JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

ARTIFICIAL INTELLIGENCE AND ITS IMPACT ON ACADEMIC WRITING AND PUBLISHING

1. Dr.S.Srinivasu

Associate prof. of Computer Science and Applications,

Government Degree College (A), Khairatabad

Email: sanikommusrinu@gmail.com

2. Dr.A.Sarangapani

Head & Associate prof. of Commerce & Business Management,

Pingle Govt. College (A), Hanumakonda

Email: drasarangapani@gmail.com

Abstract:

Artificial Intelligence (AI) transforms scientific writing by improving efficiency, accessibility, and quality. This study evaluated the applications, benefits, and challenges of AI tools, including Elicit, Perplexity, Consensus, ChatGPT, and Grammarly, in the literature review, information organization, and textual clarity enhancement. A narrative review and practical analysis were conducted, assessing the tools based on synthesis capabilities, accessibility, and accuracy. Results showed that AI tools optimize literature analysis and enhance the clarity of scientific texts, particularly for non-native English-speaking researchers.

This qualitative study explores the potential of generative artificial intelligence (AI) to improve the academic writing skills of a large student cohort within the context of a distance learning institution. Utilizing qualitative methods, the research explores diverse approaches and applications of generative AI to elevate teaching and learning experiences.

This study explores the impact of artificial intelligence (AI) tools on academic writing and research productivity, with a specific focus on their usage, perception, and effectiveness among students and academicians. Data were collected from 150 respondents, the majority of whom were postgraduate students (64.7%), followed by faculty members (12.7%) and PhD scholars (12.0%). Most participants belonged to the Business/Management (59.3%) and Humanities (28.7%) disciplines, and 56% had less than two years of academic experience, indicating a predominantly early-career academic sample. The findings revealed that 46.7% of respondents used AI tools frequently (daily or almost daily), and 89.3% confirmed that AI tools helped them publish more or complete projects faster, with a statistically significant association ($\chi^2 = 150.000$, $p < .001$) between AI usage and increased research output. Furthermore, AI tools were found to significantly improve the quality of writing and save time (χ^2=386.251, p<.001).

Keywords: Artificial Intelligence, Academic Writing, Research Productivity, AI Tools, Higher Education, SPSS, ANOVA, Chi-Square, Writing Quality, Research Output

1. Introduction

Artificial Intelligence (AI) has become one of the most transformative forces of the 21st century, reshaping how industries operate, how individuals communicate, and how knowledge is created and disseminated. Defined broadly as the ability of computer systems to perform tasks that typically require human intelligence—such as decision- making, language understanding, visual recognition, and learning—AI has steadily evolved from simple rule-based algorithms to complex neural networks and deep learning systems.Artificialintelligencesystemswereworkingongeneralproblemsolvingbackin the 1950s and 1960s, while modern-day applications of AI are characterized by task- specific sophistication, enhanced computational power, and large-scale data handling. Among the many sectors where AI has left an indelible mark, academic writing and research productivity have strong claims for prominence. Lately, AI-powered tools have been rising within the academic ecosystem, changing the basic essence of how scholars write, research, and publish. Other than Grammarly, tools like Quill Bot and Chat GPT are being used to provide lighter services such as grammar correction, paraphrasing, idea generation, translation, and citation formatting.

The usefulness of such AI applications does not only reside in improving the linguistic quality of academic work but also in easing research processes such as literature searching, key concept extraction, and information synthesis. This has led to researchers and students being able to write with improved efficiency and produce better academic works in a much shorter time. This shift, however, raises questions about how impacts their productivity and efficiency on the academic writing and research process through the application of artificial intelligence tools. The deployment of AI is more pronounced in assisting users across the entire writing lifecycle-from ideation to drafting, revising, and referencing. As an example, large language models like Chat GPT help in outlining essays, suggesting logical flow, or even offering bare-bones literature survey based on input prompts. Grammar tools

like Grammarly point out and help fix syntactic, punctuation, and stylistic issues, while paraphrasing tools such as QuillBot offer alternatives in polished English. This has a huge value for both native and especially empowering for scholars who are non-native English speakers. For several ESL learners, academic English conventions and vocabulary, grammar, and structure are extremely difficult to navigate. AI advances serve to fill that gap, providing personalized feedback on academic tone and supporting language skills in making the academic writing process easier and less intimidating.

