

BEYOND GRADES: THE IMPACT OF ARTIFICIAL INTELLIGENCE ON ACADEMIC WRITING AND STUDENT ENGAGEMENT IN UNDERGRADUATE STUDIES AT HIGHER EDUCATION INSTITUTIONS IN BAHAWALPUR

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DOI: (<https://doi.org/10.71146/kjmr802>)

Article Info



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Abstract

The rapid proliferation of Generative Artificial Intelligence (GenAI) has fundamentally altered the landscape of English Language Teaching (ELT) and academic writing in higher education. This study investigates the impact of AI tools on the academic writing practices and student engagement of undergraduate students at Higher Education Institutions (HEIs) in Bahawalpur, South Punjab, Pakistan. Moving beyond grades, the research explores how these technologies influence critical thinking, learner autonomy, and the writing process itself. Grounded in Sociocultural Theory and the Technology Acceptance Model (TAM), the study adopted a sequential explanatory mixed-methods design. Quantitative data were collected through a survey of 350 undergraduate students from The Islamia University of Bahawalpur (IUB) and Government Sadiq College Women University (GSCWU), followed by semi-structured interviews with 15 students and 5 faculty members. Findings indicate that while AI tools significantly enhance writing self-efficacy and linguistic accuracy, they present a paradox for engagement. They facilitate micro-scaffolding of language skills but pose risks of cognitive disengagement and over-reliance. The study concludes with pedagogical implications for integrating AI into the Pakistani undergraduate curriculum to foster ethical, autonomous, and critical writing practices.

Keywords: *Artificial Intelligence, Academic Writing, Student Engagement, Higher Education, Bahawalpur, Applied Linguistics.*

Introduction

The integration of Artificial Intelligence (AI) into educational practices has transitioned from a speculative innovation to a pervasive reality, fundamentally reshaping the paradigms of teaching, learning, and assessment in higher education (Bearman & Ajjawi, 2023). Across global academic contexts, Generative AI (GenAI) and AI-driven tools such as ChatGPT, Grammarly, and Quill Bot have become increasingly embedded in students' academic routines. These technologies are particularly prominent in academic writing, where they function as sophisticated co-authors, editors, and tutors (Dwivedi et al., 2023). In Pakistani Higher Education Institutions (HEIs), this shift is especially visible as students increasingly leverage technological support to navigate complex linguistic, cognitive, and academic demands (Ali & Hussain, 2024). However, current scholarly discussions have largely remained confined to defensive issues such as plagiarism, academic integrity, and grading outcomes, often neglecting the broader pedagogical and psychological implications of AI integration (Zawacki-Richter et al., 2019). This study argues for a shift in focus beyond the product of grades to examine how AI influences the process of academic writing and the multidimensional nature of student engagement.

In regions such as Bahawalpur, located in South Punjab, the role of AI in academic writing acquires heightened significance due to unique contextual and linguistic realities. English functions as a Second Language (ESL) and serves as the primary medium of instruction in most universities, placing considerable pressure on undergraduate students to meet rigorous academic conventions (Manan et al., 2020). For many students in this region, these conventions are misaligned with their prior educational experiences, which often emphasize rote learning over critical composition. Consequently, academic writing frequently becomes a source of writing anxiety, low self-efficacy, and emotional disengagement (Chaudhry & Khalid, 2023). AI-powered writing tools offer real-time feedback, language refinement, and structural guidance, functioning as digital scaffolding mechanisms. Within Vygotsky's (1978) Zone of Proximal Development (ZPD), these tools may help bridge the linguistic gap, theoretically reducing writing-related stress and enabling students to participate in academic discourse that was previously inaccessible.

Despite the growing reliance on AI-assisted writing tools, there is a notable lack of empirical research examining their influence on the *process* of writing rather than merely the quality of the final submission. In Bahawalpur's HEIs, undergraduate students often struggle to adopt a process-oriented approach involving planning, drafting, revising, and reflecting (Flower & Hayes, 1981). While AI can generate polished texts with minimal human effort, it remains unclear whether these tools foster the internal development of rhetorical competence and independent voice or if they promote cognitive offloading (Lodge et al., 2023). This creates a tension between AI as a facilitator of learning and AI as a surrogate for thought, risking a trend toward surface-level engagement and a dependency that may stifle long-term critical thinking skills.

