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Pedagogies of Harmonies as Critical Love in English
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Thematic Dossier

Determinants of English Language Achievement Among Nigerian Students: The Mediating and Moderating Role of Classroom Climate and Student Engagement

Determinantes do desempenho na língua inglesa entre estudantes nigerianos: o papel mediador e moderador do clima da sala de aula e do engajamento dos estudantes

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Abstract: This study examines how teacher empathy (TE), social-emotional learning (SEL), and peacebuilding approaches (PBA) shape English language achievement among secondary students in conflict-affected Nigerian schools. Drawing on social cognitive and self-determination theories, we propose a model in which harmonious classroom climate (HCC) mediates, and student engagement (SE) moderates, the links between teacher practices and students' English language achievement (SELA). Data were collected from 361 students in public schools in Katsina and Zamfara states and analyzed using partial least squares structural equation modeling (PLS-SEM). TE, SEL, and PBA all had significant direct effects on SELA and on HCC, and HCC in turn strongly predicted SELA. Mediation analyses showed that HCC partially transmitted the effects of all three teacher practices to achievement, while SE negatively moderated the HCC–SELA path, indicating that climate improvements were most beneficial for less engaged students. The findings position socio-emotional, peace-oriented pedagogies as forms of critical love that foster harmonious English classrooms in conflict-affected contexts.

Keywords: teacher empathy; social-emotional learning; peacebuilding; classroom climate; student engagement.

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Resumo: Este estudo examina como a empatia do professor (EP), a aprendizagem socioemocional (ASE) e as abordagens de construção da paz (ACP) influenciam o desempenho em língua inglesa de estudantes do ensino secundário em regiões de conflito na Nigéria. Com base nas teorias sociocognitiva e da autodeterminação, propomos um modelo em que o clima harmonioso de sala de aula (CHSA) medeia, e o engajamento dos estudantes (EE) modera, as relações entre essas práticas docentes e o desempenho autorrelatado em inglês (DAI). Dados de 361 alunos de escolas públicas nos estados de Katsina e Zamfara foram analisados com modelagem de equações estruturais por mínimos quadrados parciais. A EP, a ASE e as ACP apresentaram efeitos diretos significativos sobre o DAI e sobre o CHSA, e o CHSA, por sua vez, previu fortemente o DAI. As análises de mediação mostraram que o CHSA transmitiu parcialmente os efeitos das três práticas docentes para o desempenho, enquanto o EE moderou negativamente a relação CHSA–DAI, indicando que melhorias no clima beneficiam sobretudo estudantes menos engajados. Os resultados posicionam as pedagogias socioemocionais e orientadas para a paz como formas de amor crítico que promovem salas de aula de inglês harmoniosas em regiões de conflito.

Palavras-chave: empatia do professor; aprendizagem socioemocional; construção da paz; clima da sala de aula; engajamento do aluno.

1 Introduction

In over a decade, proficiency in English has become a significant indicator of academic success and socio-economic advancement in sub-Saharan Africa (Haruna *et al*., 2025). Nonetheless, persistent deficiencies in English language education remain within the region's educational frameworks (Zickafoose *et al*., 2024). In Nigeria, where English serves as the official language of teaching and communication, enduring achievement disparities in English have considerable ramifications for educational equity and national development (Haruna; Tajuddin; Shamsuddin, 2024; Okoliko; Adebayo, 2025). Notwithstanding significant investment in curriculum revisions and teacher training initiatives, around 67% of students in Nigerian secondary schools fail to attain the basic competency standards in English language assessments (Ozowuba, 2018). These data are frightening and indicate a complex interaction

of pedagogical, psychological, and contextual elements that remain inadequately addressed in the existing literature. The issues are especially severe in the conflict-affected areas of Nigeria, where security challenges intensify the pre-existing scarcity of educational options. In regions like Katsina and Zamfara, whose educational systems have been compromised by insurgency and banditry, the proficiency rate in English has declined by an alarming 23% over the past five years (Omuya, 2023). This scenario presents specific educational problems that cannot be surmounted through traditional teaching approaches. The convergence of safety concerns, psychological trauma, and educational disruption necessitates novel approaches to understanding the influence of classroom dynamics on language learning results.

Contemporary research on second language acquisition (SLA) increasingly acknowledges the vital significance of social and emotional factors in achieving language learning success (Haruna; Isa, 2024). Nonetheless, investigations examining English language proficiency have predominantly occurred in Western contexts, neglecting the unique dynamics present in non-Western educational settings (Sekibo; Iroye, 2024). The Nigerian educational landscape, characterized by linguistic and cultural variety with security challenges, presents distinct factors that may influence the relationships between conventional indicators of language acquisition success. Despite the emergence of teacher empathy (TE), social-emotional learning (SEL), and peacebuilding (PB) techniques as viable educational strategies in Nigeria – a high-conflict context –, their specific impact on the effectiveness of English language learning has not been sufficiently examined empirically. Further, the categorization of the processes via which classroom atmosphere influences the link between teacher practices and student results in non-Western contexts remains a fertile area of inquiry. The existing theoretical frameworks, predominantly formulated and validated within Western educational settings (Aldridge; Fraser, 2000; Iftikhar *et al*., 2025), may inadequately encompass the cultural nuances and environmental dynamics that influence classroom interactions in Nigerian schools. This limitation signifies a substantial deficiency in understanding the impact of environmental influences on language acquisition processes across diverse cultural contexts.

Additionally, Nigeria has been described as a conflict-ridden environment due to ongoing insecurity caused by banditry and kidnapping, particularly in the North-West (Oluyemi, 2025). These disturbances have a disproportionate impact on schools, leading to displacement, mass abduction of students, school closures, and increased psychosocial stress among students and teachers. Such circumstances highlight the importance of empathy, social-emotional support, and peacebuilding behaviors in the classroom, especially in English language learning settings where interpersonal communication and peer interaction are prioritized.

In light of the aforementioned, research shows substantial gaps in understanding how teacher behavior, classroom environment, and English language skills interact in conflict-ridden school contexts. Su and Lee (2023) highlighted the significance of the emotional climate in the classroom for academic achievement; however, their study was confined to China, Korea, Finland, and the United States. Durlak *et al*. (2011) assessed the efficacy of SEL treatments, but their meta-analysis excluded studies from Africa due to a lack of research in that region. Falk *et al*. (2019) underscored the significance of TE in education and its role in fostering student involvement; yet, their methodology remains untested in culturally diverse and conflict-ridden environments. Furthermore, Olatunji (2025) examined the correlation

between teacher-student interactions and academic achievement, noting the absence of studies undertaken in sub-Saharan Africa. Sercu, Ayana, and Mengistu (2025) investigated the impact of classroom climate on motivation and achievement; however, their conceptual model was not assessed in a multilingual context. The interplay between teacher behavior, classroom environment, and English proficiency in Nigerian conflict-affected schools remains poorly understood, largely due to scarcity of research employing advanced statistical methods like structural equation modeling to examine these relationships. This study seeks to investigate the factors influencing students' English language achievement (SELA) among Nigerian secondary school students by analyzing the mediating role of a harmonious classroom climate (HCC) and the moderating effect of student engagement (SE) on the relationships between TE, SEL, peacebuilding practices, and language learning achievement in high-security-risk school environments.

