

Socio-cognitive Predictors and Assessment of a Self-Regulated Strategy Development Intervention for Filipino Learners in Academic Writing

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ABSTRACT:

This study explores the socio-cognitive predictors of academic writing proficiency and assesses the impact of a Self-Regulated Strategy Development (SRSD) intervention among multilingual senior high school students in the Philippines. Utilizing a convergent mixed-methods design, the study found that socioeconomic status, language proficiency, parental involvement, and access to academic resources significantly predicted writing outcomes (adjusted $R^2 = 0.46$). Pre-intervention assessments revealed persistent challenges in citation, grammatical accuracy, and academic register. Following a six-week SRSD-based intervention, students demonstrated statistically significant gains across all writing domains ($p < .001$, $d = 1.04$). Qualitative data indicated enhanced metacognitive awareness and confidence in managing academic discourse. These findings support the efficacy of structured, strategy-focused instruction in mitigating writing inequities in under-resourced ESL settings and affirm SRSD as a viable pedagogical model for fostering writer agency and academic literacy (Harris, 2022; Zhang & Hyland, 2023).

Keywords: academic writing, SRSD, Filipino senior high school, mixed-method, writing intervention, metacognition

1. Introduction

Over the last two decades, writing proficiency has emerged as a critical yet persistently underdeveloped domain in second language (L2) education, particularly within contexts marked by systemic educational inequities. Writing, as both a cognitive and social practice, entails far more than linguistic

correctness; it demands the orchestration of syntactic precision, rhetorical organization, disciplinary knowledge, and metacognitive control (Hyland & Hyland, 2019; Nation, 2012). For many learners in English-as-a-Second-Language (ESL) settings such as the Philippines, these demands are exacerbated by under-resourced instructional environments, socio-economic disparities, and

limited access to individualized feedback (Tupas, 2024; Poehner & Wang, 2021;). Despite the institutional emphasis on academic writing in senior high school curricula, a substantial number of Filipino students continue to underperform in formal writing assessments, as evidenced by their results in both local evaluations and international metrics such as the Programme for International Student Assessment (PISA) (Munder, 2024; OECD, 2019).

From a cognitive-interactionist perspective, writing development is mediated by both individual learner factors and the instructional contexts in which writing occurs (Graham & Harris, 2018). However, mainstream classroom practices in many Philippine senior high schools often remain focused on static models of writing instruction—those emphasizing end-products over processes, grammar drills over idea generation, and teacher monologues over student agency (Corcuera, 2024). These structural limitations disproportionately affect students from low-income households, those with limited access to digital or print literacy resources, and learners who experience inconsistent home and school language practices (S. Pettalongi et al., 2024). What remains underexamined in this regard is how specific demographic variables—such as parental education, language proficiency, time management, and access to instructional resources—correlate with students' writing outcomes and how pedagogical interventions might be tailored in response.

In seeking to address this gap, recent scholarship has advocated for theoretically informed instructional models that blend strategy instruction with self-regulatory skill development (Harris, 2022; McKeown et al., 2021). The Self-Regulated Strategy Development (SRSD) model has garnered considerable empirical support for its capacity to promote writing fluency, organization, and revision quality among diverse L2 populations (Harris, 2022; Marzuki et al., 2023). SRSD is premised on the idea that effective writing instruction must not only target textual features but must also cultivate learners' ability to plan, monitor, and revise their own writing through explicit modeling, guided practice, and goal setting. In combining cognitive

strategy instruction with metacognitive scaffolding, SRSD offers a promising route for empowering students in under-resourced contexts to manage the complexities of academic writing.

The present study builds on this body of research by investigating how writing proficiency among Filipino senior high school students is shaped by demographic and contextual factors, and by designing a localized instructional intervention—the GO WRITE Program—anchored in SRSD principles. Specifically, the study pursues four interrelated aims: (1) to identify the extent to which selected demographic variables predict students' writing performance; (2) to evaluate students' baseline proficiency across key academic writing domains; (3) to explore the cognitive, affective, and linguistic challenges that shape students' writing experiences; and (4) to assess the impact of a structured instructional intervention—the GO WRITE Program—on students' post-intervention writing outcomes and self-perceived development. Unlike prior interventions, which often rely on decontextualized tasks or one-size-fits-all pedagogies, the GO WRITE Program is tailored to the sociocultural and institutional realities of learners in a provincial private institution in the Philippines. This program integrates process writing principles, socio-cognitive scaffolding, and data-informed strategy instruction into a six-stage pedagogical sequence.

Methodologically, the study adopts a convergent mixed-methods design that combines standardized writing assessments with thematic analysis of student narratives and teacher interviews. This design enables a multi-layered understanding of writing development—one that captures not only measurable outcomes but also the lived experiences and affective dimensions of student writers (Forbes, 2022; Zhou et al., 2024). By foregrounding both statistical trends and qualitative insight, the study aligns with recent calls for more context-sensitive, ethically attuned research in second language writing (Dakakni & Safa, 2023).

Ultimately, this study contributes to the expanding scholarship on writing instruction in ESL contexts by offering empirical evidence and pedagogical models relevant to linguistically diverse,

economically constrained, and technologically transitional learning environments. Its findings hold implications for curriculum developers, teacher educators, and policymakers seeking to promote writing as a transformative academic and communicative tool—not only a skill to be assessed but a practice to be cultivated.

2. Theoretical Background

Second language (L2) writing proficiency is shaped by a constellation of cognitive, social, and pedagogical influences. Over the past three decades, scholars have advanced multiple models of writing development that attempt to explain how learners generate, monitor, and revise written texts under varying instructional and sociocultural conditions (Baharudin et al., 2023; Fitts et al., 2016). While early product-oriented models emphasized linguistic correctness and final output, contemporary theories prioritize writing as a recursive, self-regulated process mediated by strategy use, metacognition, and socio-contextual interaction (Graham & Harris, 2018; Sun et al., 2024). This study draws on an integrative theoretical framework that incorporates the Self-Regulated Strategy Development (SRSD) model, Social Cognitive Theory, Sociocultural Theory, and functional linguistics, with a view to understanding and supporting the academic writing development of senior high school learners in under-resourced contexts.

2.1 Writing as a Self-Regulated Cognitive Process

At the core of this study is the SRSD model, developed by (Harris, 2022), which posits that effective writing instruction must build both declarative knowledge of writing strategies and procedural knowledge for their self-regulated deployment. SRSD is grounded in the belief that students become competent writers not merely through exposure to good models but by internalizing planning, organizing, revising, and goal-setting behaviors through explicit instruction and iterative practice. Meta-analytic evidence supports SRSD's impact on writing performance across diverse learner populations, including L2 writers (Graham & Harris, 2018; Marzuki et al., 2023). The model consists of six recursive phases—

developing background knowledge, discussing strategies, modeling, memorizing strategies, guided practice, and independent performance—all of which foster learners' capacity to manage the cognitive demands of writing.

