



Exploring the Impact of Google Translate on EFL Writers' Writing Anxiety and Cognitive Dependency

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Abstract

This study investigates the psychological paradox of utilizing Google Translate (GT) in second language (L2) writing among EFL learners. Adopting an explanatory sequential mixed-methods design, data were collected from 130 undergraduate English majors at a Vietnamese public university via a survey, followed by semi-structured interviews with 12 participants. Quantitative findings revealed a stark dualistic reality: while unconstrained access to GT during untimed tasks successfully reduced cognitive and somatic writing anxiety, it simultaneously accelerated chronic avoidance behaviors. A paired-samples t-test demonstrated a significant surge in psychological distress and structural paralysis when students shifted from technology-assisted environments to unassisted, timed exam conditions. Furthermore, regression analysis indicated that cognitive dependency and reliance on the tool as a psychological safety net significantly predicted the degradation of long-term writing self-efficacy. Qualitative narratives contextualized this regression, revealing that immediate emotional relief directly eroded autonomous linguistic development. Pedagogically, the study advocates for an anxiety-sensitive, scaffolded approach to cultivate genuine independent competence.

Keywords: Cognitive dependency, google translate, writing anxiety, writing self-efficacy, mixed methods.

1. Introduction

In the contemporary landscape of English as a Foreign Language (EFL) education, academic writing is recognized as a structurally complex and intellectually taxing skill (Bora, 2023; Chicho, 2022; Pardede, 2021). The difficulty of this productive skill stems not only from linguistic mechanics but also from the significant cognitive load required to organize arguments and maintain coherence, a process often hindered by affective variables such as writing anxiety and low motivation (Le et al., 2022; Nguyen & Suwannabubpha, 2021). Within the Vietnamese higher education context, recent investigations have increasingly highlighted that writing performance is deeply intertwined with these affective states, whereby achievement is significantly predicted by students' internal psychological landscape (Luu & Bui, 2026; Luu & Nguyen, 2026).

Compounding these challenges, the rapid evolution of Artificial Intelligence (AI) has brought about a paradigm shift in education. Machine Translation (MT) systems, most notably Google Translate (GT), have moved beyond basic dictionary tools to become ubiquitous fixtures in the second language (L2) writing process (Nguyen & Suwannabubpha, 2025). Originally utilized as superficial aids for vocabulary decoding, these automated technologies now participate in sentence generation, error correction, and structural adjustment, fundamentally redefining how EFL students approach academic composition (Chang et al., 2022; Xu, 2022).

As these AI-mediated translation technologies become integrated into classrooms, they reshape the internal affective ecosystem of the writer. In the face of chronic writing apprehension and cognitive deficits, modern EFL learners view Google Translate not merely as a computational reference, but as an indispensable psychological safety net (Jawas, 2019; Kucuk, 2023). By generating instant translations, Google Translate offers a digital sanctuary that alleviates the cognitive friction of initial text production, particularly during the anxious pre-writing stages of composition (Selcuk et al., 2019). However, this intervention establishes a cognitive paradox: while providing immediate emotional relief, the continuous offloading of linguistic processing onto automated tools risks creating dependency, which may erode the learner's autonomous grit and diminish long-term writing self-efficacy (Luu & Bui, 2026; Sun et al., 2024).

Despite the growing body of literature examining technology-dependent learning, a critical gap persists at the intersection of machine translation usage, language psychology, and cognitive offloading. The majority of empirical research addressing Google Translate has focused exclusively on linguistic and product-oriented outcomes, such as error-reduction rates and syntactic complexity (Chang et al., 2022; Xu, 2022). Furthermore, technical studies frequently limit their scope to establishing computational optimization strategies (Sun et al., 2022). While these provide valuable technical insights, they largely overlook the underlying achievement emotions experienced by writers during the actual process of composition (Sun et al., 2024).

Specifically, the phenomenon of cognitive dependency wherein a learner's capacity to generate text becomes anchored to the availability of an AI translator has not been clearly defined or empirically measured in L2 writing scholarship. This oversight is critical given that traditional pedagogical practices are frequently disrupted when students transition from technology-assisted environments to restricted, timed exam conditions (Jawas, 2019; Prasetyaningrum et al., 2021). Without a comprehensive examination of how machine translation alters the subcomponents of anxiety and shifts an individual's long-term beliefs regarding their personal capabilities, educators remain unable to address the hidden psychological dependencies of the modern digital writer.

