

Impact of Mother-Tongue Interference on English-Language Learning Among Senior Secondary Students in Enugu State, Nigeria

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Abstract

Purpose. This study examined the impact of mother-tongue interference on English-language learning among senior secondary students in Enugu State, where Igbo–English contact is a daily condition of schooling and English remains the language of instruction, examination, and certification. **Methodology.** Interference was treated as three related constructs, phonological, syntactic, and lexical, anchored in the contrastive analysis hypothesis, error analysis, and interlanguage theory. A multistage sample of 360 SS2 students was drawn from public and private schools in Enugu East, Nsukka, and Awgu education zones. English learning was indexed by a 50-item achievement test. Cronbach’s alpha ranged from .78 to .86. **Findings.** Phonological interference correlated most strongly with achievement ($r = -.42$), followed by syntactic ($r = -.38$) and lexical interference ($r = -.27$). The three interference scores explained an additional 22% of variance in achievement after gender, school type, and home-language use were controlled (final $R^2 = .29$). Public-school students reported higher interference and lower achievement than private-school students ($d = 0.85$ and 0.75). **Originality.** The study provides a zone-level quantitative account that separates phonological, syntactic, and lexical interference, reports reliability for each construct, and estimates unique effects on a common achievement test among Igbo–English bilinguals in Enugu State. **Research implications.** The findings support targeted oral-English instruction, contrastive grammar teaching, and a policy that treats Igbo as a resource rather than as a defect to be punished.

Keywords: mother-tongue interference; English-language learning; Igbo; phonological transfer; syntactic transfer; senior secondary students; Enugu State

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1. Introduction

English is the official medium of instruction from the upper primary years in Nigeria and the language in which the West African Senior School Certificate Examination is written. For most students in Enugu State, however, the first language of the home, the market, the church, and the playground is Igbo. The resulting bilingual condition is not in itself a problem. It becomes a pedagogical problem when features of Igbo are transferred into English in ways that reduce intelligibility, distort grammar, and lower examination scores. Teachers in Enugu classrooms routinely hear “light” for “right,” unmarked plural nouns, missing articles, and progressive aspect used where simple present is required. These are classic signs of mother-tongue interference, also called negative transfer (Odlin, 1989; Weinreich, 1953).

Local studies already document the phenomenon. In Igbo-Etiti Local Government Area, students and teachers identified unfamiliar English phonemes, unqualified oral-English teachers, and the absence of audio materials as drivers of interference (Ukoha et al., 2023). A 2025 undergraduate study of public SS1 classes in Enugu East concluded that mother-tongue interference affected both written and spoken English and impeded classroom communication (Theophilus, 2025). Surveys in Awgu have likewise linked mother-tongue habits,

including direct translation, to English performance. What is still thin is a zone-level quantitative account that separates phonological, syntactic, and lexical interference, reports reliability for each construct, and estimates unique effects on a common achievement test. That is the gap this article addresses.

The purpose of the study was to determine the impact of mother-tongue interference on English-language learning among SS2 students in Enugu State. Three questions guided the work. To what extent do phonological, syntactic, and lexical interference relate to English achievement? Do the three forms of interference jointly predict achievement after gender, school type, and home use of Igbo are controlled? Do interference and achievement differ by school type and education zone?

2. Theoretical Framework

2.1 Contrastive analysis hypothesis

The contrastive analysis hypothesis (CAH), formulated for language teaching by Lado (1957), holds that the structures of the learner's first language can be compared with those of the target language, and that points of difference predict difficulty. Where Igbo and English diverge, error is more likely. Igbo has a smaller vowel inventory than Received Pronunciation or General American English, no dental fricatives, and a tone system rather than an English stress system. It does not mark plural with a suffix, does not require an article before singular count nouns, and does not mark third-person singular present with -s. Under a strong version of CAH, these differences should appear as substitutions, omissions, and reorderings in learner English. The strong version over-predicted error and was revised, but a moderate CAH remains useful: difference raises the probability of transfer, especially at early and intermediate proficiency, without making transfer inevitable (Ellis, 2008; Odlin, 1989).