In L2 contexts, SRSD has been shown to enhance genre awareness, syntactic variety, and overall text quality, particularly when implemented alongside collaborative scaffolding and formative feedback (Harris, 2022; McKeown et al., 2021). For learners in multilingual, resource-constrained settings, this approach is particularly valuable as it cultivates agency and autonomy in navigating the conventions of academic discourse. Furthermore, SRSD aligns with the growing body of research suggesting that writing instruction must be both skills-based and affectively supportive, accounting for students' emotional and motivational engagement with writing tasks (Poehner & Wang, 2021).

2.2 Social Cognitive and Sociocultural Perspectives

Social Cognitive Theory complements SRSD by emphasizing the triadic interaction among behavioral, environmental, and personal factors in learning (Bandura, 2020). Central to this model is the construct of self-efficacy—students' beliefs in their ability to perform writing tasks—which has been consistently linked to greater persistence, deeper strategy use, and improved writing outcomes (Mitchell et al., 2023). In writing instruction, enhancing self-efficacy through feedback, modeling, and reflective practice can significantly influence learners' willingness to take risks, revise drafts, and invest cognitively in written expression (Busse et al., 2023). The SRSD framework operationalizes these theoretical principles by encouraging learners to articulate goals, monitor their progress, and self-evaluate their texts in a structured environment.

Complementing this cognitive view, Vygotsky's Sociocultural Theory introduces the concept of the Zone of Proximal Development (ZPD), where learners benefit from scaffolded support until they attain independent mastery (Azi, 2020; Vygotsky, 1978). Writing, from this perspective, is a socially mediated process wherein knowledge is co-

constructed through interaction with peers, teachers, and tools. In multilingual ESL settings, dialogic instruction, peer feedback, and shared writing tasks serve as critical mediators of development (Patwary, 2023). SRSD's collaborative elements—particularly in its guided practice phase—mirror this theoretical grounding, enabling learners to internalize complex writing behaviors through repeated cycles of support and gradual release.

2.3 Functional and Linguistic Dimensions of Writing Proficiency

In parallel to cognitive and social frameworks, this study draws on Halliday's Systemic Functional Linguistics (SFL), which views language as a resource for making meaning shaped by context, purpose, and genre (Halliday et al., 2014). Academic writing proficiency, in this view, involves not just syntactic correctness but also the strategic deployment of language to achieve ideational, interpersonal, and textual meanings (Herman et al., 2023). Hallidayan perspectives underscore the importance of cohesion, lexical density, and thematic progression—dimensions that are especially challenging for L2 learners unfamiliar with the expectations of academic English.

Recent studies in ESL contexts have reaffirmed the utility of SFL-informed pedagogy in developing learners' control over genre-specific conventions, voice, and cohesion (Zhang & Hyland, 2023). These elements are embedded into the SRSD-based intervention designed in this study, particularly through the use of genre models, sentence stems, and revision checklists that help learners navigate linguistic choices aligned with academic expectations. Additionally, SFL's emphasis on register and context supports a more nuanced understanding of how students' linguistic choices are shaped by their social and academic positioning.

2.4 A Process-Oriented Approach to Instruction

Finally, the theoretical framework is informed by the Process Writing Approach, which frames writing as a cyclical activity encompassing prewriting, drafting, revising, editing, and publishing (Setyawan et al., 2020). Unlike traditional

product-based models, this approach values learner reflection, writer identity, and iterative improvement. It also supports the use of formative assessment and portfolio-based evaluation, practices known to improve metacognitive awareness and writing self-regulation (C. Liu & Yu, 2022). The synergy between SRSD and the process approach is particularly salient in scaffolding low-performing writers, as both emphasize structured progression, feedback loops, and strategy use.

In this study, the design of the GO WRITE intervention draws from the process-writing tradition by embedding revision protocols, peer conferences, and teacher modeling across all stages of instruction. This holistic design is essential for ensuring that writing instruction is not merely a transfer of strategies but a dialogic process through which students co-construct their understanding of good writing practice.

3. Methodology

3.1 Research Design

This study employed a convergent parallel mixed-methods design (Creswell & Plano Clark, 2018) to explore the relationship between socio-demographic variables and academic writing proficiency, and to assess the effectiveness of an instructional intervention based on the Self-Regulated Strategy Development (SRSD) model. The choice of this design was driven by the need to simultaneously capture measurable changes in writing performance and the contextualized experiences of student writers navigating academic genres in a second language.

Quantitative and qualitative data were collected independently but analyzed and interpreted jointly to provide a multi-layered account of writing development. This methodological framework allowed for the integration of statistical trends with learner narratives, enabling a more holistic understanding of the cognitive, linguistic, and socio-affective variables shaping academic writing in an under-resourced ESL context (Forbes, 2022; Sun et al., 2024).

3.2 Participants

The study involved 60 senior high school students (aged 16–18) enrolled in a private institution in the Caraga Region, Philippines. Participants were recruited using stratified purposive sampling to ensure representation from four academic strands: Science, Technology, Engineering, and Mathematics (STEM); Accountancy, Business, and Management (ABM); Humanities and Social Sciences (HUMSS); and the Technical-Vocational-Livelihood (TVL) track.

Eligibility criteria required that students be enrolled in the course *English for Academic and Professional Purposes* and had no prior exposure to SRSD-based writing instruction. Demographic data—covering variables such as age, gender, socioeconomic status, parental education, language proficiency, access to learning resources, parental involvement, and time management—were gathered via a researcher-developed profiling tool and cross-validated with institutional records. Ethical clearance was obtained from the university's Institutional Research Ethics Board, and informed consent was secured from all participants and their guardians in accordance with the Declaration of Helsinki.

3.3 Instruments and Procedure

3.3.1 Writing Proficiency Assessment

Academic writing proficiency was assessed through a task-based writing test, scored using a validated analytic rubric adapted from the British Council IELTS Writing Band Descriptors, consistent with current L2 writing assessment practices (Zhang & Hyland, 2023). The rubric evaluated six core dimensions: (1) content development, (2) organizational coherence, (3) academic register and tone, (4) integration of sources and citation, (5) grammatical accuracy, and (6) lexical cohesion. Each dimension was rated on a 6-point scale, yielding a composite proficiency score out of 36.

Pre-tests and post-tests were administered in a controlled environment, with each session limited to 40 minutes and monitored to ensure writing authenticity. Two trained raters independently scored the essays, with inter-rater reliability confirmed via Cohen's Kappa ($\kappa = 0.87$), indicating

a high level of agreement. Raters were calibrated prior to assessment using anchor samples and norming sessions to ensure consistency.