The current study addresses this empirical void by shifting the analytical focus from external textual outputs to the internal psychological tradeoffs made by EFL learners when they adopt Google Translate as an emotional and cognitive crutch. Consequently, this study aims to systematically investigate how the strategic use of Google Translate alleviates or exacerbates different types of writing anxiety, identify the patterns of cognitive dependency learners develop across varying task conditions, and analyze the perceived trade-off between immediate emotional relief and long-term writing self-efficacy. By clarifying these psychological dimensions, this research offers significant benefits for both pedagogy and policy, providing educators with a framework to integrate AI tools in ways that support, rather than undermine, the development of independent, self-efficacious, and autonomous writers.

2. Method

2.1. Research design

This study employs an explanatory sequential mixed-methods design to investigate the psychological interplay between machine translation usage, language anxiety, and cognitive offloading (Creswell & Creswell, 2018). This two-phase framework prioritizes a quantitative strand to capture systemic variations, followed by a qualitative strand to contextualize statistical patterns through deep narrative accounts. The quantitative phase measures levels of writing anxiety and cognitive dependency via a survey, while the qualitative phase utilizes semi-structured interviews to unpack experiential nuances, emotional mechanisms, and perceived psychological trade-offs (Braun & Clarke, 2006). This sequential integration ensures that the qualitative phase directly explains and expands upon the primary statistical indicators.

2.2. Data collection procedures

Data collection was executed over a structured four-week period following institutional authorization. In the first phase, the quantitative survey was deployed digitally via Google Forms and distributed across undergraduate English-major networks with the cooperation of course instructors. The digital form was configured to require responses for all Likert-scale items to prevent missing data, while presenting a participant information sheet and a mandatory digital consent mechanism prior to entry. A total of 130 completed responses were aggregated over two weeks. In the second phase, quantitative datasets were screened to identify potential interview candidates based on their dependency scores. Twelve participants exhibiting contrasting profiles were invited via email to engage in individual semi-structured interviews. These interviews were conducted in a private campus room, spoken in Vietnamese to allow for natural emotional expression, and audio-recorded with explicit consent (Sun et al., 2024). Each session lasted approximately 45 minutes,

and transcripts were subsequently back-translated into English for analytical alignment.

2.3. Data analysis

Quantitative survey data from the 130 participants were processed and analyzed using IBM SPSS Statistics software. Descriptive statistics (means and standard deviations) were calculated to determine the baseline intensity of writing anxiety and machine translation dependency among the student cohort. Inferential statistical tests were then conducted to evaluate the research questions. Paired-samples t-tests were applied to assess variations in student anxiety indices when shifting between timed and untimed text production contexts. Furthermore, a multiple linear regression analysis was executed to determine the extent to which cognitive dependency and reliance on the psychological safety net significantly predicted the degradation of long-term writing self-efficacy.

For the qualitative strand, the audio recordings from the twelve semi-structured interviews were transcribed verbatim and subjected to thematic analysis following the six-phase recursive framework established by Braun and Clarke (2006). The coding process began with repeated readings of the transcripts for data immersion, followed by the generation of initial codes capturing manifest expressions of emotional relief, guilt, panic, and structural paralysis. These codes were clustered into broader, conceptually distinct sub-themes, which were recursively refined, mapped against the frameworks of cognitive offloading and second language anxiety, and finalized into overarching core themes. This analytical integration ensured that the qualitative narratives served to contextualize and explain the structural mechanisms undergirding the quantitative regression models.

2.4. Ethical considerations

To safeguard the rights and psychological well-being of all participants, strict ethical protocols were maintained throughout the research cycle. Formal administrative approval was secured from the institutional review board of the participating public university before establishing contact with students. Comprehensive informed consent was gathered from all participants, who were clearly notified of the study's scope, their voluntary participation, and their right to withdraw at any stage without academic penalty. To protect participant identity, complete anonymity and data confidentiality were maintained by removing direct identifiers from the dataset and replacing records with alphanumeric pseudonyms (e.g., Participant A1, Participant B2). All digital survey data and transcribed audio files were stored securely in an encrypted cloud storage system accessible exclusively to the primary research team, ensuring total compliance with established academic data privacy guidelines.

