



A Psycholinguistic Analysis of English Spelling Errors in Indonesian Fifth-Grade Students at SD 'Aisyiyah 1 Kauman Pagaralam

Amelia Dwi Putri^{1*}, Yoga Pratama², Umi Kalsum³

^{1,2,3}STKIP Muhammadiyah Pagaralam, Indonesia

*Correspondence: amelia.dputri98@gmail.com

Received: 06/03/2026 Revised: 17/04/2026 Accepted: 12/05/2026

ABSTRACT

Purpose – This study aims to identify the types of English spelling errors and analyze the underlying psycholinguistic factors causing these errors among fifth-grade students at SD 'Aisyiyah 1 Kauman Pagaralam.

Methodology – Employing a quantitative descriptive research design, this research involved a saturated sample of 41 students. Data were systematically collected using an English spelling test, including dictation and written tasks, alongside a Likert-scale questionnaire based on the Dual-Route Model (DRM). The collected data were processed utilizing SPSS for descriptive statistical analysis.

Findings – The most frequent spelling error was Capitalization Visual (14.3%), followed by Substitution Phonological Auditory (13.7%) and Morphological Visual (12.6%). From a psycholinguistic perspective, these errors were primarily triggered by working memory limitations (Performance mean = 24.05), lexical retrieval failure (Cognitive mean = 22.54), and profound mother tongue interference (L1 mean = 22.51) combined with weak English phonological awareness.

Novelty – The study empirically links written spelling error patterns back to their probable psycholinguistic causes in early EFL learners, addressing the research gap of merely counting error frequencies in local contexts.

Significance – Educators and curriculum designers would benefit from this study to design targeted pedagogical interventions, ultimately improving transcription skills and writing self-efficacy in Indonesian elementary schools.

Keywords: Dual-route model; EFL learners; Psycholinguistics; Spelling errors; Working memory

How to cite: Putri, A. D., Pratama, Y., & Kalsum, U. (2026). A Psycholinguistic Analysis of English Spelling Errors in Indonesian Fifth-Grade Students at SD 'Aisyiyah 1 Kauman Pagaralam. *Journal of Literature Language and Academic Studies*, 05(2), pp. 81-89, doi: <https://doi.org/10.56855/jllans.v5i2.2090>



1. Introduction

English as a foreign language (EFL) plays a crucial role in 21st-century education and serves as a primary lingua franca in various global sectors. In Indonesia, English is categorized as a foreign language with limited linguistic input in the social environment, making the acquisition process heavily reliant on the quality of formal teaching. Elementary education is a highly strategic phase for foundational language development, leading the government to establish English as a compulsory subject across educational levels to foster international competitiveness. Introducing English at the elementary level equips students for international demands and strengthens cross-cultural interaction capabilities. Within formal instruction, the mastery of productive skills, such as writing, is highly complex and significantly influenced by receptive input. Writing demands the simultaneous orchestration of high-level idea generation and lower-level transcription skills, with spelling accuracy acting as a critical prerequisite for high-quality text composition.

Consequently, the majority of understanding writing difficulties relies on a thorough review of relevant literature concerning orthography and cognitive processes. Spelling is a multifaceted linguistic skill that integrates phonological, orthographic, and morphological knowledge. English is characterized by a deep orthography containing irregular spelling patterns and multiple pronunciation rules, creating significant cognitive challenges for young learners who cannot rely solely on phonetic strategies. In stark contrast, the Indonesian language features a shallow, transparent orthography with a consistent one-to-one correspondence between phonemes and graphemes. When learning English, Indonesian students frequently transfer their native transparent spelling strategies, leading to a high frequency of phonological and structural errors. The Dual-Route Model (DRM) provides a robust psycholinguistic framework to analyze these mechanisms by mapping two cognitive pathways: the lexical route for retrieving familiar words from memory, and the non-lexical (phonological) route for converting phonemes to graphemes in unfamiliar words. Under this framework, spelling errors emerge when these cognitive routes become overloaded or fail due to specific factors such as lexical retrieval failure, over-reliance on phonetic strategies, working memory limitations, or first-language interference.

The problem statement of this research centers on the persistent difficulties Indonesian elementary students face in English spelling due to the clash of contrasting orthographic systems and inherent cognitive limitations. While international empirical research strongly validates the psycholinguistic underpinnings of spelling challenges, a critical research gap exists within the Indonesian EFL context. Previous local investigations have predominantly relied on descriptive quantitative approaches focused merely on counting the frequency and basic typology of observable spelling errors. These prior studies are limited as they fall short of providing a deeper, explanatory understanding of the cognitive and psycholinguistic mechanisms driving these errors. There is an evident need to empirically link written spelling error patterns back to their probable psycholinguistic causes, such as phonological processing and working memory, in early EFL learners navigating limited language input.