3.3.2 The GO WRITE Program Intervention

The intervention, entitled GO WRITE (Goal-setting, Organizing, Writing, Revising, Integrating, Testing, Evaluating), was designed in alignment with the six recursive phases of the SRSD model (Graham & Harris, 2018): (1) develop background knowledge, (2) discuss the strategy, (3) model the strategy, (4) memorize the steps, (5) support guided practice, and (6) promote independent performance. Instructional sessions occurred over six weeks, twice a week, for 60 minutes per session. Each session incorporated explicit strategy modeling, collaborative writing tasks, peer conferencing, and metacognitive reflection.

Instructional materials were designed using principles of Systemic Functional Linguistics (SFL) (Halliday et al., 2014) to support students in managing genre-specific discourse demands. Materials included model texts, genre deconstruction activities, sentence stems, and revision checklists targeting cohesion and citation practices.

3.3.3 Qualitative Protocols: Interviews and Reflections

To explore learners' perspectives, semi-structured interviews were conducted with a purposively selected subsample of 20 participants (5 per academic strand) following the intervention. Interviews were guided by a protocol focusing on learners' writing challenges, perceptions of growth, and engagement with the SRSD strategies.

Additionally, all participants completed reflective journals at the end of each intervention cycle, which served as narrative data capturing shifts in self-efficacy, strategy use, and writing behavior. Interviews were conducted in the participants' preferred language (English or Filipino), audio-recorded, transcribed, and translated where necessary.

3.4 Data Collection Procedures

Data collection was conducted over an eight-week academic term and organized into three interrelated phases: baseline assessment, intervention

implementation, and post-intervention evaluation. During the first phase (Week 1), participants completed a demographic survey to profile key variables such as age, gender, academic strand, parental education, socioeconomic status, language proficiency, access to academic resources, parental involvement, and time management. This demographic mapping provided the foundation for subsequent correlational and regression analyses. In the same week, a baseline pre-intervention writing task was administered. Participants were given 40 minutes to respond to an academic essay prompt under proctored, standardized conditions. This writing sample served as a benchmark for measuring changes in performance.

The second phase (Weeks 2–7) involved the delivery of the GO WRITE intervention, integrated into participants' regularly scheduled *English for Academic and Professional Purposes* (EAPP) classes. The six-week intervention was implemented by trained English instructors in collaboration with the researchers. Sessions were recorded and monitored using a fidelity observation checklist to ensure consistency in strategy modeling, guided practice, and feedback delivery, in accordance with SRSD protocol standards (Graham & Harris, 2018). Researchers maintained weekly logs to track instructional adherence and classroom dynamics.

In the third and final phase (Week 8), participants completed the post-intervention writing assessment, responding to a parallel task prompt under identical conditions as the pre-test. To gain deeper insight into learners' experiences, semi-structured interviews were conducted with a purposive subsample of 20 students—five from each academic strand. Interviews explored students' perceived writing development, cognitive and emotional challenges, and responses to the intervention. Additionally, all participants submitted weekly reflective journals, which provided qualitative data on strategy use, motivation, and writing confidence. These qualitative data sources were triangulated to generate a more comprehensive understanding of learner outcomes.

All procedures were designed to minimize instructional disruption and were integrated into the

existing curriculum to preserve ecological validity (McKinley & Rose, 2019).

3.5 Data Analysis

The study employed a convergent data analysis strategy that integrated statistical evaluation of writing performance with qualitative interpretation of learner experiences. Quantitative data, including demographic profiles and pre/post writing scores, were processed using IBM SPSS Statistics Version 27. Descriptive statistics (means, standard deviations, skewness, and kurtosis) were calculated for each of the six writing rubric domains: content development, organization, academic tone, citation conventions, grammar, and cohesion. To examine the predictive relationship between demographic variables and writing proficiency, a multiple linear regression analysis was conducted. Predictor variables were first tested for multicollinearity using Variance Inflation Factor (VIF) diagnostics to ensure model stability.

To determine the effectiveness of the GO WRITE intervention, paired-sample t-tests were used to compare pre- and post-test scores across all rubric dimensions. Effect sizes were computed using Cohen's d , with interpretation following Lakens (2013): $d = 0.2$ (small), 0.5 (medium), and 0.8 (large). Levene's Test for Equality of Variances and the Shapiro-Wilk Test for Normality were employed to verify statistical assumptions prior to inferential testing. The significance threshold was set at $\alpha = .05$.

Complementing these analyses, the qualitative data—comprising interview transcripts and learner reflections—were subjected to reflexive thematic analysis (Forbes, 2022), supported by NVivo 12 software. A hybrid approach to coding was adopted. Deductive codes were drawn from the SRSD instructional framework and systemic functional linguistic features, while inductive codes emerged from close reading and iterative memo writing. Codes were collapsed into higher-order themes capturing learners' metacognitive growth, emotional responses, and genre awareness. Themes were developed through recursive comparison and thematic saturation, and representative quotations were selected to illustrate key findings. Qualitative

insights were then integrated with quantitative results to provide interpretive depth to statistical patterns—a hallmark of convergent mixed-methods studies (Creswell & Plano Clark, 2018).

3.6 Trustworthiness and Rigor

To ensure methodological credibility and empirical rigor, the study employed several strategies consistent with best practices in applied linguistics and educational research. First, inter-rater reliability was established through double scoring of all writing tasks by two experienced raters. A high Cohen's Kappa coefficient ($\kappa = 0.87$) indicated substantial agreement, thus validating the scoring process. Prior to rating, raters underwent norming sessions using anchor papers, following procedures recommended by Zhang & Hyland (2023).

Second, triangulation was achieved by integrating data from multiple sources—demographic profiles, writing assessments, interviews, and reflections. This multiplicity of perspectives enabled convergence on key constructs and reduced potential bias from single-method inference. To reinforce qualitative credibility, member checking was conducted with selected interview participants who were invited to review the preliminary themes extracted from their data and confirm their accuracy. Moreover, peer debriefing sessions were conducted among the research team to discuss emerging interpretations, resolve coding discrepancies, and enhance analytical reflexivity.

Third, the fidelity of the intervention was monitored using structured observation protocols and weekly implementation logs, which served as an audit trail for process validation. These procedures ensured alignment with the SRSD instructional model and supported internal validity of the treatment condition.

Finally, the study adhered to the ethical and transparency standards outlined in the British Educational Research Association's (BERA) ethical guidelines and maintained full compliance with institutional research ethics requirements. Taken together, these strategies ensure that the findings reported herein are not only methodologically robust but also ethically and interpretively sound,

rendering them generalizable to similar ESL instructional contexts.