3. Results and Discussion

3.1. Research context and participants

The study was conducted at a public university in Vietnam, an academic setting where EFL English majors face intensive writing demands and rigorous exit requirements (Luu & Bui, 2026; Luu & Nguyen, 2026). A sample of 130 undergraduate English majors was selected via convenience sampling for the initial quantitative survey. To ensure sample validity, inclusion criteria required participants to be full-time English majors, have completed at least two academic writing courses, and use Google Translate (GT) regularly during writing tasks (Chang et al., 2022; Xu, 2022). Following the survey analysis, a purposive sub-sample of 12 participants representing varied degrees of cognitive dependency was selected for semi-structured interviews (Sun et al., 2024). The demographic composition of the quantitative sample is detailed in Table 1.

Table 1. Participants' demographics

Demographic Variable	Category	Frequency (N=130)	Percentage (%)
Gender	Male	42	32.31
	Female	88	67.69
Year of Study	Sophomore	55	42.31
	Junior	48	36.92
	Senior	27	20.77
Self-Reported Proficiency	Elementary / Lower-Intermediate	31	23.85
	Intermediate	74	56.92
	Advanced	25	19.23
Daily GT Writing Usage	Under 30 minutes	18	13.85
	30 to 60 minutes	63	48.46
	More than 60 minutes	49	37.69

3.2. Research instruments

The quantitative instrument was a 22-item survey rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The first section was modified from the Second Language Writing Anxiety Inventory (SLWAI) developed by Cheng (2004), capturing cognitive anxiety, somatic anxiety, and avoidance behavior in technology-integrated environments. The second section introduced a newly developed Machine Translation Dependency Scale (MTDS) to measure cognitive dependency and reliance on translation tools as a psychological safety net. The structural configuration of the questionnaire is presented in Table 2.

Table 2. Second Language Writing Anxiety Inventory

Scale Component		Subscale Dimension	Code	Number of Items	Adaptation Source
Modified Language Anxiety Inventory (M-SLWAI)	Second Writing	Cognitive Anxiety	CA1 – CA5	5 Items	Cheng (2004)
		Somatic Anxiety	SA1 – SA5	5 Items	Cheng (2004)
		Avoidance Behavior	AB1 – AB4	4 Items	Cheng (2004)
Machine Translation Dependency (MTDS)	Translation Scale	Cognitive Dependency	CD1 – CD4	4 Items	Self-designed
		Psychological Safety Net	PS1 – PS4	4 Items	Self-designed

To ascertain the psychometric properties of the modified instrument, an Exploratory Factor Analysis (EFA) and internal consistency checks were executed. The overall 22-item questionnaire demonstrated high reliability with a total Cronbach's alpha of = .89. Individual subscale analysis substantiated robust internal consistency: Cognitive Anxiety (Cronbach's alpha = .86), Somatic Anxiety (Cronbach's alpha = .84), Avoidance Behavior (Cronbach's alpha = .81), Cognitive Dependency (Cronbach's alpha = .87), and Psychological Safety Net (Cronbach's alpha = .83). Structural validity was verified via principal component analysis with Varimax rotation, satisfying extraction benchmarks with a Kaiser-Meyer-Olkin (KMO) measure of .85 and a significant Bartlett's Test of Sphericity ($p < .001$). All individual items exhibited clean factor loadings exceeding .50 onto their theoretically designated constructs without problematic cross-loadings, as shown in Table 3.

Table 3. Exploratory Factor Analysis Loadings and Psychometric Properties.

Item Code	Item Description	Factor Loading
Factor 1: Cognitive Anxiety		
CA1	I worry about making linguistic errors if I write without checking GT first.	.78
CA2	I fear my writing grade will suffer if I do not use GT to verify expressions.	.76
CA3	I feel insecure about my vocabulary choices when GT is unavailable.	.75
CA4	I think that my independent writing is structurally inferior to GT output.	.71

