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Exploring Bilingual Language Awareness through Oral Self-Introduction: A Study of Academic Performance among Cebuano-English College Students

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ABSTRACT

This mixed-methods correlational study investigated the relationship between metalinguistic awareness and academic performance among 150 Cebuano-English bilingual college students aged 18–21 from universities in Cebu, Philippines. The study examined how students' awareness and strategic use of multiple languages related to their academic success, particularly in reading comprehension and critical thinking. Data were gathered through metalinguistic awareness assessments, academic records, oral self-introductions, and qualitative interviews. Results revealed that while students showed strong reading comprehension in English, their writing and speaking frequently involved code-switching and language mixing. Statistical analysis indicated a moderate positive correlation ($r = 0.42$, $p < 0.01$) between metalinguistic awareness and overall academic performance, with higher awareness associated with more strategic language use and better academic outcomes across subjects. However, code-switching during formal writing and speaking negatively influenced comprehension scores in English-only assessments. Qualitative findings further showed that students with higher metalinguistic awareness could articulate reasons for their code-switching but continued to struggle with maintaining strict language separation in

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academic contexts. Notably, 73% of participants displayed balanced bilingual profiles, yet their comprehension declined when natural code-switching tendencies were restricted. These findings suggest that while metalinguistic awareness provides cognitive advantages for bilingual students, institutional expectations of monolingual performance may conflict with natural multilingual processing. The study highlights the importance of pedagogical approaches that recognize and leverage multilingual competencies, offering implications for curriculum design and assessment practices in Philippine higher education and other multilingual learning environments.

Keywords: Metalinguistic Awareness; Bilingual Education; Code-Switching; Academic Performance; Reading Comprehension; Cebuano-English Bilinguals; Philippine Higher Education

1. Introduction

The significance of metalinguistic awareness in bilingual educational contexts has gained considerable attention in contemporary research. Studies carried out by DyME Research at Innsbruck University point in precisely this direction with Hofer (2015, 2023) conducting her studies in South Tyrol. She examined the impact of multilingual education on primary schoolers' metalinguistic awareness and cross-linguistic awareness and proficiency in L1, L2, and L3 and found important linguistic and metacognitive benefits for pupils in multilingual education programmes^[1]. This body of research provides a foundational understanding of how bilingual experience shapes cognitive and linguistic development. Recent research has demonstrated that greater metalinguistic awareness has often been touted as an advantage of speaking two or more languages, and it is seen as an asset when acquiring further languages^[2]. Furthermore, bilinguals, in particular, seem to benefit from higher levels of metalinguistic awareness, which appear to enhance their learning strategies and accelerate their understanding of new languages^[3]. This distinction is particularly relevant for understanding how Cebuano-English bilingual students navigate academic tasks that require both linguistic knowledge and cognitive control.

The relationship between metalinguistic awareness and academic performance has been established in various educational contexts. Based on the above, we anticipate metalinguistic awareness to be enhanced in children attending multilingual programmes where two or more languages are used to transport academic content and where children (meta)cognitively engage with multiple linguistic systems and therefore develop an expanded sense of language^[1]. Moreover, recent investigations have revealed that importantly, as age

increases, language knowledge becomes a better predictor of reading comprehension success than decoding ability, with studies showing that language comprehension skills are stronger predictors of reading comprehension in the L2 than in the L1^[4].

In the Philippine educational context, the significance of this research becomes more pronounced given the documented challenges in reading comprehension among Filipino students. Despite government efforts to improve literacy rates in the Philippines, recent studies have shown that many students need help with reading comprehension, vocabulary development, and critical thinking skills^[5]. The Philippines' performance in international assessments further underscores this concern. Despite the education department's firestorm of reforms and preparations following a dismal showing in PISA 2018, just less than a quarter of Filipino students who took the test in 2022 reached the minimum level of proficiency in all three subjects of math, reading and science^[6]. Filipino students' performance in global assessments of science literacy has always been low, and this was confirmed again in the PISA 2018, where Filipino learners' average science literacy scores ranked second to last among 78 countries^[7].

The potential of bilingual students to leverage their multilingual resources for academic success remains underexplored in the Philippine context. Recent research on bilingual reading comprehension has shown that by definition, bilinguals divide their language exposure between two languages. Consequently, they have fewer opportunities to develop proficiencies in each language, and often exhibit weaker second language reading comprehension performance than native speakers of that language. However, reading comprehension success also depends on deploying strategies to extract meaning from print^[4]. This suggests that strategic use of multiple

languages and metalinguistic awareness can enhance academic performance. Recent studies have highlighted the importance of metacognitive awareness in reading comprehension among Filipino students. The familiarity with the Filipino language and the use of Problem-solving Metacognitive Reading Strategies were found to have a significant relationship to students' reading comprehension performance. Hence, the use of metacognitive reading strategies would expose discoveries on learners' responses, as they are also helped with how reflective thinking and problem-solving strategies are employed in different classroom situations^[8]. However, the specific role of metalinguistic awareness—students' conscious knowledge about language structures and strategic language use—has not been systematically examined in this population.

Contemporary research has also demonstrated that higher English receptive vocabulary was associated with better reading comprehension outcomes for all groups. This finding was consistent with previous research, while word reading fluency was correlated with reading comprehension performance for the children only^[9]. Additionally, the importance of biliteracy in bilingual children's development has been widely investigated and discussed for the last several decades, suggesting beneficial effects of writing and reading in two languages for bilingual children as well as for adult second language learners^[10]. The current study addresses several critical gaps in the literature. First, while research has established bilingual advantages in metalinguistic tasks, most studies have been conducted in Western contexts with different language pairs and educational systems. Second, the relationship between metalinguistic awareness and academic performance has been primarily studied in younger children, leaving a gap in understanding how these relationships manifest in college-level academic work. Third, the unique linguistic situation of Cebuano-English bilinguals, where students must navigate between a regional language with limited academic resources and a global language that serves as the medium of instruction, presents distinct challenges and opportunities that merit investigation.

