

Original Article

Factors of Second Language Writing Accuracy: The Role of First Language and Informal English Exposure Among Senior High School Students

Gliezel L. Cabaltican-Escalante¹ , Midge Seiman Flor Maines² , John N. Cabansag³ 

Author Information:

¹Cabatuan National High School, Isabela, Philippines

²San Mariano National High School, Isabela, Philippines

³Apayao State College, Conner, Apayao, Philippines

Corresponding Author:

gliezel.escalante@gmail.com

Article History:

Date received: April 9, 2026

Date revised: May 6, 2026

Date accepted: May 20, 2026

Recommended citation:

Cabaltican-Escalante, G., Maines, M.S.F., & Cabansag, J. (2026). Factors of second language writing accuracy: The role of first language and informal English exposure among senior high school students. *Journal of Interdisciplinary Perspectives*, 4(6), 323 - 330.

<https://doi.org/10.69569/jip.2026.009>

Abstract. Despite formal pedagogical interventions, emergent bilinguals persistently struggle with English writing accuracy due to first language (L1) negative transfer. While informal English exposure through digital media improves general second-language (L2) proficiency, its specific capacity to moderate L1 structural influence during writing remains underexplored. Addressing this gap, this study examines the relationships among L1 background, informal English exposure, and writing inaccuracy. This study employed a predictive-correlational design with a stratified random sample of 77 senior high school students. Researchers collected data using a validated scale for informal English exposure and a diagnostic error analysis of 250-350-word L2 compositions to measure omission, insertion, substitution, misinformation, misordering, and syntactic errors. Structural equation modeling revealed that L1 influence significantly predicted higher writing inaccuracy ($\beta = .34$, $p < .001$), confirming negative transfer effects. Conversely, informal English exposure had a significant negative direct effect on writing errors ($\beta = -.42$, $p = .003$). Crucially, informal exposure significantly moderated the relationship between L1 background and writing inaccuracy, buffering the detrimental effects of L1 interference. These findings demonstrate that out-of-class English engagement actively mitigates cross-linguistic errors, offering critical implications for integrating informal digital learning into formal ESL writing instruction.

Keywords: *First language background; Informal English exposure; Negative transfer; Second language writing; Writing accuracy*

Writing in English as a second language is a complex process. Zhan et al. (2024) and Jabari et al. (2025) note that writing demands lexical breadth and syntactic precision. The Philippine government recognizes the importance of literacy for national development. Basic education programs intend to secure functional literacy in the country. Previously, schools treated reading and writing as simple classroom drills for grade school mastery. Educators now consider these narrow approaches insufficient, but classroom realities show that foundational struggles persist. Senior high schools today receive students with highly unequal levels of English proficiency. Educators currently provide various interventions to address this gap (Sarré et al., 2021;

Chen & Huang, 2023). However, structural inaccuracies remain a persistent hurdle for students.

This friction is primarily a manifestation of cross-linguistic influence, widely identified as L1 negative transfer. When formulating texts, emergent bilinguals synthesize discourse across L1 and L2. They typically rely on mental translation. This strategy inadvertently projects native rules onto English outputs. Students attempt to process target language structures to cope with academic demands. However, these structures lack direct equivalents in their native morphology. Researchers observed cross-linguistic lexical influences and morphosyntactic inconsistencies (Lemmerth & Hopp, 2019; He & Oltra-Massuet, 2024). This interference extends across various domains. It affects English grammar skills and the acquisition of conjunctions (Kong et al., 2023; van Koert et al., 2023). Tran et al. (2024) confirm that L1-negative transfer poses challenges, resulting in recurrent structural failures. Van Dijk and Hopp (2025) explain that cross-linguistic priming establishes structural preferences. This acts as a cognitive filter. It makes the mother tongue a critical predictor of L2 syntactic complexity.

Language acquisition environments have shifted today. Sundqvist (2024) recognizes Extramural English Exposure (EEE) as a crucial individual difference variable. Students participate in out-of-school digital activities like gaming, reading, and watching videos. These activities offer distinct benefits. They aid vocabulary acquisition among young learners (Laufer & Vaisman, 2023), help university students expand their lexical size (Busby, 2024), and build a firm foundation in broader reading comprehension (Rezai et al., 2025). In the past, teachers often viewed digital media as a distraction that students spent too much time on. Modern pedagogy now rejects this outdated view, recognizing that informal exposure is just as necessary as formal instruction. Kaatari et al. (2023) proved that frequent extramural activities actively improve L2 written production. Alonso and Fernández Dobao (2025) noted similar improvements in grammar. Casale and Olsson (2025) found that primary school educators now recognize this pedagogical necessity that they must adapt to.