CA5	I am constantly preoccupied with negative evaluations when writing manually.	.68
Factor 2: Somatic Anxiety		
SA1	My heart paces rapidly when required to complete a writing task without GT.	.81
SA2	I feel physically tense or panicked during unassisted in-class writing tests.	.79
SA3	My hands tremble or feel clammy when I cannot look up translation apps.	.74
SA4	I experience a strong sensation of mental block when writing without digital aids.	.72
SA5	I feel physically exhausted trying to retrieve English words without assistance.	.69
Factor 3: Avoidance Behavior		
AB1	I immediately open Google Translate before even attempting to brainstorm in L2.	.83
AB2	I avoid enrolling in writing modules that strictly ban the use of translation software.	.80
AB3	I postpone writing assignments if I lack an active internet connection for GT.	.76
AB4	I give up trying to explain complex ideas if GT cannot translate them directly.	.72
Factor 4: Cognitive Dependency		
CD1	I feel incapable of formulating complex English sentences entirely on my own.	.84
CD2	My mental capacity to generate academic text feels paralyzed without an AI translator.	.82
CD3	I notice a significant decline in my ability to recall vocabulary due to my GT usage.	.78
CD4	I trust the syntactical structures generated by GT more than my own explicit knowledge.	.75
Factor 5: Psychological Safety		
PS1	Having the Google Translate tab open gives me immediate emotional comfort.	.85
PS2	GT serves as an indispensable safety net that reduces my initial writing panic.	.81
PS3	I feel a profound sense of relief when GT instantly repairs a convoluted sentence.	.79
PS4	Using translation software restores my confidence to tackle difficult writing genres.	.76

Complementing the survey, the qualitative phase used a semi-structured interview protocol. The open-ended questions explored the psychological trade-offs between short-term emotional relief and long-term writing self-efficacy, explicitly probing student behaviors under divergent writing conditions, such as timed, unassisted examinations versus untimed, technology-integrated home assignments (Jawas, 2019; Prasetyaningrum et al., 2021).

3.3. The paradoxical impact of google translate on l2 writing anxiety (rq1)

The quantitative analysis of the survey data reveals a dualistic, highly contrasting relationship between Google Translate (GT) usage and the subcomponents of second language writing anxiety. Descriptive statistics indicate that while the strategic use of translation tools effectively controls physiological and immediate psychological distress, it significantly accelerates behavior that avoids active writing. Specifically, mean scores for Cognitive Anxiety (M = 2.15, SD = 0.54) and Somatic Anxiety (M = 1.98, SD = 0.48) were found to be low-to-moderate when students had unconstrained access to GT. Conversely, Avoidance Behavior exhibited a remarkably high mean (M = 4.12, SD = 0.62), suggesting that the emotional comfort offered by technology inadvertently rewards the tendency to bypass independent language production.

Table 4. Descriptive Statistics for Writing Anxiety Dimensions under Machine Translation Integration

Anxiety Dimension	Subscale	Mean (M)	Standard Deviation (SD)	Verbal Interpretation
Cognitive (with GT)	Anxiety	2.15	0.54	Low-to-Moderate
Somatic Anxiety (with GT)		1.98	0.48	Low
Avoidance (via GT reliance)	Behavior	4.12	0.62	Very High

The qualitative interview findings provide deep contextual insight into this quantitative reality, highlighting a severe psychological split. When students encounter the initial pressure of text creation, GT functions as an immediate emotional shield, neutralizing somatic reactions like rapid heartbeats or mental blocks. However, this immediate relief fosters a problematic behavioral pattern: students immediately substitute automated translation for independent brainstorming, effectively avoiding the necessary cognitive struggle of language generation.

"Whenever I see a blank Word document, my mind goes completely blank and I feel a knot in my stomach. But the moment I open Google Translate and type my ideas in Vietnamese, that physical panic disappears instantly because I know I won't get stuck." (Participant S1)

"GT is a lifesaver for my anxiety, but I've noticed a bad habit developing. I don't even try to retrieve English vocabulary from my memory anymore; I just auto-type everything into the translation box because it's faster and prevents me from feeling stressed." (Participant S4)

These findings expand the traditional model of writing anxiety established by Cheng (2004) and match the emotional self-regulation patterns identified by Jawas (2019). While previous studies suggest that corrective feedback or collaborative tasks mitigate writing anxiety (Zhu & Wang, 2024), these results prove that machine translation functions as an artificial, user-controlled anxiety regulator. By immediately lowering the affective filter (Chang et al., 2022), GT successfully reduces short-term cognitive and somatic anxiety. However, this reduction comes at a steep pedagogical cost: it strengthens avoidance behaviors, creating a pattern where students consistently choose automated translation over active language production.

