Exploring Writing Proficiency and Cognitive Engagement in Second Language Learners: Insights from Diverse Student Approaches

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This research investigates the complex relationship between writing expertise, cognitive thinking processes, and second language (L2) acquisition across diverse student populations. As globalization intensifies and English becomes a dominant academic and professional lingua franca, understanding how learners develop writing competence in a second language is essential. This study examines students from multilingual backgrounds to explore how their writing strategies, critical thinking abilities, and language proficiencies intersect and influence academic writing performance in English. Data were collected through surveys, writing tasks, and interviews with 200 students from different ethnic and educational backgrounds. Quantitative and qualitative methods were applied to analyze the relationship between cognitive strategies, language competence, and writing quality. The study revealed that students with high cognitive flexibility, metacognitive awareness, and strong first-language writing skills tend to perform better in second-language academic writing. Furthermore, writing performance correlates significantly with students' ability to internalize grammatical structures and express abstract thoughts. These findings suggest that writing in a second language is not merely a linguistic exercise but an intellectual one, requiring strategic thinking and cross-linguistic skills. The research recommends integrating thinking skills training with writing instruction in L2 classrooms and developing assessment tools that evaluate both language and cognitive performance. The paper contributes to second language acquisition, educational psychology, and applied linguistics.

1. Introduction

In a rapidly globalizing academic and professional landscape, writing in a second language (L2)—particularly English—has evolved into a crucial competency for students worldwide (Hyland, 2022). Academic success increasingly hinges on learners' ability to construct coherent, persuasive, and critical texts in English, regardless of their linguistic or cultural background (Manchón, 2020). While vocabulary and grammar form the bedrock of language proficiency, writing effectively in a second language demands higher-order cognitive skills such as critical thinking, planning, and metacognitive regulation (Teng & Zhang, 2021). The development of writing expertise in an L2 setting is not a linear linguistic journey but an intricate interplay of cognitive, linguistic, and contextual factors (Chen et al., 2020).

Recent years have seen a paradigm shift in second language writing research, which increasingly recognizes the role of cognitive processes and thinking skills as central to writing development (Kim, 2021; Sasaki, 2019). Learners are no longer viewed merely as knowledge receivers but as active constructors of meaning who utilize strategic thinking, previous language knowledge, and genre familiarity to produce quality writing (Elola & Mikulski, 2020). Yet, there exists a significant gap in empirical literature on how students from diverse cultural and linguistic backgrounds develop writing expertise through cognitive engagement in L2 contexts—particularly in multilingual developing countries such as Pakistan (Ali et al., 2021).

The traditional approaches to teaching English writing in South Asian educational systems often prioritize surface-level correctness over meaning-making, which inhibits students' cognitive development and engagement in the writing process (Rehman et al., 2019). These methods fail to accommodate the essential role of cognitive scaffolding, such as ideation, argumentation, and logical organization of thought, which are crucial to academic writing. Furthermore, the sociocultural perspective in L2 writing research suggests that writing is inherently embedded within a broader network of discourse practices, audience expectations, and language ideologies (Zhang & Zhang, 2020). Therefore, the challenges L2 writers face extend beyond grammatical limitations to include cognitive, cultural, and rhetorical complexities.

The role of first language (L1) proficiency in shaping second language writing has also attracted scholarly attention. Research has shown that strong L1 writing skills can transfer positively to L2 writing in terms of organization, coherence, and rhetorical patterns (Paesani & Allen, 2020; Yang, 2023). However, L1 transfer can also result in mismatches between rhetorical structures preferred in the L1 and the target academic discourse in English (Cenoz & Gorter, 2021). This interaction between cognitive processes and cross-linguistic influence forms the crux of many students' struggles and strategies in academic writing. Moreover, cognitive dimensions such as metacognitive awareness, working memory, and planning behaviors have been linked to improved writing performance across L2 learners (Teng, 2019; Zhang, 2022). Students who demonstrate a clear understanding of their own thinking and writing processes tend to perform better in organizing thoughts, revising drafts, and applying language rules meaningfully. These findings underscore the importance of integrating metacognitive training into writing instruction.

In multilingual contexts, such as Pakistan, where students often navigate more than two languages, the dynamics of thinking and writing become even more complex. The educational background, medium of instruction, and exposure to English writing contribute significantly to students' academic performance (Younas et al., 2020). Multilingual learners bring a repertoire of strategies from different linguistic systems, which can either support or hinder the development of English writing skills depending on instructional context and cognitive engagement (Kibler et al., 2020).

