

Impact of Artificial Intelligence-based Writing Assistant on the Academic Writing Skills of University Faculty in Pakistan



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Abstract: *The aim of the study was to assess the artificial intelligence-based writing assistant on academic writing skills of faculty members. A qualitative approach (Netnography) was employed to conduct the research. The convenient sampling technique was used to select the sample. The sample of the study was consisted of 65 faculty members. There were six universities (4 Public and 2 Private) and two departments (English, 30 faculty members and Education, 35 faculty members) for sample selection. Netnographer used asynchronous tool What's app to collect the data. A semi structured interview schedule was shared within the What's app groups of faculty members. The interview schedule was comprised of four questions. The results of the study highlighted the positive impact of AI-based writing assistants on faculty members' efficiency by providing instant feedback, reducing the time and effort required for proofreading and editing. The findings of this study will guide institutions and educators in adopting AI writing assistants, ultimately enhancing writing skills and streamlining the writing process.*

Keywords: Assessment, artificial intelligence, writing assistant, academic writing skills

Introduction

Artificial intelligence (AI) has transformed many facets of our life, and the writing industry is no exception. Academic writing abilities of faculty at universities have had significantly affected by the development of artificial intelligence (AI) writing assistance, which include spelling and grammar checks, research improvement tools, or plagiarism detectors (Mohamed, 2023). Especially for academic members like university faculty members, AI-based writing assistants have evolved to become important instrument that give them immediate feedback on their research writing. This tool use for cutting-edge to find and fix grammar and spelling mistakes (Khabib, 2022).

According to a study by Johnson and Smith (2019), grammar and spelling checks with AI-based writing assistance has been demonstrated to be much more accurate, saving time. Research conducted by Thompson et al. (2020) said that faculty members who used AI-based writing assistance turned in papers with improved readability ratings and favorable reviewer comments.

Additionally, AI-based writing aids help maintain academic writing norms by making sure faculty stick to the proper style manuals and formatting specifications (Ray, 2023). Faculty members can adhere to the strict criteria set by academic institutions by using AI's real-time advice for formatting, referencing, and citation styles (Lund et, al. 2023). A study conducted by

Lee and Chen (2018) found that faculty members who utilized AI-based writing assistants, they improved their academic publications. Similarly, usefulness of AI-based writing assistants is mostly determined on the manner in which colleagues and educational organizations assess faculty staff written work. Faculty members can improve the quality of their writing by using these tools, which will promote faculty approval and recognition (Dergaa et al. 2023). According to Smith and Johnson (2020), academic writing skills & performance have improved by the incorporation of AI-based writing assistance into educational settings.

However, there is a dearth of research that precisely examines the effect of AI-based writing helpers on university faculty's written abilities. Therefore, a thorough evaluation is required to comprehend the potential advantages and disadvantages of these AI technologies in the context of faculty members' academic writing abilities. The increased use of technology in higher education and the rising need for effective writing teaching and assistance of faculty members make this evaluation necessary. In scholarly endeavors including research papers, grant applications, and conference presentations, academic writing is essential. Enhancing the writing abilities of university academics benefits their professional development as well as the caliber of their intellectual work and the institution's overall reputation.

Additionally, evaluating the writing abilities of faculty members using AI-based writing helpers might offer important insights into the prospective pedagogical implications and real-world uses of these tools. Learning how AI can help professors become better academic writers can help create treatments and support systems that are specifically suited to the needs and difficulties experienced by higher education educators.

In Conclusion, it was necessary to assess the possible advantages and effect of AI technology, and addressed the unique demands of faculty members in their academic research. This study also intends to add to the body of knowledge by

educating the university faculty members on the efficient application of AI technology to improve their writing abilities and advance scholarly excellence.

Significance

These findings are significant as they highlight the positive perception of faculty members towards AI-based writing assistants. The recognition of their potential to enhance research work, teaching, and mentoring processes indicates that AI tool can be valuable resource in academic settings. The preference for AI-based writing assistants for ensuring error-free content and adhering and improve the quality and accuracy of academic written and research work.

Objectives:

- To access the impact of artificial intelligence assistant on academic writing skills of faculty members.
- To identify the exiting challenges (if any) regarding artificial intelligences-based writing assistant by the faculty members.
- To suggest measures to cope with exiting challenges regarding artificial intelligence-based writing assistant.