Student engagement, conceptualized through behavioral, emotional, and cognitive dimensions, is a critical determinant of meaningful learning in higher education (Fredricks et al., 2004). The intersection of AI usage and these dimensions remains underexplored within the socio-cultural and institutional context of Pakistani HEIs. Understanding how AI shapes students' writing self-efficacy and autonomy, key components of Self-Determination Theory (Ryan & Deci, 2017), is essential for developing pedagogically sound and ethically responsible AI integration strategies.

The rapid adoption of AI has outpaced institutional policy, leaving both students and faculty in Bahawalpur to navigate a landscape marked by uncertainty and varying degrees of acceptance. Against this backdrop, the present study seeks to examine the impact of Artificial Intelligence on academic writing and student engagement among undergraduate students in Bahawalpur. By focusing on writing self-

efficacy, learner autonomy, and cognitive investment, this study aims to contribute context-sensitive empirical evidence to the global discourse. In doing so, it aspires to move beyond reductive narratives centered on misconduct, offering a nuanced understanding of how AI reshapes learning experiences and student identity in ESL-dominated higher education environments.

Research Objectives

1. To examine the frequency and purposes of AI tool usage among undergraduate students in Bahawalpur's universities.
2. To investigate the impact of AI on students' perceived writing self-efficacy and autonomy.
3. To explore the relationship between AI integration and cognitive engagement in academic writing tasks.

Significance of the Research

This study is significant as it provides context-specific insights into the digital divide and technological adaptation in Southern Punjab. It moves the conversation from policing AI to pedagogical integration, offering a roadmap for educators to use AI as a scaffold for critical thinking rather than a replacement for it.

Literature Review

Recent literature (Ahmed & Rashid, 2024; Khan & Ghani, 2024) suggests that AI tools function as automated writing evaluation (AWE) systems that provide immediate feedback, which is often more accessible than delayed instructor feedback. In Pakistan, where large class sizes often limit personalized teacher-student interaction, AI fills a critical gap in the Zone of Proximal Development (ZPD).

The Shift from AWE to Generative AI

Early research in English Language Teaching (ELT) focused on Automated Writing Evaluation (AWE) tools like Grammarly, which were found to improve surface-level linguistic accuracy but could not provide rhetorical feedback (Cavaleri & Dianati, 2022). However, with the advent of Large Language Models (LLMs) like ChatGPT, the focus has shifted from mere correction to co-creation. In the Pakistani context, Bashir et al. (2024) argue that while traditional AWE tools acted as passive editors, GenAI acts as a dynamic interlocutor, facilitating a dialogic writing process that aligns with Vygotsky's social mediation.

AI and the Affective Filter in ESL Learners

For undergraduate students in Bahawalpur universities, where English is often a tertiary language, writing anxiety is a significant barrier to engagement. According to Krashen's Affective Filter Hypothesis, high anxiety levels can block the acquisition of writing skills. Recent studies (Rezaei & Avandi, 2023) suggest that AI tools serve as anxiety-reduction agents. By providing a safe, non-judgmental space for students to experiment with sentence structures, AI lowers the affective filter, potentially leading to increased behavioral engagement and risk-taking in writing.

Cognitive Engagement and the Bypass Phenomenon

A critical concern in recent literature is the cognitive bypass (Lodge et al., 2023). When students use AI to generate outlines or synthesize literature, they may skip the essential productive struggle required for

deep learning. In a study of South Asian HEIs, Malik and Kanwal (2024) found that while AI improved the perceived quality of assignments, it led to a decrease in deep-level processing and critical thinking. This suggests a disconnect between students engaging with the technology, but not necessarily with the subject matter.

Self-Regulated Learning (SRL) and AI Literacy

The impact of AI is heavily moderated by the learner's level of Self-Regulated Learning (SRL). According to Panadero (2017), self-regulated learners use tools strategically to achieve specific goals. In the context of Pakistani undergraduate studies, Zafar and Mehmood (2025) identified that students with high meta-cognitive awareness use AI for strategic scaffolding, whereas students with low SRL use it for completion-focused tasks, leading to academic superficiality.