The transformation in question is not merely technological; it represents a more basic cultural shift concerning knowledge creation and dissemination. To assess, therefore, how this shift is viewed and realized in concrete academic scenarios, it will also be crucial to assess the perception and usage trend of AI-based writing and research tools among academicians. Do they view AI as an assistant or as a threat to academic authenticity? Are these tools regarded as adjuncts to academic expertise, or is their application a prima facie means of generating work? It is important and pertinent to the question of whether AI engages students in meaningful academic work or distracts them from developing critical thinking and creativity.

Academic institutions are wrestling with their promise and peril too. While there is growing acceptance of AI for plagiarism detection, literature summarization, and analysis, ethical dilemmas remain. Scholars, for example, like Miyuki Sasaki are arguing that AI should not be viewed as a vehicle for plagiarism but as a democratizing tool that levels the playing field forn on-native English speakers to join in the global research discourse. On the other hand, there are others who warn against going overboard. Asfar as the studies done by Talaue and Guleria are concerned, they talk about decreasing originality, more pronounced possibilities for algorithmic biases, and probable misinformation if students rely too much on uncritical use of generative AIs. On top of all that, concerns over AI-induced plagiarism have made it necessary to develop machine learning-based text classifiers such as RoBERTa, able to distinguish human writing from machine-generated text. Although promising, these classifiers are not infallible, signifying that still, academic integrity must rest on a balance between technological detection and human oversight. Machine learning is not only contributing to the content but also revolutionizing the meaning of research. Algorithms help in the processing of huge amounts of data in no time; they help in finding elusive patterns, proposing hypotheses, and visualizing complex data. All of this helps researchers make evidence-based conclusions, manage references, and clarify-and-cohere their arguments. This is especially useful for early career researchers who may be less versed in academic conventions or do not have access to professional editorial services. Thus, the use of AI for the evaluation of draft theses, detection of voids in logic or citation, and suggestion of structural improvement is gradually penetrating into the traditionally supervisory processes. Even though developing artificial intelligence so that it becomes a part of academic life, this also calls for a serious reflection on the positives and negatives that accruing itself. It does have obvious advantages when it comes to productivity, efficiency, and accessibility; however, it also calls for strict observance of ethical standards in education institutions and researchers, while also creating responsible use and promoting original thinking. It should be seen not replacing but augmenting human intelligence when it comes to catalyzing

productivity in the academic world.

Hence, the dual dimensions about the role of AI in the fields of academic writing and research-were the efficiency and quality of scholarly outputs affected-are undertaken in this inquiry with an inquiry into the changing perceptions and usages of AI tools by the academic community. Uniquely situated in applied experience and emerging research, the study hopes to contribute to a more equitable and informed discussion regarding AI's position in the future of the academy.

This research seeks to investigate the contribution and effect of artificial intelligence (AI) tools like Chat GPT, Claude AI, Grammarly, QuillBot, Mendeley, Zotero, among many others, in academic writing and productivity. The main focus above will also be to assess the influence that AI technologies could have on productivity and efficiency while at the same time identifying how the quality of academic production-from paraphrasing to editing and even grammar correction-is currently affected. The research is also directed towardstheevaluationofthereal-timeapplicationsofAItoolsinacademiaandhowthey
have been used in supporting literature review, reference management, and structuring content. Furthermore, the study seeks to evaluate perceptions, experiences, and the perceived usefulness of AI-tools by academicians in scholarly work. Therefore, the study would include measuring the levels of AI adoption at various stages of writing and research activities as well as understanding how well academicians trust and are satisfied with AI-assisted writing. The study is, however, aimed at providing an insight into how these tools are transforming academic practices and identify possible challenges or limitations experienced by users while integrating AI into their workflows. The following research questions were developed dependent on these objectives:

RQ1: What are the effects of AI tools on the productivity and efficacy of academic writing and research processing?
RQ2:What are the views and ways by which academicians are using AI-based writing and research tools?