Research Questions

- How does the use of an artificial intelligence-based writing assistant affect the writing skills faculty members?
- What specific aspects of academic writing are improved through the use of an AI-based writing assistant?
- Are there any potential challenges associated with the use of an AI-based writing assistant in the context of academic writing?

Theoretical Framework:

Technology Acceptance Model (TAM)

The present study based on Technology Acceptance Model. The Technology Acceptance Model, also known as the TAM, was used in this investigation. This model refers to the user's perception of how straightforward

or simple the technology appears to utilize. Individuals are more likely to accept and use a technology which has been shown to be user-friendly, intuitive, and requires little effort to understand and use (Davis, 1989). A study by Wu et al. (2019) looked into the impact of human innovativeness on technological acceptability. They discovered that people with greater levels of personal innovativeness are more likely to regard technology as useful and simple to use.

Methods

A qualitative approach “netnography” was used to conduct the study.

Sources of data in Netnography

Kozinets (1998) developed the term netnography to refer to an anthropological approach to studying online communities, which has also been referred to as 'online ethnography' (Markham, 2005) or virtual ethnography (Hine, 2000).

While the latter two names appear to allow for a blend of online and offline ethnographic approaches to understanding online phenomena, netnography is a wholly online approach. It can also contain video, graphical, and photographic information. In addition to archive data, netnography employs solicited data. This can take the form of asynchronous communication between the researcher and the participants (e.g., postings to the researcher's study forum, email exchanges among the study and participants, as well as feedback to a post on a website developed by the researcher), as well as may take a create of interviews, in which the netnographer can use asynchronous CMC tools (e.g., What's app) (Kozinets, 2010). As the interests of the rest of the people are shifting towards the online learning and incorporating their views virtually. This trend motivated the research to collect the data virtually. Therefore, researcher selected the netnography approach to conduct the research.

Data collection

Researcher used asynchronous tool What's app to collect the data by sharing semi structured interview schedule with respondents. The

interview schedule was comprised of two questions.

Population

All the faculty members of all the departments of all the public and private universities of the Pakistan.

Sampling and Sample

The convenient sampling technique was employed to select the sample from 6 public and private universities (University of the Punjab, University of Sargodha, Education University, Islamia University, Minhaj University, Superior University) of Pakistan. The sample was comprised of 65 senior faculty members, thirty from English and thirty-five from Education departments of the conveniently selected universities. Eighteen faculty members were select from University of the Punjab (8 from English department, 10 from Education department) , nineteen from Sargodha University (9 from English department, 10 from Education department) fifteen from Islamia University Bahawapur, Rahim Yar Campus, Education University, Lahore, fifteen from Superior University Lahore (8 from English department, 7 from Education department), and fifteen from Minhaj University, Lahore (6 from English department, 9 from Education department).

Delimitations: This study was delimited to six public and private universities and only two departments.

Data Analysis

Data were analyzed by using thematic analysis technique.

Thematic Analysis: The thematic analysis was carried out by following six phases: phase-1 was getting familiarized with data, phase-2 was for generating codes, phase-3 was for searching themes, phase-4 was for reviewing themes, phase-5 was for naming themes and phase-6 was for reporting the themes.

Reporting of Data

Table 1 AI-based writing assistants impacted overall writing skills of faculty members

<i>Sr No</i>	<i>Codes</i>	<i>Themes</i>	<i>Sub Themes</i>	<i>Reporting Themes (Faculty Feedback)</i>	<i>Challenges</i>	<i>Suggestions to cope With Challenges</i>
1	AI-based writing assistants impacted writing skills and productivity as a faculty member.	Positive Impact on Writing Skills	Time-saving	90% of respondents claimed that AI saves time of students and researchers in enhancing their efficiency and production in academic writing activities.	Lack of awareness and training	Provide training sessions or workshops to help faculty members understand the capabilities and limitations of AI-based writing aids. This will help faculty members to understand how to utilize the tool efficiently and when to rely on their own judgment.
			language proficiency	85% faculty members were in the favour that AI enhanced language accuracy and improved their writing.	Lack of Supportive environment	Create an environment in which faculty members can seek criticism and help from their peers or writing mentors.
			error correction	88% were claimed that AI improved their ability to identify and fix errors, leading to higher quality writing.	Lack in discussion	Encourage them to participate in discussions and share their experiences using AI-based writing aids, thereby building a collaborative learning environment.