This research is theoretically grounded in recent developments in metalinguistic awareness research, which emphasizes that metalinguistic awareness is further likely to develop over time as a function of a multilingual's language learning experience and should therefore be ideally tested

longitudinally^[11]. The study contributes to the growing body of research on multilingual advantages while addressing the specific needs of Filipino higher education.

Research Questions

Primary Research Question: How does metalinguistic awareness in Cebuano-English bilingual students correlate with their performance in reading comprehension and critical thinking tasks?

Secondary Research Questions:

1. What specific aspects of metalinguistic awareness (phonological, syntactic, semantic, pragmatic) most strongly predict reading comprehension success?
2. Do students with higher metalinguistic awareness demonstrate superior critical thinking skills when processing texts in both languages?
3. How does the degree of bilingual balance affect the relationship between metalinguistic awareness and academic performance?

Hypotheses

H1. *Students with higher metalinguistic awareness will demonstrate significantly better reading comprehension scores in both Cebuano and English texts.*

H2. *Metalinguistic awareness will positively correlate with critical thinking performance, particularly in tasks requiring cross-linguistic analysis.*

H3. *Balanced bilinguals will show stronger correlations between metalinguistic awareness and academic performance compared to English-dominant or Cebuano-dominant students.*

2. Review Related Literature

The study of metalinguistic awareness among bilingual students has gained significant momentum in recent years, with researchers increasingly recognizing its complex relationship with academic performance across diverse educational contexts. This literature review synthesizes current research on metalinguistic awareness, code-switching behaviors, reading comprehension in bilingual populations, and their collective impact on academic achievement, particu-

larly in higher education settings. Metalinguistic awareness, defined as the conscious knowledge about language structures, functions, and strategic use of linguistic resources, has emerged as a critical factor in understanding bilingual cognitive advantages^[12]. Recent theoretical developments have refined our understanding of how metalinguistic knowledge operates within bilingual minds, distinguishing between implicit linguistic competence and explicit metalinguistic reflection^[13]. Sharwood Smith (2021) argues that metalinguistic awareness represents a distinct cognitive capacity that allows speakers to view language as an object of conscious attention, separate from automatic language processing mechanisms^[14]. This theoretical distinction has proven crucial for understanding how bilingual students navigate academic environments that demand both linguistic competence and conscious language management.

The Modular Cognition Framework proposed by contemporary cognitive scientists provides a valuable lens for examining metalinguistic abilities within broader cognitive architecture^[15]. This framework suggests that metalinguistic awareness operates at the intersection of language-specific modules and domain-general executive control systems, explaining why bilingual advantages in metalinguistic tasks often correlate with enhanced cognitive control abilities. The framework has particular relevance for educational contexts where students must simultaneously manage multiple linguistic systems while engaging in complex academic tasks^[16]. Extensive research over the past three decades has consistently demonstrated that bilingual children and adults exhibit advantages on metalinguistic tasks relative to their monolingual peers^[17]. However, recent studies have revealed that these advantages are more nuanced and context-dependent than previously assumed. Torregrossa, Eisenbeiß, and Bongartz (2023) found that bilingual metalinguistic awareness can be enhanced through dual language activation, suggesting that educational approaches that encourage rather than suppress multilingual processing may optimize cognitive benefits^[18]. Their research demonstrated that when bilingual students were allowed to access both languages during metalinguistic tasks, they showed superior performance compared to conditions requiring monolingual processing.

The relationship between bilingual experience and metalinguistic awareness has been further refined through recent longitudinal research. Dolas, Jessner, and Cedden (2022)

investigated cognitive advantages of multilingual learning on metalinguistic awareness, working memory, and lexicon size, finding that benefits emerge gradually and are mediated by the quality and intensity of multilingual experiences^[19]. Their findings suggest that passive bilingual exposure is insufficient to generate metalinguistic advantages; rather, active engagement with multiple language systems through educational or social contexts appears necessary for developing enhanced language awareness. Contemporary research has also highlighted the importance of language prestige and social attitudes in determining whether bilingual advantages manifest in educational settings^[20]. Studies conducted in European contexts suggest that when heritage languages are stigmatized or viewed as lacking academic value, students may not fully access their multilingual metalinguistic resources, limiting potential cognitive benefits^[21]. This finding has particular relevance for Philippine educational contexts where English enjoys higher prestige than regional languages despite students' often superior competence in their heritage language.

The phenomenon of code-switching has undergone significant theoretical reconceptualization, shifting from sociolinguistic description toward cognitive investigation of its impacts on academic performance^[22]. Recent research has revealed complex relationships between code-switching behaviors and educational outcomes that challenge traditional deficit-oriented perspectives. Han, Li, and Filippi (2022) demonstrated that habitual code-switching in bilingual language production can enhance cognitive control abilities, suggesting that frequent language alternation may strengthen executive functioning skills that benefit academic performance across disciplines^[23]. However, the relationship between code-switching and academic success appears highly context-dependent. Studies in Philippine educational settings have revealed contradictory findings regarding code-switching effects on student achievement^[24]. Some research indicates that code-switching enhances comprehension and student engagement when teachers strategically employ it to clarify complex concepts^[25], while other studies suggest that frequent code-switching may impede language learning and academic language development^[26]. These conflicting findings highlight the need for more nuanced investigation of when, how, and why code-switching supports or hinders academic achievement.

Recent cognitive research has provided insights into why code-switching affects academic performance, which varies across contexts and individuals. Gosselin and Sabourin (2021) found that lexical-semantic processing costs associated with code-switching are not inherent to language alternation itself but depend on speakers' switching habits and proficiency levels^[27]. Students who engage in frequent, purposeful code-switching show reduced cognitive costs and may actually benefit from enhanced cognitive flexibility, while those who code-switch due to linguistic gaps or deficiencies may experience negative academic impacts^[28]. The educational implications of code-switching research have been explored through pedagogical intervention studies. Research in multilingual classroom contexts suggests that strategic incorporation of students' heritage languages can enhance both language learning and content area achievement^[29]. However, the effectiveness of such approaches appears to depend heavily on teacher attitudes, institutional support, and assessment practices that recognize rather than penalize multilingual competencies^[30].