Technology Acceptance Model and Sociocultural Theory

Integrating the Technology Acceptance Model (TAM) with Sociocultural Theory provides a holistic view. While TAM explains why students adopt AI, Sociocultural Theory explains how the tool transforms their mental functions. As Farooq et al. (2024) note, the Perceived Usefulness in Pakistani universities is often tied to the pressure of achieving high CGPAs, which can conflict with the sociocultural goal of developing a unique authorial voice.

Theoretical Framework

This study adopts a multi-theoretical approach to capture the behavioral, cognitive, and social dimensions of AI integration in academic writing.

Sociocultural Theory (SCT) and Digital Mediation

Grounded in the work of Vygotsky (1978), SCT posits that human cognition is mediated by cultural tools. In this study, GenAI is conceptualized as a sophisticated semiotic tool that mediates the relationship between the student and the academic text. Traditional scaffolding involves a More Knowledgeable Other (MKO). Here, the AI acts as a digital MKO, providing micro-scaffolding. The critical inquiry lies in whether the AI pushes the student toward the upper limit of their ZPD or if it replaces the need for the ZPD altogether by performing the task for them. The study examines whether the linguistic patterns and structural logic provided by AI are eventually internalized by the Bahawalpur undergraduates, leading to independent mastery, or if they remain externalized dependencies.

The Technology Acceptance Model (TAM)

To understand why students in Bahawalpur HEIs are adopting AI at varying rates, we utilize Davis's (1989) Technology Acceptance Model. This model focuses on two primary determinants:

1. **Perceived Usefulness (PU):** The degree to which a student believes using AI will enhance their writing performance.
2. **Perceived Ease of Use (PEOU):** The extent to which the tool is seen as free of effort.

In the Pakistani context, these are influenced by External Variables such as English language proficiency and institutional policies. If PEOU is high but the student lacks AI Literacy, it may lead to ethical shortcuts rather than pedagogical gains.

Self-Regulated Learning (SRL)

Writing is a highly self-regulated activity involving planning, monitoring, and evaluating. According to Zimmerman's (2000) SRL model, effective learners take control of their own learning processes.

- **Forethought Phase:** How students use AI to set goals and plan their writing.
- **Performance Phase:** The use of AI for real-time monitoring of tone, grammar, and coherence.
- **Self-Reflection Phase:** Whether students use AI feedback to evaluate their progress or simply accept the output uncritically.

This study argues that AI can either enhance or undermine Self-Regulated Learning (SRL).

Conceptual Framework: The AI-Mediated Writing Model

The figure below illustrates the intersection of these theories. The student's engagement is the central variable, moderated by AI Literacy and Self-Regulation.

Theory	Role in This Study	Key Construct
Sociocultural (SCT)	Explains the process of learning.	Scaffolding & Digital Mediation
TAM	Explains the adoption of the tool.	Perceived Usefulness & Ease of Use
SRL	Explains the quality of engagement.	Metacognitive Monitoring

The Affective Filter and ESL Context

Specific to the Bahawalpur context, we incorporate Krashen's Affective Filter Hypothesis. For many ESL students in Southern Punjab, the fear of making grammatical errors often leads to writer's block. AI tools act as a filter-lowering mechanism, providing a low-stakes environment to draft ideas before they are judged by a human instructor. This theoretical addition is crucial for understanding the Emotional Engagement aspect of the study.

Student Engagement and AI

Engagement in academic writing involves more than just completing an assignment. It includes cognitive engagement, behavioral engagement, and affective engagement. While Firdos et al. (2025) found that AI increases motivation, critics, such as Selwyn (2019), warn that it may lead to outsourcing the struggle essential for deep learning.

Methodology

Research Design

This study employs a sequential explanatory mixed-methods design. In the first phase, quantitative data were gathered to identify broad trends in AI usage and engagement across the student body. In the second phase, qualitative data were collected to explain *why* these trends occur, focusing on the nuances of critical thinking and the internalization of AI-mediated feedback.

Participants and Sampling

The study targeted two major Higher Education Institutions (HEIs) in Bahawalpur, The Islamia University of Bahawalpur (IUB) and the Government Sadiq College Women University (GSCWU).

