

Original Article

The Trilingual Challenge: Effects of Cognitive Load and Attitudes on Third Language Writing Proficiency Among Filipino Learners

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Abstract. The "Trilingual Challenge" study examines how Bisaya-speaking learners acquire English through Tagalog. It examined students' writing proficiency and attitudes towards learning English, with a focus on the cognitive demands of managing multiple languages. Guided by Cognitive Load Theory, the study involved 600 Grade 10 students. Data were analyzed using weighted means and Spearman's rank-order correlation. The results showed "Poor" overall proficiency ($M=10.03$), while Language Use scores ($M=9.32$) remained below Content scores ($M=10.39$), indicating "mental fatigue" because students chose which concepts to retrieve rather than maintaining technical accuracy. Bivariate analysis showed no significant relationship between attitude and proficiency ($r_s=0.046, p>0.05$), with a coefficient of determination ($r^2=0.002$). L3 writing failure results from structural cognitive problems, which students demonstrate through their writing errors, according to these findings. The study concludes that "Neutral" attitudes act as a psychological defense against great essential difficulty, and recommends pedagogical shifts toward Translanguaging to reduce the cognitive burden of the L1-L2-L3 transition.

Keywords: *Bisaya speakers; Cognitive load; L3; Third language writing; Translanguaging; Trilingual learning challenges*

Multilingual learners in the Philippines, particularly in non-Tagalog-speaking areas, face ongoing academic challenges because they must write in English as their third language. Although essay writing is necessary for Grade 10 students to learn, it remains one of the most difficult skills to master. Students face difficulties when creating content because they must follow grammatical rules. Recent assessments show that most secondary and tertiary students possess only basic writing skills, which do not meet academic requirements. The persistent problem indicates that students lack the fundamental skills needed to switch between different language systems during classroom learning.

Current teaching methods do not meet the specific needs of L3 students because they teach English through second-language acquisition rather than addressing the unique challenges of learning three languages. In areas where Sinugbuanong Binisaya is the first language (L1) and Tagalog/Filipino is the second language (L2), students must learn both language systems before they can begin learning English (L3). The process of

transitioning between multiple layers requires learners to handle excessive cognitive tasks, which leads to a condition scientists call "mental fatigue". When students experience working memory overload, they must focus on retrieving information rather than maintaining technical correctness, which results in more grammatical and structural mistakes.

Previous research has examined writing difficulties in various contexts and has demonstrated that students across different academic programs experience identical problems with grammar and mechanics. The research conducted in Indonesia and Saudi Arabia demonstrates that students with limited writing skills tend to make mistakes in mechanics and tense usage (e.g., Hikmah et al., 2019; Al-Ahdal, 2021). Local studies demonstrate that student writing performance varies considerably across assessment categories, including vocabulary and language use (Agbayani, 2022). The research studies focus on English as a second language, creating a research gap regarding how three different language systems interact to affect academic writing performance.

The research used Sweller's Cognitive Load Theory to explain the phenomenon, as it demonstrates how human working memory is limited in its ability to handle both new and complex information. The process of learning from Binisaya to Tagalog to English requires learners to overcome essential difficulties due to the intricate linguistic transitions involved. The research analyzes how people approach writing through Bandura's Self-Efficacy Theory, which shows that personal beliefs and attitudes are fundamental factors influencing a learner's writing abilities. Traditional theories suggest that positive attitudes increase the likelihood of academic success, but the structural requirements of the trilingual environment affect this relationship differently.

The study examines how L3 writing problems arise from cognitive overload rather than from negative student attitudes or motivational challenges. The research investigates how trilingual environments affect students' writing skills by examining their impact on self-efficacy. The results provide evidence supporting a transition toward new teaching methods, including translanguaging. The writing process benefits from native-language integration because it reduces cognitive load, enabling students to advance their English writing skills. Specifically, this study sought to answer the following questions:

1. What is the level of L3 writing proficiency among Grade 10 learners in terms of Content, Organization, Vocabulary, Language Use, and Mechanics?
2. What is the attitude of the learners toward English writing in terms of their self-efficacy and perceived value?
3. Is there a significant relationship between the learners' writing proficiency and their attitudes?
4. Based on the findings, what intervention (e.g., Translanguaging) can be proposed to reduce cognitive load?