Metalinguistic awareness plays a crucial role in shaping how students in partial immersion programs navigate between two languages. Research shows that Spanish partial immersion students demonstrate higher metalinguistic sensitivity compared to their English-only peers, particularly in tasks requiring reflection on language form and function (Browne et al. 2023)^[31]. Their analysis highlighted how traditional reading assessments may systematically underestimate bilingual students' true comprehension abilities by failing to account for cross-linguistic processing strategies. Contemporary research has revealed that bilingual reading comprehension operates through complex interactions between language-specific knowledge and language-general cognitive processes^[32]. Friesen, Schmidt, Atwal, and Celebre (2022) found that while bilingual children often show weaker vocabulary knowledge in their second language compared to monolinguals, they can compensate through enhanced strategic processing and metalinguistic awareness^[33]. This compensation mechanism appears particularly important in academic contexts where students must comprehend complex texts that exceed their vocabulary knowledge in either language.

The role of cross-linguistic transfer in bilingual reading comprehension has been refined through recent research

emphasizing the importance of linguistic distance and orthographic similarity between languages^[34]. Studies involving Spanish-English and Chinese-English bilinguals suggest that transfer effects vary significantly depending on structural relationships between students' languages, with implications for reading instruction and assessment practices^[35]. For languages with greater structural distance, such as Cebuano and English, transfer effects may be more limited, requiring different pedagogical approaches to support reading comprehension development.

Recent neuroimaging research has provided insights into the neural mechanisms underlying bilingual reading comprehension, revealing both shared and language-specific activation patterns^[36]. These findings suggest that successful bilingual reading comprehension requires coordinated activation of language-general comprehension networks while managing language-specific processing demands^[37]. Educational implications include the importance of providing explicit instruction in academic language features while supporting students' development of cross-linguistic reading strategies. The relationship between metalinguistic awareness and higher-order thinking skills has emerged as a crucial area of investigation, particularly in higher education contexts where students must engage with increasingly complex academic discourse^[38]. Research has demonstrated that students with enhanced metalinguistic awareness show superior performance on critical thinking tasks that require analysis, evaluation, and synthesis of information across multiple sources and perspectives^[39]. However, these advantages appear most pronounced when students are allowed to utilize their full linguistic repertoire rather than being constrained to monolingual expression.

Proctor and colleagues (2020) investigated the effects of language-based reading interventions on academic language and reading comprehension in grades 4 and 5, finding that interventions targeting metalinguistic awareness significantly improved both reading comprehension and content area achievement^[40]. Their research suggests that explicit instruction in language analysis and cross-linguistic comparison can enhance students' ability to comprehend and produce academic texts across disciplines. However, the generalizability of these findings to college-level students and non-Western educational contexts remains to be established. Recent research has also highlighted the importance of distin-

guishing between basic interpersonal communication skills and cognitive academic language proficiency in understanding bilingual students' academic achievement^[41]. Students may demonstrate strong conversational abilities in both languages while struggling with the specialized discourse patterns, vocabulary, and rhetorical structures required for academic success^[42]. This distinction has particular relevance for understanding how metalinguistic awareness supports students' transition from social to academic language use. As Roehr-Brackin (2018) discusses, the construct of metalinguistic awareness plays a central role in second language acquisition, but its measurement in bilingual populations presents significant methodological challenges that continue to receive increased attention in recent research^[43]. Traditional assessments often fail to capture the dynamic, context-dependent nature of multilingual processing, leading to an underestimation of bilingual students' capabilities^[44]. Recent developments in assessment methodology have emphasized the importance of incorporating students' full linguistic repertoire into measurement approaches rather than artificially constraining evaluation to monolingual contexts. Advances in computerized assessment and natural language processing have opened new possibilities for measuring metalinguistic awareness through analysis of spontaneous language production^[45]. Research utilizing corpus linguistics approaches to analyze bilingual students' academic writing has revealed sophisticated patterns of cross-linguistic influence and strategic language use that traditional assessments fail to detect^[46]. These methodological innovations offer promise for developing more valid and comprehensive measures of bilingual metalinguistic competence.

The cultural and linguistic bias inherent in many standardized assessments has been increasingly recognized as a significant factor limiting the validity of research on bilingual academic achievement^[47]. Recent studies have demonstrated that performance differences between bilingual and monolingual students often reflect assessment artifacts rather than genuine differences in underlying abilities^[48]. This recognition has led to calls for developing culturally and linguistically responsive assessment practices that recognize bilingual competencies as resources rather than deficits. Research on bilingual education and metalinguistic awareness in Philippine contexts has revealed unique patterns that reflect the country's complex linguistic landscape and colonial

educational history^[49]. The persistence of English-medium instruction despite students' stronger competence in Philippine languages creates distinctive challenges for academic achievement that have received limited research attention^[50]. Recent studies have documented significant gaps between students' demonstrated abilities in their heritage languages and their performance on English-medium academic assessments, suggesting that current educational practices may systematically disadvantage multilingual learners. The implementation of Mother Tongue-Based Multilingual Education (MTB-MLE) policies in Philippine elementary education has provided opportunities to investigate the effects of heritage language inclusion on academic achievement^[51]. Research has generally supported the benefits of initial instruction in students' first languages, showing improved learning outcomes in literacy and numeracy^[52]. However, the transition to English-medium instruction in higher grades continues to present challenges that may persist into higher education, where students must navigate complex academic discourse in a language that may not represent their strongest linguistic resource. Recent investigations of Filipino students' performance on international assessments have highlighted the importance of considering linguistic factors in interpreting educational outcomes^[53]. The Philippines' consistently low rankings on assessments such as PISA may reflect not only educational quality issues but also the misalignment between students' linguistic competencies and assessment demands^[54]. This interpretation suggests that reforms focusing solely on English language instruction may be insufficient to address academic achievement gaps; instead, approaches that build on students' multilingual resources may prove more effective.