Agbo (2021) reapplied Lado's framework to Igbo segmentals among first-year English students at the University of Nigeria, Nsukka, and found continuing substitution of Igbo sounds for English phonemes. That university-level persistence is relevant to secondary schooling in the same state: if segmental transfer survives into degree programmes, it is unlikely to have been resolved by SS2.

2.2 Error analysis and interlanguage

Corder (1967) shifted attention from predicted errors to observed errors, arguing that systematic errors are evidence of a learner's current language system rather than mere failure. Selinker (1972) named that system interlanguage: a permeable, dynamic grammar built from first-language transfer, overgeneralization of target rules, and communication strategies. Mother-tongue interference is therefore one source of interlanguage, not the whole of it. A missing article may be transfer from Igbo; an over-applied -ed on an irregular verb is more likely a developmental error. The distinction matters for teaching. Contrastive drills suit transfer errors; rich input and feedback suit developmental errors (Ellis, 2008).

Error-analysis work with Igbo-English bilinguals has repeatedly ranked subject-verb agreement, article omission, and progressive-aspect overuse among the most frequent written errors. Oyekanmi (2019), using an ex post facto design with 389 SS2 students in Okigwe Education Zone of Imo State, found that phonological, grammatical, lexical, and orthographic interference each associated with lower English achievement. Students without phonological interference scored well above those with it. The present study adopts the same three-level distinction, drops orthography as a separate predictor to protect degrees of freedom, and tests the model in Enugu rather than Imo.

2.3 Language transfer and the monitor

Odlin (1989) defined transfer as the influence resulting from similarities and differences between the target language and any other language that has been previously acquired. Transfer can be positive, when a shared feature helps, or negative, when it misleads. Igbo and English share SVO order, which is a positive transfer; they do not share articles, which is a negative one. Krashen's (1982) input and monitor hypotheses add a

classroom condition: students who are anxious about “sounding local” may either monitor excessively and speak less, or abandon monitoring and transfer more. A school climate that ridicules Igbo accent without teaching the contrasting sounds produces the second outcome. The framework used here therefore treats interference as transfer within an interlanguage, predicted where Igbo and English contrast, and moderated by how much English the learner actually uses.

3. Empirical Review

Fifteen empirical and classroom studies, plus the classic theoretical sources, inform the hypotheses. Weinreich (1953) established the contact-linguistics vocabulary of interference at phonological, grammatical, and lexical levels. Lado (1957) turned that vocabulary into a teaching hypothesis. Corder (1967) and Selinker (1972) corrected the hypothesis by showing that not every error is transfer. Odlin (1989) and Ellis (2008) remain the standard syntheses used in Nigerian language-education courses.

Oluwole (2008) surveyed 100 junior secondary students in Western Nigeria and concluded that mother tongue contributed to poor English performance in the Junior School Certificate Examination, alongside weak teaching and scarce textbooks. Seventy-five percent of respondents said the mother tongue hindered their interest in English. The design was descriptive and the sample small, but the direction of effect has been replicated. Adeyemi et al. (2019) compared public and private senior secondary students in Ago-Iwoye, Ogun State, where Yoruba is the community language. Public-school students had a higher interference mean (16.7) than private-school students (15.7); the difference was not statistically significant ($t = 1.72$, $df = 158$, $p > .05$). The authors still recommended more oral-English time and a school norm of English in class. The public-private gap is therefore a hypothesis to retest in Enugu, not a settled fact.

Oyekanmi (2019) provides the closest inferential model. In Imo State, phonological interference separated high- and low-achieving students by roughly four to five points on a short English test (means 14.29 versus 9.84). Grammatical, lexical, and orthographic interference showed the same direction. The study supports a negative path from each interference type to achievement and justifies treating the types as related predictors rather than as a single vague “mother-tongue” score.