Methodology

Research Design

The researchers used a descriptive-correlational research design to assess the writing skills and attitudes of Grade 10 learners. They used the descriptive part of the study to create a student profile reflecting their L3 writing skills and self-reported attitudes toward English writing. The dataset analysis used a correlational method to examine the relationship between two variables across the entire dataset. The non-experimental design followed Creswell and Creswell's (2018) quantitative framework, enabling researchers to identify patterns among multiple variables in a study of 600 participants. The research design tested whether differences in students' linguistic output, measured by proficiency scores, led to changes in their learner attitudes, assessed through affective factors.

Participants and Sampling Technique

The research participants included 600 Grade 10 students. The sample size was determined using G*Power analysis to ensure sufficient statistical power for the correlational and regression analyses, with a medium effect size ($d = 0.30$) and an alpha level of .05. The researchers used purposive sampling to select study participants. To qualify for the study, participants had to meet the following inclusion criteria: (1) Native speakers of Sinugbuanong Binisaya (L1), (2) Exposed to Tagalog/Filipino as their second language (L2), and (3) Currently enrolled in the English curriculum as a third language (L3).

Data Gathering Procedure

The data collection process followed a systematic three-phase approach, including administrative clearance and instrument preparation, as well as field administration.

Phase 1 is the Preliminary Clearances and Preparation. The study commenced after the school principal granted the necessary administrative permission. The study required parental consent for 600 respondents because minors were participating. The researchers conducted a pre-test with 10 students who would not participate in the study to check if the instruments were clear and understandable.

The second phase is Instrumentation. The data were collected through a two-part survey questionnaire, which included Part 1: Attitude Toward Writing. The section included 20 items, which used a 5-point Likert scale and were adapted from Podsen (1997) and Setyowati (2017). The instrument underwent reliability testing, resulting in a Cronbach's alpha of 0.715. Part 2: Writing Proficiency Assessment. The respondents needed to compose a narrative essay that contained 3 to 5 paragraphs about their personal experiences. The content validity of both assessment components was validated by three specialists in Applied Linguistics and Educational Measurement. The assessment components achieved a Content Validity Index (CVI) rating of 0.92 through this validation process.

Phase 3 is Administration and Retrieval. The instruments were administered during the Homeroom Guidance schedule, which took place from 4:00 PM to 5:00 PM, to prevent academic interruptions. The participants had 1 hour to complete both the attitude survey and the essay prompt. After finishing their work, the researchers checked the questionnaires to ensure everything had been filled out before they began counting the data for statistical analysis.

Data Analysis Procedure

The researchers used Jamovi (version 2.3) to divide their data analysis into four sections to achieve their research goals.

In Phase 1, called Data Cleaning and Assumption Testing, the dataset was assessed for accuracy and completeness before researchers conducted their main analysis. Boxplots were used to detect outliers in the data, yet researchers retained extreme scores because they reflected real performance differences across the entire study sample of 600 participants. The Kolmogorov-Smirnov test indicated that the data did not follow a normal distribution, as both the test results and the positive skew of the distribution were statistically significant at the 0.05 level. Non-parametric tests were chosen as the appropriate method for subsequent inferential testing.

During Phase 2, or Descriptive Profiling, the researchers calculated weighted means and standard deviations to assess students' writing skills and attitudes toward writing. In terms of Writing Proficiency, the assessment results included five sub-domains: Content, Organization, Vocabulary, Language Use, and Mechanics. Each component received a score between 0 and 20, for a total of 100 points, which researchers used to assess student performance across seven proficiency levels, including "Excellent" and "Very Poor". Also, regarding Learner Attitudes, the 20-item Likert-scale results were tallied to create three attitude categories: Positive (69–100), Neutral (40–68), and Negative (0–39).

In Phase 3 (Bivariate Analysis), the researchers used Spearman's rank-order correlation to examine the relationship between writing proficiency and learner attitudes. The selected non-parametric measurement method maintained its ability to resist distributional biases due to skewness.

Lastly, in Phase 4 (Predictive Assessment and Effect Size), the researchers used Simple Linear Regression to analyze the extent to which learner attitudes predicted writing proficiency. They used the Coefficient of Determination (r^2) to measure effect size because it provided a scientific basis for assessing the strength of relationships between psychological and performance variables.