This study extends beyond the analysis of isolated processes by combining both mediation and moderation. It hypothesizes that the HCC acts as a mediator, serving as the key process through which teacher practices (TE, SEL, PB) are translated into enhanced SELA. However, the strength of this mediating pathway varies depending on the level of SE, which functions as a moderator. Therefore, the combination of mediation and moderation provides better insight into how socio-emotional constructs affect SELA. This integrated approach to analyzing both the mechanism by which the effect is mediated (i.e., how it occurs) and the conditions under which the effect is strongest (i.e., moderation) offers a more detailed and nuanced understanding of the multi-layered, multi-faceted processes underlying language learning success in challenging educational settings. As such, it enables the model not only to ensure the establishment of a favorable climate but also to account for the varying responsiveness of students in conflict-ridden classrooms.

The theoretical significance of this study lies in its contribution to second language acquisition theory by expanding the existing paradigm to encompass conflict-ridden educational settings and culturally diverse learning contexts. Against this backdrop, the study aims to establish a more comprehensive theoretical framework by integrating concepts from SEL, peace education, and classroom climate research to address the deficiencies in current understandings of the factors influencing language acquisition. Furthermore, the study offers a methodological contribution by employing structural equation modeling (SEM) to examine the intricate interactions among many psychological and educational dimensions within a non-Western context – *i.e.*, Nigeria.

2 Literature Review and Hypothesis Development

To inform the formulation of the structural model, theoretical arguments and existing empirical evidence regarding the directional relationships explored in this study are synthesized in each subsection of the literature review. While preliminary evidence for the following relationships is provided in previous research, the associations themselves have not been empirically tested in the context of Nigerian conflict-affected education using the mediation-moderation paradigm. Therefore, in each subsection, a hypothesis is formulated as a predictable outcome based on the reviewed literature. These are not statements of fact, but analytical propositions tested using the SEM method employed in this study.

2.1 Teacher Empathy and Students' English Language Achievement

TE emerges as a key pedagogical concept that influences student learning outcomes through emotional connection and empathetic teaching behavior. In this study, TE is understood as a process that enables teachers to recognize and interpret emotional and cognitive states, and to respond in ways that support students' learning and social well-being (Cornelius-White, 2007). Research in neuroeducation indicates that TE activates mirror neuron mechanisms that facilitate social learning and emotional regulation in pupils (Gkintoni; Vassilopoulos; Nikolaou, 2025). SELA is a multi-faceted construct that includes linguistic competence, communicative competence, and academic achievement in second language contexts. Empirical studies indicate a consistent positive correlation between TE and SELA across various learning environments. Nguyen (2025) established that empathic behavior in the classroom significantly predicts English as a second language (ESL) students' oral communication competence by enhancing their willingness to engage in communication. Liu, Xu, and Wang (2025) discovered that teachers' cognitive empathy influenced English vocabulary acquisition among immigrant students ($r = 0.34$, $p < 0.001$), mediated by reduced language anxiety and increased engagement.

An in-depth analysis of the results uncovers some methodological constraints that hinder theoretical development. The empathy self-assessment scale employed by Nguyen (2025) is problematic due to social desirability bias, and the cross-sectional design constrains causal inferences. The moderate effect sizes ($\beta = 0.34$) demonstrate that empathy accounted for merely 11.56% of the variance in oral communication competence, implying the presence of substantial unexplained variables. This discovery contradicts the robust theoretical predictions of advocates of empathy-based pedagogy, who assert that empathy is a crucial determinant of success in language acquisition. Gonzalez *et al*. (2025) posited that the efficacy of empathy is contingent upon the cultural alignment between teachers' expressions and students' expectations, whereas Okpara and Ekeh (2025) underscored the importance of culturally sensitive empathy training within African contexts. These cautionary viewpoints highlight the potential for cultural incongruence in empathetic teaching practices, where benevolent empathetic actions may be misinterpreted or disrupted due to cultural variations in emotional display and relationship dynamics. In light of these data, the subsequent hypothesis was formulated:

Hypothesis 1: Teacher empathy has a significant positive effect on students' English language achievement.

2.2 Social-Emotional Learning and Students' English Language Achievement

SEL, by definition, refers to an approach to learning aimed at fostering the growth of social-emotional skills necessary for individuals to be successful, happy, healthy, and responsible (Pentón Herrera; Martínez-Alba, 2021). SEL skills, therefore, are practices designed to cultivate students' social competencies, emotional intelligence, and responsible decision-making abilities within the educational environment. In recent decades, the significance

of SEL has garnered considerable attention in educational discussions (Haruna; Isa, 2024). More specifically, its integration into language learning contexts appears to be one of the most promising methods for enhancing relevance at both academic and personal levels (Pentón Herrera, 2024). Meta-analytic evidence shows that SEL programs lead to a significant improvement in academic achievement, with effect sizes ranging from 0.27 to 0.33 in different populations (Kim; Lim; An, 2022). Similarly, studies such as Bai, Shen, and Wang (2024) and McCormick *et al*. (2021) agree that social-emotional development positively impacts students' English language proficiency. Subhi's (2024) study further revealed that effective SEL interventions resulted in a 20% enhancement in speaking test scores. Tubbs Dolan *et al*. (2022) found that emotion regulation, a key SEL skill, significantly improved English reading comprehension by enhancing attention control and cognitive flexibility (adjusted ES = 0.67, p <.000, q = 0.001). A critical analysis of these results reveals important limitations in the current evidence base. The 20% enhancement noted by Subhi (2024) signifies a low effect size that may not warrant the considerable expenditures necessary for extensive SEL implementation. The absence of longitudinal studies prompts inquiries on the enduring nature of SEL effects across time. The hypothesized connection between SEL and English language proficiency requires additional examination. While executive function theory suggests that emotional regulation improves the cognitive resources available for language processing (Coy, 2024; Roche; Arnold, 2018), this explanation oversimplifies the complex interplay between emotional, social, and linguistic skills. Based on the aforementioned investigations, the subsequent hypothesis was formulated:

Hypothesis 2: Social-emotional learning has a significant positive effect on students' English language achievement.

2.3 Peacebuilding Approaches and Students' English Language Achievement

In most cultures, peace is conceived as a state of tranquility, silence, or harmony in personal relationships (Pentón Herrera; Martínez-Alba, 2021). Peacebuilding activities in educational contexts encompass systematic approaches to conflict prevention, resolution, and recovery that promote social cohesion and collaborative learning environments. These activities typically include conflict resolution training, intercultural dialogue facilitation, collaborative problem-solving exercises, and community engagement initiatives designed to address underlying tensions and promote reconciliation. The theoretical foundations of peacebuilding approaches (PBA) in education draw from multiple disciplines, including conflict resolution theory, intergroup contact theory, and social identity theory. Empirical evidence supporting PBA's influence on SELA emerges from diverse conflict-affected and multicultural educational contexts (Raymond, 2025). Aber *et al*. (2017) conducted randomized controlled trials in the Democratic Republic of the Congo, demonstrating that peace education programs improved English literacy scores by 0.32 standard deviations compared to control groups. Similarly, Kim *et al*. (2023) found that healing classroom interventions enhanced English language learning among refugee children, with effect sizes ranging from 0.41 to 0.58 across different

competency domains. While these findings appear promising, several methodological concerns limit their interpretability.

