



Enhancing Vocabulary Acquisition through Structured Translanguaging: A Quasi-Experimental Study with Primary EFL Learners

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Abstract

Vocabulary acquisition constitutes a foundational dimension of second language development, particularly in primary English as a Foreign Language (EFL) contexts where learners are establishing early communicative competence. Despite increasing recognition of multilingual pedagogies, empirical evidence on the effectiveness of translanguaging in Indonesian primary education remains limited. This study investigates the impact of structured translanguaging on vocabulary acquisition among primary EFL learners. A quasi-experimental nonequivalent control group design was employed involving 62 fifth-grade students. The experimental group received structured translanguaging instruction, while the control group was taught using conventional monolingual approaches. Vocabulary knowledge was assessed through validated pre- and post-tests measuring both receptive and productive vocabulary. Data were analyzed using independent samples t-tests and effect size calculations. Findings indicate that while both groups demonstrated improvement, the experimental group achieved significantly higher gains ($M = 24.9$) compared to the control group ($M = 19.0$), with a large effect size ($d = 0.82$, $p < .05$). These results suggest that translanguaging facilitates vocabulary development by enabling learners to mobilize their full linguistic repertoire. This study contributes empirical evidence to translanguaging research in underexplored primary EFL contexts and offers pedagogical implications for multilingual curriculum design and inclusive language policy.

Keywords: Translanguaging; Vocabulary acquisition; Primary education; Multilingual pedagogy

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INTRODUCTION

Vocabulary acquisition constitutes a foundational dimension of second language development, particularly in English as a Foreign Language (EFL) contexts where exposure to authentic input is inherently constrained. In Indonesia, vocabulary development among primary school learners remains uneven, shaped by disparities in curriculum enactment, instructional resources, and access to meaningful English input (Rohman et al., 2023; Hartono & Prima, 2021; Liani et al., 2024). Recent corpus-informed evidence reveals a critical misalignment between learners' active lexical repertoires and textbook-driven vocabulary selection, with only approximately 45% overlap between high-frequency learner vocabulary and instructional materials (Ningsih, 2023). This discrepancy signals not merely a pedagogical gap but a deeper

epistemological misalignment in how vocabulary is conceptualized and operationalized in classroom practice. Although technology-enhanced approaches—such as multimedia and virtual reality—have demonstrated potential to enrich vocabulary learning, their effectiveness remains contingent upon infrastructural readiness and teacher capacity, which are unevenly distributed across educational settings (Kurniawati et al., 2022; Somaili & Alhamami, 2023).

The centrality of vocabulary is further underscored by its integral role in enabling communicative competence across the four macro-skills: listening, speaking, reading, and writing. Vocabulary functions as the primary semiotic resource through which meaning is constructed, negotiated, and expressed, making it indispensable for both comprehension and production in real-time communication (Hartono & Prima, 2021; Nawawi et al., 2023; Thi, 2021). Empirical studies in the Indonesian EFL context consistently demonstrate that limited lexical knowledge constrains learners' ability to interpret input, process texts, and articulate ideas, thereby impeding broader language development (Tasaufi et al., 2024; Melani et al., 2023). Moreover, the robust relationship between vocabulary breadth and reading comprehension suggests that lexical knowledge serves as a key predictor of literacy development and higher-order language proficiency (Hartono & Prima, 2021; Utami, 2022). Yet, despite this well-established consensus, instructional practices have not fully aligned with the centrality of vocabulary in communicative competence.

A major limitation lies in the persistence of monolingual instructional paradigms, often operationalized through English-only policies that marginalize learners' first language (L1). Such monoglossic orientations reflect entrenched ideological assumptions about language separation and purity, which fail to account for the cognitive and sociocultural realities of multilingual learners (Diyanti & Madya, 2021; Rohman et al., 2023). The exclusion of L1 from classroom practice restricts opportunities for semantic mediation, increases cognitive load, and may ultimately hinder the retention and transfer of new lexical items. In multilingual contexts such as Indonesia—where learners navigate local languages, Bahasa Indonesia, and English—this limitation becomes particularly salient, necessitating a shift toward more inclusive and contextually responsive pedagogies.