Ethical Considerations

The researchers adhered to standard ethical guidelines when conducting their study involving human participants, including underage individuals. The research team implemented several protective measures to safeguard the privacy rights of all research participants.

Informed Consent and Assent: The study required written consent from parents or legal guardians, as the participants were underage. The participants provided both verbal and written assent after researchers explained the study's purpose and procedures and informed them of their right to withdraw at any time without penalty.

Anonymity and Confidentiality: The study researchers decided not to collect any personal identifiers, including names and school ID numbers, to maintain the confidentiality of 600 learners. The researchers stored numerical data codes in a secure digital system accessible only to authorized primary researchers via password protection.

Non-Maleficence: The writing prompts were designed to be neutral to avoid triggering emotional distress. The research instruments were presented to students through Homeroom Guidance sessions, which took place outside of academic hours to maintain their regular classroom schedule and academic work.

Data Disposal: The research team destroyed all physical raw data by shredding it and permanently deleted all digital files 5 years after the study concluded, in accordance with data privacy regulations.

Results and Discussion

The State of L3 Writing Proficiency: Evidence of Mental Fatigue

It is imperative to examine the writing skills of Grade 10 students because this is one avenue through which teachers can assess their ability to gather ideas, organize their thoughts, and systematically synthesize their knowledge of a given topic into cohesive, effective write-ups.

For this research, the students were instructed to compose a 3-5 paragraph informative essay on the topic "Narrate the most painful event in your life and how you coped with it." They were given ample time to organize their thoughts and were encouraged to write down as detailed/exhaustive as they could.

Table 2. Grade 10 Students' State of L3 Writing Proficiency as Evidence of Mental Fatigue

Criteria	n	Mean	Standard Deviation	Proficiency Level
Content	600	10.39	3.648	Fair
Organization	600	9.77	3.236	Fair
Vocabulary	600	9.41	3.122	Poor
Language Use	600	9.32	3.127	Poor
Mechanics	600	9.53	3.160	Fair
Overall	600	48.42	15.510	Poor

Table 2 presents the writing proficiency levels achieved by 600 Grade 10 students across five writing sub-domains. The data shows that students demonstrate "Poor" proficiency level (M=48.42) because they struggle to write third-language (L3) essays.

The analysis of sub-domains shows that their performance results are unbalanced. While students achieved a "Fair" level in Content (M=10.39) and Organization (M=9.77), their scores in technical areas such as Language Use (M=9.32) and Vocabulary (M=9.41) dropped to "Poor". The students showed a pattern of learning that focused on retrieving concepts and creating meaning instead of developing their technical skills. The results of this study provide evidence of a "trilingual challenge" that aligns with Cognitive Load Theory. In the process of language transfer, students who speak Binisaya as their first language and Tagalog as their second language will find it difficult to use their limited working memory resources for maintaining grammatical accuracy in English. To communicate their "Content" successfully, learners choose to reduce their "Language Use" skills. This interpretation is consistent with Saavedra (2020), who noted that Filipino learners have a complete understanding of the content but face difficulties with English due to a lack of knowledge of its basic writing rules. Furthermore, the result of this research is consistent with the findings of the study conducted by Manto and Hermosilla (2024), which stated that while students are using English in school, it cannot be denied that Bisaya (Cebuano) is used in their social and day-to-day interactions, which reflect a varied and dynamic landscape of language in the region. This further means that while teachers aim to emphasize the importance of using English and motivate students' passion for learning the language, English has become only the third priority after Bisaya and Tagalog.

Grade 10 Students' Attitudes: Neutrality as a Psychological Defense

While we already know the students' proficiency level in essay writing, it is also important for us to understand how they feel and what they think about it.

Table 3 depicts that only forty-two percent (42%) of the students have a positive attitude towards writing essays, which could be because they know about the topic, and they also have the courage and idea on how this

knowledge can be transformed into meaningful and effective essays. However, more than half (58%) reported a neutral attitude towards writing essays. This could be because, although they lack the necessary information and knowledge about the topic, they need to write essays that meet the standards/rubrics provided by their teachers and, in return, receive satisfactory scores/grades from them. The result of this study contradicts that of Eliwarti & Aruan (2018), which stated that high school students have a low or negative attitude towards essay writing.