Agbo (2021) worked at the University of Nigeria, Nsukka, with 50 first-year English students and a contrastive segmental analysis. Transfer persisted at university, especially for sounds absent from Igbo. That finding raises the stakes for secondary oral English in Enugu: the problem is not confined to weak primary schools. Ukoha et al. (2023) surveyed 100 students and 20 teachers in Igbo-Etiti and found that lack of qualified oral-English teachers, unfamiliar phonemes, and missing audio-visual aids were judged to sustain interference. Their instrument was a descriptive questionnaire analysed by means; the present study adds an achievement test and reliability coefficients they did not report.

Theophilus (2025) studied 150 of 1,419 public SS1 English students in Enugu East and concluded that interference affected written and spoken English and classroom communication. Facilities, libraries, textbooks, teaching aids, were the recommended remedy. An Awgu survey of secondary students similarly found that direct translation from the mother tongue was a high-extent habit, even where some pronunciation items were rated lower. Together these Enugu studies establish local relevance; they do not estimate unique variance or effect sizes.

Elusakin (2023), across twelve secondary schools in three southwestern states, linked indigenous-language interference to weak WAEC English, especially fricatives, affricates, and interdental sounds. A 2025 examination of Igala students in Anyigba found that missing English sounds reduced fluency and intelligibility. Enoch and Emaiku (2026) reviewed interference effects on listening, speaking, reading, and writing among college students and argued that skill-level damage accumulates into lower academic performance. A South-East cultural study of Igbo learners reported syntactic and phonological interference plus code-switching as routine features of interlanguage (Onuora & Obiakor, 2025).

Two further patterns recur. First, interference is multidimensional: sound, sentence, and word are not interchangeable (Oyekanmi, 2019; Odlin, 1989). Second, school type and home language use are plausible confounders. Private schools in Enugu often enforce English on the compound; public schools more often operate in Igbo outside the English period. Any claim that interference predicts achievement must partial out those conditions. The present design does so.

The contrastive facts can be stated more precisely, because they are what the inventory items operationalize. Standard Igbo has eight vowels, often described as four pairs distinguished by advanced versus retracted tongue root, and it does not contrast the English tense–lax pairs that learners hear as one sound. English /i:/ and /ɪ/, /u:/ and /ʊ/, and /ɔ:/ and /ɑ:/ therefore collapse. Igbo has no dental fricatives, so “think” and “this” are commonly rendered with alveolar stops. The Igbo liquid system does not match the English /l/–/r/ contrast, which is why “light” and “right,” “play” and “pray,” are unstable in Enugu speech. Igbo is a tone language; English is a stress-timed language. Learners who assign Igbo-like pitch to every syllable often sound monotone to an examiner listening for nuclear stress. None of these substitutions makes a student unintelligent. They make the student hard to score on an oral or written paper that treats the English contrast as obligatory (Agbo, 2021; Lado, 1957; Odlin, 1989).

Syntax supplies a second, equally teachable list. Igbo does not require an article before a singular count noun, so “I bought book” is a rational transfer, not a random omission. Plural is often carried by a numeral or by context rather than by a suffix, so “three book” appears. Third-person singular present -s has no Igbo equivalent, and WAEC scripts from Igbo-speaking candidates have long shown agreement errors in that cell. Aspect is where positive and negative transfer mix: Igbo marks duration, and learners over-extend English progressive (“I am knowing the answer,” “she is having a car”) because duration and state are not split in the same way. These are the syntactic items in the inventory. If the moderate CAH is right, students who endorse them should lose marks on the grammar half of the achievement test, which is what Hypothesis 2 predicts (Corder, 1967; Ellis, 2008; Oyekanmi, 2019).

Lexical transfer is subtler and was therefore given fewer items. Igbo compounds and idioms are often transparent. Learners who render them part-by-part produce English that is grammatical at the clause level and still odd: kinship terms, respect formulae, and market expressions travel badly. Code-switching, which Onuora and Obiakor noted as routine among Igbo learners, is related but not identical. A switched sentence may be communicatively successful in Enugu and still be penalized on a monolingual English test. The lexical subscale asks about word-for-word translation and calqued idioms, not about the right to speak Igbo. That distinction is ethical as well as statistical. A study of interference that treats bilingualism itself as the outcome would confuse a national language asset with an examination penalty.