Informal digital learning also influences the psychological dimensions of language learning. Sustained extramural exposure lowers affective filters and alters interactional behaviors (Lee & Sylvén, 2021; Lee et al., 2024). This out-of-classroom exposure is vital for optimizing bilingual advantages (Tribushinina et al., 2025). However, a critical gap still exists in the literature. Researchers have well-documented the detrimental effects of L1 negative transfer and the independent linguistic gains of EEE. However, few have mathematically modeled their intersecting dynamics. Rigorous structural equation modeling approaches are required (Faul et al., 2009; Hair et al., 2021). Researchers need to determine if informal extramural exposure acts as an active moderating buffer against ingrained syntactic intrusions. Understanding this interplay is crucial. Ilocano senior high school learners present a unique linguistic ecosystem. They reflect the diverse proficiency levels schools are currently achieving.

This study explores the relationship between First Language (L1) influence and English writing inaccuracy. It examines Grade 11 senior high school students to investigate how informal engagement with the English language outside the classroom buffers the grammatical errors associated with mother-tongue interference. Specifically, it seeks to: (a) determine the respondents' linguistic profiles and levels of extramural English exposure; (b) measure the frequency of their English writing inaccuracies across form and syntax; and (c) assess the structural predictive pathways using PLS-SEM while testing the moderating effect of extramural English exposure. This study provides teachers with a clearer picture of learner proficiency. It offers a practical basis for curriculum planners designing targeted interventions. Finally, this research supports the policy goals of the Department of Education (DepEd) to produce functionally literate graduates by utilizing learner errors as meaningful indicators for instructional improvement.

Methodology

Research Design

This study utilized a quantitative, predictive-correlational research design. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed as the primary analytical framework. PLS-SEM was selected because it is optimally designed for prediction-oriented modeling and complex theoretical frameworks that incorporate both formative and reflective measurement models.

Participants and Sampling Technique

The target population for this study consisted of the 217 Grade 11 senior high school students enrolled for the school year 2025-2026 at Cabatuan National High School. To ensure precise statistical power for the PLS-SEM analysis, an a priori power analysis was conducted using G*Power software. Assuming a medium effect size ($f^2 =$

0.15), an alpha level of 0.05, a target power of 0.80, and a structural model containing three main predictors (the L1 variables, the EEE moderator, and the interaction term), the minimum required sample size was calculated at 77. Stratified random sampling was then utilized to ensure proportional representation across the four academic strands: ABM, GAS, STEM, and TVL. Table 1 details the population distribution and the corresponding sample size for each strand.

Table 1. *Distribution of Population and Sample Size by Strand*

Strand	Population (N)	Percentage (%)	Sample (n)
ABM	68	31.34%	24
GAS	47	21.66%	17
STEM	71	32.72%	25
TVL	31	14.29%	11
Total	217	100.00%	77

The inclusion criteria required participants to be officially enrolled Grade 11 students who completed both the survey and the writing task. Students who submitted plagiarized compositions or incomplete survey protocols were excluded from the dataset.

Research Instrument

Data was gathered using two primary instruments to construct the outer measurement models for the PLS-SEM. To measure English Writing Inaccuracy, respondents were asked to write a composition entitled “My Favorite Place” containing 250 to 350 words. The essays were evaluated using the error categorization framework drawn up by Chaudhary and Zahrani (2020), which identifies errors in form (omission, insertion, substitution, misinformation, and misordering) alongside syntactic structural errors (comma splices, fragments, and run-on sentences). The raw frequencies of these specific error types served as the direct indicators to form the “Writing Inaccuracy” latent construct. To standardize and avoid skewing the data set based on the varying length of the essays, the frequency of error was counted as errors per 100 words, as in $(\text{Total Errors} \div \text{Total Words Written}) \times 100$.

A researcher-made 10-item questionnaire was also utilized to measure the frequency of students' voluntary engagement with the English language outside formal academic settings, or the Extramural English Exposure (EEE) Scale. The items were conceptually developed drawing on contemporary literature on digital literacy and informal second-language acquisition. The instrument employed a 5-point Likert scale (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always). The item indicators were explicitly outlined below.