To address this critical gap, the current investigation adopts a descriptive quantitative-psycholinguistic approach to systematically evaluate student spelling errors. The primary objectives of this study are to identify and classify the specific types of English spelling

errors made by fifth-grade students at SD Aisyiyah 1 Kauman Pagar Alam, and to analyze the underlying psycholinguistic factors influencing the emergence of these errors. By interpreting error patterns through the Dual-Route Model framework, this research aims to provide a clear diagnostic map for educators to design targeted pedagogical interventions, ultimately improving transcription skills and writing self-efficacy in Indonesian elementary schools.

2. Theoretical Framework

2.1. The Concept of Writing and Orthographic Challenges

Writing is a multifaceted cognitive activity requiring the synthesis of linguistic, psychological, and motor capabilities. Proficient writing demands the simultaneous orchestration of high-level idea generation and lower-level transcription skills, such as spelling and handwriting. Mastering spelling is critical because automatized transcription significantly reduces the burden on working memory, allowing learners to focus on text quality. However, learning English spelling presents a distinct cognitive challenge due to its deep orthography, characterized by irregular spelling patterns and multiple pronunciation rules. This contrasts sharply with the Indonesian language, which features a transparent orthography with consistent phoneme-grapheme correspondences. Consequently, Indonesian learners often experience negative interlingual transfer, relying heavily on native phonetic strategies when writing in English.

2.2. The Dual-Route Model (DRM) of Spelling

To understand the cognitive mechanisms behind cross-linguistic spelling challenges, this study utilizes the Dual-Route Model (DRM) of spelling. The DRM posits that spelling production diverges into two cognitive pathways. The lexical route is utilized for familiar or irregular words, directly retrieving stored orthographic representations from the mental lexicon. Conversely, the non-lexical (phonological) route is employed for unfamiliar words, converting phonemes into graphemes based on sound rules. Spelling errors occur when one of these routes fails, becomes cognitively overloaded, or is applied inappropriately during word transcription.

2.3. Psycholinguistic Factors and Error Typology

Based on the DRM, cognitive disruptions manifest in specific spelling error typologies, including substitution, omission, addition, transposition, morphological, phonological, and capitalization errors. These physical errors are triggered by underlying psycholinguistic factors. Lexical retrieval failure causes students to default to phonetic guessing for irregular words. Over-reliance on phonetic strategies leads to inaccurate sound-letter mapping. Furthermore, working memory limitations often result in omission or transposition errors as learners struggle to hold letter sequences in mind. Finally, the influence of first-language (L1) orthographic patterns drives learners to apply familiar, transparent sound-symbol rules to a deep orthography system.

3. Methods

3.1. Research Design and Context

This study adopts a quantitative descriptive research design to systematically describe the phenomenon of English spelling errors and their psycholinguistic causes. Specifically, the research employs Error Analysis, a systematic approach used in applied linguistics to investigate, classify, and explain learner errors to better understand the language acquisition process. The research was conducted at SD Aisyiyah 1 Kauman Pagar Alam during the 2025/2026 academic year, representing an Indonesian elementary school context where English is taught as a foreign language with limited external linguistic input.

3.2. Participants

The population for this study consisted of all fifth-grade students at SD Aisyiyah 1 Kauman Pagar Alam. Utilizing a saturated sampling technique, the entire population of 41 students, distributed across two classes, Class V.A (21 students) and Class V.B (20 students), was selected as the research sample.

3.3. Data Collection Procedures and Instruments

Data were collected systematically through two primary instruments designed to capture both the physical spelling errors and the students' internal cognitive processes. The instruments underwent content validation via expert judgment (two senior English lecturers) and empirical validity testing (Pearson Product Moment correlation) on a comparable population, confirming all items as valid and reliable.

3.3.1. Spelling Error Test

The first instrument was an English spelling test consisting of dictation and written tasks designed to capture errors across both lexical and non-lexical DRM routes. The test demonstrated a reliable internal consistency ($KR-20 = 0.687$). The errors produced by the students were systematically classified into seven predefined typologies: substitution, omission, addition, transposition, morphological, phonological, and capitalization.

3.3.2. Psycholinguistic Questionnaire

Immediately following the test, students completed a 25-item psycholinguistic questionnaire utilizing a 5-point Likert scale. This instrument measured four variables derived from the DRM framework: cognitive factors (lexical retrieval), phonological awareness, mother tongue influence (L1), and performance (working memory limitations). The questionnaire demonstrated excellent reliability (Cronbach's Alpha = 0.994).