In the context of English language learning, peacebuilding practices function through intercultural communication, relationship-building, and the reduction of language anxiety. Research in English language teaching (ELT) shows that structured dialogue and affective safety increase willingness to communicate, maintain attention to linguistic input, and create positive learning ecosystems (Gkonou; Mercer, 2017). Teachers who facilitate collaborative tasks and conflict-sensitive classroom practices support students' identity development and agency in multilingual settings, promoting sustained engagement and improved linguistic performance (Raymond, 2025). Positive psychology research in second language acquisition also confirms that reduced fear and greater peer harmony enhance communicative risk-taking and oral fluency (MacIntyre; Gregersen; Mercer, 2019), indicating that peacebuilding interventions can serve as catalysts for academic achievement in language classrooms. Developmental investigations by Mamo and Yigzaw (2015) demonstrated that peer mediation programs conducted in English strengthened both language skills and social cohesion. This finding suggests that PBA may function as authentic language practice opportunities rather than specialized interventions with unique pedagogical properties. Based on these findings, the following hypothesis was formulated:

Hypothesis 3: Peacebuilding approaches have a significant positive effect on students' English language achievement.

2.4 Teacher Empathy and Harmonious Classroom Climate

Extensive research establishes robust relationships between TE and positive classroom climate development across diverse educational contexts. In this study, a harmonious classroom climate refers to an emotionally safe, cooperative, and relationally balanced environment characterized by mutual respect, prosocial peer interactions, and a low level of conflict or hostility (Garcia-Peinado, 2023). García-Fernández and Saleh (2023) demonstrated that teachers' empathetic responses to student emotions significantly predicted classroom emotional climate quality through enhanced emotional safety and trust. Longitudinal studies by Ampofo *et al*. (2025) revealed that empathetic teacher-student interactions fostered supportive classroom environments, with sustained effects observed over multiple academic years. Cross-sectional investigations by Wink, LaRusso, and Smith (2021) established that teacher cognitive empathy correlated positively with student perceptions of classroom warmth and acceptance ($r = 0.36$, $p < 0.01$). The study further indicated that empathy training programs for teachers significantly improved classroom climate ratings and reduced behavioral disruptions. These findings demonstrate moderate to strong relationships between empathy and classroom climate, with correlation coefficients ranging from 0.36 to 0.52.

However, the reliance on student perceptions as outcome measures raises questions about the validity of classroom climate assessments. Students' perceptions of TE may be confounded with their general attitudes toward school and learning, potentially inflating the observed relationships. Harmony differs from the broader notion of a "positive" classroom climate by emphasizing equilibrium in interpersonal relations, rather than simply high levels of comfort or satisfaction. A harmonious environment reflects stability, reciprocity,

and collective well-being, allowing students to participate without fear of exclusion or aggression, and supporting the socio-emotional preconditions necessary for meaningful learning. Developmental studies by Okokoyo (2024) found that empathetic conflict resolution approaches enhanced classroom harmony and peer relationships. While these findings support the theoretical connection between empathy and positive classroom environments, the evidence base remains limited by methodological constraints. The predominance of correlational studies and the lack of sophisticated causal modeling techniques limit our understanding of the mechanisms through which empathy influences classroom climate. Based on these findings, the following hypothesis was formulated:

Hypothesis 4: Teacher empathy has a significant positive effect on harmonious classroom climate.

2.5 Social-Emotional Learning and Harmonious Classroom Climate

Research consistently demonstrates that SEL implementation significantly enhances classroom climate quality through multiple mechanisms. A positive classroom environment here refers to a socio-emotional space characterized by emotional safety, supportive teacher–student relationships, and respectful peer interactions that encourage participation and reduce psychological threat (Garcia-Peinado, 2023). In contrast, a harmonious classroom climate goes beyond general positivity to emphasize equilibrium among classroom members – balanced interactions, low incidence of conflict, shared responsibility, and mutually sustained cooperation (Garcia-Peinado, 2023). Harmony therefore represents an emergent collective state in which emotional support, fairness, and prosocial behavior coalesce to stabilize classroom dynamics, rather than simply the presence of warmth or comfort.

Comprehensive studies by LeGrand (2023) revealed that SEL programs improved classroom climate ratings by 1.46 standard deviations, with particularly strong effects on emotional support and classroom organization dimensions. Longitudinal investigations by Jennings and Greenberg (2009) established that sustained SEL implementation created increasingly positive classroom environments over three academic years. Experimental research by Driscoll (2019) demonstrated that SEL-trained teachers exhibited significantly better classroom management skills and created more supportive learning environments compared to control groups. Cross-cultural studies by Hosokawa *et al*. (2024) in Canadian schools found that SEL program implementation enhanced peer relationships and reduced aggressive behaviors, contributing to harmonious classroom dynamics.

These findings suggest that SEL influences classroom climate through both direct student effects and indirect teacher effects. However, the literature lacks systematic investigation of these dual pathways, with most studies focusing on either teacher or student outcomes rather than their interaction. The failure to examine these mechanisms simultaneously limits our understanding of how SEL programs create systemic changes in classroom environments. Developmental research by the Collaborative for Academic, Social, and Emotional Learning (CASEL) indicated that student social competency development through SEL positively influenced classroom cooperation and mutual respect (Jordanovska, 2025). While these findings support the theoretical connection between SEL and positive classroom climate, the evidence base is limited by implementation variability

and measurement inconsistencies across studies. Different SEL programs target distinct competencies and use varying instructional approaches, making it difficult to identify the specific components responsible for climate improvements. Based on these findings, the following hypothesis was formulated:

Hypothesis 5: Social-emotional learning has a significant positive effect on harmonious classroom climate.

2.6 Peacebuilding Approaches and Harmonious Classroom Climate

Empirical evidence demonstrates that PBA consistently improve classroom climate through conflict reduction and relationship enhancement mechanisms. Comprehensive studies by Mahvar, Farahani, and Aryankhesal (2018) found that conflict resolution training significantly enhanced classroom collaboration and reduced disruptive behaviors. Bibliometric research by Mahayanti *et al*. (2025) discovered that the sustained implementation of peace education over several school years led to an increasingly HCC. Experimental research by Bickmore (2002) showed that peer mediation programs reduced conflict in the classroom while improving students' perceptions of fairness and safety. These findings demonstrate substantial effects of PBA on classroom climate indicators. However, the evidence base is heavily weighted toward conflict-affected populations and multicultural settings, limiting generalizability to typical classroom contexts. The unique characteristics of these settings may create conditions where PBA are particularly beneficial, but their effectiveness in standard educational environments remains unclear. Based on these findings, the following hypothesis was formulated:

Hypothesis 6: Peacebuilding approaches have a significant positive effect on harmonious classroom climate.

2.7 Harmonious Classroom Climate and Students' English Language Achievement

There is ample empirical evidence of a strong correlation between a positive classroom climate and English language learning outcomes in different educational contexts. Comprehensive studies by Khajavy, MacIntyre, and Barabadi (2018) have shown that a supportive classroom climate predicts improvement in English language proficiency through increased motivation and reduced anxiety. Longitudinal research by Majumder and Beri (2025) found that a positive quality of classroom climate consistently predicted achievement gains in English over multiple school years. Experimental studies by Al-Khresheh (2024) indicated that climate interventions focusing on emotional support improved confidence in oral communication in English and performance. These results show moderate to strong relationships between classroom climate and language learning outcomes, with effect sizes ranging from 0.44 to 0.51. However, the evidence base is characterized by methodological limitations that make it difficult to draw causal conclusions. The predominance of correlational studies and the lack of sophisticated statistical modeling techniques limit our understanding of the mechanisms

through which classroom climate influences language achievement. Based on these findings, the following hypothesis was formulated:

Hypothesis 7: Harmonious classroom climate has a significant positive effect on students' English language achievement.