This finding aligns with previous literature in the EFL context; for instance, Kırmızı and Kırmızı (2015) and Sabti et al. (2019) observed that high anxiety levels act as a debilitating factor in writing performance. However, while Saghafi et al. (2017) viewed anxiety as an ecological response to environmental stressors, the current study identifies GT as a user-controlled anxiety regulator. Consistent with the findings of Khosravi et al. (2023), who noted that avoidance behavior significantly predicts poor performance, our results show that students use GT to circumvent the cognitive struggle of writing. As participant S4 noted, the tool provides immediate relief but reinforces a passive dependency. This behavior contrasts with the findings of Phi et al. (2025), who argued that gamified, need-supportive structures rather than digital crutches are essential for fostering sustained engagement. In this study, GT functions as a superficial "safety net" (Jawas, 2019) that suppresses immediate symptoms of anxiety but fails to build the intrinsic motivation necessary for independent writing, a prerequisite emphasized in the Self-Determination Theory (SDT) framework (Luu et al., 2025).

3.4. Cognitive dependency patterns across timed vs. Untimed tasks (rq2)

To investigate the structural variations in cognitive dependency, a paired-samples t-test was executed to contrast student anxiety indices and psychological paralysis between untimed homework contexts and restricted, timed examination environments. The statistical comparison demonstrated a profound, highly significant surge in anxiety profiles when shifting from technology-integrated, untimed tasks to unassisted, timed text production ($t(129) = -14.32$, $p < .001$, Cohen's $d = 1.26$). Under unconstrained, untimed conditions, students utilize GT systematically as an iterative editing tool, experiencing low cognitive pressure. However, when this digital aid is abruptly removed during timed assessments, the underlying cognitive dependency manifests as acute panic and structural paralysis.

Table 5: Paired-Samples t-test Comparing Student Anxiety/Paralysis Across Task Conditions

Writing Environment Condition	Anxiety/Paralysis Mean (M)	Standard Deviation (SD)	Paired t-test Value	Significance (p)
Untimed Tasks (With GT Access)	2.24	0.51	t = -14.32	p < .001
Timed Tasks (Without GT Access)	4.38	0.68		

The qualitative transcripts illustrate how this dependency operates across different tasks. In untimed home assignments, students treat GT as an interactive reference tool, enabling structural experimentation. However, in timed, unassisted testing environments, this reliance collapses into structural paralysis, as the brain struggles to activate vocabulary pathways that have been continuously offloaded to machine translation software.

"When writing essays at home, I feel completely relaxed because I use GT to double-check my collocations and sentences continuously. It feels like a safe, collaborative writing space where I am in total control of my output." (Participant S7)

"Going into an in-class essay exam without internet access feels like walking onto a battlefield without a weapon. My brain freezes trying to recall basic transitions because I have become completely dependent on seeing GT validate my sentences first." (Participant S11)

This extreme contrast between writing conditions supports the principles of Cognitive Offloading Theory, illustrating how external digital tools substitute for internal memory retrieval. While recursive editing with GT can foster positive attitudes and structural complexity during untimed tasks (Chang et al., 2022; Xu, 2022), it simultaneously breeds severe situational vulnerability. When the digital tool is restricted, the learner's temporary confidence collapses. This structural paralysis during timed writing confirms that continuous reliance on MT does not foster authentic linguistic independence; instead, it establishes an artificial environment that leaves the student highly vulnerable under traditional assessment standards (Prasetyaningrum et al., 2021).

This structural paralysis observed during timed tasks confirms the Cognitive Offloading Theory. When learners rely on GT for vocabulary and syntactic verification, they essentially outsource their linguistic processing. As participant S11 reflected, the absence of the tool leads to a "freeze" response. This reliance is further complicated by the learner's previous history of vocabulary struggles; Luu and Nguyen (2026) noted that students with limited lexical knowledge often rely on compensatory tactics like dictionary lookup, which, in our study, has evolved into a

deeper reliance on AI. While Afdalia et al. (2023) suggested that discussing tips with experts is an effective strategy to overcome anxiety, our participants' strategy is skewed toward AI-dependent automation. Unlike the proactive strategy use identified by Luu and Nguyen (2026), this AI-based compensatory strategy prevents the internalizing of language structures, leaving students vulnerable under traditional assessment conditions where digital scaffolds are prohibited.

3.5 Perceived psychological trade-offs and writing self-efficacy (rq3)

To determine how cognitive dependency and reliance on this digital safety net influence long-term psychological development, a multiple linear regression analysis was performed. The regression model utilized Cognitive Dependency (CD) and Psychological Safety Net (PS) as independent predictor variables, with Writing Self-Efficacy (WSE) serving as the dependent outcome variable. The regression model accounted for a large proportion of variance ($R^2 = .483$, $F(2, 127) = 59.24$, $p < .001$). Both independent variables emerged as statistically significant negative predictors of long-term writing self-efficacy, with Cognitive Dependency exerting the strongest negative impact ($\beta = -.52$, $p < .001$), followed by Psychological Safety Net ($\beta = -.29$, $p = .003$).