3.4. Data Analysis Methods

Quantitative data analysis was performed using IBM SPSS 22. First, descriptive statistics (frequencies and percentages) were calculated for the spelling test to map the dominance and prevalence of specific error types. Second, the questionnaire data were analyzed using mean scores and standard deviations to establish the central tendencies of the students' psycholinguistic profiles. Finally, following Ellis's (1994) explanation of errors stage, the statistical outputs were synthesized. The dominant spelling error patterns were interpreted through the DRM framework and cross-referenced with the descriptive questionnaire data to provide a comprehensive explanation of the cognitive mechanisms causing the misspellings.

4. Results and Discussion

4.1. Result

To address the research objectives, the data analysis was conducted systematically following the procedures of Error Analysis, detailing both the spelling test outcomes and the psycholinguistic questionnaire results. Out of 467 total spelling errors identified, the descriptive statistics revealed a heavy clustering around specific mechanical and phonological challenges. As shown in Table 1, the most dominant spelling error was Capitalization Visual, comprising 14.3% of the total errors with 67 occurrences ($M = 1.63$). This was closely followed by Substitution Phonological Auditory (13.7%, $M = 1.56$) and Morphological Visual (12.6%, $M = 1.44$). Conversely, Phonological Visual errors were the least frequent, representing only 3.2% of the errors.

Table 1 - Descriptive Statistics and Percentage of Student Spelling Errors

Error Type	Frequency (Sum)	Mean	Percentage (%)
Capitalization Visual	67	1.63	14.3
Substitution Phonological (Auditory)	64	1.56	13.7
Morphological Visual	59	1.44	12.6
Morphological Auditory	57	1.39	12.2
Omission Auditory	51	1.24	10.9
Omission Visual	44	1.07	9.4
Substitution Visual	38	0.93	8.1
Addition Visual	29	0.71	6.2
Transposition Visual	26	0.63	5.6
Capitalization Auditory	17	0.41	3.6
Phonological Visual	15	0.37	3.2
Total Overall Errors	467		100
(Table Content References:)			

To identify the cognitive causes behind these errors, the descriptive analysis of the psycholinguistic questionnaire evaluated four variables derived from the Dual-Route Model. The results indicated that students systematically reported a high intensity of psychological and cognitive barriers. The Performance variable recorded the highest average score ($M = 24.05$), pointing to severe working memory limitations. The Cognitive variable ($M = 22.54$) and Mother Tongue Influence/L1 ($M = 22.51$) followed closely, illustrating a deeply intertwined relationship between lexical retrieval failure and native language interference. In contrast, Phonological Awareness obtained the lowest average score ($M = 20.56$), highlighting a fundamental weakness in English sound structure comprehension.

Table 2 - Descriptive Statistics of Psycholinguistic Variables

Psycholinguistic Variable	Min	Max	Sum	Mean	Std. Dev
Performance (Working Memory)	17	31	986	24.05	4.254
Cognitive (Lexical Retrieval)	15	27	924	22.54	4.278
Mother Tongue Influence (L1)	15	27	923	22.51	4.273
Phonological Awareness	14	27	843	20.56	4.863
(Table Content References:)					

4.2. Discussion

Interpreted through the Dual-Route Model (DRM), the synthesis of the spelling errors and the psycholinguistic barriers highlights a clear causal relationship between the students' cognitive limitations and their written mechanical output. First, the empirical alignment between the highest psycholinguistic barrier (Performance) and the most frequent error (Capitalization Visual) illustrates severe cognitive overload in early EFL learners. Writing is a demanding dual-task, and when the students' limited working memory is exhausted by the primary effort of decoding unfamiliar English sounds, 'attention fatigue' occurs. The brain instinctively prioritizes core letter sequences and entirely drops secondary conventions, which explains why mechanical negligence like capitalization errors dominated the findings. Similarly, memory exhaustion causes learners to drop or swap letters, resulting in omission and transposition errors.

Second, the high prevalence of Substitution Phonological Auditory errors is deeply rooted in the strong influence of the students' transparent Mother Tongue combined with fundamentally low Phonological Awareness. Because the English orthography is deeply opaque, students' dysfunctional non-lexical routes force them to utilize familiar Indonesian phonetic patterns to decode unfamiliar words. Consequently, an interlingual transfer occurs where students systematically substitute correct English graphemes with Indonesian graphemes that share a similar acoustic quality, essentially transcribing English sounds directly into the Indonesian alphabet (e.g., spelling "sweater" as switer).