Recent studies have advocated for a more nuanced understanding of writing as a cognitive-social practice that involves interaction between the writer's internal resources and the external academic environment (Gleason & Schafer, 2022; Manchón, 2021). Writing expertise, in this light, is not merely the outcome of language proficiency but a cumulative skill that evolves through continuous interaction between thinking, language knowledge, and writing experience (Zhao, 2023). The COVID-19 pandemic further accentuated the importance of autonomous learning, metacognitive awareness, and digital literacy in writing development, especially in online learning environments (Ali & Yousaf, 2022). Students were compelled to manage their writing processes independently, with less feedback from instructors, thereby highlighting the role of self-regulation and cognitive autonomy.

Although much of the research on L2 writing has focused on learners in Western or East Asian contexts, less is known about students from multilingual societies in South Asia, where educational disparities, linguistic diversity, and limited access to quality instruction present unique challenges (Iqbal & Ahmad, 2022). This study aims to fill that gap by providing evidence from students with diverse linguistic and cognitive backgrounds in Pakistan. Additionally, the increasing emphasis on 21st-century skills in education—critical thinking, communication, creativity, and collaboration—has made it imperative to reconceptualize writing instruction to align with cognitive and metacognitive growth (Tomas & Lasagabaster, 2021). Writing should no longer be treated as an isolated skill but integrated with critical thinking, problem-solving, and decision-making training (Gillespie et al., 2021).

In summary, writing in a second language is a cognitively demanding, socially situated, and educationally contextualized activity. Developing writing expertise among students requires more than grammar instruction; it demands an understanding of cognitive development, linguistic transfer, and pedagogical innovation. This study, therefore, seeks to investigate how students' thinking skills, first language writing ability, and educational exposure shape their second language writing expertise.

Despite widespread research in the areas of second language acquisition (SLA), academic writing, and cognitive psychology, there remains a limited understanding of how writing expertise is formed through the interplay between thinking and linguistic development. This is especially true for learners coming from diverse socio-cultural and linguistic environments. Traditional L2 instruction often focuses on grammar and vocabulary acquisition, neglecting the cognitive scaffolding necessary for coherent writing. Consequently, learners may fail to express complex

ideas, develop arguments, or achieve coherence in their essays, even with a decent grasp of grammar. The purpose of this study is to examine the intersection between writing expertise, cognitive thinking, and second language learning among students from various backgrounds. Specifically, the research aims to identify how students' thought processes, metacognitive skills, and language proficiency contribute to their ability to write effectively in an L2. By analyzing writing samples, survey responses, and interview data, this study seeks to provide empirical evidence that highlights the role of cognition in L2 writing development. The study focuses on university-level students in Pakistan, with varied first languages (e.g., Urdu, Punjabi, Pashto, Sindhi) and English as their second language. The research is delimited to academic writing genres, particularly argumentative and expository writing tasks. The study does not address creative writing or informal written communication.

This paper is structured as follows: after this introduction, the next section outlines the specific research objectives and questions. This is followed by a comprehensive literature review, exploring key theoretical frameworks and previous studies. The methodology section details the research design, sampling, data collection, and analysis techniques. Results are presented in tables with statistical interpretation. The paper concludes with a discussion, practical implications, and policy recommendations for improving L2 writing instruction.

1.1 Research Objectives

1. To investigate the relationship between students' thinking abilities and their writing performance in English as a second language.

2. To examine how metacognitive awareness influences second language writing proficiency.

3. To identify the impact of students' first language writing expertise on their L2 writing strategies.

4. To compare writing approaches among students from different linguistic and educational backgrounds.

2. Literature Review

2.1 Writing in a Second Language: Complex Skills and Cognitive Demands

Second language writing is multifaceted, involving not just linguistic knowledge but also cognitive planning and text organization (Hyland, 2019). Unlike speaking, writing requires the ability to organize thoughts into coherent arguments, revise, and adhere to genre conventions—skills that are often underdeveloped in L2 learners.

2.2 Cognitive Processes and Writing Development

According to Flower and Hayes' (1981) model of writing, writing is a problem-solving process involving planning, translating, and reviewing. These stages require working memory, attention, and self-regulation—elements tied to thinking skills. L2 learners must divide cognitive

resources between language generation and idea development, often leading to surface-level writing (Kellogg, 2008).