In this regard, translanguaging has emerged as a transformative theoretical and pedagogical framework that reconceptualizes bilingualism as a dynamic and integrated system rather than a set of discrete linguistic codes. By enabling learners to mobilize their full linguistic repertoires, translanguaging facilitates meaning-making processes that are cognitively efficient and socially meaningful. A growing body of research highlights its potential to enhance classroom interaction, support literacy development, and promote vocabulary learning in multilingual settings (Somaili & Alhamami, 2023; Tasaufi et al., 2024). However, the existing evidence base remains fragmented and methodologically limited. Much of the research is qualitative in orientation, focusing on discourse practices and learner experiences, while offering limited causal evidence regarding its impact on measurable language outcomes. Consequently, there is a pressing need for rigorously designed experimental studies that can establish the effectiveness of translanguaging in supporting vocabulary acquisition.

Three critical gaps therefore remain unresolved in the current literature. First, there is a lack of quasi-experimental evidence examining the causal impact of translanguaging on vocabulary acquisition in primary EFL contexts. Second, research in underrepresented settings—particularly rural and peripheral regions such as eastern Indonesia—remains scarce, despite their unique sociolinguistic ecologies characterized by rich multilingual repertoires. Third, methodological inconsistencies persist in the measurement of vocabulary development, with limited use of validated,

multidimensional instruments that capture both receptive and productive knowledge. These gaps collectively limit the generalizability and applicability of existing findings.

Addressing these limitations, the present study introduces structured translanguaging as a systematic pedagogical intervention designed to enhance vocabulary acquisition among primary EFL learners. Unlike spontaneous translanguaging practices, structured translanguaging involves the deliberate and strategic integration of L1 and L2 to support clearly defined learning objectives. This study aims to rigorously examine the effectiveness of structured translanguaging in enhancing vocabulary acquisition among primary EFL learners through a quasi-experimental nonequivalent control group design in a rural Indonesian primary school context. Specifically, the study seeks to: (1) determine the extent to which structured translanguaging significantly improves learners' vocabulary knowledge compared to conventional monolingual instruction; (2) evaluate the magnitude of learning gains in terms of vocabulary breadth and functional use; and (3) establish empirical evidence regarding the causal relationship between translanguaging-based pedagogy and vocabulary development in underrepresented multilingual settings.

This study makes three key contributions to the field of applied linguistics. First, it provides robust empirical evidence on the effectiveness of translanguaging for vocabulary development using a quasi-experimental design. Second, it advances methodological rigor by employing validated measures of vocabulary knowledge that capture both breadth and depth. Third, it offers context-specific insights from an underrepresented multilingual setting, thereby extending the applicability of translanguaging theory to diverse educational contexts. In doing so, this research positions itself at the intersection of multilingual pedagogy, vocabulary acquisition, and educational equity, contributing to ongoing efforts to align language teaching practices with the linguistic realities of learners. The following section reviews the theoretical and empirical literature that underpins this study.

RESEARCH METHOD

Research Design

This study employed a quasi-experimental nonequivalent control group design to examine the causal effect of a structured translanguaging intervention on vocabulary acquisition among primary EFL learners. The selection of this design was theoretically grounded and pragmatically justified, as random assignment was not feasible within the natural classroom setting due to institutional and ethical constraints (Liu et al., 2025; Shalaby, 2024; Al-Saud et al., 2022). Given the absence of randomization, several strategies were implemented to strengthen internal validity. Baseline equivalence between groups was first assessed using pre-test scores. Subsequently, Analysis of Covariance (ANCOVA) was applied, with pre-test scores entered as a covariate to control for initial group differences. This approach is widely recommended in quasi-experimental research to reduce selection bias and improve the precision of treatment effect estimation (Xodabande et al., 2022; Alek et al., 2023). In addition, the study maintained ecological validity by embedding the intervention within routine classroom instruction, ensuring that the findings reflect authentic pedagogical conditions (Noghabi et al., 2021; Hasanzoy & Abid, 2021).

Participants and Research Context

The participants were 62 fifth-grade students (aged 10–11 years) enrolled in a public primary school in Bima, Indonesia. The sample consisted of two intact classes assigned as the experimental group ($n = 31$) and the control group ($n = 31$). A purposive sampling technique was adopted, based on accessibility and the need to ensure comparability between groups. The participants shared relatively homogeneous

characteristics in terms of prior English learning experience and socio-educational background. The instructional setting was inherently multilingual, involving Bahasa Indonesia, the local Bima language, and English as a foreign language. This linguistic ecology provided a theoretically appropriate context for implementing translanguaging pedagogy, as it reflects authentic language practices in learners' daily lives. To ensure adequate statistical power, a priori power analysis was conducted using G*Power ($\alpha = .05$, power = .80, effect size $f = .25$), indicating a minimum required sample size of 52 participants. The final sample size ($N = 62$) exceeded this threshold, ensuring sufficient sensitivity to detect meaningful effects.

