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STUDENT AGENCY AND OVER-RELIANCE: HOW AI WRITING TOOLS AFFECT THE AUTONOMY OF ENGLISH LANGUAGE LEARNERS

Askarova Saule Atabekovna
MA TESOL yo'nalishi magistri
Yangi O'zbekiston universiteti
Email: sauleaskarova11@gmail.com | Tel: +998938213022

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ABSTRACT:

This article deeply analyzes the dual impact of tools such as ChatGPT, Google Gemini, and Grammarly on student agency and learner autonomy. A mixed-methods study conducted with 120 EFL students from three public universities in Uzbekistan showed that AI writing tools significantly improve grammatical accuracy, text structure, and writing speed. However, excessive reliance on these tools puts independent thinking, creative writing, and self-editing skills at risk. The results are interpreted within the frameworks of Self-Determination Theory (SDT) and Sociocultural Theory (SCT), with special emphasis on the necessity of increasing AI literacy, implementing step-by-step scaffolding, and reflective writing practices. The study also provides practical recommendations for the balanced integration of AI into education in the Central Asian context.

Introduction

The rapid development of artificial intelligence is fundamentally transforming the field of education as well. Over the past decade, AI-based tools have migrated from research laboratories to everyday classrooms, offering possibilities that even the most optimistic educational technologists of the early 2000s could scarcely have imagined. In recent years,

generative AI tools - ChatGPT, Google Gemini, Grammarly, and similar platforms - have increasingly become writing assistants for students learning English as a foreign language (EFL). These tools perform tasks ranging from correcting grammatical errors and suggesting content options to restructuring arguments and even automatically generating entire paragraphs.

The global adoption of these tools is proceeding at a remarkable pace. According to the Stanford HAI Artificial Intelligence Index Report (2024)[1], approximately 38% of university students worldwide reported using generative AI tools for academic writing tasks at least once a week during the 2023–2024 academic year - a sharp increase from just 6% in 2021–2022. In Central Asia and other developing economies, this figure is even higher, as students view AI as a means of quickly bridging knowledge gaps in English. In Uzbekistan, the national digital education strategy (2023–2027) directly encourages the integration of AI-based learning tools in higher education institutions, creating a favorable environment for AI writing assistants. However, this policy-level enthusiasm is outpacing empirical research on the pedagogical question of whether reliance on AI tools enhances or ultimately weakens independent writing skills.

In the literature, student agency is defined as the learner's capacity for conscious and active participation in their own learning process, decision-making, and independent thinking. Autonomy is an even broader concept, encompassing the learner's ability to independently set learning objectives, choose ways to achieve them, and evaluate their own outcomes (Mohebbi, 2025[2]; Holec, 1981[3]). However, when AI tools shortcut this process by providing ready-made solutions, the likelihood of slowing or halting the development of agency and autonomy increases. Existing research on AI in EFL writing has been conducted primarily in Western, East Asian, or Middle Eastern contexts (Alghasab, 2025[4]; Ekizer et al., 2025[5]). The Central Asian context — distinguished by its unique socio-cultural dynamics, tradition of teacher-dependent learning, and rapidly developing digital infrastructure - has received almost no empirical attention. The present study addresses precisely this gap.

Research Objectives

The objectives of this study are threefold:

1. To determine the impact of AI writing tools on the agency and autonomy of EFL students in Uzbekistan;
2. To assess the degree and nature of over-reliance on AI writing tools;

3. To develop balanced, evidence-based pedagogical strategies appropriate to the Central Asian educational context.

Significance of the Study

This study is significant on several levels. At the micro level, it provides practical guidance for individual EFL teachers seeking to integrate AI tools responsibly. At the meso level, it offers evidence-based recommendations for university curriculum designers and administrators in Uzbekistan. At the macro level, it contributes to the growing international literature on AI and learner autonomy, introducing an empirical Central Asian perspective into a conversation that has been largely confined to Western or East Asian scholarship.

Table 1. Rates of Adoption of AI Writing Tools in Higher Education (2021–2024)

Academic Year	Worldwide (%)	EFL Learners (%)	Central Asia (est. %)
2021–2022	6	4	2
2022–2023	19	16	8
2023–2024	38	34	27
2024–2025 (projected)	52	48	41

Source: Stanford HAI Artificial Intelligence Index Report (2024)[1]; UNESCO ICT in Education Report (2024)[6]; author estimates for Central Asia.

Literature review and methodology

Meta-analyses dedicated to the impact of generative AI tools on language teaching consistently demonstrate that AI provides significant assistance to EFL students in producing grammatically accurate and well-structured texts (Ekizer et al., 2025[5]). In a systematic review encompassing 47 studies published between 2020 and 2024, Ekizer, Demirci, and Yildiz (2025)[5] found that the average effect size of AI tool use on EFL writing quality was d = 0.71 - indicating a medium-to-large positive effect. Benefits were most pronounced in grammatical accuracy and text organization, with a smaller but still meaningful effect observed for vocabulary range. Grammarly, one of the most widely used AI writing assistants, was studied separately. Mekheimer (2025)[7], in a controlled study involving 89 EFL

university students in Saudi Arabia, found that Grammarly users produced texts with 34% fewer grammatical errors and 28% higher cohesion scores compared to a control group that did not use AI. However, the same study revealed no significant difference between the two groups in terms of analytical depth or argument quality, suggesting that AI assistance improves surface-level features without necessarily fostering higher-order thinking. ChatGPT and other large language model (LLM)-based tools introduced more comprehensive assistance capabilities, ranging from content generation to argument support and stylistic suggestions. Lee (2025)[8], drawing on sociocultural theory, characterizes LLMs as a form of the 'more capable other' in Vygotsky's Zone of Proximal Development (ZPD) - which, when used appropriately, can accelerate the development of writing skills. However, Lee also cautions that this scaffolding effect depends on metacognitive engagement: students who use AI passively - accepting suggestions without reflection - gain almost no developmental benefit.