4. Results

4.1 Predictive Influence of Socio-Demographic Variables on Writing Proficiency

To address Research Question 1, a multiple linear regression analysis was conducted to examine the predictive power of nine socio-demographic variables on students' academic writing proficiency. The model yielded a statistically significant result ($F(9, 50) = 5.32, p < .001$), accounting for approximately 46% of the variance in overall writing scores (adjusted $R^2 = 0.46$). This finding supports the proposition that background factors play a substantive role in shaping writing outcomes in ESL contexts, particularly where disparities in access and support persist (Li, 2022; S. Pettalangi et al., 2024).

Among the predictors, four variables emerged as statistically significant and meaningful contributors to the model. Socioeconomic status ($\beta = 0.48, p < .01$) demonstrated the strongest predictive weight, followed by language proficiency ($\beta = 0.44, p = .002$), parental involvement ($\beta = 0.41, p = .004$), and access to academic resources ($\beta = 0.38, p = .007$). These variables were not only significant at the .01 level but also exhibited substantial standardized beta coefficients, indicating their unique and combined influence on students' capacity to produce proficient academic texts.

By contrast, age ($\beta = 0.05, p = .325$), gender ($\beta = -0.03, p = .521$), and academic track ($\beta = -0.02, p = .609$) failed to reach statistical significance. These findings suggest that individual-level attributes such as age or curricular orientation have comparatively less impact on writing performance than do systemic and socio-familial conditions. Notably, while parental education ($\beta = 0.33, p = .010$) and time management ($\beta = 0.29, p = .014$) contributed meaningfully, their effects were comparatively weaker than the top four predictors.

Figure 1 visualizes the standardized beta coefficients alongside corresponding r -values and p -values for each predictor. The graph underscores the disproportionate weight of household-level factors—such as income, home language use, and

support networks—over demographic characteristics typically considered in academic performance metrics. These results align with broader findings in writing research that emphasize the embeddedness of academic literacy in students’

ecological systems (Hyland & Hyland, 2019; Sun et al., 2024).

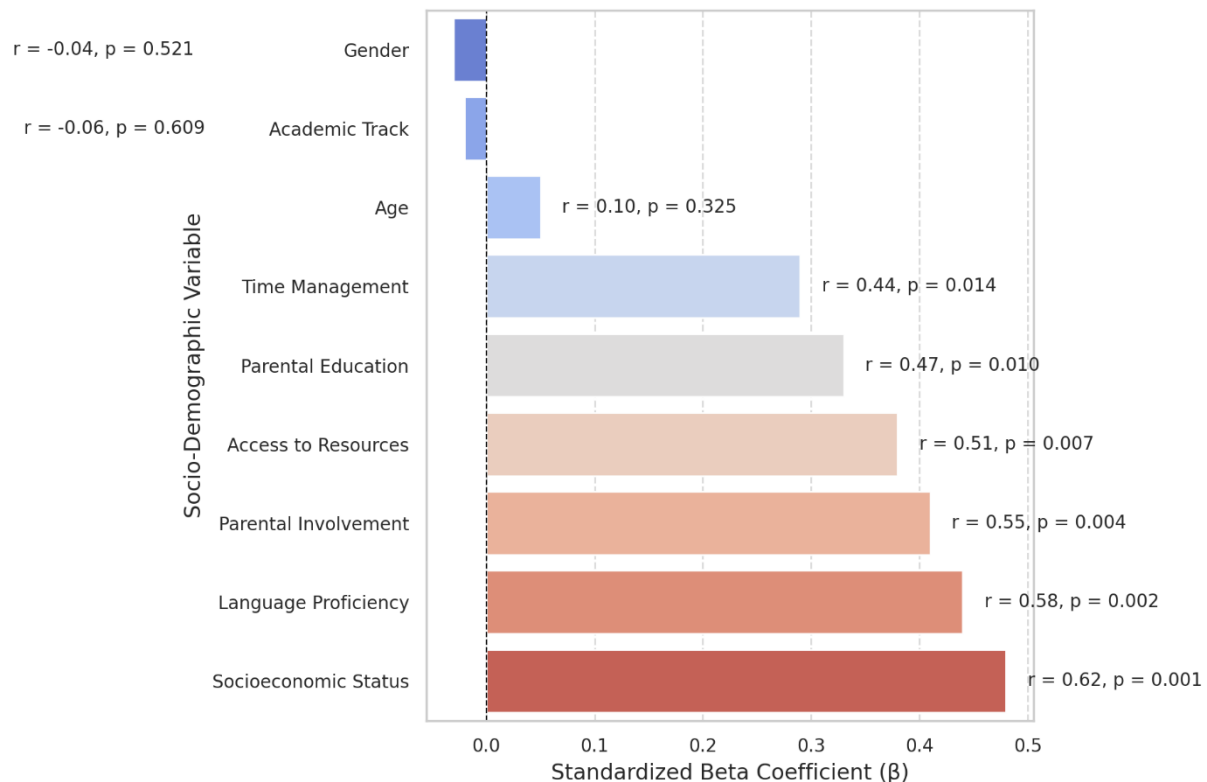


Figure 1. Predictive Influence of Socio-Demographic Variables on Writing Proficiency (Standardized Beta Coefficients from Multiple Linear Regression)

4.2 Descriptive Profile of Writing Proficiency Across Domains

To address Research Question 2, students’ academic writing performance was evaluated using a six-domain analytic rubric aligned with contemporary standards in second language writing assessment (Zhang & Hyland, 2023). The rubric captured key academic writing dimensions: content development, rhetorical organization, academic register, citation conventions, grammatical accuracy, and lexical cohesion. Each domain was scored on a six-point scale, with higher scores indicating greater proficiency.

Results from the baseline writing assessment indicated that students demonstrated moderate levels of control in certain domains. Specifically, mean pre-test scores were highest in lexical cohesion ($M = 3.3$, $SD = 0.4$), content development

($M = 3.2$, $SD = 0.4$), and rhetorical organization ($M = 3.1$, $SD = 0.5$). These findings suggest an initial ability to maintain idea continuity and basic paragraph structure. However, weaker performance was evident in domains requiring advanced academic discourse features. Citation conventions recorded the lowest mean score ($M = 2.5$, $SD = 0.5$), followed by academic register ($M = 2.8$, $SD = 0.6$) and grammatical accuracy ($M = 3.0$, $SD = 0.5$), indicating persistent challenges in referencing, tone modulation, and syntactic control.