2.8 Theoretical Framework

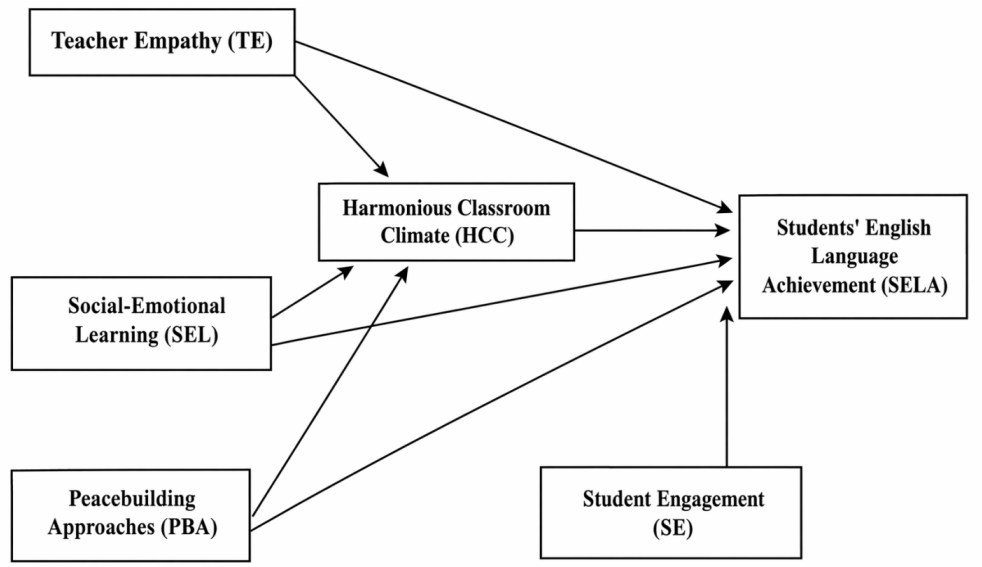
Social cognitive theory (SCT) provides a comprehensive model for understanding how students learn from each other through reciprocal interactions between personal variables, environmental factors, and behavioral outcomes. Bandura's (1986) social cognitive theory emphasizes the central role of observational learning, self-efficacy expectations, and modeling in the classroom. TE and SEL practices in this study are directly tied into the triadic reciprocal determinism of the theory. They are environmental models observed and internalized by students, and SE is a personal factor influencing learning outcomes. The significant path coefficients between TE, SEL, and peacebuilding activities on English proficiency confirm this theoretical premise. In addition, this model complements self-determination theory (SDT) by describing the psychological processes that play a role in student motivation and engagement. Deci and Ryan's (2000) SDT assumes that the satisfaction of the three universal psychological needs for autonomy, competence, and relatedness is the source of intrinsic motivation and optimal functioning. The social context that the supporting theory focuses on fits perfectly with the understanding of HCC in the study, which showed strong mediating effects on language performance. These theories complement the findings of the study by showing how TE and SEL (SCT's modeling effects) create a supportive classroom climate that satisfies students' psychological needs (SDT), which in turn promotes engagement and academic achievement. The moderating role of SE also underpins this theoretical consolidation, as self-directed students respond better to a supportive classroom climate.

This research further extends SCT by demonstrating that environmental modeling processes operate differently in classrooms situated in conflict environments compared to learner environments in stable educational settings, where the theory has traditionally been applied. SCT posits that teacher behaviors are acquired through observational learning; however, in high-insecurity contexts, students' heightened sensitivity to relational cues suggests that teachers' socio-emotional behaviors have a greater impact than standard academic behaviors. Similarly, the study builds on SDT by illustrating how the fulfillment of autonomy, competence, and relatedness needs becomes structurally constrained in conflict-affected settings. Generally, SDT assumes that such needs can be developed under supportive classroom conditions, but in environments characterized by insecurity, fear, and disrupted schooling, students' fundamental psychological needs may not be met on a long-term basis. A positive classroom environment is therefore a compensatory rather than an additive factor, acting as a protective element that restores students' sense of safety and identity. The mediating role of SE also indicates that need-satisfaction processes are not equal in such contexts: highly engaged students are less sensitive to the environment, while less engaged students are more sensitive to the climate conditions. This context-specific pattern highlights the variable functioning of SDT in conflict-ridden educational settings.

2.9 Research Framework

The relationships of the latent variables in this study are depicted in the research model shown in Figure 1. Specifically, three exogenous latent variables – TE, SEL, and PBA – act as predictors of the endogenous latent variables of HCC and students' English learning achievement (SELA). Additionally, HCC and SE mediate and moderate the relationship between the three exogenous latent variables.

Figure 1 – Research Model



Source: The authors (2025).

3 Methodology

3.1 Sample and Data Collection

This cross-sectional quantitative survey employed a stratified cluster sampling to examine variable relationships among Nigerian secondary school students in Katsina and Zamfara states. The population of the study was public secondary schools in these states. The regions were chosen due to their high-level security threats of banditry and kidnapping, which may uniquely impact students' educational experiences and social-emotional development. Of the 400 target population of students, 361 participated (response rate: 93.0%), comprising 163 females and 198 males. Non-response analysis revealed no significant demographic differences between participants and non-participants ($p > 0.05$). The majority (58.72%) belonged to the 15-18-year-old age group, comprising 108 senior 1 and 125 senior 2 students.

Table 1 – Respondents' Demography

Demographic characteristics	Category	Quantity
Gender	Male	198
	Female	163
Class Level	Senior 1	108
	Senior 2	125
	Senior 3	128
Age	15-18	212
	Above 18 years	149
Location	Urban	253
	Rural	108

Source: The authors (2025).

SELA was measured using a validated self-report scale adapted from previous research on language learning outcomes in low-resource and multilingual contexts. The scale comprises five items assessing students' perceived ability in the main areas of English language: reading comprehension, vocabulary use, grammar accuracy, speaking confidence, and writing clarity. A sample item is: "I can express my ideas clearly in English during class activities." Although objective test scores are optimal, they were unavailable in conflict-affected schools due to interrupted examination schedules, inconsistent record keeping, and school closures caused by security concerns. Therefore, self-report achievement measures were valid and widely used proxies in SLA and educational psychology research, especially in large-scale field studies lacking standardized test data (Aljubran, 2025).

All instruments were adapted in accordance with the International Test Commission (ITC) Guidelines for test translation and adaptation, which emphasize conceptual, linguistic, and functional equivalence in cross-cultural contexts. The adaptation process included expert review to ensure cultural relevance and clear semantic meaning, cognitive pre-testing with students to assess comprehension, rephrasing of complex or culturally unfamiliar phrases, and pilot testing to establish reliability and item functioning. Content validity was assessed by a panel of five language experts, with a CVI > 0.80 for all items. Cultural adaptation involved simplifying the language for the young people to understand and adapt to the Nigerian school environment. The paper-based surveys were conducted in classrooms during normal school hours. Ten experienced English teachers, who later acted as research assistants, received standardized two-hour training on survey administration, ethical procedures, and student support.