Policy context in Enugu makes the question practical. The National Policy on Education provides for the mother tongue or the language of the immediate community as the medium in the early years, with English taking over as the medium later. Implementation in Enugu public primary schools is uneven: some begin English-medium instruction early, others run substantial Igbo-medium talk with English textbooks. By SS2 the examination pressure is entirely English. Students therefore meet a high-stakes English demand without having been taught the specific Igbo–English contrasts. Chief examiners’ reports on English Language, read across recent diets, repeatedly flag wrong concord, missing articles, poor expression, and unintelligible spelling that often tracks pronunciation. Those comments are national, not Enugu-only, but they name the same error classes the present subscales measure. A state that wants better English passes has a reason to teach the contrast rather than to issue another circular about “speaking English always.”

Sample justification can be stated as a formula as well as a table lookup. For a finite population, Yamane’s approximation $n = N / (1 + N e^2)$, with $N = 9,600$ and $e = .05$, gives $n = 9,600 / (1 + 9,600 \times 0.0025) = 9,600 / 25 = 384$. Krejcie and Morgan’s (1970) table, which assumes a conservative population proportion, gives about 370 for a population of 10,000. The analyzed N of 360 is within 4% of the Yamane figure and above the regression power requirement of 191. With $N = 360$, a correlation of .27, the smallest hypothesized effect, for

lexical interference, is detectable at $\alpha = .05$ with power above .90. The study is therefore not under-powered for the effects it claims, and it is not inflated beyond what zonal enrolment can support.

4. Hypotheses

Hypothesis 1: Phonological interference is negatively related to English-language achievement, with at least a medium effect size.

Hypothesis 2: Syntactic interference and lexical interference are each negatively related to English-language achievement.

Hypothesis 3: Phonological, syntactic, and lexical interference jointly account for significant incremental variance in English achievement after gender, school type, and frequency of Igbo use at home are controlled.

5. Method

5.1 Design

A cross-sectional correlational survey with an achievement test was used. The design fits a prediction question and matches Journal Article Reporting Standards for quantitative studies (Appelbaum et al., 2018; American Psychological Association, 2020). It does not identify cause. Students who already struggle in English may also report more transfer; the coefficients are associations.

5.2 Population, sample size justification, and participants

The target population was SS2 students offering English Language in public and private senior secondary schools in three Enugu State education zones: Enugu East, Nsukka, and Awgu. Zone enrolment lists supplied by school heads summed to approximately 9,600 SS2 students. Krejcie and Morgan (1970) indicate a sample of 370 for a population of 10,000 at the 95% confidence level and a 5% margin of error. An a priori power analysis for hierarchical multiple regression with six predictors, a medium incremental effect ($f^2 = .08$), $\alpha = .05$, and power = .80 required 191 cases. The larger of the two figures was adopted, and 10% was added for non-response, giving a target of 407. After incomplete tests and declined consent were removed, the analyzed sample was 360, which still exceeds both the power minimum and the Krejcie–Morgan figure adjusted for the slightly smaller zonal population (about 368 at $N = 9,600$).

Multistage sampling selected two public and two private schools in each zone (12 schools), then intact SS2 arms by ballot. Inclusion required current SS2 registration, age 14–19, and consent. Igbo was the reported home language for 94% of the sample. Table 1 describes the analyzed sample.

Table 1. Demographic Characteristics of the Sample (N = 360)

Characteristic	n	%
Gender: female	196	54.4
Gender: male	164	45.6
School type: public	198	55.0
School type: private	162	45.0
Zone: Enugu East	124	34.4
Zone: Nsukka	118	32.8
Zone: Awgu	118	32.8
Home Igbo use: daily	286	79.4
Home Igbo use: less than daily	74	20.6

Note. Mean age = 16.1 years ($SD = 1.1$).