Post-test scores collected after the implementation of the six-week GO WRITE intervention revealed statistically significant improvements across all six domains ($p < .001$). The most substantial gains were observed in grammatical accuracy ($M = 4.2$, $\Delta M = 1.2$, $SD = 0.4$), citation conventions ($M = 3.6$, $\Delta M = 1.1$, $SD = 0.4$), and academic register ($M = 3.8$,

$\Delta M = 1.0$, $SD = 0.5$). These improvements suggest that the instructional components targeting formality, grammar, and source integration had an observable impact. In addition, notable gains were recorded in content development ($M = 4.1$, $\Delta M = 0.9$, $SD = 0.5$), rhetorical organization ($M = 4.0$, ΔM

$= 0.9$, $SD = 0.4$), and lexical cohesion ($M = 4.1$, $\Delta M = 0.8$, $SD = 0.5$), indicating general upward trends in students' ability to compose well-structured, thematically coherent academic texts.

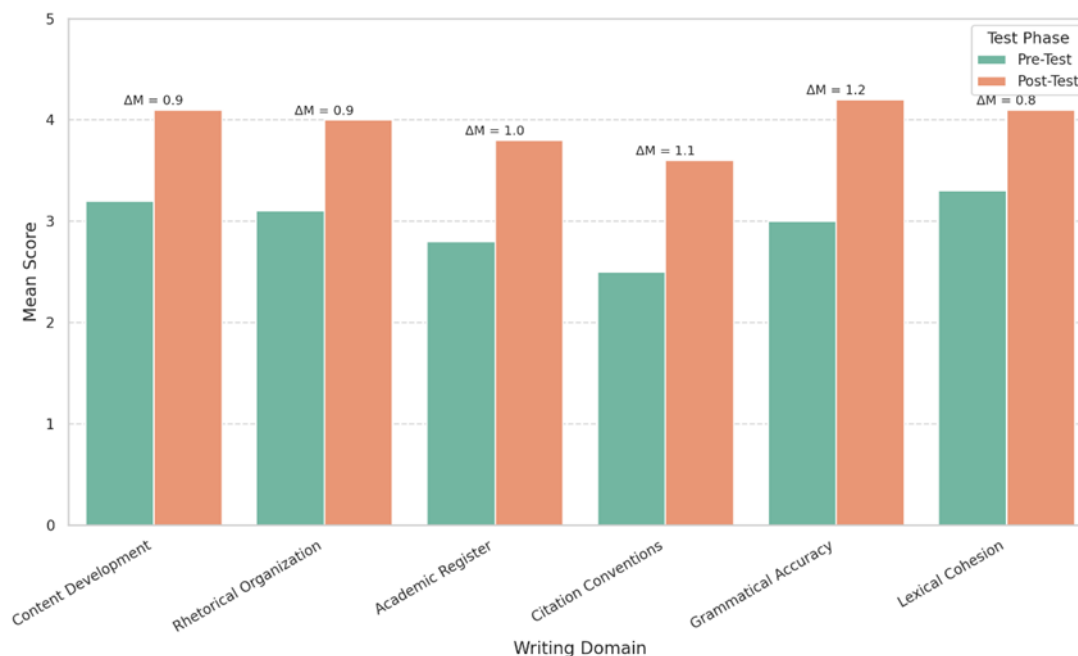


Figure 2. Writing Proficiency Across Domains Before and After Intervention

As shown in Figure 2, the intervention produced gains in both lower-order mechanical features and higher-order rhetorical structures. Each domain exhibited measurable improvement, underscoring the reliability of the analytic rubric in capturing nuanced shifts in academic writing performance.

4.3 Reported Cognitive, Linguistic, and Affective Challenges in Academic Writing

In response to Research Question 3, thematic analysis of semi-structured interviews and reflective journals revealed a nuanced constellation of challenges encountered by learners in academic writing. Three interrelated themes emerged from the data: strategic uncertainty, emotional disengagement, and linguistic insecurity. These themes encapsulate students' internal experiences and contextual constraints that hindered their ability to produce coherent, genre-appropriate academic texts.

Strategic uncertainty was the most consistently reported theme across all academic strands.

Students expressed difficulty with initiating and structuring essays, particularly in articulating thesis statements, crafting cohesive transitions, and adhering to paragraph unity. For instance, one STEM-track student remarked, *"I always get stuck in the introduction—it's hard to connect ideas without knowing the exact pattern to follow."* Such comments suggest a limited internalization of rhetorical structures, consistent with existing research on planning deficiencies among novice L2 writers (Graham & Harris, 2018; Lim & Kessler, 2024). Notably, even students who exhibited moderate surface-level accuracy struggled to manage higher-order concerns, indicating a need for instructional scaffolds that foreground genre-based organization and rhetorical purpose.

The second theme, emotional disengagement, reflects the affective dimension of students' writing challenges. Many reported experiencing writing anxieties, particularly when tasked with integrating citations or adopting a formal academic register. As one ABM student noted, *"I feel pressured when I need to*

use sources. I don't know how to start or if I'm doing it right." These sentiments echo earlier findings that self-doubt and performance anxiety can disrupt strategic engagement and inhibit text production (Golparvar & Khafi, 2021; Li, 2022). Students also linked these emotional responses to previous negative feedback or a lack of constructive commentary, suggesting a gap in formative assessment practices within their classrooms.

The third emergent theme, linguistic insecurity, was most pronounced among students from the Technical-Vocational-Livelihood (TVL) track. These learners often reported minimal exposure to academic English outside school and relied heavily on AI-powered writing tools (e.g., grammar checkers, paraphrasing software) to compensate for perceived linguistic inadequacies. As one student reflected, *"I use Grammarly because I'm not confident with grammar, and my teacher usually checks only the final output."* This pattern is consistent with Poehner & Wang's (2021) concern that in low-feedback environments, learners may resort to algorithmic tools rather than developing independent linguistic control. While such tools can offer surface-level correction, they rarely support syntactic variety, rhetorical development, or genre-specific style—all essential to academic writing competence (Zhang & Hyland, 2023).

Interestingly, the data also revealed that students with higher self-reported parental involvement and home language support demonstrated greater resilience. These students described writing as a recursive process, often engaging in self-revision and seeking clarification from peers or family members. Such learners appeared to benefit from

what Vygotsky (1978) terms the Zone of Proximal Development, supported by home-based scaffolds that reinforced school-based instruction. These findings underscore the mediating role of socio-cultural capital in shaping learners' affective and cognitive engagement with writing tasks, especially in resource-limited contexts.