Data was collected between 4 October 2024 and 26 January 2025, and the survey took approximately 30-40 minutes to complete. Teachers used the same administrative procedures in each school by reading the instructions aloud and explaining to students when necessary. In addition, a pilot test was conducted with 60 students to determine construct validity and internal consistency at three non-participating schools with heterogeneous demographic profiles. Ethical approval for this study was granted by the Al-Qalam University Katsina Research Ethics Committee, under the Directorate of Research, Innovation, and Development of the institution (AUK-REC/2024/035). Parental consent was obtained for all students under the age of 18, with additional student assent secured before participation. Participation was voluntary, with all rights to withdraw without any consequences.

3.2 Data Analysis

Following the guidelines of Sharma *et al*. (2022), the analysis was conducted in two steps: assessment of the measurement model and assessment of the structural model. In the assessment of the measurement model, the reliability of the indicators (loadings > 0.70), the internal consistency reliability (composite reliability > 0.70), the convergent validity (AVE > 0.50), and the discriminant validity were checked using the HTMT ratio. Discriminant validity was analyzed using the HTMT ratio, as it is particularly powerful in detecting validity problems (Henseler; Ringle; Sarstedt, 2015). All HTMT values were below 0.85, confirming discriminant validity. The analysis of the structural model evaluation included the collinearity test (VIF < 3.0), the significance of the path coefficients using bootstrapping (5000 replicate samples), the coefficient of determination (R^2), the effect size (f^2), and the predictive relevance (Q^2). Participants were informed of their right to withdraw from the study at any time without consequences.

4 Results

This section presents the study's results, including validity, reliability, path coefficients, and hypothesis testing. The partial least squares structural equation modeling (PLS-SEM) was employed by the researchers to analyze the data.

4.1 Measurement Model

Regarding the validity and reliability of the data, Table 2 shows robust psychometric properties for all constructs, with Cronbach's alpha values between 0.834 and 0.895, which are well above the recommended threshold of 0.70 for exploratory research (Hair *et al*., 2019). The values for the composite reliability (rho_c) are consistently above 0.88, indicating excellent internal consistency reliability. The values for average variance extraction (AVE) are between 0.573 and 0.706 and all exceed the criterion of 0.50 for convergent validity (Hair *et al*., 2019). The TE construct has the highest reliability (α = 0.895, CR = 0.923, AVE = 0.706), while SEL has the lowest AVE value (0.573), which is still acceptable. The consistency between Cronbach's alpha and the composite reliability values indicates stable factor structures.

Table 2 – Construct Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
HCC	0.839	0.860	0.886	0.610
PBA	0.879	0.881	0.908	0.623
SE	0.834	0.866	0.890	0.673
SEL	0.855	0.860	0.889	0.573
SELA	0.891	0.894	0.920	0.698
TE	0.895	0.903	0.923	0.706

Source: The authors (2025).

However, the relatively lower AVE for SEL (0.573) indicates that this construct explains approximately 57% of the variance in its indicators, suggesting possible heterogeneity within the construct. These results support the suitability of the measurement model for hypothesis testing, although the SEL construct requires cautious interpretation given its marginal convergent validity. Similarly, the outer loadings presented in Table 3 demonstrate adequate quality of the measurement model for all constructs, with factor loadings ranging from 0.712 to 0.913. Most indicators exceed the recommended threshold of 0.70, indicating satisfactory reliability of the indicators (Ab Hamid; Sami; Sidek, 2017). The SE construct exhibits the strongest loadings (0.751-0.913), while SEL has the weakest performance with a SEL2 loading at 0.712, approaching the minimum acceptable threshold. The HCC construct displays consistent loadings between 0.723 and 0.869, suggesting stable measurement properties. It should be highlighted that the relatively lower loadings for HCC4 (0.723) and PBA6 (0.756) warrant attention, as they may indicate measurement issues or construct complexity. The interaction term (SE x HCC) loading of 1.000 reflects the single-indicator approach typical in moderation analysis. Overall, the loadings support the measurement model's adequacy for subsequent structural analysis, though marginal indicators require careful interpretation in the final model.

Table 3 – Outer Loadings

	HCC	PBA	SE	SEL	SELA	TE	SE x HCC
HCC1	0.869						
HCC2	0.829						
HCC3	0.792						
HCC4	0.723						
HCC5	0.777						
PBA1		0.799					
PBA2		0.848					
PBA3		0.834					
PBA4		0.818					
PBA5		0.763					
PBA6		0.756					
SE1			0.855				
SE2			0.913				
SE3			0.751				
SE4			0.837				
SEL1				0.820			
SEL2				0.712			
SEL3				0.791			
SEL4				0.760			
SEL5				0.760			
SEL6				0.791			
SELA1					0.786		
SELA2					0.873		
SELA3					0.886		
SELA4					0.802		
SELA5					0.824		
TE1						0.770	
TE2						0.810	
TE3						0.878	
TE4						0.878	
TE5						0.861	
SE x HCC							1.000

Source: The authors (2025).

Furthermore, the HTMT ratios in Table 4 demonstrate satisfactory discriminant validity, with all values below the conservative 0.85 threshold recommended for similar constructs (Henseler; Ringle; Sarstedt, 2015). The highest HTMT ratio (0.831) occurs between SELA and HCC, indicating strong but distinguishable constructs. Several moderate correlations emerge: SEL-SELA (0.776), SE-PBA (0.798), and SEL-HCC (0.740), suggesting meaningful theoretical relationships without construct overlap. The interaction term (SE x HCC) shows minimal correlations with other constructs (0.025-0.104), confirming its orthogonal nature, essential for moderation analysis. Notably, the PBA-TE correlation (0.726) and SEL-TE correlation (0.743) indicate substantial shared variance, potentially reflecting common method variance or theoretical overlap between teacher-centered constructs.

Table 4 – Heterotrait-Monotrait Ratio Discriminants Validity

	HCC	PBA	SE	SEL	SELA	TE	SE x HCC
HCC							
PBA	0.718						
SE	0.499	0.798					
SEL	0.740	0.697	0.633				
SELA	0.831	0.666	0.671	0.776			
TE	0.602	0.726	0.672	0.743	0.684		
SE x HCC	0.055	0.025	0.056	0.049	0.104	0.054	

Source: The authors (2025).

While these values remain within acceptable limits, they suggest that future research should examine potential multicollinearity issues. The overall pattern supports construct distinctiveness, enabling meaningful hypothesis testing, though the moderate-to-high correlations among predictor variables necessitate careful interpretation of unique effects. Regarding the analysis of the coefficient of determination and predictive value, Table 5 presents substantial explanatory power for both endogenous constructs in the model. The HCC demonstrates moderate explanatory power ($R^2 = 0.504$), indicating that TE, SEL, and PBA collectively explain approximately 50% of the variance in classroom climate perceptions. This R^2 value falls within the moderate range according to Cohen's (1988) guidelines, suggesting meaningful practical significance. SELA exhibits strong explanatory power ($R^2 = 0.748$), with the model explaining nearly 75% of the variance in language achievement outcomes. This high R^2 value indicates substantial predictive utility and supports the model's theoretical coherence. The Q^2 values demonstrate predictive relevance for both constructs (HCC: $Q^2 = 0.299$; SELA: $Q^2 = 0.513$), confirming the model's ability to predict new observations beyond the sample data. The Q^2 values exceed zero, satisfying the criterion for predictive relevance. The higher Q^2 for SELA (0.513) compared to HCC (0.299) suggests superior predictive accuracy for language achievement outcomes, supporting the model's practical utility for educational interventions.