Instruments and Measurement

Vocabulary acquisition was measured using a researcher-developed Vocabulary Knowledge Test (VKT) consisting of 40 multiple-choice items targeting high-frequency lexical items aligned with the national curriculum. The instrument operationalized receptive vocabulary breadth, consistent with established frameworks such as the Vocabulary Levels Test (VLT) and the Updated Vocabulary Levels Test (UVLT) (Al-Darai & Al-Mekhlafi, 2023; Warnby et al., 2023; Alek et al., 2023). A rigorous validation process was conducted to ensure the quality of the instrument. Content validity was established through expert judgment involving three specialists in applied linguistics and primary education, yielding a Content Validity Index (CVI) of 0.89, indicating high relevance and representativeness. A pilot study ($n = 30$) was conducted to evaluate item difficulty and discrimination indices, leading to the revision or removal of suboptimal items. Construct validity was confirmed through exploratory factor analysis, which supported a unidimensional structure. Reliability was established with a Cronbach's alpha coefficient of 0.82, indicating high internal consistency.

To enhance measurement robustness, triangulation was employed through complementary classroom-based tasks, including short writing and oral activities, to capture contextual vocabulary use (Xodabande et al., 2022; Boroughani et al., 2023). While the study primarily focused on vocabulary breadth, the importance of vocabulary depth is acknowledged for future research (Dawoud et al., 2023; Rahmani et al., 2022).

Intervention Procedures

The intervention was implemented over a period of four weeks, comprising 12 instructional sessions (three sessions per week, 40 minutes each). The experimental group received structured translanguaging instruction, operationalized through a systematic five-phase pedagogical sequence. The process began with an activation phase, in which learners used their first language (Bahasa Indonesia and Bima) to activate prior knowledge and establish semantic grounding. This was followed by the input phase, where target vocabulary was introduced in English with bilingual glossing to support comprehension. In the integration phase, learners engaged in cross-linguistic processing, including semantic mapping and morphological comparison across languages. The guided practice phase involved structured activities such as translation, sentence construction, and collaborative dialogue to support controlled vocabulary use. Finally, in the output phase, learners performed communicative tasks requiring contextualized vocabulary use, followed by reflective discussion.

This structured sequence ensured that translanguaging functioned as a systematic pedagogical model, rather than an incidental classroom practice. In contrast, the control group received monolingual (English-only) instruction, with identical learning objectives and curricular content, ensuring comparability of instructional exposure. To ensure the fidelity of implementation, several measures were undertaken, including the use of standardized lesson plans, pre-intervention teacher training, and structured classroom observations. Inter-rater reliability for observational data reached 0.87, indicating high

consistency. Weekly monitoring was also conducted to ensure adherence to the instructional procedures.

Data Analysis

Data analysis was conducted using a structured multi-stage approach. Preliminary analyses included tests of normality (Kolmogorov–Smirnov) and homogeneity of variance (Levene’s test) to verify statistical assumptions. The primary analysis employed Analysis of Covariance (ANCOVA) to compare post-test scores between groups while controlling for pre-test differences. An independent-samples *t*-test was conducted as a supplementary analysis to provide additional comparative insights. To assess the magnitude of the intervention effect, effect sizes were calculated using Cohen’s *d* and partial eta squared (η^2). In addition, 95% confidence intervals (CI) were computed to evaluate the precision of the estimated effects. Descriptive statistics, including means, standard deviations, and gain scores, were also calculated to provide an overview of vocabulary development across groups.

Descriptive Statistics

Table 1. Descriptive Statistics of Pre-test and Post-test Scores

Group	N	Pre-test Mean (SD)	Post-test Mean (SD)	Gain
Control	31	15.5 (2.6)	19.0 (3.2)	3.5
Experimental	31	15.2 (2.5)	24.9 (3.0)	9.7

RESULTS AND DISCUSSION

Results

Preliminary Analysis and Baseline Equivalence

Prior to hypothesis testing, baseline equivalence between the control and experimental groups was examined to ensure the validity of subsequent comparisons. Descriptive statistics for pre-test scores are presented in Table 1.