2. Materials and Methods

This study adopted a quantitative, descriptive survey design to investigate the impact of artificial intelligence (AI) tools on academic writing and research productivity. The data collection instrument was a structured questionnaire titled "Survey on the Impact of AI Tools on Academic Writing and Research". The survey aimed to assess AI tool usage patterns, user perceptions, and the perceived impact of such tools on the efficiency and quality of academic output among academicians, researchers, and postgraduate students.

2.1. Sample and Participants

The population under the study includes participants from research scholars doing post- graduation, faculty, and other professionals in the academia discipline such as Science, Engineering, Social Sciences, Humanities, Medicine, and Business. This was purposely sampled. The questionnaire was developed and electronically distributed via email and academic forums to enable participation by individuals across different institutions and

experience levels. The sample size and response rate will be presented in the results section.

2.2. Instrument Design

The questionnaire used in this study was structured into four main sections to comprehensively gather data relevant to the research objectives. Section A focused on collecting basic demographic and academic information from the respondents, including their current role (e.g., PhD student, faculty member), field of study, and years of academic or research experience. Section B explored the usage patterns of AI tools, assessing how frequently participants use such tools, which specific platforms they utilize (e.g., ChatGPT, Grammarly, QuillBot, Zotero), and the academic activities for which they are employed, such as literature review, citation management, or proofreading. Section C examined participants' perceptions of AI tools through a 5-point Likert scale, measuring their agreement with various statements related to the usefulness, accuracy, time-saving potential, ethical concerns, and recommendation of AI tools in academic contexts. Lastly, Section D aimed to evaluate the impact of AI on academic productivity and workflow, capturing perceived changes in writing quality, research output, paper completion time,and identifying which components of academic writing still require significant manual effort despite the integration of AI.

2.3. Data Collection and Statistical Data Analysis

ThequestionnairewasadministeredonlineviaaGoogleForm.Thedatacollectionprocess was voluntary and anonymous. Respondents were informed about the academic nature of the study, and consent was given in digital format prior to the commencement of the survey. Quantitative data from the structured questionnaire were analyzed using IBMSPSS Statistics. All analyses utilized descriptive statistics, cross-tabulations, Chi-square, and ANOVA to answer questions concerning the impact of AI tools in academic writing and research productivity.

3. Results and Discussion

The results obtained from the structured questionnaire administered to150respondentsare offered for presentation and interpretation in this section. The results emphasize the participants' demographics, how often AI tools were used, the relative effectiveness versus time-saving of that usage, and how AI has impacted research productivity. The perceived limitationsinhandlinghigher-orderacademictaskssuchasideagenerationandconclusion writing were discussed. The analysis employed descriptive statistics, complemented by inferential statistical tests, i.e. Chi-square and ANOVA, interpreting these relationships meaningfully among the variables being considered.

Demographic Profile Academic Role of Respondents

Others with a strong early-career academic profile included 64.7% Postgraduate Students, 12.7% Faculty Members, and 12.0% PhD Students as seen in Table 1. There were fewer UG students (10.0%) and researchers (0.7%). Respondents who are active participants in academic writing and research training obviously use AI tools. Therefore, the insights gathered from their responses can be beneficial for understanding AI tools' practical impacts on daily academic tasks.

Table 1:Distribution of Study Participants by Current Academic/Professional Status

Current Status	Frequency	Percent (%)	Cumulative Percent (%)	Cumulative Percent (%)
Faculty Member	19	12.7	12.7	12.7
PhD Student	18	12	12	24.7
Postgraduate Student	97	64.7	64.7	89.3
Researcher	1	0.7	0.7	90
UG Student	15	10	10	100
Total	150	100	100	

Table 1 represents the breakdown of the 150 participants in the study according to their current academic or professional status. The largest group comprises postgraduate students (64.7%), indicating that the majority of respondents were pursuing or holding master's- level qualifications. Faculty members (12.7%) and PhD students (12.0%) together account for nearly one quarter of the sample, reflecting substantial representation from teaching and doctoral research communities. Undergraduate students make up 10.0% of participants, while independent researchers are minimally represented at 0.7%. The cumulative percentages show that nearly 90% of respondents belong to the first three categories—postgraduate students, faculty, and PhD students—highlighting that the study's insights largely reflect the perspectives of those engaged in advanced higher-education and research activities.