Table 1 shows the faculty member feedback, 90% of respondents claimed that AI saves time of students and researchers in enhancing their efficiency and production in academic writing activities while 85% faculty members were in the favour that AI enhanced language accuracy and improved their writing, similarly 88% were claimed that AI improved their ability to identify and fix errors and leading to higher quality writing, 90% also claimed that AI help them for coherence and logically understanding in their academic writing, challenges were also

highlighted by the faculty members like: lack of awareness and training, lack of supportive environment and lack of IT resources. Faculty members also suggested the solutions to reduce the challenges by providing training sessions or workshops to faculty members which help them to understand the capabilities and limitations of AI-based writing aids. This will help also help faculty members to understand how to utilize the tool efficiently similarly, encouraged faculty members to analyze and amend the AI-based writing assistant's suggestions and created an

environment in which faculty members can seek criticism and helped from their peers or writing mentors. Encouraged them to participate in discussions and share their experiences using AI-based writing aids, thereby building a collaborative learning environment and created a support mechanism to resolve any technological obstacles or difficulties that faculty members may face as they adapt to new technology. Access to help centers, online resources, and specialist IT assistance.

Overall, it was revealed that Faculty members highlighted challenges with the use of AI-based writing aids, including lack of awareness, training, and IT resources, but suggested solutions such as providing training sessions, encouraging analysis and amendment of AI suggestions, and creating a supportive and collaborative learning environment with access to help centers and specialized IT assistance.

Discussion

According to the feedback received, the respondents believed that AI saves their time for researcher, enhance their efficiency in academic writing skills. Finding aligns with previous studies, they have found that AI tools are for time-saving in writing tasks (Lai et al., 2020; Rauf et al., 2021). Furthermore, 85% of faculty members supported AI for boosting language accuracy and academic writing. This is similar with Smith and Jones' (2019) results that AI-based writing tools improved language proficiency and reduced grammatical errors. According to the study results, 88% of respondents claimed AI raised the ability to identify and fix mistakes, resulting in higher-quality writing. This research backs up the findings of Lee et al. (2018), who discovered that AI technologies can efficiently detect and rectify writing faults. Additionally, 90% of faculty members stated AI assists them to attain consistency or logical understanding of their academic work. This finding is consistent with Chen and Cheng's (2020) research, which found that AI-based writing aids provide ideas for improving the logical flow of writing.

Several issues linked with the employment of AI in academic writing were also raised by the

faculty members. These difficulties include a lack of awareness and training, as well as a lack of a supporting atmosphere and IT resources. These difficulties have already been identified in the literature (Chiu et al., 2019; Goodyear et al., 2020), underlining the need of tackling these issues.

To address these issues, academic members proposed a variety of remedies. To get started, presenting faculty members regular training sessions or workshops could help them grasp the potential and limitations of AI-based writing aids. This suggestion is similar with Lee et al.'s (2021) suggestions for focused training programs to improve faculty members' awareness and skills in using AI tools.

Finally, faculty members recommended some important like help centers, online resources, and specialist IT assistance etc. These findings align with the suggestions made by Chang and Yang (2021) who emphasized the importance of providing comprehensive support to users of AI-based writing aids.

The study's generalizability may be limited due to the small sample size of faculty members from a single university or a small number of universities in Pakistan, which may not represent the full faculty member demographic in the country. Furthermore, the availability and accessibility of AI-based writing helpers may differ across different institutions or areas in Pakistan, thereby altering faculty members' acceptance and utilization of the technology.

Conclusion

It was concluded that majority of respondents said that AI reduce time, increase language accuracy, and boost their writing skills. They did, however, identify problems such as a lack of awareness, training, and IT resources. Faculty members also proposed offering training sessions, creating collaborative learning environments, and establishing resources to address these problems. It was also suggested that academic members have access to support centers, internet resources, and professional IT assistance to improve their learning.

Findings based Recommendations

Institutions should give teaching staff with training and resources to help them use AI tools effectively. Researchers might employ this resource to ensure correct academic rules and error-free material. Furthermore, continual research and development in AI technology can aid boost their research capacities.

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