4.4 Effectiveness of the GO WRITE Program and Learner Perceptions

To address Research Question 4, a paired-sample *t*-test was conducted to determine the effect of the GO WRITE intervention on students' overall academic writing proficiency. Results revealed a statistically significant increase in composite writing scores from pre-test ($M = 18.0$, $SD = 2.1$) to post-test ($M = 24.1$, $SD = 1.8$), $t(59) = 8.96$, $p < .001$. The effect size, calculated using Cohen's $d = 1.04$, indicates a large and practically meaningful improvement (Lakens, 2013). This gain reflects progress not only in surface-level mechanics but also in higher-order writing competencies such as rhetorical structuring, strategic organization, and integration of sources—skills explicitly targeted in the SRSD-based instructional sequence (Graham & Harris, 2018).

Visualized in Figure 3, the pre-to-post gains suggest a strong outcome profile, supporting the quantitative evidence of intervention efficacy. Students demonstrated elevated scores across all rubric dimensions, with the largest improvements observed in grammatical accuracy, citation conventions, and academic register—indicators of enhanced control over academic discourse norms.

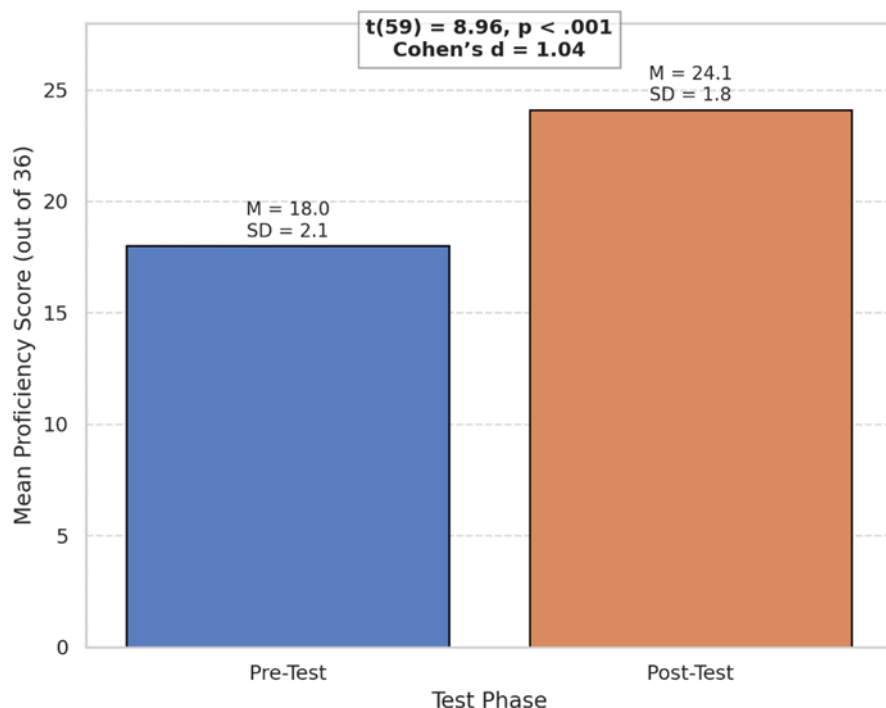


Figure 3. Effectiveness of the GO WRITE Program on Overall Writing Proficiency

Qualitative data from post-intervention interviews and reflective journals further corroborated these results. Participants consistently described the modeling and guided practice phases of the GO WRITE program as “empowering,” citing the usefulness of clear exemplars, step-by-step scaffolding, and opportunities for collaborative writing. Learners emphasized that explicit instruction in thesis construction and paragraph coherence helped demystify what they previously perceived as vague academic expectations. Peer interaction and feedback were frequently mentioned as catalysts for confidence-building, with several students noting that the intervention “made academic writing feel less intimidating.”

Reflective journal entries also revealed a noticeable increase in students’ metacognitive engagement with writing. Unlike in pre-intervention reflections, where students often focused on completing the task as quickly as possible, post-intervention entries demonstrated attention to process. Students documented the use of self-regulation strategies such as planning, goal setting, self-monitoring, and checklist-based revision—behaviors aligned with the six recursive stages of SRSD instruction. These self-reports suggest that the intervention fostered

not only improvements in writing quality but also a deeper awareness of the cognitive strategies underpinning effective academic writing.

5. Discussion and Implications

This study investigated the predictors of academic writing proficiency among Filipino senior high school students and evaluated the effectiveness of the GO WRITE intervention grounded in the Self-Regulated Strategy Development (SRSD) model. The findings offer both empirical insight and theoretical reinforcement, underscoring the interplay between demographic influences, instructional design, and cognitive-affective writing processes.

The multiple regression analysis revealed that socioeconomic status, language proficiency, parental involvement, and access to academic resources were the most salient predictors of writing proficiency. These results affirm longstanding claims in sociocultural and ecological models of literacy development that writing is deeply mediated by learners’ social contexts and resource availability (Hyland & Hyland, 2019; S. Pettalongi et al., 2024). That individual-level traits such as gender, age, and academic track failed to predict writing performance

reinforces the assertion that structural inequalities, rather than inherent learner traits, often determine access to literacy practices and their subsequent mastery (Li, 2022; Nikcevic-Milkovic et al., 2022). These findings signal a shift away from deficit-oriented framings of student performance and emphasize the need to contextualize writing instruction within students' lived realities.

The descriptive data on writing domain performance offered further granularity to these findings. Consistent with prior research (Graham & Harris, 2018; Zhang & Hyland, 2023), students displayed relative strength in content development and rhetorical organization, but exhibited marked weaknesses in citation conventions, academic register, and grammatical accuracy. These areas represent complex discursive tasks often associated with academic voice, intertextuality, and syntactic control—competencies that are typically underdeveloped in under-resourced learning environments. Importantly, these findings align with Systemic Functional Linguistics perspectives, which foreground the role of register, cohesion, and genre in shaping academic writing (Halliday et al., 2014).

The qualitative themes surfaced from student interviews and reflective journals add interpretive depth to these quantitative patterns. Strategic uncertainty, emotional disengagement, and linguistic insecurity emerged as the central cognitive and affective barriers. These findings corroborate prior work by Golparvar & Khafi (2021) and Lim & Kessler (2024), who argue that affective states like anxiety and self-doubt can significantly inhibit writing fluency and writer agency. The finding that students frequently relied on AI-generated tools in the absence of teacher feedback points to a growing dependency on technological scaffolds as compensatory mechanisms. While these tools offer short-term support, their overuse may limit the development of deep linguistic awareness and genre control, as cautioned by Poehner & Wang (2021).

Crucially, the implementation of the GO WRITE intervention yielded statistically and practically significant improvements in students' writing proficiency across all six domains. The observed effect size (Cohen's $d = 1.04$) confirms the

intervention's robustness. The improvements in citation conventions, grammatical accuracy, and academic register directly align with the targeted SRSD strategies such as explicit modeling, scaffolded revision, and genre-based instruction (Harris, 2022; Ray, 2023). The post-intervention reflections also revealed enhanced metacognitive awareness, as students increasingly referenced the use of planning, self-monitoring, and revision strategies. This supports theoretical claims that self-regulation is not merely a byproduct but a precursor to writing improvement (Zimmerman & Schunk, 2013).