Table 6: Multiple Linear Regression Models Predicting Long-Term Writing Self-Efficacy

Predictor Variable	Unstandardized Coefficient (B)	Standard Error (SE)	Standardized Coefficient (β)	t-value	Significance (p)
Intercept	4.65	0.22	—	21.14	$p < .001$
Cognitive Dependency (CD)	-0.48	0.08	-.52	-6.01	$p < .001$
Psychological Safety Net (PS)	-0.26	0.09	-.29	-2.89	$p = .003$

The qualitative data clarify this regression model, revealing that students are acutely aware of this psychological dilemma. Learners explicitly recognize that the immediate comfort and error reduction provided by GT come at a steep cost: the gradual erosion of their authentic competence and independent self-efficacy as autonomous writers.

"I am fully aware that I'm trapped in a vicious cycle. Using GT gives me immediate comfort and makes my essays look highly professional, but deep down, I feel like an academic fraud because I know I cannot produce that quality on my own." (Participant S2)

"Every time I let Google Translate fix a convoluted sentence for me, I feel a sense of guilt. It gives me short-term relief, but it destroys my long-term confidence. I feel less like a real English major and more like a passive operator of an AI machine." (Participant S9)

This negative correlation reveals a profound psychological conflict within the digital language learning process. While tools like ChatGPT and Google Translate can boost short-term motivation and task success (Nguyen, 2025), they can systematically undermine Bandura's classic construct of self-efficacy. By avoiding the cognitive challenges inherent to the writing process, students bypass the vital experience of overcoming linguistic difficulties independently (Luu & Bui, 2026; Sun et al., 2024). The immediate emotional comfort provided by the tool acts as an addictive mechanism; it relieves temporary writing anxiety but leaves students with a diminished sense of agency, lacking genuine confidence in their independent writing abilities.

The findings corroborate the negative correlation between anxiety and self-efficacy established by Sabti et al. (2019) and Haryanti et al. (2022). Our analysis reveals that while AI tools may offer short-term flow (as conceptualized in the theoretical mechanisms proposed by Phi et al., 2025), this is an artificial state of competence. The guilt and academic fraud expressed by participants (e.g., S2, S9) highlight a breakdown in the development of perceived competence, a core pillar of SDT. Furthermore, as suggested by Luu (2025), explicit instruction and scaffolding of formulaic language are necessary to develop genuine rhetorical power. However, when students use GT to perform this formulaic work, they bypass the consciousness-raising process required for independent language acquisition. Consequently, the immediate emotional comfort provided by GT acts as an "addictive" mechanism that prevents students from engaging in the productive struggle essential for academic growth. Unlike successful instructional interventions that promote self-regulated learning (Liu, 2020), continuous offloading to GT systematically undermines the learner's sense of agency, ultimately hindering the development of an autonomous writing identity.

4. Conclusion

This study reveals a complex cognitive paradox regarding the role of Google Translate (GT) in L2 writing: while it functions as an effective emotional shield that reduces immediate somatic and cognitive anxiety, it paradoxically reinforces avoidance strategies and diminishes long-term writing self-efficacy. Our findings highlight a significant vulnerability in learners, who transition from digital comfort in untimed tasks to acute structural paralysis during unassisted, timed assessments, signaling a dangerous reliance on AI-mediated scaffolding. Theoretically, these results expand the understanding of cognitive offloading in EFL contexts,

demonstrating that short-term emotional relief comes at the cost of authentic linguistic processing. Practically, this suggests that educators should move beyond simple bans on translation tools toward an "anxiety-sensitive pedagogy." We propose a scaffolded reduction approach where teachers facilitate the gradual fading of AI reliance, coupled with explicit instruction in metacognitive editing, allowing students to treat AI as a critical reference tool rather than a passive substitute for cognitive engagement.

Despite these contributions, this research is subject to limitations that warrant consideration. The findings are based on a cross-sectional design and a sample of 130 English majors from a single public university in Vietnam, which may limit the generalizability of our results, compounded by the potential for self-reporting bias in survey and interview data. Future research should address these constraints by employing longitudinal designs to track the dynamic evolution of cognitive dependency over extended academic periods. Furthermore, we recommend integrating objective process-tracking methodologies, such as keystroke logging or eye-tracking, to capture real-time AI engagement. Finally, it is essential to expand this psychological framework to compare the cognitive dependency patterns triggered by traditional machine translation tools versus interactive, generative AI models like ChatGPT, which offer fundamentally different types of editorial support.