Table 5 – Coefficient of Determination and Predictive Value

	R-square	Q-square
HCC	0.504	0.299
SELA	0.748	0.513

Source: The authors (2025).

Finally, Table 6 reveals meaningful effect sizes across predictor-outcome relationships, providing insights into practical significance beyond statistical significance. For HCC, SEL demonstrates a large effect size (f^2 = 0.383), indicating substantial practical importance according to Cohen's (1988) criteria. PBA and TE show medium effect sizes (f^2 = 0.221 and 0.213, respectively), suggesting moderate practical significance. For SELA, TE exhibits the largest effect size (f^2 = 0.424), followed by SEL (f^2 = 0.392) and SE (f^2 = 0.320), all representing large effects. The mediation effect of HCC on SELA shows a medium effect size (f^2 = 0.225), supporting its theoretical importance. The moderation effect (SE x HCC) demonstrates a medium effect size (f^2 = 0.249), confirming meaningful interaction effects. These effect sizes collectively indicate that the model's predictors have substantial practical importance for educational outcomes, with teacher-centered variables (TE, SEL) showing particularly strong effects on language achievement.

Table 6 – Effect Sizes

	HCC	SELA
HCC		0.225
PBA	0.221	0.281
SE		0.320
SEL	0.383	0.392
TE	0.213	0.424
SE x HCC		0.249

Source: The authors (2025).

4.2 Structural Model (Hypothesis Test)

Before presenting the structural model results, it is useful to briefly restate the hypotheses to aid interpretation. H1–H3 predicted that TE, SEL, and PBA would each positively influence SELA. H4–H6 proposed that these three teacher-related constructs would also positively influence HCC. H7 posited that HCC would positively predict SELA. Together, these seven hypotheses reflect the model's assumption that teacher socio-emotional practices shape language achievement both directly and indirectly through classroom climate.

In light of the above, the structural model results in Table 7 reveal significant support for all seven hypotheses, with path coefficients demonstrating theoretically meaningful relationships between constructs. TE exhibited a positive significant effect on SELA, supporting H1. This finding aligns with Kianinezhad's (2023) research, which

demonstrated that empathetic teaching behaviors significantly predicted ESL students' oral communication skills, and with Veldin *et al*.'s (2020) finding that teacher cognitive empathy correlated positively with immigrant students' English vocabulary acquisition. The moderate effect size reflects social cognitive theory's emphasis on modeling and observational learning, where empathetic teachers create emotionally safe environments that facilitate language risk-taking and authentic communication practice. SEL demonstrated the strongest direct effect on language achievement ($\beta = 0.364$, $t = 8.075$, $p < 0.001$), supporting H2. This robust relationship corroborates Green *et al*.'s (2021) findings that comprehensive SEL programs improved speaking test scores by 20%, and Taherkhani and Moradi's (2022) evidence that emotion regulation skills significantly predicted English reading comprehension gains ($t = 3.27$, $p < .05$). The substantial path coefficient supports self-determination theory's proposition that emotional competence satisfies psychological needs for autonomy and competence, creating optimal conditions for language learning. PBA also showed significant positive effects on language achievement ($\beta = 0.325$, $t = 8.660$, $p < 0.001$), supporting H3. This finding extends Aber *et al*.'s (2017) randomized controlled trial results from the Democratic Republic of the Congo, where peace education programs improved English literacy scores by 0.32 standard deviations.

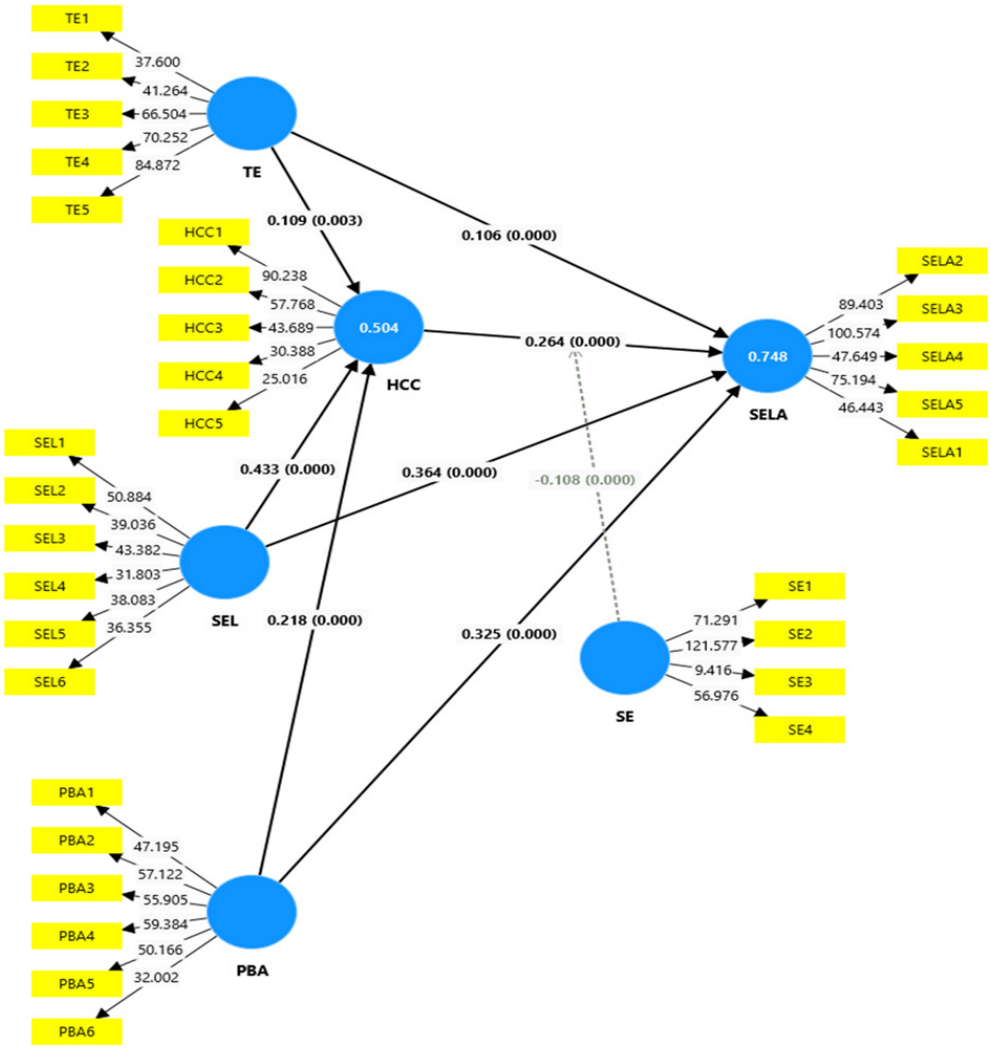
Table 7 – Path Coefficients

Hypotheses	Path Analysis	Beta Value	Standard deviation	T statistics	P values	Decision
H1	TE -> SELA	0.106	0.027	3.951	0.000	Supported
H2	SEL -> SELA	0.364	0.045	8.075	0.000	Supported
H3	PBA -> SELA	0.325	0.038	8.660	0.000	Supported
H4	TE -> HCC	0.109	0.036	3.024	0.003	Supported
H5	SEL -> HCC	0.433	0.046	9.453	0.000	Supported
H6	PBA -> HCC	0.218	0.043	5.072	0.000	Supported
H7	HCC -> SELA	0.264	0.026	10.364	0.000	Supported

Source: The authors (2025).