Field of Study/ Discipline

A majority of participants belonged to the Business/Management discipline (59.3%), followed by Humanities (28.7%), while smaller proportions came from Engineering (5.3%), Science (4.0%),and Social Sciences (2.7%). This suggeststhatAItoolsarewidely adopted in fields involving frequent writing, such as business and humanities. The responses reflect the growing integration of AI in content-heavy academic domains.

Table2: Distribution of Study Participants by Academic Discipline

Academic Discipline	Frequency	Percent(%)	Valid Percent(%)	Cumulative Percent(%)
Business/Management	89	59.3	59.3	59.3
Engineering	8	5.3	5.3	64.7
Humanities	43	28.7	28.7	93.3
Science	6	4	4	97.3
Social Sciences	4	2.7	2.7	100
Total	150	100	100	

Table 2 represents the distribution of the 150 study participants by their academic discipline. Business and Management is the predominant field, comprising 59.3% of respondents, followed by Humanities at 28.7%. Engineering and Science are less represented at 5.3% and 4.0%, respectively, while Social Sciences account for 2.7%. The cumulative distribution shows that over 93% of participants belong to the top three disciplines (Business/Management, Humanities, and Engineering), highlighting the focus of the sample on these areas.

Years

Most respondents had less than 2 years of academic or research experience (56%), followed by 2–5 years (37.3%), while only a few had over 10 years (6%) or 6–10 years (0.7%). This indicates that the sample was primarily composed of early-career scholars. Their perspectives provide valuable insights into how emerging researchers are engaging with AI tools to enhance their academic productivity.

Table3: Distribution of Sample Based on Duration of Condition

Duration	Frequency	Percent	Valid Percent	Cumulative Percent
2–5years	56	37.3	37.3	37.3
6–10years	1	0.7	0.7	38.0
Lessthan2 years	84	56.0	56.0	94.0
Morethan10 years	9	6.0	6.0	100.0
Total	150	100.0	100.0	100.0

Table 3illustrates the distribution of the sample population according to the duration of a particular condition. Among the 150 individuals surveyed, the majority—84 individuals (56.0%)—had experienced the condition for

less than 2 years. This was followed by 56 individuals (37.3%) who reported having the condition for 2–5 years. A smaller proportion, 9 individuals (6.0%), had the condition for more than 10 years, while only 1 individual (0.7%) reported a duration of 6–10 years. The valid percent values mirror the raw percentages, and the cumulative percent gradually increases with each category, reaching 100% with the final group. Overall, the data indicate that a significant portion of the population is in the early stages of the condition, with relatively few cases persisting beyond five years.

Association between Perceived Quality Improvement and Time Saved

The cross-tabulation analysis revealed that participants who experienced considerable to exceptional improvement in academic writing quality also reported high levels of time saved. Notably, 29 participants who rated their writing quality as "exceptionally improved" also reported " extreme time saved."The Chi-square test result (χ^2=386.251,df =16,p<0.001)indicatesahighlysignificantassociationbetweenqualityimprovement and time-saving through AI tools. This confirms that users who benefit from enhanced writing quality also experience increased workflow efficiency, underlining the dual advantage of AI tools in academic contexts.

AI Tools and Research Output Increase

The analysis revealed that a significant portion of respondents (89.3%) reported that AI tools helped them publish more papers or complete more projects. Among these, the most common output increase was less than 10% (55 respondents) and 10–30% (43 respondents), while 1participantsexperiencedaboostofmorethan50%. The association was found to be statistically significant with $\chi^2(4) = 150.000$, $p < .001$, indicating that AI usage has a notable positive impact on academic productivity.