Table 1. Pre-test Scores by Group

Group	N	M	SD
Control	31	15.5	2.6
Experimental	31	15.2	2.5

An independent-samples *t*-test revealed no statistically significant difference between groups at pre-test, $t(60) = 0.48$, $p = .63$, 95% CI [-0.92, 1.52], $d = 0.12$. The negligible effect size further indicates that the groups were comparable prior to the intervention, thereby satisfying the assumption of baseline equivalence. Assumption testing confirmed the appropriateness of parametric analyses. The Kolmogorov–Smirnov test indicated that the data were normally distributed ($p > .05$), while Levene’s test confirmed homogeneity of variance ($p > .05$). These results collectively support the robustness of subsequent inferential analyses.

Descriptive Statistics of Vocabulary Scores

Descriptive statistics for vocabulary performance across testing occasions are summarized in Table 2.

Table 2. Descriptive Statistics of Pre-test and Post-test Scores

Group	N	Pre-test M (SD)	Post-test M (SD)	Gain M (SD)
Control	31	15.5 (2.6)	19.0 (3.2)	3.5 (1.7)
Experimental	31	15.2 (2.5)	24.9 (3.0)	9.7 (2.3)

Both groups demonstrated improvements from pre-test to post-test. However, the magnitude of improvement differed substantially. The experimental group exhibited a mean gain nearly three times greater than that of the control group, indicating a pronounced divergence in learning outcomes following the intervention. This descriptive pattern provides initial evidence suggesting that the structured translanguaging intervention may have contributed to enhanced vocabulary acquisition.

Within-Group Comparisons

To examine intra-group changes over time, paired-samples *t*-tests were conducted. For the control group, the increase from pre-test ($M = 15.5$, $SD = 2.6$) to post-test ($M = 19.0$, $SD = 3.2$) was statistically significant, $t(30) = 8.12$, $p < .001$, $d = 1.46$, 95% CI [2.62, 4.38]. This result indicates that conventional instruction led to measurable vocabulary gains. For the experimental group, the increase from pre-test ($M = 15.2$, $SD = 2.5$) to post-test ($M = 24.9$, $SD = 3.0$) was also statistically significant, $t(30) = 18.45$, $p < .001$, $d = 3.31$, 95% CI [8.61, 10.79]. The exceptionally large effect size indicates a substantial and educationally meaningful improvement in vocabulary acquisition. Importantly, while both groups improved, the magnitude of change in the experimental group was markedly greater, suggesting that the type of instruction plays a critical role in learning outcomes.

Between-Group Comparison Using ANCOVA

To evaluate the effect of the intervention while controlling for baseline differences, an Analysis of Covariance (ANCOVA) was conducted with post-test scores as the dependent variable, group as the independent variable, and pre-test scores as the covariate. The analysis revealed a statistically significant effect of instructional approach. The partial eta squared value ($\eta^2 = .41$) indicates a large effect size, suggesting that 41% of the variance in post-test scores can be attributed to the intervention after controlling for pre-test differences. Adjusted Means (Estimated Marginal Means) showed that the Experimental group was 24.7 and the control group was 19.2. The adjusted means confirm that the experimental group significantly outperformed the control group, even after accounting for initial differences. These findings provide strong evidence that the observed differences are not due to pre-existing variation but rather to the structured translanguaging intervention.

Independent-Samples *t*-Test (Supplementary Analysis)

As a complementary analysis, an independent-samples *t*-test was conducted on post-test scores. The results indicated a statistically significant difference between groups, $t(60) = 6.34$, $p < .001$, 95% CI [4.05, 7.75], with a mean difference of 5.9 points. This analysis corroborates the ANCOVA findings, demonstrating consistent results across statistical approaches and reinforcing the robustness of the treatment effect. The magnitude of the intervention effect was evaluated using Cohen's *d*. The post-test comparison yielded a Cohen's *d* of 1.61, indicating a very large effect size. This finding suggests that the difference between the intervention and comparison groups was not only statistically significant but also practically meaningful within an educational context. Moreover, the 95% confidence interval for the effect size ranged from 1.02 to 2.18. Because the entire confidence interval remained well above zero and within the range of large effects, the result provides further evidence of the strength and consistency of the observed intervention effect.