From a pedagogical standpoint, these findings affirm the utility of SRSD-based instruction in multilingual and resource-constrained ESL contexts. They further call attention to the importance of culturally responsive scaffolding, multimodal exemplars, and peer-mediated feedback loops to support learner autonomy. At the policy level, the study suggests that writing development should not be confined to language classrooms alone but should be viewed as an institution-wide responsibility, particularly in schools serving linguistically and economically marginalized populations.

6. Conclusion and Recommendations

This study contributes to the evolving literature on L2 academic writing by foregrounding the socio-cognitive and instructional determinants of writing proficiency among Filipino senior high school students in a multilingual, under-resourced educational context. Anchored in a convergent mixed-methods design, the investigation integrated demographic profiling, rubric-based writing assessment, and qualitative inquiry to offer a multi-layered understanding of the barriers and affordances surrounding writing development. The findings provide compelling evidence that structural factors such as socioeconomic status, language proficiency, parental involvement, and access to academic resources are critical determinants of writing performance, eclipsing more conventional demographic variables like age and gender. These insights underscore the salience of contextualized, equity-driven approaches to writing pedagogy in English as a Second Language (ESL) education.

The GO WRITE intervention, modeled on the Self-Regulated Strategy Development (SRSD) framework, demonstrated a significant and large effect on students' writing outcomes. Gains were particularly notable in complex academic discourse domains—citation conventions, grammatical accuracy, and academic register—which are often resistant to change through conventional instruction. Moreover, the integration of explicit modeling, scaffolded feedback, and reflective practice cultivated metacognitive engagement, aligning with research that positions self-regulation as a prerequisite to writing improvement (Graham & Harris, 2018; Zimmerman & Schunk, 2013).

Several pedagogical recommendations emerge from this study. First, academic writing instruction should be recentered around process-oriented, strategy-based approaches that empower students to manage the cognitive and rhetorical demands of academic discourse. Second, teacher education programs must emphasize the role of formative assessment, feedback literacy, and scaffolding in addressing the socio-affective and linguistic needs of L2 writers. Third, institutional support structures—from access to writing centers to home-school collaboration—must be expanded to mitigate the inequities identified in this study. These recommendations align with contemporary calls for inclusive and sustainable writing pedagogies that recognize the multiliteracies and multilingual repertoires of diverse learners (Zhang & Hyland, 2023).

Nonetheless, this study is not without limitations. The sample was limited to a single private institution

in a provincial Philippine context, which may constrain the generalizability of findings. The intervention period was relatively short, and although the gains were statistically and practically significant, the long-term durability of these improvements remains unknown. Additionally, while qualitative insights enriched the interpretation of findings, classroom observations and teacher perspectives were not systematically included and should be incorporated in future research.

Further studies are encouraged to undertake longitudinal evaluations of SRSD-based interventions, particularly those integrating digital writing tools and AI-mediated feedback systems. Future research should also explore cross-sector applications of the GO WRITE model in public schools and tertiary institutions, as well as adaptations for learners with varying levels of English proficiency. A multi-level analysis that considers policy, institutional, and classroom-level variables would offer a more comprehensive account of the ecosystem shaping academic writing development in ESL contexts.

In conclusion, this study affirms that academic writing proficiency is not merely an individual competence but a socially situated, instructionally cultivated, and systemically supported practice. By attending to both learner agency and institutional structure, writing pedagogy can move toward more equitable, effective, and context-responsive paradigms.

References

- Azi, Y. (2020). Scaffolding and the Teaching of Writing Within ZPD: Doing Scaffolded Writing (A Short Case Study). *International Journal of Linguistics*, 12(3), 105. <https://doi.org/10.5296/ijl.v12i3.14044>
- Baharudin, F., Laily Ramli, N. H., Mohd Habali, A. H., Azlina Azmi, A., & Hanim Rahmat, N. (2023). Process of Writing: The Challenges in Writing Skill Among ESL Learners. *International Journal of Academic Research in Business and Social Sciences*, 13(10), Pages 33-52. <https://doi.org/10.6007/IJARBS/v13-i10/18649>
- Bandura, A. (2020). Social Cognitive Theory: An Agentic Perspective. *Psychology: The Journal of the Hellenic Psychological Society*, 12(3), 313. https://doi.org/10.12681/psy_hps.23964
- Busse, V., Graham, S., Müller, N., & Utesch, T. (2023). Understanding the interplay between text quality, writing self-efficacy and writing anxiety in learners with and without migration background. *Frontiers in Psychology*, 14, 1130149. <https://doi.org/10.3389/fpsyg.2023.1130149>