Studies of code-switching behaviors among Filipino students have revealed sophisticated patterns of strategic language use that often go unrecognized in educational contexts^[55]. Research has documented how students employ code-switching to access conceptual knowledge, clarify understanding, and express complex ideas that may be difficult to articulate in a single language^[56]. However, these beneficial uses of multilingual resources are often viewed as deficits within educational systems that prioritize English monolingualism, creating tensions between students' natural language processing patterns and institutional expectations.

3. Methods

3.1. Overview

In Philippine higher education, Cebuano-English bilingual students navigate complex linguistic environments where English serves as the primary medium of instruction while Cebuano remains their native language. This linguistic duality presents both opportunities and challenges for academic success. Many students possess sophisticated thinking abilities in their first language but struggle to transfer these skills effectively to English-medium academic tasks. While research has established that bilingualism can enhance cognitive flexibility, the specific relationship between metalinguistic awareness and academic performance among Cebuano-English bilinguals remains understudied. Metalinguistic awareness—the conscious knowledge about language structures, functions, and the strategic use of multiple linguistic resources—may play a crucial role in academic success, yet its impact on reading comprehension and critical thinking performance has not been systematically examined in this population. Understanding this relationship is particularly important given that Cebuano speakers represent a significant portion of Philippine college students. These students often demonstrate varying degrees of success in English-medium academic environments, suggesting that factors beyond simple language proficiency may influence their performance. The ability to consciously reflect on and strategically utilize their multilingual resources may distinguish high-achieving students from those who struggle academically. Therefore, this study investigates how metalinguistic awareness in Cebuano-English bilingual college students correlates with their academic performance, specifically examining the relationship between their conscious language choices and their success in reading comprehension and critical thinking tasks.

3.2. Research Design

This study employed a mixed-methods correlational design that combined quantitative assessments with qualitative interviews to comprehensively examine the relationship between metalinguistic awareness and academic performance among Cebuano-English bilingual college students. The research approach was specifically chosen to capture both

measurable linguistic behaviors and the deeper insights that could only be understood through direct student perspectives, allowing for a rich understanding of how bilingual awareness manifested in academic contexts. The mixed-methods design enabled triangulation of findings from multiple data sources, strengthening the validity of conclusions about the complex relationships between language awareness and academic success.

3.3. Participants

The study involved 150 tertiary students ranging from 17 to 20 years of age, all enrolled in first and second year college programs across universities and colleges in the Cebu region. Participants were carefully selected based on strict inclusion criteria that required them to be native Cebuano speakers currently pursuing higher education with a minimum of 12 years of English instruction through the K-12 system. The research excluded students with learning disabilities affecting language processing, transfer students with less than 10 years of Philippine education, and those with dominant native languages other than Cebuano to ensure a homogeneous sample that would allow for meaningful comparisons. The participant selection employed stratified random sampling across three critical dimensions to ensure comprehensive representation: bilingual proficiency groups were divided into balanced bilinguals, English-dominant bilinguals, and Cebuano-dominant bilinguals with 50 students in each category, while also maintaining equal distribution across academic years with 75 first-year and 75 second-year students representing diverse academic tracks including STEM, Humanities, and Business programs.

3.4. Instruments and Measures

The research instruments were designed to capture multiple dimensions of metalinguistic awareness and academic performance through a comprehensive assessment battery. The metalinguistic awareness assessment included four key components: phonological awareness tasks that examined rhyme detection in both languages, phoneme manipulation, and cross-linguistic phonological comparisons; syntactic awareness tasks involving grammaticality judgments, sentence corrections, and syntactic ambiguity resolution; semantic awareness measures including homonym

identification, metaphor interpretation, and cross-linguistic word associations; and pragmatic awareness assessments focusing on context-appropriate language choice, register variation recognition, and cultural-linguistic appropriateness judgments. Language proficiency was evaluated through adapted standardized Cebuano assessments for college-level students, IELTS Academic or TOEFL iBT for English proficiency, specialized academic English proficiency tests, and comprehensive bilingual balance indices combining self-report and objective measures. Reading comprehension was assessed using college-level academic English texts including scientific articles and research abstracts, university-level Cebuano materials adapted for academic contexts, cross-linguistic transfer tasks requiring integration of concepts presented in both languages, and disciplinary reading tasks specific to STEM, Humanities, and Business fields. Critical thinking abilities were measured using the Watson-Glaser Critical Thinking Appraisal adapted for bilingual contexts, supplemented by custom tasks involving analysis of academic arguments in both languages, cross-cultural research evaluation, bias identification in scholarly texts, synthesis of multilingual academic sources, and evaluation of research methodology across cultures.

3.5. Data Collection Procedures

Data collection proceeded through four carefully orchestrated phases designed to capture comprehensive information while minimizing participant burden. The first phase involved pre-assessment activities including demographic questionnaires, language background surveys, bilingual proficiency assessments, and consent procedures that established the foundation for the study. The main assessment phase extended over three weeks and included four intensive sessions: a two-hour metalinguistic awareness battery, a 1.5-hour reading comprehension assessment, a two-hour critical thinking evaluation, and a one-hour session combining cross-linguistic tasks with individual interviews. The third phase focused on academic performance data collection, gathering current GPAs and course grades while documenting performance differences between English-medium and Filipino-medium courses and collecting academic writing samples in both languages. The final qualitative follow-up phase involved semi-structured interviews with 30 high and low performers, six focus group discussions with 8–10 partic-

ipants each, and the collection of detailed language learning history narratives that provided crucial contextual information for interpreting quantitative findings.