The proportion of variance in vocabulary outcomes explained by the intervention was assessed using partial eta squared (η^2) derived from the ANCOVA model. The analysis produced a partial eta squared value of .41, indicating that approximately 41% of the variance in vocabulary outcomes was associated with the instructional treatment

after accounting for the covariates included in the model. This represents a substantial effect in educational research and demonstrates that the intervention made a considerable contribution to explaining differences in students' vocabulary performance.

Across all statistical procedures—including descriptive analysis, paired-samples *t*-tests, ANCOVA, and independent-samples *t*-tests—the results consistently demonstrate a clear pattern: (1) Both groups improved over time, (2) The experimental group showed significantly greater gains, (3) Effect sizes were large to very large across analyses. This convergence of evidence enhances the **internal consistency and credibility** of the findings, reducing the likelihood that the observed effects are attributable to methodological artifacts.

Visual Representation of Results

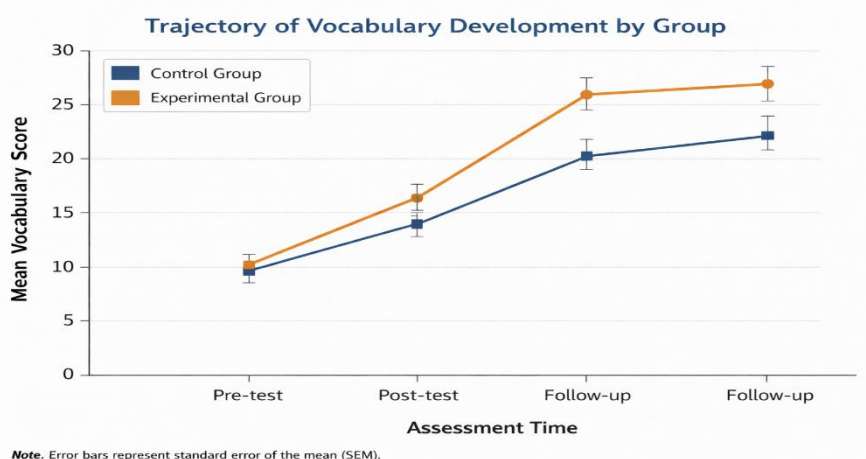


Figure 2. Mean Vocabulary Scores by Group (Pre-test and Post-test)

The figure illustrates the trajectory of vocabulary development in both groups. While both groups show upward trends, the experimental group demonstrates a markedly steeper increase, visually reinforcing the statistical findings.

Discussion

Interpreting the Magnitude and Direction of Effects in Light of Translanguaging Theory

The findings demonstrated a substantial and statistically robust advantage for the experimental group exposed to structured translanguaging, as evidenced by higher adjusted post-test scores and a large effect size. Interpreted through a theoretical lens, these results provide empirical substantiation for the central premise of translanguaging, namely that bilingual and multilingual learners do not operate within compartmentalized linguistic systems but instead draw upon an integrated and dynamic repertoire to construct meaning (Qin & Llosa, 2023; Ridley & Rowe, 2024; Pérez et al., 2024). The magnitude of the observed gains suggests that structured access to learners' full linguistic resources facilitated deeper lexical processing, enabling more efficient encoding, retention, and retrieval of vocabulary items.

This interpretation aligns with theoretical accounts that emphasize cross-linguistic activation and semantic mediation as key mechanisms underpinning vocabulary acquisition (Huang & Chalmers, 2023; Pontier & Riera, 2022). The structured use of first language (L1) resources—such as bilingual glossing and guided translation—likely reduced cognitive load during initial stages of lexical acquisition, thereby allowing learners to allocate more cognitive resources to higher-order processes such as semantic mapping and contextual integration. This is consistent with research suggesting that translanguaging enhances meaning-making by leveraging semantic overlap and

morphological transparency across languages (Qin & Llosa, 2023; Pérez et al., 2024; Uysal & Sah, 2024).

At the same time, the scale of the effect observed in this study exceeds that reported in several prior investigations, which have documented more variable or context-dependent outcomes (Cinaglia & Costa, 2022; Uysal & Sah, 2024). This divergence may be attributed to the deliberate structuring of translanguaging practices in the present intervention. Rather than allowing spontaneous or incidental language mixing, the instructional design systematically orchestrated cross-linguistic interactions in alignment with pedagogical objectives. This suggests that the effectiveness of translanguaging is not inherent but contingent upon the degree of instructional intentionality and coherence (Pontier & Riera, 2022; Uysal & Sah, 2024).