Furthermore, a brief demographic profile sheet was used to ascertain students' primary spoken language (L1), which was coded into categorical dummy variables (1 for Ilocano, 0 for otherwise) to serve as the exogenous predictive constructs. Because the research locale is predominantly Ilocano-speaking, Ilocano was isolated as the primary predictor of L1 interference.

The developed scale was subjected to content validation by a panel of three language experts prior to deployment, with an average content validity index (CVI) of 0.90. Furthermore, an initial pilot test of the EEE scale was conducted with 15 non-participating Grade 12 students. This preliminary phase established face validity, ensured the clarity of the instructions, and verified that the items were contextually appropriate for the local student demographic. The definitive construct validity and internal consistency (Cronbach's alpha) of the items were subsequently confirmed during the PLS-SEM outer model assessment.

Data Gathering Procedure

Permission was first secured from the authorities. Data collection was conducted face-to-face during the students' free periods in coordination with their class advisers. After a brief orientation explaining the study's purpose, participants were given the EEE survey with a short portion of the profile survey for their first language at home (L1). Immediately following the survey, the students were allotted 45 minutes to complete a written composition. To ensure the authenticity of the written output and accurately capture L1 interference, the use of dictionaries, mobile phones, or translation applications was strictly prohibited during the task. The compositions were subsequently collected, blinded for anonymity, and distributed to three independent language instructors for inter-rater error identification and frequency tallying to establish inter-rater reliability.

Data Analysis Procedure

Descriptive statistics were used in summarizing baseline measurements of the variables. Data processing and structural equation modeling were executed using SmartPLS version 4. The analysis followed the standard two-step procedure in PLS-SEM (Hair et al., 2021).

Measurement Model (Outer Model) Assessment

The reflective EEE construct was evaluated for indicator reliability (outer loadings > 0.70), internal consistency (Cronbach's alpha and Composite Reliability > 0.70), and convergent validity (Average Variance Extracted > 0.50). For the formative dependent variable (Writing Inaccuracy), the indicators (error frequencies) were assessed for critical collinearity VIF issues (Variance Inflation Factor < 3.0), and the significance of their outer weights was tested with bootstrapping at 5,000 resamples.

Structural Model (Inner Model) Assessment

After validating the measurement models, the structural relationships were estimated. The predictive pathways connecting the L1 variable to Writing Inaccuracy, and the moderating effect of EEE on these paths, were evaluated. The model's predictive power was assessed using the coefficient of determination (R^2) and predictive relevance (Q^2). A bootstrapping procedure utilizing 5,000 resamples was performed to generate t-statistics, p-values, and 95% confidence intervals to determine the statistical significance of the path coefficients and the moderation interaction terms.

Ethical Considerations

Strict adherence to research ethics was maintained throughout the study. Because the participants were minors, informed parental consent and student assent were secured prior to participation. The participants were explicitly informed that their involvement was entirely voluntary, with no bearing on their academic grades, and that they retained the right to withdraw from the study at any time without penalty. To guarantee confidentiality and anonymity, all names on the written compositions and surveys were replaced with numerical codes (e.g., Participant 1, Participant 2) prior to the inter-rater analysis. All collected physical and digital data are stored securely and will be permanently disposed of following the publication of the findings.

Results and Discussion

Demographic Profile of Respondents by First Language (L1)

The distribution of respondents ($N = 77$) by their primary first language (L1) provides critical context for the study. As detailed in Table 1, the majority of the sample identified Ilocano as their mother tongue, followed by Tagalog/Filipino and a smaller minority speaking other local languages. For the subsequent PLS-SEM analysis, this categorical data was dummified, with "Ilocano" serving as the primary exogenous variable of interest (coded as 1; 0 for otherwise).

Table 1. Distribution of Respondents by First Language

First Language (L1)	Frequency (n)	Percentage (%)
Ilocano	45	58.44
Tagalog / Filipino	25	32.47
Others	7	9.09
Total	77	100.00

The predominance of Ilocano speakers underscores the inevitable role of cross-linguistic influence in second language acquisition. Recent research emphasizes that negative transfer from a learner's first language (L1) presents substantial challenges in English (L2) structural mastery, particularly when syntactic rules drastically diverge (Tran et al., 2024). Furthermore, bilingual learners consistently exhibit cross-linguistic lexical and syntactic influences as they attempt to intuitively map L1 structures onto L2 written outputs (Lemmerth & Hopp, 2019). Thus, treating the Ilocano L1 as a baseline exogenous variable is theoretically essential for accurately modeling the trajectory of L2 syntactic errors.