Finally, the manifestation of Morphological Visual errors is a direct consequence of the students' highly elevated Cognitive barriers. Accurate spelling requires successful retrieval from the orthographic output lexicon via the lexical route. When students' visual memory capacity fails to retain the complex orthographic structures of target-language vocabulary, lexical retrieval failure occurs. This mental bottleneck forces students to guess, producing visually fragmented and morphologically incomplete English words, such as omitting the plural '-s' or distorting internal vowels (e.g., writing "dress" as drass). Rather than representing complete learning failures, these errors reflect the logical compensatory strategies students develop when their orthographic memory is overloaded.

5. Conclusions

This study advances the scientific understanding of educational psycholinguistics by empirically mapping the cognitive barriers that trigger EFL spelling errors among Indonesian elementary students. Answering the research questions, the findings confirm that fifth-grade students' spelling errors systematically cluster into Capitalization Visual, Substitution Phonological Auditory, and Morphological Visual typologies. These physical errors are directly driven by three intertwined cognitive barriers: working memory limitations, lexical retrieval failure, and mother-tongue (L1) interference compounded by low phonological awareness. Theoretically, this study validates the application of the Dual-Route Model in explaining how the orthographic clash between a transparent L1 and a deep L2 overloads students' lexical and non-lexical cognitive pathways.

Pedagogically, these findings highlight crucial implications for EFL instruction in elementary settings. To mitigate cognitive overload, teachers must adapt their strategies by avoiding overwhelming vocabulary memorization tasks. Instead, educators should employ information chunking systems and develop visually engaging, thematic worksheets (LKPD) utilizing soft, clean illustrations to capture attention and minimize visual clutter. Furthermore, teachers must explicitly emphasize phonological awareness activities, utilizing phonetic drills to dissect the contrasting differences between Indonesian and English pronunciation, thereby preventing students from negatively transferring their native spelling habits.

While this study successfully mapped the error typology and established a cognitive diagnostic framework, it is limited by its quantitative descriptive design, which maps phenomena without testing interventions. Therefore, future research should build upon these empirical findings by conducting experimental studies. Specifically, future researchers are encouraged to investigate the effectiveness of the proposed visually engaging LKPD and chunking-based digital media in significantly reducing spelling errors and working memory overload in real-world EFL classrooms.

Conflict of Interest

The authors declare no conflicts of interest related to this study.

AI Disclosure Statement

During the preparation of this manuscript, the author(s) utilized artificial intelligence (AI) technology to assist with formatting, structural organization, and language refinement to meet the journal's specific template requirements. The AI tool was employed strictly as an editorial and proofreading assistant. All fundamental research ideas, data collection, data analysis, synthesis of findings, and scientific interpretations were entirely conceived and conducted by the human author(s). The author(s) have thoroughly reviewed, edited, and assume full responsibility for the final content and integrity of this published manuscript.

References

- Alfarisy, F. (2021). Kebijakan pembelajaran Bahasa Inggris di Sekolah Dasar di Indonesia. *Jurnal Pendidikan dan Kebudayaan*, 6(2), 203–215.
- Arikunto, S. (2019). *Prosedur penelitian: Suatu pendekatan praktik*. Rineka Cipta.
- Barry, C. (1994). Spelling routes (or, tall stories from the green board). In G. D. A. Brown & N. C. Ellis (Eds.), *Handbook of spelling: Theory, process and intervention* (pp. 27–49). John Wiley & Sons.

