	AI tools have provided accurate and reliable information for my studies.	47 (68.11%)	11 (15.95%)	06 (8.69%)	4 (5.79%)	01 (1.44%)
4	AI tools have helped me stay organized and manage my study schedule better.	31 (44.92%)	27 (39.13%)	07 (10.14%)	03 4.34%)	01 (1.44%)
5	AI tools have facilitated creative thinking and idea generation in academic work.	27 (39.13%)	31 (44.92%)	04 (5.79%)	04 (5.79%)	03 (4.34%)
6	AI tools have made learning more engaging and interactive.	13 (18.24%)	9 (13.04%)	17 (24.63%)	19 (27.53%)	11 (15.94%)
7	AI tools have supported my research work by providing insights and analysis.	17 (24.63%)	21 (30.425)	19 (27.53%)	08 (11.59%)	04 (5.79%)

The table nine explains that 76.81% strongly agreed that AI tools enhanced their understanding of AI tools have enhanced understanding of difficult concepts with only 1.44% disagreeing. This indicates a significant positive impact on comprehension. 59.42% strongly agreed that AI tools improved academic efficiency, although 4.34% disagreed,

suggesting that while most found them beneficial, some did not experience the expected improvements. 68.11% strongly agreed that AI tools offered reliable information. A small percentage 5.79% disagreed, indicating trust in AI for accuracy, though a few users had concerns. 44.92% strongly agreed and 39.13% agreed that AI tools improved organization. A small minority (5.78%) disagreed, indicating that most users found them helpful in managing schedules. 39.13% strongly agreed and 44.92% agreed that AI tools helped foster creativity. A small percentage (10.13%) disagreed, showing that most respondents benefited, though some did not. Only 18.24% strongly agreed that AI tools made learning engaging, with 27.53% disagreeing. This suggests that AI tools may not always enhance interactivity or engagement for all users. 24.63% strongly agreed and 30.42% agreed that AI tools provided valuable insights for search. However, 17.38% disagreed or strongly disagreed, indicating varied effectiveness.

Table 10: Challenges faced by the users while using the AI Tools

Sl No	Challenges	Respondents	Percentage
1	Lack of technical knowledge	17	24.64
2	Limited availability of tools	32	46.37
3	Concerns about data privacy	13	18.85
4	Inaccurate or biased results	07	10.14
Total		**69**	**100%**

The table ten presents that most significant challenge faced by users is the limited availability of tools. Almost half of the respondents 46.37% report this issue, suggesting that there is a lack of access to sufficient AI tools for academic work. Lack of technical knowledge 24.64% is another considerable challenge, indicating that many users struggle with using AI tools due to their limited understanding of how to operate them. Concerns about data privacy 18.85% highlight the growing apprehension regarding the security of personal and academic data when using AI tools. As AI tools are increasingly involved in processing sensitive information, users are wary of potential data breaches, underscoring the need for stronger data protection measures. A relatively smaller proportion of respondents 10.14% face challenges related to inaccurate or biased results. This could be a concern about the reliability and fairness of AI-generated outcomes. Users may feel that AI tools sometimes produce flawed or partial results that could impact their academic work.

Table 11: Feel more confident about your academic work after using AI tools

Sl No	Improvement	Respondents	Percentage
1	Strongly Agree	47	68.11
2	Agree	11	15.95
3	Neutral	07	10.15
4	Strongly Disagree	03	4.34
5	Disagree	01	1.44
Total		**69**	**100%**

The table twelve reveals that significant majority of respondents 68.11% strongly agree that using AI tools has made them feel more confident about their academic work. This suggests that AI tools have a positive impact on enhancing students' confidence in their academic tasks, making them feel more capable and efficient in their studies. 15.95% of respondents agree that AI tools have improved their confidence, indicating that while not as overwhelming as those who strongly agree, a substantial portion still recognizes the value AI tools bring to their academic work. 10.15% of respondents are neutral, meaning that they neither strongly agree nor disagree with the statement. This group might feel that AI tools have neither significantly boosted nor diminished their confidence in academic work. A smaller proportion of respondents strongly disagree 4.34% or disagree 1.44%, indicating that a few users feel that AI tools did not positively impact their confidence in academic work, or they may even have found the tools to be a hindrance.

Table 12: Training or Awareness programs are needed for using AI tools

Sl No	Opinion	Respondents	Percentage
1	Yes	48	69.56
2	No	21	30.44
Total		**69**	**100%**

The table thirteen describes that a majority of respondents (69.56%) believe that training or awareness programs are needed for using AI tools. This indicates that many users may feel the need for structured learning opportunities to better understand and effectively utilize AI tools in their academic

work. 30.44% of respondents do not believe that additional training or awareness programs are necessary. This could reflect a group of users who feel confident in their ability to use AI tools independently or may already possess the necessary skills to navigate them.