Level of Extramural English Exposure (EEE)

Table 2 presents descriptive statistics for respondents' Extramural English Exposure (EEE). Overall, the respondents demonstrated a moderately high level of informal English exposure outside the classroom. The

highest recorded exposure involved receptive digital media, such as watching English videos and listening to music, whereas productive extramural activities, such as speaking in informal contexts, recorded the lowest frequencies.

Table 2. *Descriptive Statistics of Extramural English Exposure (EEE) Indicators*

Indicator	M	SD	Verbal Interpretation
EEE1: Watching movies, TV shows, or streams	4.31	0.82	Often
EEE2: Listening to English music	4.15	0.85	Often
EEE3: Reading digital/printed articles or blogs	3.78	0.91	Often
EEE4: Playing video games requiring English	3.92	1.04	Often
EEE5: Device/app language settings	4.05	0.98	Often
EEE6: Chatting/messaging online	3.81	0.95	Often
EEE7: Writing social media captions/posts	3.64	0.89	Often
EEE8: Listening to podcasts/audiobooks	3.12	1.11	Sometimes
EEE9: Browsing online forums	3.45	1.02	Sometimes
EEE10: Speaking in informal conversations	2.95	1.08	Sometimes
Grand Mean	3.82	0.61	Often

This level of exposure reflects the shifting paradigm of modern language acquisition toward informal environments. The dominance of receptive digital activities corroborates findings that out-of-classroom L2 vocabulary and syntax acquisition are heavily driven by digital media engagement (Laufer & Vaisman, 2023). Informal digital learning not only provides authentic input but also significantly shapes learners' emotional engagement and willingness to interact (Lee et al., 2024). From a usage-based approach, frequent authentic exposure allows learners to incrementally build their linguistic repertoire and implicitly internalize grammar structures outside formal schooling (Ellis & Wulff, 2020).

Frequency of English Writing Inaccuracies

The frequency of writing errors identified in the respondents' compositions is presented in Table 3. Aligning with the initial hypotheses, omission emerged as the most frequent form-related error among the students, followed by substitution and insertion. Misordering was the least frequent error type observed.

Table 3. *Descriptive Statistics of English Writing Errors per Category*

Error Category (Avazpour Framework)	Mean Frequency per 100 Words	SD	Min	Max
Form Errors				
ERR1: Omission	5.21	2.14	1	12
ERR2: Insertion	3.45	1.82	0	8
ERR3: Substitution	4.12	2.01	0	9
ERR4: Misinformation	2.88	1.65	0	7
ERR5: Misordering	1.34	1.15	0	4
Syntactic Errors				
ERR6: Syntactic Structure (Fragments/Splices)	3.95	1.77	1	9

The high frequency of omission and substitution errors highlights the intricate challenges of L2 writing development among bilinguals. These specific inaccuracies stem from the cognitive demands of bridging disparate linguistic systems (Ünal Gezer et al., 2025). When bilinguals process L2 syntax, they frequently resort to mental translation, leading to structural gaps—such as the omission of articles or copula verbs—that do not exist in their native morphology (Lemmerth & Hopp, 2019). These errors are symptomatic of L1 negative transfer, wherein mother-tongue parameters inadvertently disrupt L2 production (Tran et al., 2024). Consequently, these inaccuracies are not random mistakes but systematic reflections of interlanguage trajectories (Ellis & Wulff, 2020).

Measurement Model (Outer Model) Assessment

The reflective measurement model for Extramural English Exposure was evaluated for internal consistency reliability, convergent validity, and indicator reliability (see Table 4). Items EEE8 and EEE10 were removed as their outer loadings fell below the 0.708 threshold. The retained items exhibited strong outer loadings. The construct demonstrated excellent internal consistency and established convergent validity.

The main endogenous variable, English Writing Inaccuracy, was modeled formatively. As detailed in Table 5, all Variance Inflation Factor (VIF) values were well below the stringent 3.0 threshold, confirming the absence of critical collinearity among the error types. Furthermore, the outer weights for all indicators were significant,

indicating strong contributions to the formative construct.

