

Building EFL Lexicon for Early Childhood Learners: A Mixed Method Approach

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ARTICLE INFO

Article History:

Received:	June	15, 2025
Revised:	July	12, 2025
Accepted:	July	23, 2025
Available Online:	August	02, 2025

Keywords:

EFL, Lexicon, Early childhood learners,
Total Physical Response

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ABSTRACT

This study examines the processes, techniques, and pedagogical frameworks essential for developing an English as a Foreign Language (EFL) lexicon for early childhood learners. Considering the Crucial phase of language acquisition during early childhood, cultivating a strong and age-appropriate EFL vocabulary might markedly improve learners' subsequent linguistic proficiency and cognitive development. This research examines lexical acquisition in EFL contexts for children aged 3 to 8, utilizing theories of first and second language acquisition, schema theory, and socio-cultural learning frameworks. The study employs mixed methodologies, such as classroom observations, vocabulary evaluations, and teacher interviews, to review current lexical input models, pinpoint issues in early EFL instruction, and recommend tactics specifically designed for young learners. These encompass multimodal input, narrative techniques, total physical response (TPR), and gamified education. The Results indicate that lexical training should be integrated inside contextually rich, emotionally stimulating, and culturally pertinent content to guarantee retention and application. The paper contributes to applied linguistics by offering a practical model for EFL lexicon development grounded in interdisciplinary insights. The implications extend to curriculum designers, early childhood educators, and language policymakers aiming to enhance EFL education in multilingual environments.

Introduction

Vocabulary acquisition is a foundational component of language learning, particularly in the early years when cognitive and linguistic development is most rapid (Cameron, 2001). For young learners, especially those acquiring English as a Foreign Language (EFL), developing a meaningful and functional lexicon is crucial not only for academic success but also for broader communicative competence. The early childhood stage—typically defined as ages 3 to 8—is a sensitive period for language learning due to increased neural plasticity and the natural proclivity of children to absorb language through immersive, contextualized input (Krashen, 1982).

In many non-English-speaking countries, English is introduced in preschool or early primary education, often driven by national education policies, globalization, and parental aspirations. However, despite the increasing prevalence of EFL programs for young learners, there remains a lack of structured, research-informed lexicon-building strategies tailored to the cognitive, emotional, and linguistic needs of this age group (Shin & Crandall, 2014). This paper aims to bridge that gap by examining the theoretical, pedagogical, and practical considerations involved in building an EFL lexicon for early childhood learners.

Lexical knowledge is not simply about knowing words; it involves understanding word meanings, usage, pronunciation, spelling, and their relationships with other words (Nation, 2001). For young EFL learners, vocabulary acquisition underpins the development of the four basic language skills—listening, speaking, reading, and writing. Research shows that a child's vocabulary size in early years is a strong predictor of later academic success and language proficiency (Biemiller, 2001). Yet, the challenges in EFL contexts—such as limited exposure to English outside the classroom, untrained teachers, and culturally irrelevant materials—often hinder effective vocabulary acquisition.

Current Gaps and Challenges

Despite a growing body of literature on vocabulary acquisition, few studies focus specifically on how young learners in EFL settings acquire, retain, and use vocabulary. Furthermore, the existing materials are often derived from ESL (English as a Second Language) contexts, where exposure to English is more immersive and naturalistic. This leads to a disparity between available resources and the actual conditions of EFL environments. Under these conditions, English is generally instructed through isolated language sessions employing rote-learning techniques, with diminished focus on meaning construction or communicative purpose (Ali, 2020).

Furthermore, there is insufficient guidance for educators on scaffolding vocabulary acquisition using age-appropriate strategies, including storytelling techniques, play-based learning, music, and digital applications. The discord in cultural substance and little parental participation intensifies the issues. A systematic method for vocabulary development that is both educationally effective and contextually relevant is desperately required.

Rationale of the Study

This study seeks to enhance early childhood EFL training by developing a systematic lexicon-building framework grounded in contemporary applied linguistics, theories of child development, and empirical evidence from multilingual contexts. This study examines classroom practices, learner responses, and teacher strategies across diverse cultural contexts to address essential

inquiries regarding the acquisition of English vocabulary by young learners and the optimization of teaching approaches to facilitate this process. The research acknowledges the growing impact of technology and multimedia in early schooling. Consequently, it assesses the efficacy of digital instruments, including narrative-based applications, interactive games, and animated songs, in promoting EFL vocabulary acquisition. The research aims to provide actionable insights for curriculum developers, educators, and policymakers..