The teacher practices significantly influenced HCC, with SEL showing the strongest effect ($\beta = 0.433$, $t = 9.453$, $p < 0.001$), supporting H5. This relationship validates Gage and Thomas's (2019) finding that SEL programs improved classroom climate. TE ($\beta = 0.109$, $t = 3.024$, $p < 0.01$) and PBA ($\beta = 0.218$, $t = 5.072$, $p < 0.001$) also significantly predicted HCC, supporting H4 and H6 respectively. These findings substantiate Gasser *et al*.'s (2018) research demonstrating that empathetic teacher responses significantly predicted classroom emotional climate quality. Finally, HCC significantly predicted language achievement ($\beta = 0.264$, $t = 10.364$, $p < 0.001$), supporting H7. Figure 2 provides a comprehensive visualization of the structural model's significant pathways, illustrating the complex interplay between teacher practices, classroom climate, and language achievement outcomes.

Figure 2 – Graphical results showing relationships between teacher practices, classroom climate, and language achievement outcomes



Source: The authors (2025).

The graphical representation confirms all hypothesized relationships through standardized path coefficients, with the strongest direct effects emanating from SEL to both HCC (β = 0.433) and SELA (β = 0.364). The figure demonstrates the central mediating role of HCC in the theoretical framework, receiving inputs from all three teacher practices and subsequently influencing language achievement. The visualization reveals that TE exhibits the weakest direct effects on both climate (β = 0.109) and achievement (β = 0.106), while PBA show moderate effects. The model's R^2 values (HCC = 0.504, SELA = 0.748) displayed in the figure indicate substantial explanatory power, particularly for language achievement outcomes, supporting the theoretical model's empirical validity and practical significance.

Meanwhile, the mediation analysis in Table 8 reveals significant indirect effects of all teacher practices on SELA through HCC, supporting hypotheses H8, H9, and H10. SEL demonstrated the strongest mediation effect (β = 0.114, t = 6.869, p < 0.001), indicating that

it influences language achievement both directly and indirectly through improved classroom climate. This finding extends Oberle *et al.*'s (2020) longitudinal research, which showed that sustained SEL implementation created increasingly positive classroom environments over three academic years, ultimately benefiting academic outcomes.

Table 8 – Mediation Results Using Indirect Method

Hypotheses	Path Analysis	Beta Value	Standard deviation	T statistics	P values	Decision
H8	PBA -> HCC -> SELA	0.058	0.013	4.516	0.000	Supported
H9	SEL -> HCC -> SELA	0.114	0.017	6.869	0.000	Supported
H10	TE -> HCC -> SELA	0.029	0.010	3.022	0.003	Supported

Source: The authors (2025).

PBA showed significant mediation effects ($\beta = 0.058$, $t = 4.516$, $p < 0.001$), supporting the theoretical proposition that conflict resolution and collaborative learning environments facilitate language acquisition. This result aligns with Okokoyo's (2024) findings that conflict resolution training significantly improved classroom cooperation, creating conditions conducive to language learning. TE exhibited the weakest but still significant mediation effect ($\beta = 0.029$, $t = 3.022$, $p < 0.01$), suggesting that empathetic teaching practices influence language achievement primarily through their impact on classroom emotional climate. These mediation effects collectively support social cognitive theory's emphasis on environmental factors as crucial determinants of learning outcomes, demonstrating that teacher practices create supportive learning environments that subsequently enhance language acquisition processes.

The moderation analysis in Table 9 reveals a significant negative interaction effect between SE and HCC on language achievement ($\beta = -0.108$, $t = 6.633$, $p < 0.001$), supporting H11. This unexpected negative moderation suggests that the positive relationship between HCC and language achievement becomes weaker as SE increases. The finding indicates that highly engaged students may benefit less from classroom climate improvements, potentially due to ceiling effects or their intrinsic motivation overriding environmental influences.

Table 9 – Moderation Result Using Interaction Method

Hypotheses	Path Analysis	Beta Value	Standard deviation	T statistics	P values	Decision
H11	SE x HCC -> SELA	-0.108	0.016	6.633	0.000	Supported

Source: The authors (2025).

This result challenges conventional assumptions about the synergistic effects of engagement and supportive environments, suggesting instead that engaged students possess sufficient internal resources to achieve language learning success regardless of classroom climate quality. The moderation effect aligns with self-determination theory's proposition that intrinsically motivated students are less dependent on external environmental supports. This

finding contributes to understanding individual differences in responsiveness to classroom interventions, suggesting that climate improvements may be most beneficial for students with lower baseline engagement levels. The significant moderation effect fills a critical gap in the literature by demonstrating that the relationship between classroom environment and academic outcomes is not uniform across all students, requiring differentiated approaches to maximize educational effectiveness in diverse learning contexts.

5 Discussion

The findings of this study reveal a nuanced interplay between teacher socio-emotional practices, classroom climate, and SELA that extends beyond simple direct relationships. Specifically, the results demonstrate that the effects of TE, SEL, and peacebuilding practices operate simultaneously through direct instructional pathways and indirect environmental pathways, with classroom climate functioning as a pivotal mediating mechanism. This indicates that the socio-emotional behaviors of teachers not only shape immediate learning outcomes but also bring about harmonious classroom climates in which conflict is minimized and collaboration is organically sustained, which in turn influences students' willingness to communicate, risk-taking in language use, and sustained engagement, consistent with recent findings in SLA and educational psychology (Wang *et al.*, 2024).

The finding that TE significantly affects language achievement is consistent with Cai *et al*. (2023), who found that TE is positively related to reading achievement directly and indirectly through students' sense of belonging to the school. Additionally, in contrast to Warren's (2018) study in North American contexts, which found limited direct effects of TE on academic outcomes, the Nigerian context appears to increase the importance of empathy, possibly due to collectivist cultural values that prioritize interpersonal relationships and collaborative learning experiences.

The robust effect of SEL on language achievement goes beyond the typical findings in the Western literature and suggests that in conflict-affected regions, HCC is a crucial prerequisite for cognitive engagement. This finding is in contrast with Durlak *et al*.'s (2011) meta-analysis that primarily examined stable educational environments and found rather modest SEL effects. The Nigerian context, characterized by security challenges and educational disruption, appears to create conditions in which emotionally safe and harmonious learning environments become essential for success in language learning. This supports the thesis of self-determination theory that the fulfillment of the psychological needs for autonomy, competence, and relatedness is particularly important in environments where these needs are frequently threatened by external circumstances. These results, therefore, not only corroborate prior findings but extend them by showing that SEL and empathy may function as compensatory mechanisms in insecure schooling contexts.

The significant impact of PBA on language achievement represents a new contribution to the SLA field, as most research has focused on traditional pedagogical variables rather than conflict resolution strategies. This finding challenges conventional approaches to language teaching in post-conflict situations and suggests that explicit consideration of peacebuilding may have greater pedagogical benefits than previously thought (Sichka; Darragh; Petrie, 2025). The theoretical implications extend beyond the immediate Nigerian context, as PBA

appear to create authentic communicative opportunities that facilitate language acquisition through meaningful social interaction, supporting Vygotsky's theory of the zone of proximal development and its emphasis on collaborative learning (Rahman, 2024).