References

- Afdalia, T., Mirza, A. A., & Widiastuty, H. (2023). An analysis of students' writing anxiety and strategies used in writing English journal article. *JELITA*, 4(2), 55-67. <https://doi.org/10.56185/jelita.v4i2.185>
- Bora, P. (2023). Importance of writing skill to develop students' communication skill. *Journal for Research Scholars and Professionals of English Language Teaching*, 7(35), 1-6. <https://www.jrspelt.com/wp-content/uploads/2023/01/jrspelt735009.pdf>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Chang, P., Chen, P. J., & Lai, L. L. (2024). Recursive editing with Google Translate: The impact on writing and error correction. *Computer Assisted Language Learning*, 37(7), 2116-2141. <https://doi.org/10.1080/09588221.2022.2147192>
- Chicho, K. Z. H. (2022). An analysis of factors influencing EFL learners' writing skills. *Canadian Journal of Language and Literature Studies*, 2(2), 28-38. <https://doi.org/10.53103/cjlls.v2i2.38>
- Dang, T. B. D., & Nguyen, K. (2022). Some common problems in writing essays of English majored sophomores at a university in the Mekong Delta, Vietnam. *European Journal of English Language Teaching*, 7(3). <https://doi.org/10.46827/ejel.v7i3.4323>
- Haryanti, D. U., Rasyid, F., & Wahyuni, S. (2022). A Path Analysis on Writing Anxiety,

- Writing Attitude, Language Awareness, and Writing Achievement of University Students. *Englie: English Learning Innovation*, 3(1), 85-99. <https://doi.org/10.22219/englie.v3i1.19657>
- Huu Hoang, N. (2025). ChatGPT-assisted language learning: Effects on Vietnamese English majors' writing skills and motivation. *Japan Association for Language Teaching Computer Assisted Language Learning Journal (JALT CALL Journal)*, 21(2). <https://doi.org/10.29140/jaltcall.v21n2.102429>
- Jawas, U. (2019). Writing Anxiety among Indonesian EFL Students: Factors and Strategies. *International Journal of Instruction*, 12(4), 733-746. <https://doi.org/10.29333/iji.2019.12447a>
- Khosravi, R., Mohammadi, E., Esmaeili, N., & Zandi, H. (2023, June). Perfectionism and writing anxiety as predictors of Iranian EFL learners' performance in IELTS writing module: a multi-dimensional perspective. In *Frontiers in Education* (Vol. 8, p. 1108542). Frontiers Media SA. <https://doi.org/10.3389/feduc.2023.1108542>
- Kirmizi, Ö., & Kirmizi, G. D. (2015). An Investigation of L2 Learners' Writing Self-Efficacy, Writing Anxiety and Its Causes at Higher Education in Turkey. *International Journal of Higher Education*, 4(2), 57-66. <http://dx.doi.org/10.5430/ijhe.v4n2p57>
- Kucuk, T. (2023). Factors leading to writing anxiety in EFL classes. *International Journal of Social Sciences & Educational Studies*, 10(1), 1-12. <https://doi.org/10.23918/ijsses.v10i1p1>
- Liu, Y. (2020). The Effect of Sentence-Making Practice on Adult EFL Learners' Writing Anxiety: A Comparative Study. *English Language Teaching*, 13(6), 34-47. <https://doi.org/10.5539/elt.v13n6p34>
- Luu, D. P. (2025). A theoretical framework for explicit instruction of idiomatic and formulaic language in EFL academic contexts. *International Journal of Educational Innovations*, 2(1), 1-13. <https://doi.org/10.46451/ijei.251126>
- Luu, D. P., & Bui, G. H. (2026). Exploring the relationship between writing motivation and writing test scores among English majors at a Vietnamese public university. *HO CHI MINH CITY OPEN UNIVERSITY JOURNAL OF SCIENCE-SOCIAL SCIENCES*. <https://journalofscience.ou.edu.vn/index.php/socien/article/view/5003>
- Luu, D. P., & Le, T. T. V. (2026). Exploring the relationship between vocabulary learning problems and strategies among non-English major students at a public university. *HO CHI MINH CITY OPEN UNIVERSITY JOURNAL OF SCIENCE - SOCIAL SCIENCES*, 16(12). <https://journalofscience.ou.edu.vn/index.php/socien/article/view/4985>
- Luu, D. P., & Nguyen, V. T. X. (2026). Exploring the relationship between writing anxiety and writing achievement among English majors at a Vietnamese public university. *HO CHI MINH CITY OPEN UNIVERSITY JOURNAL OF SCIENCE-SOCIAL SCIENCES*. <https://journalofscience.ou.edu.vn/index.php/socien/article/view/5003>