- **Quantitative Phase (N=350):** A stratified random sampling technique was used to select undergraduate students from the Departments of English, Linguistics, and Literature. Strata were defined by gender and year of study (Year 1 to Year 4) to ensure a representative cross-section of AI-native vs. traditional learners.
- **Qualitative Phase (N=20) Students (n=15):** Purposive sampling was used to select participants with varying levels of AI usage based on survey results.
- **Faculty (n=5):** English Language instructors with at least 5 years of experience were interviewed to provide a pedagogical counter-perspective.

Data Collection

A structured questionnaire was adapted from the Technology Acceptance Model (TAM) and the Student Engagement Scale. It consisted of four sections:

1. ChatGPT, Grammarly, and Quill Bot tools were used.
2. The 10 items on a 5-point Likert scale.
3. The sub-scales for cognitive engagement and behavioral engagement.
4. 5 items measuring confidence in academic writing post-AI adoption.

Semi-Structured Interview

Interviews were conducted in English and Urdu (to ensure depth of expression). The key themes of the interview are as follows:

- The transition from brainstorming to final polish.
- Perceptions of originality and academic honesty.
- The feeling of dependency vs. empowerment.

The ethical clearance was obtained from the respective board of studies. The survey was piloted with 30 students to ensure the language was accessible to ESL learners. In the first phase, the questionnaire was distributed via Google Forms during the Fall 2025 semester. In the second phase, the One-on-one

interviews were conducted in person at the universities' libraries, lasting 30 minutes each. The study utilized data triangulation to synthesize findings from both phases.

Data Analysis

Therefore, for quantitative analysis, SPSS v.29 was used to calculate mean, frequency, and standard deviation of AI usage patterns, and Pearson Correlation was used to test the relationship between AI usage frequency and cognitive engagement and to determine if Perceived Usefulness and Writing Self-Efficacy significantly predict Learner Autonomy, using Multiple Regression. The T-tests were used to check for significant differences in AI adoption between male and female students.

NVivo 14 was used for qualitative data to measure the Following Braun and Clarke's (2006) six-step framework. Transcripts were coded for emergent themes. Initial codes like Automated feedback and Laziness were grouped into higher-order themes such as The Scaffold-Crutch Continuum and Linguistic Emancipation.

Thus, descriptive statistics revealed that 82% of students used AI tools at least once a week, primarily for grammar correction (Mean = 4.45) and idea generation (Mean = 4.12).

Variable	Mean (SD)	Correlation with AI Use (r)	Empirical Insight
Writing Self-Efficacy	4.10 (0.65)	0.38	AI reduces linguistic Affective Filter.
Behavioral Engagement	3.85 (0.72)	0.29	Higher task completion rates.
Cognitive Engagement	3.15 (0.88)	-0.15	The Shadow Effect: Reduced mental effort.

The data shows a positive correlation between AI use and self-efficacy, but a negative trend with cognitive engagement, suggesting that while students feel more confident, they may be putting in less mental effort.

Ethical Considerations

Participants provided informed consent, and anonymity was strictly maintained by using pseudonyms. Data were stored on a password-protected drive. Crucially, the researchers ensured that students felt comfortable discussing AI use without fear of academic penalty.

Discussion

The findings highlight that in the Bahawalpur context, AI's impact is double-edged. Using the lens of Self-Regulated Learning (SRL), AI serves as an external regulator. When students use AI for micro-scaffolding, checking a specific preposition, or seeking a synonym, they remain engaged. However, when AI is used for macro-generation, the cognitive link between the student and the text is severed.

This mirrors the digital divide mentioned by Ahmed & Rashid (2024), where students with better digital literacy use AI to enhance their autonomy, while others use it to bypass the learning process. The engagement observed is often behavioral rather than cognitive.

Conclusion

AI has moved beyond grades to become an integral part of the student's cognitive ecosystem in Bahawalpur. While it improves the quality of the final academic product and boosts student confidence, it poses a risk to deep cognitive engagement and the development of independent critical thinking.

Pedagogical Implications

Universities should move beyond bans and instead teach students how to write with AI (e.g., prompt engineering, fact-checking AI output). Shift grading from the final essay to include reflection logs or version history to ensure students are engaged in the writing process. Higher Education Institutes in Pakistan need clear ethical guidelines that define permitted assistance versus academic dishonesty.

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