- Bruck, M., & Waters, G. S. (1988). An analysis of the spelling errors of children who are good or poor spellers and good or poor readers. *Journal of Experimental Child Psychology*, 46(3), 441–459.
- Caravolas, M. (2018). The development of spelling in English and other alphabetic texts. In G. Miller (Ed.), *The Oxford handbook of reading* (pp. 162–181). Oxford University Press.
- Corder, S. P. (1967). The significance of learner's errors. *International Review of Applied Linguistics in Language Teaching*, 5(1–4), 161–170.
- Corder, S. P. (1974). *Error analysis and interlanguage*. Oxford University Press.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
- Creswell, J. W., & Guetterman, T. C. (2019). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Pearson.
- Crystal, D. (2001). *English as a global language*. Cambridge University Press.
- Darji, C. M. (2023). Impact of Constructivist Pedagogy in Developing RACE among Children. *Journal of Literature Language and Academic Studies*, 2(01), 1-5.
- Ellis, R. (1994). *The study of second language acquisition*. Oxford University Press.
- Fakhrudin, M. U., & Lukita, C. (2023). Teaching Speaking Skills Communicatively to Promote Education 4.0. *Journal of Literature Language and Academic Studies*, 2(02), 22-30.
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design and evaluate research in education*. McGraw-Hill.
- Gathercole, S. E., & Alloway, T. P. (2008). *Working memory and learning: A practical guide for teachers*. SAGE Publications.
- Graham, S. (2019). Changing how writing is taught. *Review of Research in Education*, 43(1), 277–303.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage Learning.
- Harmer, J. (2007). *The practice of English language teaching*. Pearson Longman.
- Hidayat, R. (2021). Analisis kesalahan ortografi dalam tulisan siswa sekolah dasar. *Jurnal Bahasa dan Sastra*, 6(1), 45–58.
- Hyland, K. (2019). *Second language writing*. Cambridge University Press.
- Kim, Y. S. G. (2024). Writing fluency: A key to understanding writing quality. *Educational Psychology Review*, 36(1), 1–25.
- Kim, Y. S. G., & Schatschneider, C. (2017). Expanding the developmental models of writing: A direct and indirect effects model of writing (DIEW). *Journal of Educational Psychology*, 109(1), 35–50.
- Kim, Y. S. G., Al Otaiba, S., Wanzek, J., & Gatlin, B. (2015). Toward an understanding of spelling instructional efficiency. *Journal of Educational Psychology*, 107(2), 570–580.
- Kormos, J. (2023). *The second language writing process: A psycholinguistic perspective*. Routledge.
- Krashen, S. D. (1985). *The input hypothesis: Issues and implications*. Laredo Publishing Company.
- Limpo, T., & Alves, R. A. (2013). Modeling writing development: Contributions of transcription and self-regulation to writing quality in grades 4 to 9. *Reading and Writing*, 26(3), 401–425.
- Niolaki, G. Z., Masterson, J., & Terzopoulos, A. R. (2023). *Transcription skills and writing quality in literacy development*. Springer.
- Peraturan Menteri Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia Nomor 12 Tahun 2024 tentang Kurikulum pada Pendidikan Anak Usia Dini, Jenjang Pendidikan Dasar, dan Jenjang Pendidikan Menengah.

- Putri, A. D., & Sari, N. (2020). Analisis kesalahan ejaan bahasa Inggris pada siswa sekolah dasar di Sumatera Selatan. *Jurnal Pendidikan Bahasa Inggris*, 8(2), 112–125.
- Rapp, B., & Dufor, O. (2011). *The neurobiology of spelling: Evidence from behavioral and lesion studies*. In G. Gaskell (Ed.), *The Oxford handbook of psycholinguistics* (pp. 1–24). Oxford University Press.
- Rapp, B., Purcell, J., Hillis, A. E., Caplan, D., & Low, E. (2015). *Cognitive processes in spelling*. Academic Press.
- Rismayani, R., & Kania, N. (2024). Global and Multicultural Education: A Necessity in the Globalization Era. *Journal of Literature Language and Academic Studies*, 3(3), 118–122.
- Rowa, M. (2022). The student's lack of interest in EFL reading classroom. *Journal of Literature Language and Academic Studies*, 1(01).
- Santangelo, T., & Graham, S. (2016). *A comprehensive meta-analysis of handwriting instruction*. *Educational Psychology Review*, 28(2), 225–265.
- Sari, N. (2018). Frequency and typology of spelling errors in EFL students' writing. *Journal of English and Education*, 6(2), 154–165.
- Sofiani, D., et al. (2019). Orthographic transparency and its impact on reading and writing in Indonesian students. *Indonesian Journal of Applied Linguistics*, 9(1), 183–191.
- Sudijono, A. (2018). *Pengantar statistik pendidikan*. Rajawali Pers.
- Sugiyono. (2016). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.
- Sugiyono. (2019). *Statistika untuk penelitian*. Alfabeta.
- Sugiyono. (2022). *Metode penelitian pendidikan*. Alfabeta.
- Sulistiyo, U. (2016). English language teaching and EFL teacher competence in Indonesia. *Cakrawala Pendidikan*, 35(3), 397–407.
- Tainturier, M. J., & Rapp, B. (2001). The spelling process. In B. Rapp (Ed.), *The handbook of cognitive neuropsychology: What deficits reveal about the human mind* (pp. 263–289). Psychology Press.
- Treiman, R. (2017). Learning to spell: Phonology and beyond. *Current Directions in Psychological Science*, 26(6), 484–490.
- Winkel, H., & Widjaja, V. (2007). Phonological awareness and early literacy development in Indonesian. *Archiv fur Psychologie*, 159(1), 1–12.
- Yunus, M., Wicaksono, B. A., & Andriami, S. M. (2024). Syntactic Analysis of Ideative Functions in Motorcycle Maintenance Manuals. *Journal of Literature Language and Academic Studies*, 3(3), 110–117.