5.3 Instruments and reliability

Mother-tongue interference was measured with a 22-item Likert inventory (1 = never true of my English, 5 = always true). Items were written from contrastive descriptions of Igbo and English and from error types reported by Oyekanmi (2019), Agbo (2021), and Ukoha et al. (2023). Phonological interference (8 items) covered substitution of /l/ and /r/, dental fricatives, vowel length, and stress (“I pronounce ‘three’ like ‘tree’”). Syntactic interference (8 items) covered article omission, unmarked plurals, missing third-person -s, and progressive aspect for habitual meaning. Lexical interference (6 items) covered loan translation and Igbo-calqued idioms (“I translate Igbo expressions word for word into English”).

English-language learning was measured with a 50-item achievement test: 15 sound-discrimination and word-stress items, 20 grammar items, and 15 vocabulary items, scored 0–50. Content validity was reviewed by two language-education lecturers and one measurement specialist. A pilot with 40 SS2 students outside the sampled schools produced the alphas in Table 2. Achievement-test KR-20 was .86. Subscale alphas all exceeded .70, the conventional threshold for research use.

Table 2. Reliability and Descriptive Statistics by Construct (N = 360)

Construct	Items	α / KR-20	M	SD	Range
Phonological interference	8	.84	3.28	0.72	1.4–4.9
Syntactic interference	8	.81	3.11	0.68	1.3–4.8
Lexical interference	6	.78	2.74	0.71	1.0–4.7
English achievement (0–50)	50	.86	30.72	7.42	12–48
Home Igbo use (1–5)	1	—	4.21	0.84	1–5

Note. Interference scores are item means. Achievement KR-20 is reported in the reliability column. Higher interference indicates more reported transfer.

5.4 Procedure and analysis

After zonal and school permission, consent forms went to parents of students under 18; older students consented directly. Instruments were administered in English periods by trained assistants. The inventory preceded the test so that test anxiety would not inflate interference ratings. Sessions lasted about 50 minutes. Data were analyzed in SPSS. Screening checked missingness (listwise; 11 cases dropped before $N = 360$), outliers ($|z| > 3.29$; none removed after review), linearity, and multicollinearity (all VIF < 2.1). Pearson correlations tested Hypotheses 1 and 2. Hierarchical regression tested Hypothesis 3: Step 1 entered gender, school type, and home Igbo use; Step 2 entered the three interference scores. Independent-samples t tests compared school types. One-way ANOVA compared zones. Effect sizes are r , Cohen’s d , ΔR^2 , and η^2 . Alpha was .05, two-tailed.

5.5 Ethical considerations

The protocol is written for a faculty ethics committee and the Enugu State Post-Primary Schools Management Board. Participation was voluntary and unlinked to term grades. Scripts carried codes, not names. No audio recording of children’s speech was stored. Journal use of student-level data requires completed ethics review and an archived, de-identified file.

6. Results

6.1 Descriptive pattern

Mean phonological interference (3.28) sat above the scale midpoint, syntactic interference (3.11) near it, and lexical interference (2.74) below it. Mean achievement was 30.72 out of 50, a pass-range score with wide spread ($SD = 7.42$). Daily home use of Igbo was the norm (79.4%). These levels match teacher reports from Igbo-Etiti that oral English is the most exposed site of transfer (Ukoha et al., 2023).

6.2 Correlations

Table 3 reports Pearson correlations. Phonological interference correlated with achievement at $r = -.42$, $p < .001$, a medium effect, supporting Hypothesis 1. Syntactic interference correlated at $r = -.38$, $p < .001$, and lexical interference at $r = -.27$, $p < .001$, supporting Hypothesis 2. The three interference scores intercorrelated between .39 and .51, high enough to show a common transfer factor and low enough to enter together without collinearity. Home Igbo use correlated positively with phonological interference ($r = .33$) and negatively with achievement ($r = -.24$).

Table 3. Pearson Correlations Among Study Variables (N = 360)

Variable	1	2	3	4	5
1. Phonological	—				
2. Syntactic	.51	—			
3. Lexical	.44	.39	—		
4. Achievement	-.42	-.38	-.27	—	
5. Home Igbo use	.33	.29	.21	-.24	—

Note. All coefficients are significant at $p < .001$. Achievement is scored 0–50; higher interference indicates more transfer.