6. Findings and Conclusion

The findings of this study highlights that the significant impact of AI tools on academic and professional work, underscoring their crucial role in improving efficiency, creativity and understanding (Al Naqbi et al., 2024) (Abulibdeh et al., 2024). With a substantial portion of respondents exhibiting proficiency in AI tools, the study suggests that these tools are deeply integrated into academic processes, particularly in research, writing and learning. The widespread use of AI for tasks such as grammar and structure improvement, as well as for clarifying complex concepts, demonstrates their importance in enhancing academic productivity and understanding (Goldstein & Papert, 1977), (Zhai & Wibowo, 2023) (Javaid et al., 2023). The high level of engagement with AI tools (68.11% of respondents using them for more than 10 hours) reveals the importance placed on these technologies by the academic community. AI tools, especially those related to writing assistance, are central to improving academic documents, making them an essential resource for students, researchers and educators alike. Additionally, the tool's ability to save time and improve creative output highlights their multifaceted utility beyond technical tasks. However, the study also identifies challenges related to the limited availability of diverse AI tools. A notable portion of respondents feels constrained by this limitation, suggesting an opportunity for institutions and developers to expand the range of tools available to meet various academic needs. Moreover, the survey highlights the significant role of educators and library staff in fostering AI awareness, suggesting that they could be key agents in promoting AI tools. Peer-to-peer learning, facilitated through clubs or discussion forums, is another effective avenue for enhancing AI tool adoption and usage.

While most respondents (84.06%) express increased confidence in their academic work due to AI tools, there is also a strong indication (69.56%) of the need for more comprehensive training and awareness programs. This suggests that although many users are familiar with AI tools, there remains a gap in fully understanding their potential, making training programs a crucial step in increasing AI tool proficiency and utilization. In conclusion, AI tools are transforming academic work by enhancing productivity, creativity and understanding. To maximize their potential, institutions should focus on expanding access to diverse tools, providing more training opportunities and leveraging the influence of educators and library staff to encourage wider adoption and proficient use of AI technologies

References

1) Abbas, N., Ali, I., Manzoor, R., Hussain, T., & Hussain, M.H. (2023). Role of Artificial Intelligence Tools in Enhancing Students' Educational Performance at Higher Levels. *Aug-Sept 2023*.
2) Abulibdeh, A., Zaidan, E., & Abulibdeh, R. (2024). Navigating the confluence of artificial intelligence and education for sustainable development in the era of industry 4.0: Challenges, opportunities, and ethical dimensions. *Journal of Cleaner Production*, 140-527.
3) Al Naqbi, H., Bahroun, Z., & Ahmed, V. (2024). Enhancing work productivity through generative artificial intelligence: A comprehensive literature review. *Sustainability*, *16*(3), 1166.
4) Bilad, M.R., Yaqin, L.N., & Zubaidah, S. (2023). Recent Progress in the Use of Artificial Intelligence Tools in Education. *Jurnal Penelitian dan Pengkajian Ilmu Pendidikan: e-Saintika*.
5) Chauke, T.A., Mkhize, T.R., Methi, L., & Dlamini, N. (2024). Postgraduate Students' Perceptions on the Benefits Associated with Artificial Intelligence Tools on Academic Success: In Case of ChatGPT AI tool. *Journal of Curriculum Studies Research*.
6) Goldstein, I., & Papert, S. (1977). Artificial intelligence, language, and the study of knowledge. *Cognitive science*, *1*(1), 84-123.
7) Hiremath, B. K., & Kenchakkanavar, A. Y. (2016). An alteration of the web 1.0, web 2.0 and web 3.0: a comparative study. *Imperial Journal of Interdisciplinary Research*, *2*(4), 705-710.
8) Javaid, M., Haleem, A., Singh, R. P., Khan, S., & Khan, I. H. (2023). Unlocking the opportunities through ChatGPT Tool towards ameliorating the education system. *BenchCouncil Transactions on Benchmarks, Standards and Evaluations*, *3*(2), 100115.

9) Kenchakkanavar, A. Y. (2023). Exploring the artificial intelligence tools: Realizing the advantages in education and research. *Journal of Advances in Library and Information Science*, *12*(4), 218-224.
10) Kenchakkanavar, A. Y., Rathod, A., & Kamble, A. A. (2024). Artificial Intelligence in Indian Education: Transforming Teaching and Learning for the Digital Age. *International Research Journal of Innovations in Engineering and Technology (IRJIET), 8* (11), 200-204. https://doi.org/10.47001/IRJIET/2024.811024
11) Kruglyk, V., Osadchyi, V.V., Pavlenko, L., & Symonenko, S.V. (2024). Formation of an open educational environment using artificial intelligence technologies: analysis and classification. *Educological discourse*.
12) Liu, J., Li, S., & Dong, Q. (2024). Collaboration with Generative Artificial Intelligence: An Exploratory Study Based on Learning Analytics. *Journal of Educational Computing Research*. https://doi.org/10.1177/07356331241242441.
13) Mallillin, L. L. D. (2024). Artificial Intelligence (AI) Towards Students' Academic Performance. *innovare Journal of Education*, *12*(4), 16-21.
14) Orsi Koch Delgado, H., De Azevedo Fay, A., Sebastiany, M.J., & Cortina Silva, A.D. (2020). Artificial intelligence adaptive learning tools. *BELT - Brazilian English Language Teaching Journal*.
15) Sun, L., & Zhou, L. (2024). Does Generative Artificial Intelligence Improve the Academic Achievement of College Students? A Meta-Analysis. *Journal of Educational Computing Research.* https://doi.org/10.1177/07356331241277937.
16) Zhai, C., & Wibowo, S. (2023). A systematic review on artificial intelligence dialogue systems for enhancing English as foreign language students' interactional competence in the university. *Computers and Education: Artificial Intelligence*, *4*, 100134.
17) Zia, M.A., Gul, H., & Janjua, I.M. (2024). Unveiling Perspectives: Exploring Student Perception on Artificial Intelligence in Academics in Rawalpindi, Pakistan. *June*.