Table 4. Construct Reliability and Validity of the Reflective Model (EEE)

Construct/ Indicators	Outer Loadings	Cronbach's α	rho_c	AVE
EEE1: Watching movies, TV shows, or streams	.812	.892	.914	.575
EEE2: Listening to English music	.765			
EEE3: Reading digital/printed articles or blogs	.791			
EEE4: Playing video games requiring English	.732			
EEE5: Device/app language settings	.788			
EEE6: Chatting/messaging online	.881			
EEE7: Writing social media captions/posts	.842			
EEE9: Browsing online forums	.745			

Note: Indicators EEE8 and EEE10 were removed due to low outer loadings (< 0.708).

Table 5. Assessment of the Formative Measurement Model (Writing Inaccuracy)

Formative Indicators	Outer Weights	t-value	p-value	VIF	Decision
ERR1: Omission	0.412	4.561	$<.001^{**}$	1.64	Retained
ERR2: Insertion	0.385	2.822	.048*	1.42	Retained
ERR3: Substitution	0.355	3.125	.002**	1.55	Retained
ERR4: Misinformation	0.350	2.512	.013*	1.31	Retained
ERR5: Misordering	0.292	2.204	.022*	1.18	Retained
ERR6: Syntactic Errors	0.310	2.548	.011*	1.49	Retained

Note: * $p < .05$, ** $p < .01$.

Structural Model and Moderation

The structural model was evaluated to test the direct and moderating effects of the constructs on English Writing Inaccuracy. The predictive pathways and structural relationships are illustrated in Figure 1.

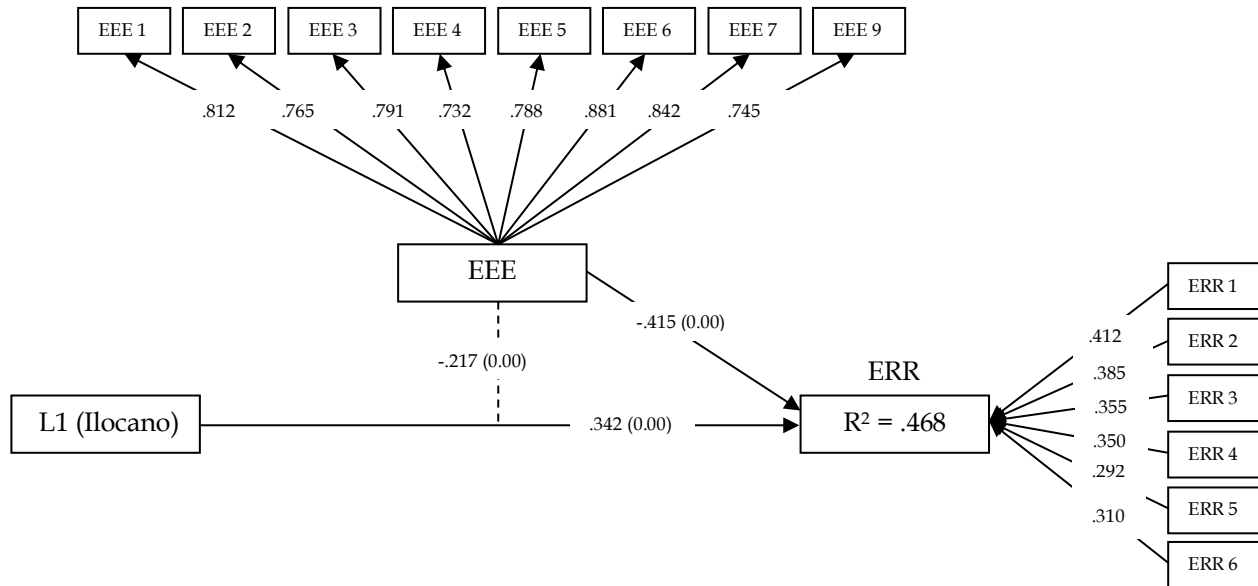


Figure 1. Visual Model of the Structural Relationships

The path estimates, determined using a 5,000-resample bootstrapping procedure, are summarized in Table 6. The analysis shows that the L1 baseline (Ilocano) has a significant positive direct effect on writing inaccuracy, indicating that being an Ilocano L1 speaker is a significant predictor of higher grammatical and syntactic errors. Conversely, Extramural English Exposure (EEE) has a significant negative direct effect on writing inaccuracy, meaning greater informal exposure significantly reduces errors.