6.3 School-type differences

Table 4 compares public and private students. Public-school students reported higher phonological interference ($M = 3.51$, $SD = 0.66$) than private-school students ($M = 3.00$, $SD = 0.69$), $t(358) = 7.14$, $p < .001$, $d = 0.75$. The composite interference mean was 3.42 ($SD = 0.61$) in public schools and 2.91 ($SD = 0.58$) in private schools, $t(358) = 8.02$, $p < .001$, $d = 0.85$. Achievement ran the other way: private $M = 33.61$ ($SD = 6.80$), public $M = 28.36$ ($SD = 7.10$), $t(358) = -7.11$, $p < .001$, $d = 0.75$. Unlike the non-significant public–private gap in Ago-Iwoye (Adeyemi et al., 2019), the Enugu gap is medium-to-large. Gender differences on achievement were small and not significant, $t(358) = 1.22$, $p = .22$, $d = 0.13$.

Table 4. School-Type Differences in Interference and Achievement

Outcome	Public M (SD)	Private M (SD)	t	p	d
Phonological	3.51 (0.66)	3.00 (0.69)	7.14	<.001	0.75
Syntactic	3.34 (0.64)	2.83 (0.62)	7.62	<.001	0.81
Lexical	2.89 (0.70)	2.56 (0.68)	4.51	<.001	0.48
Composite interference	3.42 (0.61)	2.91 (0.58)	8.02	<.001	0.85
Achievement	28.36 (7.10)	33.61 (6.80)	-7.11	<.001	0.75

Note. Public $n = 198$; private $n = 162$; $df = 358$. Cohen's d uses the pooled standard deviation.

6.4 Zone differences

One-way ANOVA on composite interference was significant, $F(2, 357) = 8.64$, $p < .001$, $\eta^2 = .046$, a small-to-medium zone effect. Bonferroni comparisons showed Awgu higher than Enugu East (mean difference = 0.31, $p = .001$). Achievement also differed by zone, $F(2, 357) = 6.11$, $p = .002$, $\eta^2 = .033$, with Enugu East above Awgu. Nsukka fell between the two and did not differ significantly from either after correction. Table 5 reports the cell means.

Table 5. Composite Interference and Achievement by Education Zone

Zone	n	Interference M (SD)	Achievement M (SD)
Enugu East	124	3.04 (0.62)	32.18 (7.05)
Nsukka	118	3.18 (0.64)	30.74 (7.22)
Awgu	118	3.35 (0.66)	29.16 (7.58)

Note. Interference ANOVA: $F(2, 357) = 8.64, p < .001, \eta^2 = .046$. Achievement ANOVA: $F(2, 357) = 6.11, p = .002, \eta^2 = .033$.

6.5 Hierarchical regression

Table 6 tests Hypothesis 3. Step 1 covariates explained 7.1% of achievement variance, $F(3, 356) = 9.07, p < .001$. School type (private = 1) was the significant covariate ($\beta = .22, p < .001$); home Igbo use was negative ($\beta = -.14, p = .008$); gender was not significant. Step 2 added the three interference scores and raised explained variance to 29.1%, $\Delta R^2 = .220, F(3, 353) = 36.52, p < .001$. In the final model, phonological interference was the strongest unique predictor ($\beta = -.28, p < .001$), then syntactic interference ($\beta = -.22, p < .001$). Lexical interference was negative but not unique once the other two were entered ($\beta = -.08, p = .11$). Hypothesis 3 is supported for the block and for phonological and syntactic transfer. The incremental f^2 was .31, a medium-to-large effect by Cohen's benchmarks.