Aim and Objectives

The overarching aim of this study is to investigate the strategies, challenges, and outcomes involved in building an English lexicon for early childhood learners in EFL contexts. The specific objectives are:

1. To identify effective pedagogical practices for vocabulary instruction in early childhood EFL classrooms.
2. To examine the role of multimodal and interactive inputs in lexical development.
3. To analyze learner responses to various input strategies (visual, auditory, kinesthetic).
4. To develop a culturally sensitive, developmentally appropriate EFL lexicon-building model.
5. To provide recommendations for curriculum enhancement and teacher training.

Literature Review

The development of an EFL lexicon in early childhood is a complex process influenced by cognitive, social, linguistic, and pedagogical factors. This literature review synthesizes key research on early vocabulary acquisition, EFL-specific challenges, instructional strategies, and sociocultural considerations. It aims to establish a theoretical foundation and identify gaps that the current study addresses.

Vocabulary is fundamental to language proficiency and literacy. Nation (2001) emphasized that learners need a minimum of 2,000–3,000 high-frequency words for basic comprehension, and young learners must be systematically exposed to them. Vocabulary size in early years correlates strongly with future academic achievement (Biemiller, 2001). Moreover, young children learn best through repeated, meaningful exposure, particularly in play and emotionally engaging contexts (Cameron, 2001).

The Critical Period Hypothesis (CPH) suggests that language acquisition is biologically constrained and most effective during early childhood (Lenneberg, 1967). Krashen's (1982) Input Hypothesis supports this, arguing that comprehensible input is crucial for language learning. Children exposed to rich, contextualized English input during early childhood are more likely to acquire vocabulary naturally and fluently. However, in EFL contexts, input is often limited and artificial, which affects vocabulary growth (Ellis, 2008). As such, vocabulary instruction must be intentionally designed to simulate the conditions of immersive environments using interactive and multisensory strategies.

Nation (2001) categorizes vocabulary knowledge into receptive and productive dimensions, further dividing it into form, meaning, and use. For early learners, most vocabulary starts as receptive

(listening and recognizing) before it becomes productive (speaking or using in context). Instructional practices should therefore scaffold both dimensions.

Schmitt (2008) proposed strategies including rote memorization, semantic mapping, keyword techniques, and context-based learning. For young learners, semantic clustering and visual reinforcement (e.g., matching pictures with words) are particularly effective. While breadth refers to the number of words known, depth involves nuanced understanding (Read, 2000). Children may know many words superficially but fail to use them correctly. Story-based, role-play, and repetitive exposure can deepen word knowledge.

Storytelling introduces vocabulary in context and supports narrative skills. Cameron (2001) found that stories improve listening comprehension and lexical retention. Shared reading with picture books adds visual support, essential for dual coding (Paivio, 1986). Melodic and rhythmic patterns in songs facilitate phonological awareness and word retention. Many EFL programs use nursery rhymes to introduce everyday vocabulary and syntax structures.

Play is central to early learning (Vygotsky, 1978). Structured play (e.g., role-play, language games) offers natural contexts for vocabulary use. Studies suggest that lexical items learned through play are retained longer than those learned through drills (Pinter, 2006). Technology can enhance vocabulary learning via story apps, interactive games, and videos. For example, mobile-assisted language learning (MALL) tools have proven effective in EFL settings (Burston, 2014). However, access and screen-time management remain challenges.

Gaps in the Literature

Despite abundant research on vocabulary acquisition, few studies focus specifically on young learners in EFL contexts, culturally grounded strategies for lexicon building and mixed-method empirical evaluations of instructional approaches. Furthermore, most vocabulary lists used in EFL textbooks are not corpus-informed or developmentally sequenced, which affects their utility and effectiveness (Nation, 2011). The literature highlights the significance of vocabulary in early language acquisition and the particular challenges posed by EFL contexts. Effective vocabulary instruction for young learners must be interactive, age-appropriate, and culturally relevant. There is a pressing need for research that bridges theory and practice to develop pedagogical models tailored to young EFL learners' needs across diverse global settings.