Table 6. Structural Path Coefficient and Effect Size Estimates

Structural Path	Original Sample (β)	Standard Error	t-value	p-value	f^2	Decision
L1 (Ilocano) $\rightarrow$ Writing Inaccuracy ($X \rightarrow Y$)	.342	.094	3.615	.000**	.14	Significant
EEE $\rightarrow$ Writing Inaccuracy ($M \rightarrow Y$)	-.415	.085	4.882	.000**	.22	Significant
L1 * EEE $\rightarrow$ Writing Inaccuracy ($X * M \rightarrow Y$)	-.278	.094	2.945	.003**	.12	Significant

Crucially, the interaction term ($L1 \times EEE$) yielded a significant negative path coefficient ($\beta = -.28$, $t(75) = 2.95$, $p = .003$ [two-tailed]). This confirms the moderation hypothesis, proving that extramural English exposure significantly buffers the effect of L1 interference on writing inaccuracy. Furthermore, the structural model demonstrates moderate-to-strong explanatory power, accounting for 46.8% of the variance in writing inaccuracy ($R^2 = 0.47$). A blindfolding procedure confirmed that the exogenous constructs hold significant predictive relevance ($Q^2 = 0.30$).

These results offer strong empirical evidence regarding the competing mechanisms of second language inaccuracy. The significant positive pathway from L1 confirms the pervasive challenges of negative transfer, where reliance on the mother tongue systematically drives structural failures (Lemmerth & Hopp, 2019; Tran et al., 2024). Conversely, the significant negative effect of EEE validates the profound benefits of out-of-classroom digital activities in curbing written errors (Laufer & Vaisman, 2023). Most importantly, the moderating effect reveals that extensive informal digital learning serves as a powerful compensatory mechanism (Lee et al., 2024). Sustained authentic exposure implicitly recalibrates syntactic processing, helping learners override deeply ingrained L1 patterns before they translate into written inaccuracies (Ellis & Wulff, 2020). Thus, extramural exposure bridges the interlanguage gap and fosters greater L2 written accuracy.

Conclusion

This study demonstrates that informal English exposure functions not merely as an auxiliary learning tool but as a critical moderating mechanism that actively buffers the detrimental effects of L1 negative transfer on L2 writing. By mathematically modeling this interaction, the research moves beyond isolated observations of mother-tongue interference. It empirically establishes that consistent, authentic digital engagement empowers emergent bilinguals to bypass native syntactic filters, thereby significantly reducing systemic writing inaccuracies.

These findings provide concrete implications across practice, policy, and research. For classroom practice, writing instructors should move away from purely penalizing native-language interference and instead leverage students' existing extramural habits. Instruction must explicitly bridge the gap between the informal English consumed in digital spaces and the strict syntactic requirements of academic writing. At the curriculum and policy level, planners should formalize the integration of out-of-class media engagement into standard ESL frameworks. Recognizing digital exposure as a vital, measurable component of language development aligns directly with broader educational goals of achieving functional literacy.

While the findings are statistically robust, the cross-sectional design involving Grade 11 Ilocano students presents limitations regarding long-term syntactic development. However, these limitations offer constructive avenues for future research. Subsequent longitudinal studies should track how specific modalities of informal exposure, such as interactive gaming versus passive video consumption, differentially affect error rates over time. Furthermore, examining these predictive pathways across diverse regional language groups will help validate the universal applicability of this moderation model in varying bilingual contexts.

Contributions of Authors

The authors conceptualized and proposed the study, designed the research, collected and analyzed the data, and prepared and finalized the manuscript.

Funding

This study did not receive any funding from agencies in the public or commercial sectors.

Conflict of Interests

There is no known conflict of interest.

Acknowledgment

The authors express their sincerest gratitude to the Almighty for the wisdom and perseverance He granted for the completion of this study.