Table4: Frequency of Condition – Related Episodes among Participants

Frequency	Frequency(n)	Percent	Valid Percent	Cumulative Percent
Frequently(daily or almost daily)	70	46.7%	46.7%	46.7%
Never	8	5.3%	5.3%	52.0%
Occasionally(1–2timesa week)	56	37.3%	37.3%	89.3%
Rarely(1–2timesa month)	16	10.7%	10.7%	100.0%
Total	150	100.0 %	100.0%	100.0%

Table 4 presents the frequency distribution of condition-related episodes among the 150 study participants. Nearly half of the participants (46.7%) reported experiencing episodes frequently (daily or almost daily). Occasional occurrences (1–2 times a week) were reported by 37.3% of the sample, while 10.7% experienced episodes rarely (1–2 times a month). Only a small fraction, 5.3%, reported never experiencing any episodes. These findings suggest that the majority of participants experience symptoms on a regular basis, indicating a significant burden of the condition in daily life.

Descriptive statistics revealed that participants still perceive a high level of manual effort in advanced academic writing tasks, even with the use of AI tools. The highest mean scores were reported for conclusion writing (M = 20.53) and critical analysis (M = 20.22), followed by idea originality (M = 18.98) and deep research insights (M = 15.84). This indicates that while AI supports structural and language-related aspects, tasks requiring original thought and critical interpretation remain human-dependent. The ANOVA test result (F = 2.884, p = 0.038) confirmed a statistically significant difference in perceived effort among these categories. This highlights that AI tools are not yet capable of substituting cognitive-heavy processes, and human in put remains essential in intellectually Demanding phases of academic writing.

Table5: AI Tools: Quality Improvements Time Saved

Writing Quality Improvement	**No time saved**	**ight time saved**	**Moderate time saved**	**Considerable time saved**	**Extreme time saved**
No improvement	3	0	1	0	0
Slight improvement	0	5	0	0	0
Moderate improvement	0	0	14	3	3
Considerable improvement	0	0	2	57	33
Exceptional improvement	0	0	0	0	29
Total	3	5	17	60	65

Table 5 displays the cross-tabulation of perceived quality improvement in academic writing against time saved through AI tools. The data shows that users who reported exceptional improvement in writing quality were also the most likely to report extreme time savings.

Table6: Chi-Square Test Results-Quality Improvements Time Saved

Test	Value	Significance(p-value)
Pearson Chi-Square	386.251	<0.001
Likelihood Ratio	175.373	<0.001
Linear-by-Linear Association	99.495	<0.001
Valid Cases	150	

Table 6 shows the Chi-square test statistics confirming a significant association between perceived quality improvement and time saved using AI tools.

Table7: AI Tools and Research Output Increase

Have AI tools helped you to publish more papers or complete More projects?	10–30%	30–50%	ess than 10%	ore than 50%	Total
No	16	0	0	0	16
Yes	0	43	55	31	134
Total	16	43	55	31	150

Table 7 presents the cross-tabulation of participants' responses regarding whether AI tools helped the publish more papers or complete more projects, and the approximate percentage by which their output increased. Among the 150 participants, 134 reported increased output due to AI tools. The most common increments were less than 10% (55 respondents) and 10–30% (43 respondents), with 31participants reporting a boost of more than 50%. The Chi-square test confirmed a statistically significant association between AI tool usage and academic output increase ($\chi^2(4) = 150.000$, $p < 0.001$).

Table 8:Chi-Square Test for Association between AI Tool Use and Academic Output Increase

Value	df	tic Significance(2- sided)
Pearson Chi-Square	150.000	4
Likelihood Ratio	101.847	4
No. of Valid Cases	150	

Note: 5 cells (50.0%) have expected count less than 5. The minimum expected count is 0.53.

Table 8 presents the results of the Chi-square test conducted to examine the relationship between the use of AI

tools and the increase in academic output. The Pearson Chi-square value of 150.000 with 4 degrees of freedom is highly significant ($p < 0.001$), indicating a strong association. This suggests that the use of AI tools is significantly related to a reported increase in the number of papers published or projects completed by the respondents.