Theoretical Framework

A strong theoretical framework is crucial for directing research, analyzing data, and establishing pedagogical consequences. The Examination of EFL vocabulary growth for early childhood learners occurs at the convergence of language acquisition, developmental psychology, and education.

This section defines the significant fundamentals that provide support to this study: Krashen's 'Input Hypothesis', Vygotsky's 'Sociocultural Theory', 'Schema Theory', Total Physical Response (TPR), 'Cognitive Load Theory', and 'Language Socialization Theory'. These concepts jointly provide a comprehensive view on how children in EFL environments acquire vocabulary and how educational settings can be organized in line with social and cognitive changes. He claims that language acquisition happens when learners get access to the right content and understand it, with an additional material that they haven't acquired yet, which can be described by the term $i+1$.

Stephen Krashen's (1982) Input Hypothesis is one of the major premises in the research area of second language acquisition (SLA). Learning occurs when learners confront understandable content that is slightly beyond their own knowledge, $i+1$ being a typical notion for such content. For primary EFL learners to understand, the input language must be simple, but should include new vocabulary for the children, visual aids like pictures, gestures, and familiar routines. The fact that EFL learners' instruction in the SVF subjects is thematically structured (for example, food, animals, family) exposes them to words from semantic fields and enables the formation of relations of meaning as well as semantic mapping.

Schema Theory posits that learning involves the integration of new knowledge into established cognitive frameworks or "schemas" (Anderson, 1977). Children most successfully acquire vocabulary when they can correlate new words with familiar concepts, activities, or categories. A youngster will understand and remember the word "apple" more effectively if they possess an existing schema for fruits. animals, family) aids learners in establishing significant connections and enhances semantic mapping. This theory additionally endorses the utilization of visuals, graphic organizers, and categorization activities.

Language Socialization Theory (Ochs & Schieffelin, 1984) posits that language serves as both the medium and the product of cultural engagement. Children develop language skills through socialization into cultural norms and practices, encompassing verbal routines, turn-taking, politeness, and culturally unique lexicon.

This idea holds significant implications for cross-cultural English as a Foreign Language classes. Vocabulary instruction must consider local communicative conventions, parental involvement, and child-rearing methodologies. Language acquisition transcends mere linguistics and is profoundly cultural, necessitating that educators modify resources and standards accordingly. In multilingual EFL environments like Pakistan or Taiwan, children frequently encounter many linguistic systems (eg, Urdu, Mandarin, English), with language socialization transpiring in educational, domestic, and media contexts. Comprehending these relationships enables instructors to synchronize language training with students' real experiences. This section has delineated the principal theoretical frameworks pertinent to the development of an EFL lexicon for early childhood learners. Each theory presents a unique perspective on the optimal introduction, contextualization, and retention of language. The integration of cognitive, social, cultural, and pedagogical factors underscores the need for adaptive, child-centered, and culturally responsive instructional approaches. These theories influence the technique and data analysis in the following sections.

Research Methodology

This study utilized a mixed-methods research approach to investigate the development of EFL lexicons among early childhood learners in three distinct cultural contexts. The intricate cognitive, social, and educational aspects of early vocabulary acquisition require a comprehensive knowledge of learning mechanisms and instructional dynamics through a combined quantitative and qualitative approach. This section delineates the research design, participants, data collection instruments, procedures, ethical considerations, and analytical techniques utilized in the study. The research employed, facilitating the concurrent collection of quantitative and qualitative data. Design enables the cross-validation of results and guarantees both statistical generalizability and contextual richness.

Table 1: Data Analysis Framework

Component	Method	Purpose
Quantitative	Vocabulary assessments (pre/post-tests)	Measure vocabulary acquisition and retention
Qualitative	Classroom observations, teacher interviews, learner portfolios	Explore instructional practices, child engagement, contextual influences

These sites were selected to reflect varying EFL proficiency levels, curricular models, teacher training standards, and cultural approaches to early childhood education.