References

- Alonso, R., & Fernández-Dobao, A. (2025). Adolescents' informal exposure to English as a second language in the context of Galicia: Effects on vocabulary, grammar, and writing. *ITL - International Journal of Applied Linguistics*, 176. <https://doi.org/10.1075/itl.23010.alo>
- Busby, N.L. (2024). Exploring the effects of early extramural English exposure on the vocabulary size of university students. *Education Sciences*, 14(4), 372. <https://doi.org/10.3390/educsci14040372>
- Calafato, R., & Clausen, T. (2025). Vocabulary learning strategies in extramural English gaming and their relationship with vocabulary knowledge. *Computer Assisted Language*

- Learning, 38(8), 1825–1843. <https://doi.org/10.1080/09588221.2024.2328023>
- Casale, A., & Olsson, E. (2025). Extramural English and English teaching: A survey study among primary school teachers in Sweden. *Innovation in Language Learning and Teaching*, 1–21. <https://doi.org/10.1080/17501229.2025.2563110>
- Chaudhary, A., & Al Zahrani, S. (2020). Error analysis in the written compositions of EFL students: A classroom study. *International Journal of English Linguistics*, 10(2), 357–366. <https://doi.org/10.5539/ijel.v10n2p357>
- Chen, B., & Huang, J. (2023). A Chinese perspective on writing English abstracts: Challenges, errors, improvement tips, and critical reflections. *SAGE Open*. <https://doi.org/10.1177/21582440231194188>
- Ellis, N., & Wulff, S. (2020). Usage-based approaches to L2 acquisition. Routledge. <https://doi.org/10.4324/9780429503986-4>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41(4), 1149–1160. <https://doi.org/10.3758/BRM.41.4.1149>
- Hair, J., Jr., Hult, G.T., Ringle, C., Sarstedt, M., Danks, N., & Ray, S. (2021). Partial least squares structural equation modeling (PLS-SEM) using R: A workbook. Springer. <https://doi.org/10.1007/978-3-030-80519-7>
- He, Q., & Oltra-Massuet, I. (2024). Morphosyntactic inconsistency in cross-linguistic transfer: Pedagogical implications for teaching English questions to Chinese EFL learners. *Language Teaching Research*. <https://doi.org/10.1177/13621688211029430>
- Jabari, M.A., Liang, X., & Albert, Á. (2025). The influence of task type and learner language background on writing production and anxiety: A Bayesian linear mixed-effects analysis. *Studies in Second Language Learning and Teaching*, 15(4), 205–225.
- Kaatari, H., Larsson, T., Wang, Y., Acikara-Eickhoff, S., & Sundqvist, P. (2023). Exploring the effects of target-language extramural activities on students' written production. *Journal of Second Language Writing*, 62, 101062. <https://doi.org/10.1016/j.jslw.2023.101062>
- Kong, M.S., Carr, M., & Chong, S.W. (2023). Cross-linguistic influence in Hong Kong ESL learners' acquisition of conjunctions. *Fudan Journal of the Humanities and Social Sciences*, 16, 515–539. <https://doi.org/10.1007/s40647-023-00384-y>
- Laufer, B., & Vaisman, E.E. (2023). Out-of-classroom L2 vocabulary acquisition: The effects of digital activities and school vocabulary. *The Modern Language Journal*, 107(4), 854–872. <https://doi.org/10.1111/modl.12880>
- Lee, J.S., Kiaer, J., & Jeong, S. (2025). The role of informal digital learning of Korean in KFL students' willingness to communicate. *Journal of Multilingual and Multicultural Development*, 46(3), 863–879. <https://doi.org/10.1080/01434632.2023.2216671>
- Lee, J.S., & Sylvén, L.K. (2021). The role of informal digital learning of English in Korean and Swedish EFL learners' communication behaviour. *British Journal of Educational Technology*, 52, 1279–1296. <https://doi.org/10.1111/bjet.13082>
- Lee, J.S., Xie, Q., & Lee, K. (2024). Informal digital learning of English and L2 willingness to communicate: Roles of emotions, gender, and educational stage. *Journal of Multilingual and Multicultural Development*, 45(2), 596–612. <https://doi.org/10.1080/01434632.2021.1918699>
- Lemmerth, N., & Hopp, H. (2019). Gender processing in simultaneous and successive bilingual children: Cross-linguistic lexical and syntactic influences. *Language Acquisition*, 26(1), 21–45. <https://doi.org/10.1080/10489223.2017.1391815>