- Luu, D. P., Nguyen, V. T. X., Do, L. C., & Nguyen, T. P. (2025). A Self-Determination Theory Model of Gamified EFL Intrinsic Motivation. *EuroGlobal Journal of Linguistics and Language Education*, 2(5), 60-74. <https://doi.org/10.69760/egille.2505005>
- Nguyen, T. T. L., & Suwannabubpha, S. (2025). EFL Writing at Thai Secondary Schools: Teachers and Studentsâ Views, Difficulties and Expectations. *Language Related Research*, 12(3), 187-214. https://www.sid.ir/en/VEWSSID/J_pdf/135820216306.pdf
- Pardede, P. (2024). Collaborative writing in EFL settings: A review. *JET (Journal of English Teaching)*, 10(1), 92-109. <https://ejournal.uki.ac.id/index.php/jet/article/view/5631>
- Phi, L. D., Nguyen, H. M. A., Nguyen, D. T. T., Le, N. D., Le, T. T. V., Do, T. X. T. (2025). Integrating gamification into the classroom: Theoretical mechanisms for enhancing student engagement. *International Journal of All Research Writings*, 7(4), 22-30. <https://www.academia.edu/download/125485144/IJARW2807.pdf>
- Prasetyaningrum, A., Nazri, A., & Asrobi, M. (2021). A Study of Learnersâ€™ Writing Anxiety in EFL Context. *Jo-ELT (Journal of English Language Teaching) Fakultas Pendidikan Bahasa & Seni Prodi Pendidikan Bahasa Inggris IKIP*, 8(1), 19-31. <https://ojspanel.undikma.ac.id/index.php/joelt/article/view/3707>
- Sabti, A. A., Md Rashid, S., Nimehchisalem, V., & Darmi, R. (2019). The impact of writing anxiety, writing achievement motivation, and writing self-efficacy on writing performance: A correlational study of Iraqi tertiary EFL learners. *SAGE open*, 9(4), 2158244019894289. <https://doi.org/10.1177/2158244019894289>
- Saghafi, K., Adel, S. M. R., & Zareian, G. (2017). An ecological study of foreign language writing anxiety in English as a foreign language classroom. *Journal of Intercultural Communication Research*, 46(5), 424-440. <https://doi.org/10.1080/17475759.2017.1367954>
- Salikin, H. (2019). Factors affecting male and female Indonesian EFL students' writing anxiety. *Indonesian Journal of Applied Linguistics*, 9(2), 316-323. <https://doi.org/10.17509/ijal.v9i2.20229>
- Selcuk, H., Jones, J., Vonkova, H., & Kratochvíl, R. (2019). The use of Google Translate as an ICT tool in web-based collaborative writing: Self-reported accounts of EFL learners. *Proceedings of IAC*, 74-80.
- Sun, J., Motevalli, S., & Chan, N. N. (2024). Exploring writing anxiety during writing process: an analysis of perceptions in chinese english as a foreign language (efl) learners. *Qualitative Research in Education*, 13(2), 149-164.
- Sun, Y. C., Yang, F. Y., & Liu, H. J. (2022). Exploring Google Translate-friendly strategies for optimizing the quality of Google Translate in academic writing contexts. *SN Social Sciences*, 2(8), 147.
- Xu, J. (2021). Google Translate for writing in a Japanese class: What students do and think. *Journal of the National Council of Less Commonly Taught Languages*, 30, 136-182.

<https://ncolctl.org/wp-content/uploads/2021/04/Google-Translate-for-Writing-in-a-Japanese-Class-What-Students-Do-and-Think.pdf>

Zhu, S., & Wang, C. (2025). Effects of corrective feedback on writing motivation and anxiety: A structural equation model of adult CSL learners in Vietnam. *Thinking Skills and Creativity*, 57, 101844. <https://doi.org/10.1016/j.tsc.2025.101844>