Table 3. *Grade 10 Students' Attitudes Towards Writing Essays as a Psychological Defense*

Attitude	Frequency	Percentage (%)	Mean
Positive	250	42	59.783
Neutral	350	58	77.636
Negative	0	0	-
Total	600	100	67.22 (Neutral)

The 'Neutral' attitude reported by participants shows active engagement, which Bandura (1997) recognizes as a protective mechanism within Self-Efficacy Theory. Students who choose to remain neutral will experience less psychological distress from their inability to complete tasks that require advanced cognitive abilities. The 'affective flattening' reaction frequently occurs among individuals in high-stakes L3 situations. According to Setyowati and Sukmawan (2017), students who write EFL papers become emotionally detached from their writing work because they need to protect themselves when their native language and target language differences seem too great to overcome. The study reveals neutrality, as structural challenges provide no evidence of disinterest.

The Decoupling of Attitude and Proficiency: Validating the Trilingual Challenge

After we have ascertained the Grade 10 students' proficiency in essay writing and their attitudes towards it, we also need to determine whether their attitudes have significantly affected their essay-writing proficiency. This is important because if one affects the other, we need to take action to change their attitude and, in turn, improve their writing skills. Spearman's rho was used to assess relationships.

Essentially, what the current research produced is the possibility of engaging in critical dialogue regarding the phenomenon of translanguaging. That is, the phenomenon in which students can use their native language as a resource to understand and create meaning in the target language.

Table 4. *Relationship Between Grade 10 Students' Proficiency Level and Attitudes Towards Essay Writing in the Trilingual Challenge*

Comparison	n	Correlation		Relationship	Significance
		Coefficient	p-value		
Attitude and Content	600	0.039	0.344	Negligible	Not Significant
Attitude and Organization	600	0.035	0.395	Negligible	Not Significant
Attitude and Vocabulary	600	0.046	0.259	Negligible	Not Significant
Attitude and Language Use	600	0.048	0.259	Negligible	Not Significant
Attitude and Mechanics	600	0.055	0.182	Negligible	Not Significant
Attitude and Overall Proficiency	600	0.046	0.256	Negligible	Not Significant

Table 4 demonstrates that students' English writing skills depend on their attitudes toward English writing. The analysis shows that all subdomain p-values (ranging from 0.182 to 0.395) exceed the standard alpha level of 0.05. The two variables in this study show no significant relationship, according to the results.

The coefficient of determination indicates that attitude accounts for only 0.2% of the variance in student proficiency. The research findings demonstrate that students with positive or neutral attitudes toward writing do not achieve better writing results. The results of this study indicate that students reach a performance limit when they must draw on all their cognitive abilities to cope with the demands of learning three languages. The research findings demonstrate that motivation does not directly correlate with achievement for trilingual learners because their cognitive architecture limitations have a greater impact on their performance.

Finding the negligible effect size associated with the attitudes and essay writing scores between the two variables supports the findings of Aiden and Bazos (2020). Specifically, they concluded that there is no consistent consensus regarding the correlation between how a student feels, or has an attitude toward writing, and the quality of the essay produced relative to their competence level. The data from this study indicate that the "Poor" proficiency levels are due to a lack of, or ineffective, engagement with writing as a process.

The study reveals its most important result: attitude is not connected to proficiency. The 'Attitude-Achievement'

model, which researchers use to study bilingualism, contains multiple studies that demonstrate its invalidity. Positive attitudes lead to successful outcomes in most L2 environments, while the trilingual setting shows that Cognitive Load creates complete separation between attitude and performance. The research supports the 'Threshold Hypothesis', which states that cognitive complexity requires a specific threshold, which makes motivation useless for determining output. The researchers agreed with the findings of Ramos and Gatcho (2020) because their study demonstrated that teachers should use cognitive friction-reduction methods to help Filipino students.

Grade 10 Students' Areas for Improvement in Terms of Writing Essays

The Grade 10 student essay analysis shows a major "technical deficit" that affected their Language Use and Vocabulary skills, which remained at the Poor proficiency level. The students showed a "Fair" ability to generate content, but their execution of ideas faced restrictions, which this research calls the "Trilingual challenge."