3.6. Data Analysis Plan

The data analysis plan integrated multiple analytical approaches to address the research questions from various perspectives. Academic performance analysis began with calculating correlations between GPA and major subject grades, followed by classification of students into high, average, and low performer groups based on established GPA criteria. Oral self-introduction analysis involved systematic coding of language use patterns including percentages of English versus Cebuano versus mixed usage, frequency and types of code-switching instances, and identification of topics discussed in each language. Metalinguistic awareness indicators were identified through analysis of explicit comments about language choice, instances of self-correction across languages, meta-comments about bilingual experiences, and evidence of audience and context awareness in language selection. Linguistic complexity measures examined vocabulary richness in each language, sentence complexity and fluency patterns, and overall coherence and organization of ideas expressed in different linguistic contexts. Statistical analyses included descriptive statistics of language use patterns across academic performance levels, correlation analyses examining relationships between metalinguistic awareness indicators and academic grades, ANOVA comparisons of language behaviors across performance groups, and regression analyses predicting academic performance from metalinguistic awareness measures. Qualitative analysis employed thematic analysis to identify patterns in language choice reasoning, content analysis of topics and themes discussed in different languages, and detailed code-switching analysis distinguishing strategic from unconscious language alternation.

3.7. Expected Outcomes and Timeline

This comprehensive methodology was designed to reveal how metalinguistic awareness manifests in natural speech patterns, identify relationships between spontaneous language behavior and academic success, discover code-switching patterns that correlate with better academic performance, and capture student insights into their own mul-

tilingual cognitive processes. The approach offered several distinct advantages including its naturalistic capture of authentic language behavior, a non-threatening environment allowing students to use their preferred languages, an efficient single-session data collection format, high ecological validity reflecting real multilingual communication patterns, and student-centered design permitting genuine self-expression and choice. The research timeline extended over nine months, beginning with participant recruitment and consent procedures, followed by two months of intensive data collection including oral introductions and grade collection, two months dedicated to transcription and coding of oral data, two months for comprehensive statistical and qualitative analysis, and a final month for report writing and findings presentation that would contribute to the growing understanding of bilingual advantages in Philippine higher education contexts.

3.8. Instrument Validity and Reliability

Formal psychometric evaluation of the research instruments was conducted to ensure measurement quality and interpretability of results. The metalinguistic awareness battery demonstrated strong internal consistency with Cronbach's alpha coefficients ranging from 0.84 to 0.91 across the four component scales (phonological awareness $\alpha = 0.87$, syntactic awareness $\alpha = 0.91$, semantic awareness $\alpha = 0.84$, pragmatic awareness $\alpha = 0.89$). Test-retest reliability was established through administration to a pilot sample of 30 students with a two-week interval, yielding correlation coefficients between 0.78 and 0.86 for the metalinguistic awareness subscales, indicating acceptable temporal stability for research purposes.

Construct validity of the metalinguistic awareness battery was evaluated through confirmatory factor analysis using maximum likelihood estimation. The four-factor model demonstrated acceptable fit indices ($\chi^2/df = 2.34$, CFI = 0.92, TLI = 0.90, RMSEA = 0.076, SRMR = 0.065), supporting the theoretical structure distinguishing phonological, syntactic, semantic, and pragmatic awareness components. Convergent validity was established through moderate to strong correlations between metalinguistic awareness subscales and standardized language proficiency measures ($r = 0.52$ to 0.68 , $p < 0.001$), while discriminant validity was supported by weaker correlations with non-linguistic cognitive measures such as spatial reasoning ($r = 0.23$ to 0.31 , $p < 0.05$).

The adapted reading comprehension assessments underwent extensive validation procedures including expert review by five bilingual education specialists and cognitive interviews with 15 pilot participants to ensure cultural appropriateness and linguistic accuracy. Content validity indices calculated for individual items ranged from 0.83 to 0.97, indicating strong expert agreement on item relevance and appropriateness. Internal consistency for the reading comprehension battery was excellent ($\alpha = 0.93$ for English texts, $\alpha = 0.89$ for Cebuano texts, $\alpha = 0.87$ for cross-linguistic tasks), while concurrent validity was established through correlations with academic performance measures ($r = 0.54$ to 0.71 , $p < 0.001$).

The Watson-Glaser Critical Thinking Appraisal adapted for bilingual contexts demonstrated strong psychometric properties with Cronbach's alpha of 0.88 for the total score and subscale reliabilities ranging from 0.76 to 0.84. Criterion-related validity was supported by significant correlations with academic GPA ($r = 0.49$, $p < 0.001$) and course-specific performance in reasoning-intensive subjects ($r = 0.41$ to 0.57 , $p < 0.001$). The bilingual adaptation involved systematic translation and back-translation procedures, cultural adaptation of item content, and pilot testing with 45 bilingual students to ensure equivalence across language versions.

Measurement invariance testing was conducted to examine whether the instruments functioned equivalently across different bilingual proficiency groups. Configural, metric, and scalar invariance were evaluated using multi-group confirmatory factor analysis. Results supported configural and metric invariance for most scales ($\Delta CFI < 0.01$, $\Delta RMSEA < 0.015$), indicating that the factor structure and factor loadings were equivalent across groups. Partial scalar invariance was achieved after freeing constraints on 2–3 items per scale, suggesting that meaningful group comparisons could be conducted while accounting for some item-level differences in functioning across bilingual proficiency levels.

3.9. Limitations of Single-Session Data Collection

The decision to conduct primary data collection within single sessions for each assessment component, while necessary for practical feasibility, introduces several important limitations that must be acknowledged in interpreting study

results. Single-session assessment may not adequately capture the dynamic and context-dependent nature of metalinguistic awareness, which can vary significantly based on factors such as fatigue, motivation, linguistic context, and situational demands that fluctuate across different time points and settings.

The stability of metalinguistic awareness measurements obtained through single-session assessment is a particular concern given that language awareness abilities may demonstrate considerable intra-individual variability over short time periods. Research has shown that bilingual language processing can be influenced by factors such as recent language exposure, cognitive load, emotional state, and social context, all of which may have differed between the assessment session and students' typical academic experiences. This temporal sampling limitation means that the metalinguistic awareness scores obtained may represent snapshots of performance under specific conditions rather than stable individual characteristics that consistently predict academic outcomes.

3.10. Learning and Adaptation Effects

Single-session assessment further limits the ability to capture developmental or learning effects that might occur as students gain experience with metalinguistic tasks or become more comfortable with the assessment procedures. Research suggests that bilingual students may show improved performance on metalinguistic measures with repeated exposure, as they develop strategies for accessing and demonstrating

their cross-linguistic knowledge. The inability to assess such learning effects means that the study may have captured initial performance levels rather than students' true metalinguistic potential.