- Li, K., Peterson, M., & Wang, Q. (2024). Out-of-school language learning through digital gaming: A case study from an activity theory perspective. *Computer Assisted Language Learning*, 37(5–6), 1019–1047. <https://doi.org/10.1080/09588221.2022.2067181>
- Neagu, T., Eklöf, H., Laukaityte, I., & Wedman, J. (2025). Reading, watching and gaming: Exploring the relationships between extramural English activities and academic L2 English reading comprehension in a Swedish university admissions test context. *Education Inquiry*, 1–16. <https://doi.org/10.1080/20004508.2025.2556572>
- Ogawa, Y. (2025). EFL essay writing: Grammatical accuracy and productivity. *Journal of Response to Writing*, 11(1), Article 3. <https://scholarsarchive.byu.edu/journalrw/vol11/iss1/3>
- Pardes, P. (2024). Collaborative writing in EFL settings: A review. *Journal of English Teaching*, 10(1), 92–109. <https://doi.org/10.33541/jet.v10i1.5631>
- Rezaei, A., Goodarzi, A., & Liu, G.L. (2025). A comparative study of the effects of informal digital learning of English in extracurricular and extramural settings on reading comprehension: A multi-analysis study on Iranian university students. *Computer Assisted Language Learning*, 1–25. <https://doi.org/10.1080/09588221.2025.2491708>
- Sagarra, N., Fernández-Arroyo, L., Lozano-Argüelles, C., & Casillas, J. (2024). Unraveling the complexities of second language lexical stress processing: The impact of first language transfer, second language proficiency, and exposure. *Language Learning*, 74(3), 574–605. <https://doi.org/10.1111/lang.12627>
- Sarré, C., Grosbois, M., & Brudermann, C. (2021). Fostering accuracy in L2 writing: Impact of different types of corrective feedback in an experimental blended learning EFL course. *Computer Assisted Language Learning*, 34(5–6), 707–729. <https://doi.org/10.1080/09588221.2019.1635164>
- Sundqvist, P. (2024). Extramural English as an individual difference variable in L2 research: Methodology matters. *Annual Review of Applied Linguistics*, 44, 79–91. <https://doi.org/10.1017/S0267190524000072>
- Tran, N.T., Nguyen, T.T., & Pham, H.H. (2024). Exploring the challenges of L1 negative transfer among Vietnamese English language learners: A qualitative study. *rEFlections*, 31(2). <https://so05.tci-thaijo.org/index.php/reflections/index>
- Tribushinina, E., Boz, B., Aalbers, V., & Blom, E. (2025). Revisiting bilingual foreign language learning advantages: The role of extramural exposure. *International Journal of Bilingualism*. <https://doi.org/10.1177/13670069231224542>
- Tsuji, K. (2021). Effects of L1 use on L2 text quality: Rethinking cognitive process of formulating L1 texts during L2 writing. *English Language Teaching*, 14(7). <https://doi.org/10.5539/elt.v14n7p44>
- Ünal Gezer, M., Dixon, L.Q., Choi, Y., Wu, S., & Kuo, L.-J. (2025). Early literacy skills and L2 writing development in emergent bilinguals: A 3-year longitudinal study. *Early Education and Development*, 36(6), 1298–1319. <https://doi.org/10.1080/10409289.2025.2521895>
- van Dijk, C., & Hopp, H. (2025). Structural preferences in language learning across languages: Evidence from verb bias effects in cross-linguistic L1-to-L2 and L2-to-L1 priming. *Language, Cognition and Neuroscience*, 40(6), 849–867. <https://doi.org/10.1080/23273798.2025.2476703>
- van Koert, M., Leona, N., Rispens, J., Tijms, J., van der Molen, M., Grunberg, H.L., & Snellings, P. (2023). English grammar skills in Dutch Grade 4 children: Examining the relation between L1 and L2 language skills. *Journal of Psycholinguistic Research*, 52, 1737–1753. <https://doi.org/10.1007/s10936-023-09968-x>
- Zhan, J., Sun, Q., & Zhang, L.J. (2024). Effects of manipulating writing task complexity on learners' performance in completing vocabulary and syntactic tasks. *Language Teaching Research*. <https://doi.org/10.1177/13621688211024360>
- Zhu, X., Li, G.Y., Cheong, C.M., Yu, G., & Liao, X. (2021). Secondary school students' discourse synthesis performance on Chinese (L1) and English (L2) integrated writing assessments. *Reading and Writing*, 34, 49–78. <https://doi.org/10.1007/s11145-020-10065-x>