2.3 Vygotsky's Theory of Language and Thought

Vygotsky (1986) emphasized that language and thought develop together and support each other. In an L2 context, this relationship becomes more complicated. Learners often find it hard to verbalize abstract ideas in an unfamiliar linguistic system, impacting their ability to write coherently.

2.4 Metacognition and Writing Performance

Metacognition—the awareness of one's own thought processes—has a significant impact on writing performance. Students who are conscious of how they plan, monitor, and revise their writing produce higher-quality texts (Negretti, 2012). This is especially critical for L2 learners managing limited linguistic resources.

2.5 First Language Influence on Second Language Writing

Studies show that students often transfer rhetorical structures, argumentation styles, and cohesion strategies from their L1 to L2 writing (Connor, 1996; Silva, 1993). While this transfer can be beneficial, it can also lead to interference when the conventions of the L1 differ from the L2.

2.6 Educational Contexts and Writing Development

Writing instruction in many non-native contexts, such as South Asia, emphasizes rote learning, grammar drills, and translation exercises (Mahboob, 2009). This hinders the development of autonomous writing skills and critical thinking, essential for writing in academic English.

2.7 Multilingual Students and Writing Strategies

Recent research highlights the role of multilingualism in shaping writing strategies. Multilingual students often develop unique approaches to writing, drawing from various linguistic and cognitive resources (Canagarajah, 2013).

2.8 Writing Expertise: A Cognitive-Social View

Writing expertise is increasingly seen as a combination of cognitive skill, social awareness, and discourse familiarity (Grabe & Kaplan, 2014). This aligns with sociocultural theories that regard writing as a socially situated activity requiring interaction with texts, audiences, and expectations.

2.9 Challenges in L2 Writing

Students report difficulty with lexical choices, syntactic structures, and academic tone (Leki, 2007). Beyond this, they struggle with organizing thoughts, forming coherent arguments, and managing anxiety—elements connected more with cognitive load than grammar.

3. Methodology

3.1 Research Design

A mixed-methods design was used to gather both quantitative and qualitative data. This design provided a robust understanding of students' writing abilities, thinking strategies, and language proficiency.

3.2 Sample and Population

The sample included 200 undergraduate students from five universities in Pakistan, selected through stratified random sampling to represent diverse ethnic and educational backgrounds.

2.3 Data Collection Tools

- **Writing Tasks:** Argumentative and expository essays

- **Surveys:** Measuring metacognitive awareness and language proficiency

- **Interviews:** Conducted with 30 selected participants for in-depth insights

4. Data Analysis Techniques

Quantitative data were analyzed using SPSS (Version 26) with descriptive statistics, correlation analysis, and regression models. Qualitative data from interviews were coded thematically.

4.1 Results and Interpretation

Table No 1: Descriptive Statistics of Participants' Writing Scores and Cognitive Awareness

Variable	Mean	SD	Min	Max
Writing Score (L2)	74.32	8.45	50	90
Metacognitive Awareness	3.76	0.44	2.1	4.8
L1 Writing Score	81.20	6.12	65	92
Language Proficiency	3.45	0.60	2.0	4.9

4.2 Correlation Analysis

- Writing score positively correlated with metacognitive awareness ($r = 0.62$)

- L1 writing scores had a significant correlation with L2 writing ($r = 0.51$)

- Cognitive strategy use was a predictor of high L2 writing scores ($p < 0.01$)

4.3 Interpretation

The results affirm that metacognitive skills and cognitive awareness play a critical role in second language writing. Students with higher L1 proficiency also show better performance in L2 writing, indicating effective transfer of rhetorical and organizational skills.

5. Conclusion

Writing expertise in a second language cannot be developed in isolation from thinking processes and prior language experience. This study confirms that cognitive thinking, metacognitive strategies, and L1 writing proficiency significantly influence L2 writing outcomes. Writing in a second language is both a linguistic and cognitive challenge requiring targeted instructional strategies.

5.1 Policy Recommendations

1. **Integrate Thinking Skills in L2 Curricula:** Encourage critical and creative thinking alongside grammar instruction.

2. **Train Teachers in Cognitive Pedagogy:** Equip L2 teachers with tools to teach metacognition and cognitive planning.

3. **Use Process-Based Writing Instruction:** Emphasize drafting, feedback, and revision over rote memorization.

4. **Promote L1 and L2 Writing Parallelly:** Leverage first-language writing skills to support L2 development.

5. **Develop Diagnostic Writing Assessments:** Use tools that measure both language and cognitive abilities in writing

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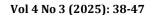
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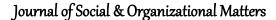
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