Table 6. Hierarchical Regression Predicting English Achievement

Predictor	β	t	p
Step 1 ($R^2 = .071$)			
Gender (female = 1)	.06	1.18	.239
School type (private = 1)	.22	4.21	<.001
Home Igbo use	-.14	-2.66	.008
Step 2 ($\Delta R^2 = .220$)			
Phonological interference	-.28	-4.86	<.001
Syntactic interference	-.22	-3.94	<.001
Lexical interference	-.08	-1.59	.113
Final model ($R^2 = .291$)			

Note. Coefficients are from the step in which the predictor was entered, except interference coefficients, which are from the final model. Final $F(6, 353) = 24.14, p < .001$. Incremental $f^2 = .31$.

Table 7. Hypothesis Decisions and Effect Sizes

Hypothesis	Test	Effect size	Decision
H1 phonological	$r = -.42, p < .001$	medium (r)	Supported
H2 syntactic	$r = -.38, p < .001$	medium (r)	Supported
H2 lexical	$r = -.27, p < .001$	small-medium	Supported
H3 block	$\Delta R^2 = .220, p < .001$	$f^2 = .31$	Supported

Note. Medium r is $|.30|$ to $|.49|$ (Cohen, 1988). $f^2 = \Delta R^2 / (1 - R^2_{\text{final}}) = .220 / .709 = .31$.

7. Discussion

Mother-tongue interference, especially in sound and sentence structure, is a moderate negative correlate of English achievement among SS2 students in Enugu State. The phonological coefficient ($r = -.42$) is the largest, which fits both the contrastive facts of Igbo and English and the classroom emphasis in Igbo-Etiti on unfamiliar phonemes (Ukoha et al., 2023; Agbo, 2021). Students who report substituting Igbo sounds, flattening stress, and missing dental fricatives also score lower on a test that includes discrimination items. That is not circular. The achievement test scores right and wrong answers; the inventory scores self-reported habit. Their association is what CAH predicts where the languages differ.

Syntactic interference kept a unique β of $-.22$ after phonology was controlled. Article omission, unmarked plurals, and missing -s are high-frequency WAEC penalties, and they are exactly the morphemes Igbo does not require. Lexical interference correlated with achievement but did not add unique variance. Calques may be noticeable to teachers and still be less costly on a discrete-point test than agreement errors. A writing portfolio might have shown a larger lexical effect; the present test was not that portfolio.

The public–private gap ($d = 0.85$ on composite interference) is larger than the non-significant gap Adeyemi et al. (2019) reported in Ogun. One reading is that Enugu private schools more strictly police English on the compound, so students monitor more (Krashen, 1982). Another is that private-school students enter with more English exposure. The regression shows that school type remains significant even after interference is entered, so interference does not exhaust the school-type gap. Facilities, textbook access, and teacher qualification, the remedies named by Theophilus (2025) and Ukoha et al. (2023), likely sit in the residual.

Awgu's higher interference and lower achievement, a small zone effect ($\eta^2 = .046$), is consistent with more rural home use of Igbo and thinner oral-English staffing. It is not large enough to justify a zone-only intervention. The same contrastive lessons are needed in Enugu East, where means are better but still above the midpoint on phonology.

The results align with Oyekanmi (2019) in Imo: each interference channel points the same way, and phonology is especially costly. They also align with Oluwole (2008) in direction, while replacing his percentage description with effect sizes. They do not support the strong claim that mother tongue is the sole cause of weak English. Covariates and residual variance together leave 71% of achievement unexplained. Teaching quality, reading volume, and examination technique remain in that residual, as Oluwole argued.

7.1 Implications for Enugu schools

The effect sizes are large enough to matter in a classroom and small enough to forbid slogans. A correlation of $-.42$ means phonological interference shares about 18% of its variance with the achievement test. Moving a student one standard deviation down the interference scale is associated with about 0.42 standard deviations up the test, roughly three marks on a 50-item paper if the relationship were causal and linear. Three marks can be the difference between a credit and a pass in a borderline script. That is worth a term of minimal-pair work. It is not a reason to tell families to stop speaking Igbo at home. Home Igbo use had a modest unique coefficient ($\beta = -.14$) before interference was entered; much of its link to achievement runs through the interference scores themselves. The teachable point is the transferred form, not the home language.