- Corcuera, L. (2024). Uncovering QuillBot: Filipino Senior High School Students' Experiences and Factors Influencing Its Use in Enhancing Language Writing Skills. *Uluslararası Eğitim Araştırmacıları Dergisi*. <https://doi.org/10.52134/ueader.1497368>
- Dakakni, D., & Safa, N. (2023). Artificial intelligence in the L2 classroom: Implications and challenges on ethics and equity in higher education: A 21st century Pandora's box. *Computers and Education: Artificial Intelligence*, 5, 100179. <https://doi.org/10.1016/j.caeai.2023.100179>
- Fitts, S., Bowers, E., & Keisler, L. (2016). Writing Instruction for English Learners: Examining Instructional Practices in Fourth-Grade Classrooms. *NABE Journal of Research and Practice*, 7(1), 106–141. <https://doi.org/10.1080/26390043.2016.12067806>
- Forbes, M. (2022). Thematic analysis: A practical guide. *Evaluation Journal of Australasia*, 22(2), 132–135. <https://doi.org/10.1177/1035719X211058251>
- Golparvar, S. E., & Khafi, A. (2021). The role of L2 writing self-efficacy in integrated writing strategy use and performance. *Assessing Writing*, 47, 100504. <https://doi.org/10.1016/j.asw.2020.100504>
- Graham, S., & Harris, K. R. (2018). Evidence-Based Writing Practices: A Meta-Analysis of Existing Meta-Analyses. In R. Fidalgo Redondo, K. Harris, & M. Braaksma (Eds.), *Design Principles for Teaching Effective Writing* (pp. 13–37). BRILL. https://doi.org/10.1163/9789004270480_003
- Halliday, M. A. K., Matthiessen, C. M. I. M., Halliday, M., & Matthiessen, C. (2014). *An Introduction to Functional Grammar* (0 ed.). Routledge. <https://doi.org/10.4324/9780203783771>
- Harris, S. G. K. R. (2022). The Role and Development of Self-Regulation in the Writing Process. In D. H. Schunk & B. J. Zimmerman, *Self-regulation of Learning and Performance* (1st ed., pp. 203–228). Routledge. <https://doi.org/10.4324/9780203763353-9>
- Herman, H., Rafiek, M., Agustina, T., Saddhono, K., Malabar, S., Saputra, N., & Purba, R. (2023). Exploring the metafunctions to improve EFL learners' writing ability in the perspective of systemic functional linguistics. *Research Journal in Advanced Humanities*, 4(2). <https://doi.org/10.58256/rjah.v4i2.1195>
- Hyland, K., & Hyland, F. (Eds.). (2019). *Feedback in Second Language Writing: Contexts and Issues* (2nd ed.). Cambridge University Press. <https://doi.org/10.1017/9781108635547>
- Lakens, D. (2013). Calculating and reporting effect sizes to facilitate cumulative science: A practical primer for t-tests and ANOVAs. *Frontiers in Psychology*, 4. <https://doi.org/10.3389/fpsyg.2013.00863>
- Li, D. (2022). A Review of EFL Students' English Writing Self-efficacy. *IRA International Journal of Education and Multidisciplinary Studies*, 18(3), 94. <https://doi.org/10.21013/jems.v18.n3.p4>
- Lim, J., & Kessler, M. (2024). Multimodal composing and second language acquisition. *Language Teaching*, 57(2), 183–202. <https://doi.org/10.1017/S0261444823000125>
- Liu, C., & Yu, S. (2022). Reconceptualizing the impact of feedback in second language writing: A multidimensional perspective. *Assessing Writing*, 53, 100630. <https://doi.org/10.1016/j.asw.2022.100630>
- Marzuki, D., Sariani, S., & Sumira, S. (2023). The Effects of Self-Regulated Strategy Development (SRSD) Instruction on EFL Learners' Autonomy and Writing Proficiency. *International Journal of English and Applied Linguistics (IJEAL)*, 3(3), 266–278. <https://doi.org/10.47709/ijeal.v3i3.3095>
- McKeown, D., FitzPatrick, E., Ennis, R. P., & Sanders, S. (2021). Self-Regulated Strategy Development: A Framework for Effective Instruction across the Content Areas. *Learning Disabilities Research & Practice*, 36(3), 184–187. <https://doi.org/10.1111/ldrp.12256>
- McKinley, J., & Rose, H. (Eds.). (2019). *The Routledge Handbook of Research Methods in Applied Linguistics* (1st ed.). Routledge. <https://doi.org/10.4324/9780367824471>
- Mitchell, K. M., Zumbrunn, S., Berry, D. N., & Demczuk, L. (2023). Writing Self-Efficacy in Postsecondary Students: A Scoping Review. *Educational Psychology Review*, 35(3), 82. <https://doi.org/10.1007/s10648-023-09798-2>
- Munder, D. (2024). Writing Errors of English as Second Language (ESL) Learners in the 21st Philippine Context. *Randwick International of Education and Linguistics Science Journal*, 5(2), 276–292. <https://doi.org/10.47175/rielsj.v5i2.955>

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- Nation, I. S. P. (2012). *Learning Vocabulary in Another Language* (1st ed.). Cambridge University Press. <https://doi.org/10.1017/CBO9781139524759>
- Nikcevic-Milkovic, A., Balenovic, K., & Brala-Mudrovčić, J. (2022). Self-Regulated Learning and Sociodemographic Factors in Students' L1/L2 Writing Proficiency. *Journal of Language and Education*, 8(1), 100–116. <https://doi.org/10.17323/jle.2022.11581>
- OECD. (2019). *PISA 2018 Assessment and Analytical Framework*. OECD. <https://doi.org/10.1787/b25efab8-en>
- Patwary, Md. N. (2023). Peer Feedback in Developing Writing in Tertiary EFL/ESL Education: A Review of Related Research. *Crossings: A Journal of English Studies*, 14, 154–166. <https://doi.org/10.59817/cjes.v14i.489>
- Poehner, M. E., & Wang, Z. (2021). Dynamic Assessment and second language development. *Language Teaching*, 54(4), 472–490. <https://doi.org/10.1017/S0261444820000555>
- Ray, A. B. (2023). Writing Interventions Using SRSD for Secondary Students with and At-Risk for Learning Disabilities: A Review of Empirical Research. In X. Liu, M. Hebert, & R. A. Alves (Eds.), *The Hitchhiker's Guide to Writing Research* (Vol. 25, pp. 233–252). Springer International Publishing. https://doi.org/10.1007/978-3-031-36472-3_13
- S. Pettalongi, S., M. Londol, M., & Umboh, S. E. (2024). Disparities in Digital Education: Socioeconomic Barriers to Accessing Online Learning Resources. *International Journal of Social and Human*, 1(3), 181–189. <https://doi.org/10.59613/be6gdv98>
- Setyawan, Y., Suwastini, N. K. A., & Ratminingsih, N. M. (2020). Process Approach in the Teaching of Writing for Undergraduate EFL Students. *Script Journal: Journal of Linguistics and English Teaching*, 5(2), 149–164. <https://doi.org/10.24903/sj.v5i2.520>
- Sun, Q., Zhang, L. J., & Carter, S. (2024). English as a foreign language learners' metacognitive experiences and writing development: Unraveling the process of learning EFL writing. *Learning and Individual Differences*, 115, 102540. <https://doi.org/10.1016/j.lindif.2024.102540>
- Tupas, R. (2024). English in the Philippines. In A. J. Moody (Ed.), *The Oxford Handbook of Southeast Asian Englishes* (1st ed., pp. 285–296). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780192855282.013.14>
- Vygotsky, L. S. (1978). *Mind in Society: Development of Higher Psychological Processes* (M. Cole, V. Jolm-Steiner, S. Scribner, & E. Souberman, Eds.). Harvard University Press. <https://doi.org/10.2307/j.ctvjf9vz4>
- Zhang, Z. (Victor), & Hyland, K. (2023). The role of digital literacy in student engagement with automated writing evaluation (AWE) feedback on second language writing. *Computer Assisted Language Learning*, 1–26. <https://doi.org/10.1080/09588221.2023.2256815>
- Zhou, Y., Zhou, Y., & Machtmes, K. (2024). Mixed methods integration strategies used in education: A systematic review. *Methodological Innovations*, 17(1), 41–49. <https://doi.org/10.1177/20597991231217937>
- Zimmerman, B. J., & Schunk, D. H. (Eds.). (2013). *Self-Regulated Learning and Academic Achievement* (0 ed.). Routledge. <https://doi.org/10.4324/9781410601032>
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