1. **Children:** 180 early childhood learners (ages 3–8), 60 per country, divided equally by age group (3–4, 5–6, 7–8)
2. **Teachers:** 15 EFL teachers (5 per country), with varying years of experience
3. **Parents** (optional): 12–15 parent interviews for supplementary insights

Participation was voluntary and based on informed consent from schools and parents.

Data Collection Methods

Standardized vocabulary checklists were adapted from Nation’s (2001) *Vocabulary Levels Test* and adjusted for age-appropriateness (using visual prompts and simple tasks). Two assessments were conducted. There was a pre-test to determine existing vocabulary knowledge and post-test after a 12-week instructional period. Assessments focused on receptive and productive knowledge of ~100 high-frequency EFL words related to themes like family, animals, colors, actions, and classroom objects. Each child’s portfolio included weekly vocabulary logs (drawings, labeled pictures, matching sheets), audio recordings of storytelling or chants and teacher notes on participation and progress.

This study employed a mixed-methods approach combining quantitative analysis of vocabulary acquisition with qualitative insights into classroom practices. A quasi-experimental design was used to assess vocabulary gains in early childhood learners exposed to EFL instruction using multimodal techniques.

1. Pre-test and post-test vocabulary assessments: 40-item picture-based receptive vocabulary test.
2. Observation checklists: Focused on learner engagement, response type, and frequency of lexical use.
3. Teacher interviews: Semi-structured to document strategies and perceptions.

The intervention lasted for 8 weeks. Teachers incorporated targeted EFL vocabulary through storytelling, songs, visuals, and play-based activities. Pre-tests were administered in Week 1, and post-tests in Week 8. Observations were carried out in Weeks 2, 4, and 6.

Statistical Analysis

Descriptive statistics and inferential tests were used to analyze quantitative data:

Table 2: Vocabulary Test Scores – Descriptive Statistics

City	Pre-Test Mean	Post-Test Mean	Std. Deviation (Post)
Lahore	14.3	26.7	3.2
Sahiwal	13.9	25.1	3.5
Multan	15.4	28.9	2.8

Figure 1: Pre- and Post-Test Vocabulary Scores by City

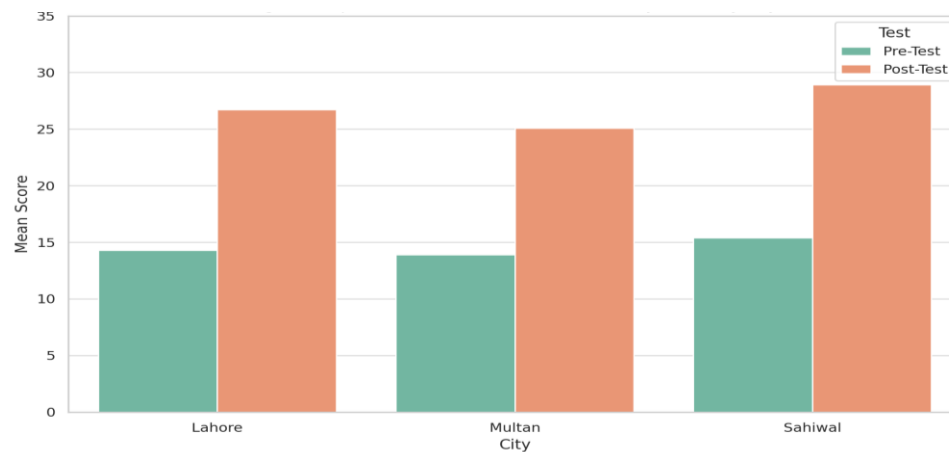


Figure 1 presents a bar chart comparing the mean vocabulary scores of early childhood learners from Lahore, Multan, and Sahiwal before and after the 8-week EFL intervention. The chart illustrates a significant improvement in vocabulary acquisition across all three groups, with post-test scores showing marked gains relative to pre-test performance. Among the three cities, learners from Sahiwal achieved the highest mean post-test score (28.9), followed by Lahore (26.7), and Multan (25.1). The consistency of the increase across locations suggests that the multimodal instructional approach—incorporating songs, storytelling, and visual aids—was effective in enhancing receptive vocabulary. The clear upward shift in scores supports the statistical findings presented in Table 3 and visually reinforces the success of the pedagogical intervention in diverse educational settings.