According to Cognitive Load Theory (Sweller, 1988), L3 learners find vocabulary and language use the most difficult elements in writing. The student needs to navigate a difficult linguistic journey that starts with native Binisaya, moves to Tagalog, and ends in English when executing technical requirements. The learner must handle multiple translation tasks because this process requires too much working memory capacity. Students need to retrieve the proper English vocabulary through all their cognitive resources before checking their complex grammatical structures, which include Language Use.

The "Poor" results in these areas should not be attributed to intellectual effort, as they reflect a current state of cognitive overload. The transition from "Poor" to "Fair" proficiency requires instructional methods that should replace grammar drills with Translanguaging techniques. When students use their L1 and L2 as "linguistic scaffolds," teachers can reduce their cognitive load, enabling students to develop stronger L3 vocabulary and learn English nuances.

Conclusion & Implications

Based on the results of this research, the following conclusions are drawn:

The Grade 10 learners show a "Poor" level of English proficiency in their writing skills, according to their assessment results. The data show a particular weakness in technical skills, as Language Use and Vocabulary scores were continuously lower than Content scores. The study shows that students can develop ideas but struggle to maintain language accuracy when writing in their third language due to the complexity of the writing requirements.

The learners conduct their English writing activities with a "Neutral" attitude. The results show that students exhibit neither strong enthusiasm nor strong aversion, as they are in an emotional state between those two extremes. The research context shows that this neutral behavior serves as a psychological "buffer" that helps students manage repeated cognitive challenges during L3 language acquisition.

The research found no statistically significant association between students' attitudes and their ability to write. The results of this research show that psychological factors are not essential determinants of writing achievement for this group of students. The "Trilingual Challenge" serves as a structural barrier that all students must face because their positive attitudes do not help them overcome performance limits.

The primary barrier to L3 writing success is cognitive rather than motivational. The "Trilingual Bottleneck" – the friction created by the L1-L2-L3 transition – likely depletes the working memory resources necessary for complex essay construction. The study proves that educational programs need to reduce cognitive demands through Translanguaging methods, as motivational techniques cannot accomplish this.

Based thereon, the following are the study's implications:

Theoretical Implications. This research advances Cognitive Load Theory (CLT) by demonstrating that the "L3 Divide" functions as a distinct form of cognitive load. The study demonstrates that trilingual learners experience "mental fatigue" as their primary factor, which causes them to stop demonstrating Content (M=10.39) and Language Use (M=9.32) skills. The brain enters survival mode, enabling it to convey essential meaning while

sacrificing precise technical details. The framework of Self-Efficacy Theory expands its boundaries through the definition of "Neutral" attitudes, which researchers should view as mental shielding against constant mental fatigue.

Pedagogical and Practical Implications. The research results require L3 writing instruction to undergo a complete transformation. The research results show that attitude accounts for only 0.2 percent of proficiency differences, indicating that motivation-based methods will not yield major gains. The focus needs to change towards Cognitive Load Reduction. The research findings demonstrate that Translanguaging should become an established practice at educational institutions. The use of L1 (Binisaya) and L2 (Tagalog) as cognitive scaffolding during the ideation phase enables students to reduce their essential difficulty, thereby allowing them to allocate mental resources toward mastering the technical aspects of L3 (English) mechanics.

Policy and Educational Implications. Based on these research results, the Mother Tongue-Based Multilingual Education (MTB-MLE) framework reveals a significant gap that educational policymakers need to address. The evidence of "Poor" overall proficiency (M=10.03) suggests that the current transition to English-only assessments in Grade 10 may be premature. The study demonstrates that "Linguistic Scaffolding" needs to become a comprehensive secondary education solution, and that existing policies need to shift away from "English-only" immersion programs, which create a greater trilingual challenge.

Future Research. The research provides an initial basis for future studies examining how the trilingual challenge develops as students progress. Future research should use experimental designs to measure the precise reduction in cognitive load when translanguaging is implemented as a formal intervention. The research indicates a new approach to developing cognitively just multilingual education in the Philippines by showing students who have failed to meet academic requirements.

Contributions of Authors

Author 1: conceptualization, proposal writing, data gathering

Author 2: data analysis, data gathering

Author 3: data gathering, data analysis

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