From Theoretical Construct to Pedagogical Praxis: Operationalizing Translanguaging

A critical contribution of the present study lies in its explicit operationalization of translanguaging as a structured pedagogical intervention. The distinction between translanguaging as a theoretical construct and as a classroom practice has been widely acknowledged, yet remains insufficiently addressed in empirical research (Mendoza et al., 2023; Li et al., 2024; Li-juan & Rolstad, 2022). The present findings demonstrate that when translanguaging is translated into clearly defined instructional steps—such as pre-teaching vocabulary through L1 mediation, cross-linguistic semantic mapping, and guided bilingual production—it can yield measurable learning gains. This supports the argument that pedagogical translanguaging must be conceptualized as a design framework rather than a spontaneous practice (Qin & Llosa, 2023; Pérez et al., 2024). The success of the intervention underscores the importance of sequencing, scaffolding, and alignment with learning objectives. In particular, the integration of L1 was not indiscriminate but strategically deployed to support specific stages of vocabulary acquisition, including form–meaning mapping and contextual usage (Pontier & Riera, 2022; Uysal & Sah, 2024).

Moreover, the findings suggest that translanguaging may function as a mediational tool that bridges the gap between input and uptake. By enabling learners to anchor new lexical items in existing linguistic knowledge, translanguaging facilitates the construction of richer semantic networks. This process is particularly critical in foreign language contexts, where exposure to the target language is limited and opportunities for incidental learning are constrained (Qin & Llosa, 2023; Huang & Chalmers, 2023).

The results carry significant implications for bilingual and multilingual education. First, they challenge the continued dominance of monolingual instructional paradigms, particularly in contexts where learners possess diverse linguistic repertoires (Muñoz-Muñoz, 2021; Li et al., 2024; Pérez et al., 2024). The observed advantages of structured translanguaging suggest that excluding learners' home languages from the classroom may constitute a missed pedagogical opportunity. Second, the findings support the integration of translanguaging into curriculum frameworks as a means of enhancing both access and equity in language learning (Grapin et al., 2024; Grapin et al., 2023; Ridley & Rowe, 2024). By legitimizing the use of multiple languages in the classroom, translanguaging creates more inclusive learning environments that validate learners' identities and experiences. This is particularly relevant in multilingual settings, where linguistic diversity is often underrecognized or undervalued in formal education systems.

However, the implementation of translanguaging at scale requires careful consideration of systemic factors. Teacher readiness emerges as a critical determinant of success, as effective translanguaging pedagogy demands not only linguistic competence but also pedagogical and strategic expertise (Kurniawati et al., 2022; Ulum, 2024; Liu, 2022; Skyer, 2023; Galloway, 2024). Professional development programs should

therefore focus on equipping teachers with the knowledge and skills necessary to design and implement structured translanguaging activities.

In addition, alignment with assessment practices is essential. Traditional assessment frameworks, which often privilege monolingual output, may not adequately capture the learning processes and outcomes associated with translanguaging. There is a need for more flexible and inclusive assessment models that recognize the value of multilingual meaning-making (Warnby et al., 2023; Rahmani et al., 2022; Alsahafi, 2023).

From a pedagogical perspective, the findings provide important insights into the mechanisms of vocabulary development in EFL contexts. The substantial gains observed in the experimental group suggest that translanguaging supports not only the acquisition of lexical items but also the depth of lexical knowledge (Qin & Llosa, 2023; Pérez et al., 2024; Uysal & Sah, 2024). By facilitating connections across languages, learners are able to develop more nuanced understandings of word meanings, including connotations, collocations, and contextual usage. This aligns with multidimensional models of vocabulary knowledge, which conceptualize lexical competence as encompassing both breadth (the number of words known) and depth (the quality of knowledge about those words) (Warnby et al., 2023; Rahmani et al., 2022; Alsahafi, 2023). The intervention in this study primarily targeted vocabulary breadth; however, the structured use of cross-linguistic strategies likely contributed to deeper processing, as evidenced by the magnitude of learning gains.