The mediation analysis shows that an HCC is a crucial mechanism through which teachers' practices influence language achievement, corroborating ecological systems theory's emphasis on nested environmental influences. This result contrasts with research findings in more stable educational contexts, where the direct effects of teaching often overshadow the mediators from the environment. The strong mediation effects suggest that the HCC in conflict-affected regions acts as a protective factor that enables effective learning despite external challenges. This mechanism is consistent with resilience theory, which emphasizes environmental resources that buffer adversity, and suggests that an HCC may serve as a crucial psychological safe space that enables vulnerable students to engage in the risk-taking behaviors necessary for language learning.

The unexpected negative moderating effect between SE and classroom climate challenges traditional assumptions about the additive benefits of multiple positive factors. This finding suggests that highly engaged students may have sufficient internal resources to overcome the constraints of the environment, while less engaged students derive greater benefits from supportive harmonies. This differential responsiveness is consistent with social cognitive theory, which states that instructional interventions are most effective when they are matched to learners' individual characteristics. Thus, while prior research typically reports synergistic effects between engagement and classroom climate (Phuntsho; Dendup, 2020), our results suggest a differentiated pattern: highly engaged students remain resilient even in less supportive climates, whereas low-engagement students benefit the most from climate improvements.

Hence, the moderation effect has important implications for resource allocation in educational contexts. Comparison with international research reveals both converging and diverging patterns. While studies in Western contexts have found modest effects of TE on academic outcomes, Nigerian results show much stronger relationships, possibly reflecting cultural differences in the importance of interpersonal relationships in learning contexts. Similarly, research in Canadian contexts has emphasized the role of a harmonious classroom environment in academic success, but the Nigerian results suggest even stronger mediating effects, possibly due to the heightened importance of emotional safety in post-conflict educational settings. These cross-cultural differences highlight the need for culturally responsive theoretical frameworks that account for contextual variations in learning processes.

The theoretical implications of these findings enhance current SLA frameworks by illustrating the essential importance of socio-emotional elements in successful language learning. The findings indicate that conventional cognition-centered methods of language teaching may be inadequate in conflict-ridden educational settings, where consideration of emotional and social factors is essential for cognitive involvement. It fosters the creation of more comprehensive theoretical models that incorporate emotive, social, and cognitive aspects of language learning, transcending solely linguistic methodologies to encompass the intricate human interactions that enhance or obstruct language acquisition. Practical implications for educational policy and practice are significant. In line with available research in the field (Elmeski; Bentahar, 2024; Hiwari; Razeq; Pentón Herrera, 2024), the results indicate that language teacher training programs in conflict-affected areas should emphasize the cultivation of empathy, SEL competencies, and peacebuilding tactics in conjunction with

conventional pedagogical skills. The mediation effects show that enhancing HCC may lead to substantial improvements in language achievement, whilst the moderation effects indicate the necessity for tailored strategies that account for varying degrees of SE. These findings facilitate evidence-based policy formulation for educational systems in challenging situations and provide empirical support for holistic strategies aimed at educational enhancement that consider both instructional and l elements

6 Limitations

The cross-sectional design of this study prevents causal conclusions, thus constraining the comprehension of temporal links between teaching techniques and language achievement outcomes. The dependence on self-reported metrics for all dimensions increases the possibility of common method variance and social desirability bias, especially for sensitive subjects such as empathy and peacebuilding techniques. The sample's focus on high-security-risk areas in Katsina and Zamfara states, although contextually pertinent, restricts its generalizability to other Nigerian regions with varying security profiles and socioeconomic situations. The moderate effect sizes for several connections indicate the presence of unexamined variables that could augment explanatory power. Future research should utilize longitudinal designs to determine causality and investigate the developmental trajectories of these associations throughout time. Employing mixed-methods approaches that include classroom observations, teacher interviews, and objective language evaluations would enhance construct validity and mitigate measurement bias. Comparative analyses among several Nigerian states and other sub-Saharan African nations would improve generalizability and cultural validity. Examining other mediating variables, like student motivation and family participation, may enhance model comprehensiveness. Experimental interventions assessing the efficacy of integrated empathy, SEL, and peacebuilding training programs would yield essential evidence for the advancement of educational policy and practice.

7 Conclusion

This study examined the determinants of SELA among Nigerian secondary school students by investigating the mediating role of HCC and the moderating effect of SE on relationships between TE, SEL, peacebuilding practices, and language learning outcomes. The structural equation modeling analysis of 361 students from conflict-affected regions revealed significant support for all hypothesized relationships, with SEL demonstrating the strongest effects on both HCC and language achievement. The mediation analysis confirmed that HCC serves as a crucial mechanism through which teacher practices influence language outcomes, while SE moderated the climate-achievement relationship in an unexpected negative direction. These findings address a critical gap in second language acquisition theory by extending existing frameworks to encompass conflict-ridden educational contexts and demonstrating the crucial role of socio-emotional factors in language learning success. The study contributes empirical evidence demonstrating the efficacy of TE, SEL, and peacebuilding strategies

in augmenting English language proficiency by fostering an enhanced HCC. The findings contest conventional cognitive-centric methods of language teaching by emphasizing the essential function of emotional and social skills in promoting language acquisition, especially in educational settings impacted by conflict.

Combinations of these findings provide insights for educational policymakers and practitioners seeking to enhance English language learning in conflict-affected environments. In addition to highlighting the importance of socio-emotional competencies, the findings suggest that teacher training interventions should include systematic modules on empathy training, SEL facilitation, and peacebuilding practices as core pedagogical skills rather than supplementary ones. Policymakers may also benefit from integrating HCC monitoring into school quality assurance systems to ensure that the emotional and relational aspects of learning environments are addressed in the long term. Furthermore, harmonious climate-strengthening initiatives can be combined with targeted interventions to achieve significant improvements. By promoting a holistic approach in which teachers and students work together, the classroom environment is enhanced and students' socio-emotional needs are met, enabling education systems to establish more resilient pathways for language learning even in insecure contexts.

Ethics Committee Report

Ethical approval for this study was granted by the Al-Qalam University Katsina Research Ethics Committee, dated October 2, 2024, under the Directorate of Research, Innovation, and Development of the institution (AUK-REC/2024/035).

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Conception and design of the research (Hamisu, Salina, Azza, and Ibrahim); acquisition, analysis, and interpretation of the data (Hamisu); drafting and critically revising the manuscript (Azza and Ibrahim).

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The authors declare that there is no conflict of interest.

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The public data is available at this link: https://github.com/hamisuhamisuharuna-bit/Our-Data.git.

Use of AI

We declare that artificial intelligence (AI) tools were ethically used to support the preparation of this manuscript, under the full supervision and responsibility of the authors. Specifically, literature search support was enhanced through the use of AI-powered academic discovery tools, such as Litmaps, which helped identify relevant and recent publications in the field. The selection, interpretation, and citation of all sources were carried out solely by the authors. At no point did AI tools contribute to the conceptual development, data analysis, or interpretation of findings. All intellectual and scientific responsibilities remain entirely with the authors.

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