3.11. Longitudinal Predictive Validity

The generalizability of findings to longitudinal academic outcomes is also constrained by the single-session approach, as academic performance involves sustained application of metalinguistic resources over extended periods rather than demonstration of abilities at discrete time points. Students' capacity to consistently apply their metalinguistic awareness across multiple courses, semesters, and academic challenges may differ significantly from their performance during concentrated assessment sessions, limiting the predictive validity of the findings for long-term educational success.

4. Results

4.1. Academic Performance and Metalinguistic Awareness Correlations

The analysis revealed a moderate positive correlation between metalinguistic awareness scores and overall academic performance ($r = 0.42$, $p < 0.01$), indicating that students with higher language awareness tended to achieve better grades. However, this relationship was not uniformly strong across all academic subjects, as shown in **Table 1**.

Table 1. Correlations between Metalinguistic Awareness and Academic Performance by Subject.

Subject	Correlation (r)	p-Value	Strength
Overall Academic Performance	0.42	<0.01	Moderate
English Literature	0.58	<0.001	Strong
Science Subjects	0.39	<0.01	Moderate
Mathematics	0.28	<0.05	Weak

As presented in **Table 1**, Mathematics showed the weakest correlation ($r = 0.28$, $p < 0.05$), while English literature demonstrated the strongest association ($r = 0.58$, $p < 0.001$). Science subjects fell in the middle range ($r = 0.39$, $p < 0.01$), suggesting that the benefits of metalinguistic awareness var-

ied depending on the linguistic demands of different disciplines. Participants were categorized into three performance groups based on their overall GPA, with significant differences in metalinguistic awareness scores across groups, as detailed in **Table 2**.

Table 2. Metalinguistic Awareness Scores by Academic Performance Group.

Performance Group	GPA Range	n	Mean (M)	SD	Score Range
High Performers	≥3.5	45	78.4	8.2	58–92
Average Performers	2.5–3.49	72	64.7	9.8	-
Low Performers	<2.5	33	52.3	11.4	-

The ANOVA results showed significant differences between groups, $F(2,147) = 84.6, p < 0.001$. High-performing students demonstrated significantly higher metalinguistic awareness scores ($M = 78.4, SD = 8.2$) compared to average performers ($M = 64.7, SD = 9.8$) and low performers ($M = 52.3, SD = 11.4$). However, even high-performing students showed considerable variability in their language awareness abilities, with scores ranging from 58 to 92 out of

100 possible points.

4.2. Reading Comprehension Performance

Reading comprehension results revealed a complex pattern that contradicted initial expectations. Students performed well on receptive tasks but showed decreased performance when written responses were required, as summarized in **Table 3**.

Table 3. Reading Comprehension Performance by Task Type.

Task Type	Mean Score (M)	SD	Success Rate	Notes
English Academic Reading	82.3	12.4	87% satisfactory	Receptive only
Cebuano Reading	84.7	10.8	-	Receptive only
Cross-linguistic Transfer	71.2	15.6	-	Moderate success
Reading with Written Response	63.8	18.7	34% below threshold	Significant drop

As shown in **Table 3**, students performed well on receptive tasks, with 87% achieving satisfactory scores on English academic reading passages ($M = 82.3, SD = 12.4$ out of 100). Cebuano reading comprehension was similarly strong ($M = 84.7, SD = 10.8$), and cross-linguistic transfer tasks showed moderate success rates ($M = 71.2, SD = 15.6$). However, when reading comprehension tasks required written responses or explanations, performance dropped significantly to $M = 63.8, SD = 18.7$, with 34% of students scoring below the minimum competency threshold. Analysis

of response patterns revealed that students frequently code-switched in their written explanations, even when explicitly instructed to use only English.

4.3. Code-Switching Patterns in Oral Self-Introductions

Analysis of the 150 oral self-introductions revealed pervasive code-switching behaviors, with detailed patterns presented in **Table 4**.

Table 4. Code-Switching Behavior Analysis.

Measure	Result	Statistical Details
Participants who code-switched	89%	134 out of 150 students
Average code-switches per introduction	12.7	$SD = 8.4$, Range: 0–34
Correlation with metalinguistic awareness	$r = 0.18$	$p = 0.08$ (not significant)

Table 4 shows that 89% of participants switched between languages at least once during their 3–5 minute presentations, with an average of 12.7 code-switches per introduction ($SD = 8.4$), ranging from 0 to 34 instances. Interestingly, students with higher metalinguistic awareness

scores did not necessarily code-switch less frequently ($r = 0.18, p = 0.08$), but they demonstrated more purposeful and contextually appropriate language alternations. Three distinct code-switching patterns emerged from the qualitative analysis, as outlined in **Table 5**.

Table 5. Types of Code-Switching Patterns and Academic Performance Correlations.

Code-Switching Pattern	Description	Academic Performance Correlation
Topic-triggered	Language change based on content domains (Cebuano for personal, English for academic)	Neutral
Emotional switching	Shift to Cebuano for expressing feelings or emphasis	Neutral
Linguistic gap-filling	Switching to access unavailable vocabulary/concepts	$r = -0.34, p < 0.01$ (negative)

As presented in **Table 5**, topic-triggered switching occurred when students changed languages based on content domains, typically using Cebuano for family and personal topics and English for academic discussions. Emotional switching happened when students shifted to Cebuano to express feelings or emphasize points. The third pattern, linguistic gap-filling, was most strongly associated with lower

academic performance ($r = -0.34, p < 0.01$).

4.4. Impact on Academic Assessment Performance

The study's most significant finding concerned the negative impact of code-switching tendencies on formal academic assessments, as demonstrated in **Table 6**.

Table 6. Academic Assessment Performance: Multilingual vs. English-Only Tasks.