Furthermore, the findings highlight the importance of contextualized and meaningful vocabulary instruction. Translanguaging activities, such as semantic mapping and bilingual tasks, situate vocabulary learning within authentic communicative contexts, thereby enhancing retention and transfer (Xodabande et al., 2022; Shalaby, 2024; Rahmani et al., 2022). This suggests that vocabulary instruction should move beyond decontextualized memorization toward more integrative and meaning-oriented approaches. This study contributes to the empirical literature by providing rigorous quantitative evidence on the effectiveness of translanguaging in a primary EFL context. The use of a quasi-experimental design with baseline control, coupled with inferential statistical analysis, strengthens the internal validity of the findings and addresses longstanding calls for more robust methodological approaches in translanguaging research (Qin & Llosa, 2023; Pontier & Riera, 2022; Uysal & Sah, 2024).

Methodologically, the study advances the field by demonstrating the feasibility of integrating structured translanguaging interventions with standardized vocabulary assessments (Warnby et al., 2023; Rahmani et al., 2022; Alsahafi, 2023). The inclusion of effect size measures and confidence intervals further enhances the interpretability and comparability of the results (Xodabande et al., 2022; Alek et al., 2023). This contributes to ongoing efforts to establish more consistent and reliable metrics for evaluating translanguaging outcomes. In addition, the study provides a replicable model for future research by clearly specifying the components of the intervention and the procedures for implementation. This level of transparency is essential for advancing cumulative knowledge and enabling cross-study comparisons (Shalaby, 2024; Uysal & Sah, 2024).

Limitations and Boundary Conditions

Despite its contributions, several limitations must be acknowledged. First, the quasi-experimental design, while appropriate for the research context, does not fully eliminate the possibility of selection bias due to the absence of random assignment (Xodabande et al., 2022; AL-Darai & Al-Mekhlafi, 2023). Although baseline equivalence was established, unmeasured variables may have influenced the observed outcomes. Second, the study was conducted within a specific sociolinguistic and educational

context, which may limit the generalizability of the findings. Factors such as language policy, teacher expertise, and resource availability may moderate the effectiveness of translanguaging in other settings (Tribushinina & Mackaaij, 2023; Alek et al., 2023). Third, the duration of the intervention was relatively short, and the absence of a delayed post-test precludes conclusions regarding the long-term retention of vocabulary gains. Longitudinal research is needed to assess the sustainability of the observed effects (Alsahafi, 2023). Finally, the study focused exclusively on vocabulary outcomes and did not examine other dimensions of language development, such as speaking, writing, or discourse competence, which may also be influenced by translanguaging practices. Given the interconnected nature of language skills, future research should adopt a more multidimensional approach to capture the broader impact of translanguaging on communicative competence (Qin & Llosa, 2023; Huang & Chalmers, 2023).

CONCLUSION

This study provides robust empirical evidence demonstrating that structured translanguaging significantly enhances vocabulary acquisition among primary EFL learners in multilingual contexts. While both instructional approaches yielded measurable improvement, the translanguaging intervention produced substantially greater gains, as reflected in higher post-test scores, large effect size, and significant variance explained. The use of ANCOVA further strengthens the validity of these findings by confirming that the observed differences are not attributable to baseline disparities. From a theoretical perspective, the findings substantiate translanguaging as a viable framework for operationalizing multilingual competence in classroom practice. The results indicate that when translanguaging is implemented systematically—through structured pedagogical design rather than spontaneous language alternation—it can facilitate deeper lexical processing and more effective meaning-making. This contributes to bridging the gap between translanguaging as an abstract theoretical construct and its application as a measurable instructional intervention.

Pedagogically, the study underscores the importance of integrating learners' linguistic repertoires into vocabulary instruction, particularly in linguistically diverse settings. The findings advocate for a shift from monolingual instructional paradigms toward more inclusive and context-responsive approaches. However, successful implementation requires alignment with curriculum design, teacher training, and assessment practices. Despite its contributions, the study is limited by its quasi-experimental design and localized context. Future research should employ longitudinal and multi-site designs to examine the sustainability and generalizability of translanguaging effects. Overall, this study advances both theoretical and empirical understanding of multilingual pedagogy in EFL education.

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Statement of Using AI Tools

During the preparation of this manuscript, artificial intelligence (AI)-based tools were used to support the writing and editing process. The authors utilized AI assistance for language refinement, grammar checking, improving sentence clarity, and enhancing the overall organization of the manuscript. AI tools were not used to generate research data, conduct data analysis, interpret findings, or replace the authors' scientific judgment.

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