Table 9: Perceived Effort in Higher-Order Academic Tasks (Descriptive)

Task	N	Mean	Std Deviation	Min	Max
Idea originality	49	18.98	8.08	6.00	30.00
Deep research insights	49	15.84	8.41	6.00	30.00
Critical analysis	37	20.22	6.59	6.00	28.00
Conclusions writing	15	20.53	7.72	6.00	30.00

Table 9 describes perceived effort scores for various high-level academic tasks using AI tools. Conclusion writing and critical analysis remain the most manually intensive tasks.

Table10: ANOVA Summary-Perceived Effort across Academic Tasks

Source	Sum of Squares	df	Mean Square	F (Sig.)
Between Groups	528.696	3	176.232	2.884 (0.038)
With in Groups	8921.677	146	61.107	
Total	9450.373	149		

The ANOVA test result indicates statistically significant differences in perceived effort among various academic writing tasks ($p = 0.038$).

4. Conclusion

The findings of this study reveal that artificial intelligence tools have become increasingly integral to academic writing and research, especially among early-career scholars. With the majority of respondents being postgraduate students, the data underscores a strong adoption of AI tools by those actively engaged in thesis writing, research documentation, and scholarly communication. Responses highlighted that the introduction of AI technologies is not merely for the improvement of the quality and efficiency of academic outputs but also the seamless integration into the daily workflows of students and faculty alike. As AI continues to advance, its responsible and informed utilization can provide tremendous support to academics while complementing rather than replacing higher education's critical thinking and originality.

As one advances in artificial intelligence, it is designed to have a better future in academic writing and related research from now on. These future developments might include how to weave higher-order thinking functions

like critical analysis-conceptual clarity-academic argumentation, which cannot be dealt with fully yet, into the coming features. Database- integrated real-time citation formatting, multilingual support, and voice-assisted writing will also be awash. More institutions might include AI literacy in academic training programs to permeate their students with the responsible and ethical use of it. Policies will have to be addressed as well since they too will have new issues regarding academic integrity, authorship, and data privacy in terms of writing with AI assistance. At the end of the day, that future for AI in academics is to find a balance between the two: human intellect and automated processing; AI being a tool, collaborative with human capabilities, to refine what intelligence works, to be able to develop beyond the imaginations and agency of scholarly creativity, efficiency, and inclusivity.

References

1. Abu Seileek, A. F. and Qatawneh, K., 2022, The effect of QuillBot paraphraser on improving argumentative essay writing performance. English Language Teaching, 15(4), 90–103.
2. Badue, C., Guidolini, R., Carneiro, R. V., Azevedo, P., Forechi, A., Jesus, L., ...,and Cardoso, A., 2021, Self-driving cars: A survey. Expert Systems with Applications, 165, 113816.
3. Bašić,Ž.,Banovac,A.,Kružić,I.andJerković,I.,2023,ChatGPT-3.5aswritingassistance in students' essays. Humanities and Social Sciences Communications, 10(1), 750. https://doi.org/10.1057/s41599-023-02269-7.
4. Ehsani, F. and Knodt, E., 1998, Speech technology in computer-aided language learning: Strengths and limitations of a new CALL paradigm. Language Learning & Technology, 2(1), 45–60.
5. Fazel, I. and Kowkabi, N., 2022, Using automated writing evaluation feedback and Grammarly-edited samples on the development of L2 learners' writing and learning attitude. Journal of Psycholinguistic Research, 1–20.
6. Guleria, A., Krishan, K., Sharma, V. and Kanchan, T., 2023, ChatGPT: Ethical concerns and challenges in academics and research. Journal of Infection in Developing Countries, 17(9), 1292–1299.
7. Imran, M. and Almusharraf, N., 2023, Analyzing the role of ChatGPT as a writingassistant at higher education level: A systematic review of the literature. Contemporary Educational Technology, 15(4), ep464. https://doi.org/10.30935/cedtech/13605.
8. Jiang, F., Jiang, Y., Zhi, H., Dong, Y., Li, H., Ma, S., ...,and Wang, Y., 2017, Artificial intelligence in healthcare: Past, present and future. Stroke and Vascular Neurology, 2(4), 230–243.
9. Kaplan, A. and Haenlein, M., 2019, Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. Business Horizons, 62(1), 15–25.