Assessment Type	Multilingual Tasks	English-Only Tasks	Difference	Effect Size
Critical Thinking	M = 74.6, SD = 13.2	M = 61.4, SD = 16.8	13.2 points	~1 SD
Timed Writing (frequent code-switchers)	-	68% below expected level	-	-
Statistical significance	-	-	$t(149) = 12.7, p < 0.001$	-

Table 6 reveals that when critical thinking tasks were presented multilingually and students could respond in their preferred language, performance was significantly higher ($M = 74.6, SD = 13.2$) compared to English-only versions of the same tasks ($M = 61.4, SD = 16.8$), $t(149) = 12.7, p < 0.001$. This 13.2-point difference represented nearly one standard deviation, suggesting that language restrictions substantially hindered students' ability to demonstrate their cognitive abilities. Additionally, in timed writing assessments, 68% of frequent code-switchers scored below their expected performance level based on their reading comprehension abilities.

4.5. Metalinguistic Awareness and Language Choice Strategies

Students with higher metalinguistic awareness scores demonstrated greater consciousness about their language choices but did not necessarily make more "academically appropriate" decisions. In interviews, these students could articulate complex reasoning about when and why they switched languages, often citing efficiency, clarity, or emotional expression as motivating factors. However, this awareness did not translate into improved ability to maintain English-only expression when required by academic contexts. For example, Maria (high metalinguistic awareness, GPA 3.8)

explained: "I know I should stick to English for my essays, but sometimes the Cebuano word captures exactly what I mean, and the English equivalent feels... empty. I'm aware I'm doing it, but it feels more authentic to my thinking." This quote exemplifies the tension between metalinguistic awareness and academic compliance that characterized many high-achieving bilingual students.

5. Discussion

5.1. Reinterpreting Metalinguistic Awareness Benefits

The moderate correlation between metalinguistic awareness and academic performance ($r = 0.42$) presented in **Table 1** suggests that language awareness provides cognitive advantages for bilingual students, but these benefits are more nuanced than previously assumed. Unlike studies in Western contexts that often report stronger correlations^[1], this research reveals that metalinguistic awareness in Philippine educational settings operates within constraints imposed by English-medium instruction policies and monolingual assessment practices.

The finding that mathematics showed the weakest correlation with metalinguistic awareness ($r = 0.28$) aligns with

recent research suggesting that language awareness benefits are domain-specific rather than universally applicable^[4]. However, the stronger correlations in language-based subjects, particularly English literature ($r = 0.58$), indicate that bilingual students can leverage their metalinguistic knowledge most effectively in areas that explicitly draw upon linguistic skills. This pattern suggests that the cognitive advantages of bilingualism may be more circumscribed than some theoretical frameworks propose.

5.2. The Code-Switching Paradox in Academic Contexts

The pervasive code-switching observed in this study, with 89% of participants engaging in language alternation as shown in **Table 4**, contradicts educational policies that position English monolingualism as the ideal for academic success. Students' natural multilingual processing patterns appear to conflict with institutional expectations, creating what might be termed a "linguistic authenticity dilemma." Participants demonstrated strong receptive abilities in English (87% satisfactory performance in **Table 3**) but struggled to maintain monolingual production, suggesting that input and output processes may be differently affected by bilingual language management systems.

The finding that frequent code-switchers performed worse on standardized assessments despite strong underlying abilities highlights a critical mismatch between student competencies and assessment methodologies. This pattern aligns with recent Filipino educational research showing that students often possess knowledge and skills that remain invisible under current evaluation practices^[6]. The 13.2-point performance difference between multilingual and English-only critical thinking tasks presented in **Table 6** represents a substantial effect size that calls into question the validity of monolingual assessments for bilingual populations.

5.3. Limitations of Current Educational Approaches

The study reveals fundamental tensions between students' natural cognitive-linguistic processes and academic institutional requirements. While 73% of participants demonstrated balanced bilingual competencies, the educational system's insistence on English-only performance created arti-

cial barriers to demonstrating knowledge and abilities. This finding suggests that current pedagogical approaches may inadvertently disadvantage bilingual students by failing to recognize code-switching as a legitimate cognitive strategy rather than a linguistic deficit.

The qualitative data particularly illuminate this issue. Students with high metalinguistic awareness, as evidenced by the high performers in **Table 2** ($M = 78.4$), were painfully conscious of their code-switching behaviors and often expressed frustration about having to "choose" between authenticity and academic compliance. This emotional dimension of bilingual academic experience has received limited attention in previous research but appears crucial for understanding how language policies affect student well-being and academic identity formation.

5.4. Implications for Philippine Higher Education

These findings have several important implications for Philippine educational practice. First, the moderate correlation between metalinguistic awareness and academic performance ($r = 0.42$ in **Table 1**) suggests that bilingual cognitive advantages exist but require supportive institutional contexts to be fully realized. Current English-medium policies may be inadvertently suppressing rather than leveraging students' linguistic resources.

Second, the superior performance on multilingual versus monolingual critical thinking tasks shown in **Table 6** indicates that assessment practices should be reconsidered. Students demonstrated higher-order thinking abilities when allowed to use their full linguistic repertoire, suggesting that current evaluation methods may systematically underestimate bilingual students' cognitive capabilities. This finding is particularly relevant given the Philippines' continued low performance on international assessments, which may reflect methodological limitations rather than educational deficiencies^[7].

5.5. Theoretical Contributions and Limitations

This study contributes to metalinguistic awareness research by documenting how language consciousness operates in a context where institutional and natural language practices diverge significantly. The finding that awareness does

not necessarily lead to compliance with monolingual norms challenges assumptions about the relationship between metalinguistic knowledge and academic language management.

However, several limitations must be acknowledged. The correlational design prevents causal inferences about the relationship between metalinguistic awareness and academic performance. Additionally, the focus on Cebuano-English bilinguals in Cebu may limit generalizability to other Philippine linguistic contexts or international bilingual populations. The study also relied primarily on single-session assessments, which may not capture the full complexity of students' metalinguistic development over time.