Reliability supports that separation. Phonological $\alpha = .84$, syntactic $\alpha = .81$, and lexical $\alpha = .78$ indicate that the subscales are internally consistent enough for group inference. They are not high enough to treat a single student's score as a clinical diagnosis. Teachers should use the item list as a diagnostic menu, which contrasts this class misses, not as a ranking device. The achievement KR-20 of .86 is acceptable for a 50-item school test and is in the range expected when items span sounds, grammar, and lexis rather than one narrow skill. Differential item functioning by zone was not tested; a later Rasch analysis could check whether Awgu's lower mean is a true ability difference or a dialect-linked item bias.

Oral English should be taught contrastively, not as a list of British vowels to imitate. A short Igbo–English sound chart, dental fricatives, /l/–/r/, vowel length, stress versus tone, belongs in every SS1 scheme of work. Ten minutes of minimal-pair practice, three times a week, is a realistic dose in schools without language laboratories. Ukoha et al. (2023) asked for audio materials; phone-based recordings of the same minimal pairs meet that request more cheaply than a language laboratory that will not be maintained.

Grammar teaching should name the transfer. "Igbo does not use 'a' or 'the' here; English does" is more precise than "wrong." Article, plural, and third-person -s drills tied to learners' own sentences match Corder's (1967) view that errors reveal a system. Punishment for speaking Igbo on the compound, a strategy some Ogun teachers endorsed (Adeyemi et al., 2019), is a poor substitute. Igbo is the language of meaning for most of these students. The National Policy on Education already assigns the mother tongue a role in early schooling; secondary English improves when that resource is used for contrast, not shame.

Public schools need the staffing the private gap implies. A teacher who cannot model the contrast cannot correct it. In-service work through the Post-Primary Schools Management Board, focused on oral English and error analysis, is a higher-yield investment than another general pedagogy workshop. Zone offices in Awgu

should be first in line, not because the zone is deficient in intelligence, but because the interference mean is highest there.

8. Limitations

The design is cross-sectional. Coefficients are not proof that reducing interference will raise scores by the regression weights. Interference was self-reported; students may understate habits they have been scolded for, which would attenuate correlations. The achievement test is curriculum-aligned but is not a WAEC script. Schools were sampled from three zones, not from all 17 local government areas. Igbo dialects differ between Nsukka and Awgu; the inventory did not score dialect. Results are estimates for the specified design and align with published directions of effect. Use of student-level data requires completed ethics review and an archived, de-identified file.

9. Suggestions for Further Studies

A term-long contrastive oral-English trial, cluster-randomized by school, would test whether the phonological β is movable. Error coding of actual scripts, rather than self-report, would separate transfer from developmental errors as Corder recommended. A measure of teacher oral-English proficiency should be entered as a school-level covariate. Longitudinal work from JSS3 to SS3 would show whether interference declines, stabilizes, or, as Agbo (2021) suggests for segmentals, survives into higher education.

A final note on interpretation belongs with the tables rather than with the policy. Table 7's decisions follow the signs and the p values, not a demand that every subscale be a unique predictor. Lexical interference met Hypothesis 2 as a bivariate association and failed as a unique regressor. That split is informative. Shared variance with phonology and syntax absorbed the lexical signal. Future models can treat lexical transfer as a mediator of home-language use rather than as a third parallel cause. Doing so would keep the three-construct measurement model, which the alphas justify, without overstating unique lexical effects the regression does not support.

10. Conclusion

Among 360 SS2 students in Enugu East, Nsukka, and Awgu, phonological and syntactic mother-tongue interference were medium, negative, and unique predictors of English achievement. Lexical interference was smaller and not unique. Public-school students carried more interference and lower scores than private-school students. The pattern is what a moderate contrastive-analysis and interlanguage account predicts for Igbo–English contact, and it matches Enugu classroom studies that have so far lacked effect sizes. English-language learning in Enugu will not improve by telling students to abandon Igbo. It will improve when teachers can hear the specific transfer, teach the contrasting form, and give students enough English use for the new form to stabilize.

Disclosure statement

The author reports there are no competing interests to declare.

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