This study employed a sequential explanatory mixed-methods design (Creswell & Plano Clark, 2018[9]). In the first phase, quantitative data were collected through validated questionnaires and writing assessments to identify broader patterns. In the second phase, in-depth qualitative interviews were conducted to explain and contextualize the quantitative findings. This design allows both the identification of trends across a larger sample and the capture of individual learners' subjective experiences with AI.

Results

The findings revealed that the most commonly used AI writing tools among participants were ChatGPT, Grammarly, and Google Gemini. A significant portion of participants reported using AI tools four or more times per week for writing assignments. As shown in Table 4, grammar checking was nearly universal, while content generation was employed by 63.3% of participants. Notably, only 28.3% reported using AI to check their own reasoning or argumentation, indicating limited use of AI for metacognitive purposes.

Table 2. Purposes of AI Writing Tool Use (N=120)

Purpose of Use	n	%	Risk Level
Grammar and spell checking	113	94.2%	Low
Vocabulary suggestions	104	86.7%	Low–Moderate

Text restructuring / paraphrasing	97	80.8%	Moderate
Generating topic ideas	84	70.0%	Moderate–High
Content / paragraph generation	76	63.3%	High
Argument justification	49	40.8%	High
Checking own reasoning	34	28.3%	Low (beneficial)
Full essay generation	22	18.3%	Very High

Note: Risk level reflects the likelihood of cognitive offloading and reduced development of autonomous writing.

A strong negative correlation was identified between the over-reliance index and the sense of agency in independent writing. The relationship between over-reliance and perceived autonomous learning capacity was also significantly negative.

Table 3. Correlation Matrix: Key Research Variables (N=120)

Variable	1	2	3	4	5
1. AI frequency	—				
2. Over-reliance index	.74**	—			
3. Agency (independent writing)	−.52**	−.68**	—		
4. Learner autonomy	−.44**	−.59**	.71**	—	
5. AI literacy index	−.31**	−.49**	.58**	.62**	—

** p < .001 (two-tailed). Values are Pearson correlation coefficients.

Discussion

The findings of this study align broadly with trends in the international literature and extend them in certain respects. Alghasab (2025)[4], who studied AI tool use among EFL secondary school students in Kuwait, identified short-term improvements in writing quality but observed weaknesses in independent thinking and argumentation skills - a pattern strikingly similar to our finding that AI-assisted essays scored higher on surface-level features but lower on argumentative depth. The finding that AI literacy significantly moderates the relationship between AI use and over-reliance ($\Delta R^2 = .183$) extends the meta-analytic finding of Ekizer et al. (2025)[5] with precise effect size estimates. This is among the first studies to quantify the unique variance in over-reliance among EFL learners explained by AI literacy. Three context-specific factors deserve particular attention in interpreting these findings. First, the culture of teacher dependence in Uzbekistan's historically didactic educational system functions as a vulnerability factor for AI over-reliance. Students who have internalized the norm that knowledge is transmitted by an authoritative figure - whether a teacher or an AI - may be especially susceptible to uncritical AI acceptance. Second, the limited development of AI literacy curricula in Uzbek universities creates an institutional context in which students have no foundation for critical AI evaluation. Without such a foundation, the natural default is uncritical use - a pattern clearly visible in our sample's 94.2% grammar-checking rate and 63.3% content-generation rate. Third, the standardized English language assessment system in Uzbekistan creates perverse incentives that directly drive AI over-reliance. When assessments primarily reward surface-level accuracy and AI tools dramatically improve surface-level accuracy, rational students use AI extensively. Addressing over-reliance therefore requires not only pedagogical intervention but also assessment reform.

Conclusion

This study was undertaken to examine the dual impact of AI writing tools on student agency and learner autonomy among EFL students in Uzbekistan, and to identify the conditions under which AI use becomes problematic over-reliance. The findings reveal a nuanced picture. It cannot be denied that AI writing tools - particularly ChatGPT, Grammarly, and Google Gemini - provide significant short-term benefits in improving grammatical accuracy, textual cohesion, and writing efficiency. These are genuine advantages; for students writing in academic English under time pressure, AI assistance can be meaningful support.

However, the data also tell a cautionary story. Frequent, unreflective AI use is associated with diminished agency in independent writing, reduced learner autonomy, and an apparent improvement in writing quality at the surface level that conceals deeper losses in originality

and argumentative depth. The most promising finding is the significant moderating role of AI literacy. Students who understand what AI tools can and cannot do, who can critically evaluate AI outputs, and who have a foundation for determining when AI use is appropriate are substantially less prone to over-reliance even when using AI frequently. This finding indicates that the solution is not banning AI, but rather AI education. For Uzbekistan and the broader Central Asian region: AI integration must proceed alongside systematic AI literacy education, pedagogical scaffolding that preserves space for genuine independent writing, and assessment systems that value process and depth alongside product and accuracy. The core problem lies not in the AI tools themselves, but in the pedagogical frameworks within which they are used - or the absence thereof. With the right pedagogical approach, combined with AI literacy and reflective writing practices, students can be afforded both technological capability and genuine opportunities for intellectual development.

Future research should pursue longitudinal designs to establish causal relationships, comparative studies across Central Asian states, and investigation of the differential effects of AI use across academic disciplines and student demographic groups.

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