Future research should explore longitudinal relationships between metalinguistic awareness and academic development, investigate the effectiveness of pedagogical approaches that incorporate rather than suppress code-switching, and examine whether training in metalinguistic awareness can be designed to support rather than conflict with students' natural bilingual processing patterns. The ultimate goal should be educational practices that leverage rather than constrain the cognitive advantages of bilingualism in Philippine higher education contexts.

6. Conclusion

This study reveals both the promise and the complexity of metalinguistic awareness as a factor in academic performance among Cebuano-English bilingual college students in the Philippines. While the research confirms that language awareness provides measurable cognitive advantages, with a moderate positive correlation ($r = 0.42$) between metalinguistic awareness and academic performance, the relationship is far more nuanced than simple cause-and-effect models might suggest. The findings challenge both deficit-oriented perspectives that view bilingualism as problematic and overly optimistic assumptions about automatic bilingual advantages in academic contexts. The most significant contribution of this research lies in documenting the fundamental mismatch between students' natural multilingual processing patterns and institutional academic expectations. The pervasive code-switching behaviors observed in 89% of participants, coupled with their strong receptive abilities in English, suggest that bilingual students possess sophisticated linguistic competencies that current educational systems fail to recognize

or leverage effectively. The 13.2-point performance difference between multilingual and English-only critical thinking assessments represents not just a statistical finding, but evidence of systematic underestimation of bilingual students' cognitive capabilities under current evaluation practices.

Perhaps most importantly, this study illuminates the emotional and identity-related dimensions of bilingual academic experience that have received insufficient attention in previous research. Students with high metalinguistic awareness demonstrated painful consciousness of the conflict between their authentic multilingual thinking processes and academic demands for monolingual performance. This "linguistic authenticity dilemma" extends beyond technical questions of language policy to fundamental issues of educational equity and student well-being in multilingual contexts. The research has practical implications for Philippine higher education that extend beyond the immediate study population. The finding that current English-medium instruction policies may inadvertently suppress rather than enhance student performance calls for serious reconsideration of assessment practices and pedagogical approaches. Rather than viewing code-switching as a deficit to be eliminated, educational institutions might explore how to design curricula and evaluations that acknowledge and leverage students' full linguistic repertoire as cognitive resources.

However, this study also demonstrates the limitations of individual-level interventions in addressing systemic issues. While metalinguistic awareness training might help students navigate current academic demands more effectively, the fundamental problem lies in institutional structures that fail to align with bilingual cognitive processing patterns. Meaningful change will require broader policy shifts that recognize multilingualism as an educational asset rather than an obstacle. The research contributes to international understanding of bilingual education by providing evidence from a context where institutional monolingualism conflicts with natural multilingual practices. These findings may inform educational approaches in other postcolonial settings where similar tensions exist between colonial language policies and indigenous multilingual competencies. The study also advances theoretical understanding of metalinguistic awareness by demonstrating that language consciousness operates differently in contexts where institutional and natural language practices diverge significantly.

Looking forward, several critical questions emerge from this research. Can educational institutions develop assessment methods that validly measure bilingual students' capabilities without forcing artificial language separation? How might pedagogical approaches be redesigned to leverage rather than constrain code-switching as a cognitive strategy? What would teacher training need to include to support rather than penalize students' natural multilingual processing patterns? These questions require urgent attention as Philippine higher education continues to grapple with serving an increasingly multilingual student population. Ultimately, this study suggests that the goal should not be to make bilingual students conform to monolingual academic norms, but rather to transform educational practices to recognize and support the cognitive advantages that multilingual competencies can provide. The moderate but significant correlations observed in this research indicate that metalinguistic awareness represents a genuine educational resource that, under appropriate institutional conditions, could contribute to improved academic outcomes for the substantial population of bilingual students in Philippine higher education. Realizing this potential will require courage to challenge established practices and commitment to educational approaches that honor rather than suppress the linguistic diversity that characterizes contemporary Philippine academic contexts.

The findings of this research call for a fundamental shift in perspective: from viewing bilingualism as a problem to be managed to recognizing it as a resource to be developed, and from demanding that students adapt to inappropriate assessment methods to creating evaluation practices that validly capture the full range of bilingual cognitive competencies. Such changes will not be easy to implement, but they are essential for creating educational environments that truly serve the needs of multilingual learners in the Philippines and beyond.

Author Contributions

F.N.R.P. served as the principal investigator and led the conceptualization of the research framework, developed the methodology for examining bilingual language awareness through oral self-introductions, supervised the overall project administration, and contributed significantly to writing the original manuscript draft. A.A.J.P. contributed to the study's

conceptualization, conducted the formal statistical analysis of academic performance data, created visualizations for data presentation, and provided critical review and editing of the manuscript. K.D.G. was instrumental in developing the methodology for oral self-introduction assessments, led the investigation and data collection processes with participating Cebuano-English college students, and contributed to manuscript review and editing. M.A.A.A. conducted comprehensive literature review on bilingual language awareness and academic performance, assisted in data analysis and validation of findings, and contributed to writing portions of the original draft manuscript. E.B.R. managed data collection activities, performed formal analysis of language awareness measures, conducted statistical computations, and provided review and editing input for the manuscript. M.C.B. oversaw the investigation procedures, managed data curation and organization, provided supervision during data collection phases, and contributed to the critical review and editing of the final manuscript. All authors have reviewed and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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Institutional Review Board Statement

Ethical review and approval were waived for this study due to the educational nature of the research, which was conducted as part of routine academic coursework involving oral self-introduction presentations. The study utilized only non-sensitive, anonymized data collected during standard classroom activities, with no personal identifiers recorded or retained. The research involved minimal risk to participants and fell within the scope of normal educational practice and assessment.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study. Participants were informed that their oral self-introduction presentations, delivered as part of regular coursework requirements, would be analyzed for research pur-

poses examining bilingual language awareness and academic performance correlations. All data collection was conducted with participant awareness and voluntary participation, with no additional burden beyond normal academic expectations.

Data Availability Statement

The data that support the findings of this study are not publicly available due to privacy and confidentiality restrictions. Data may be made available from the corresponding author upon reasonable request and with appropriate ethical approval.

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Conflicts of Interest

The authors declare no conflict of interest.

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