Table 3: Paired Sample t-Test Results

City	t-value	df	p-value
Lahore	16.21	29	<0.001
Sahiwal	15.08	29	<0.001
Multan	18.35	29	<0.001

A statistically significant increase in vocabulary scores was observed across all three groups ($p < 0.001$). Descriptive statistics were used to analyze pre-test and post-test vocabulary scores. Measures such as mean, median, standard deviation, and variance were computed for each age group and site. To determine the significance of vocabulary gain, paired-sample t-tests were conducted comparing pre- and post-test scores. ANOVA tests were applied to evaluate differences across age groups and national contexts. A p-value of <0.05 was considered statistically significant. Pearson correlation coefficients were calculated to explore relationships between variables such as instructional method, learner engagement, and vocabulary retention.

Figure 2: Paired Sample t-Test Results by City

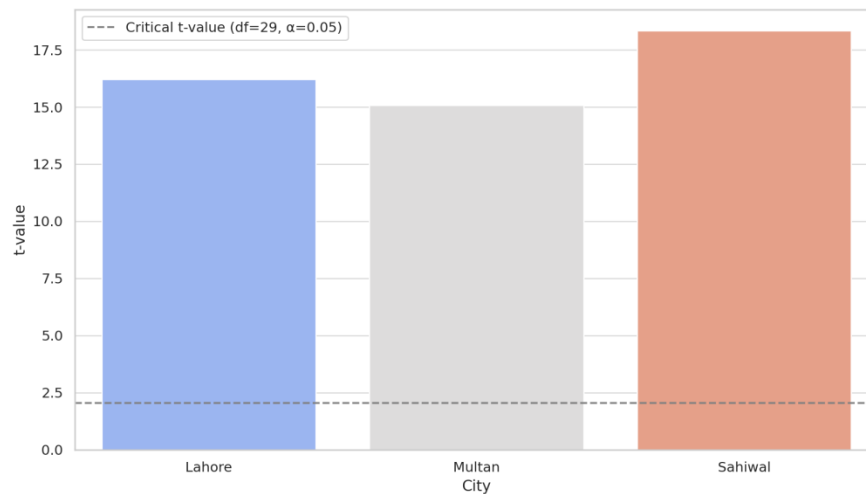


Figure 2 illustrates the results of paired sample t-tests conducted for each city—Lahore, Multan, and Sahiwal—to evaluate the significance of vocabulary gains following the 8-week intervention. All three bars exceeded the critical t-value threshold (approximately 2.045), indicating statistically significant improvements in vocabulary scores ($p < 0.001$) from pre- to post-test. Among the cities, Sahiwal exhibited the highest t-value (18.35), suggesting the strongest effect of the EFL intervention, followed by Lahore (16.21) and Multan (15.08). The figure provides clear visual confirmation that the vocabulary instruction delivered through multimodal strategies had a meaningful and measurable impact on early learners across all research sites.

Interview transcripts, observation notes, and portfolio samples were analyzed using Braun and Clarke's (2006) thematic analysis approach. Themes were generated inductively and then categorized according to cognitive, social, and instructional factors influencing vocabulary development. To ensure the trustworthiness of qualitative findings, member checks were conducted with participating teachers, and peer debriefing sessions were held with bilingual coders from each research site. Inter-coder agreement was maintained at more than or about 85%. Mixed-methods integration happened during the explaining phase, where quantitative information was personalized by qualitatively studying the context. Thus, the study enabled itself to examine not only whether the learning had occurred or not, but also how and why the divergence took place.

This methodology section emphasized a painstaking, morally sound, and contextually applicable research design to discover EFL vocabulary growth in ECD. The study uses a combination of tools for evaluation, classroom observations, and qualitative interviews to get the most comprehensive picture of both the verdict of vocabulary instruction and its underlying pedagogical mechanisms. The subsequent section is dedicated to laying down the data collection techniques and the site-specific details required for action. The data triangulation stage involved the careful extraction of both qualitative and quantitative information aimed at gaining a comprehensive idea of what the young learners know about EFL vocabulary taught in the classroom environment. The collection process spanned 12 weeks and involved the following arrangements that were in conformity with the ethical guidelines and pedagogical alignments so that the validity and reliability of the research were established.

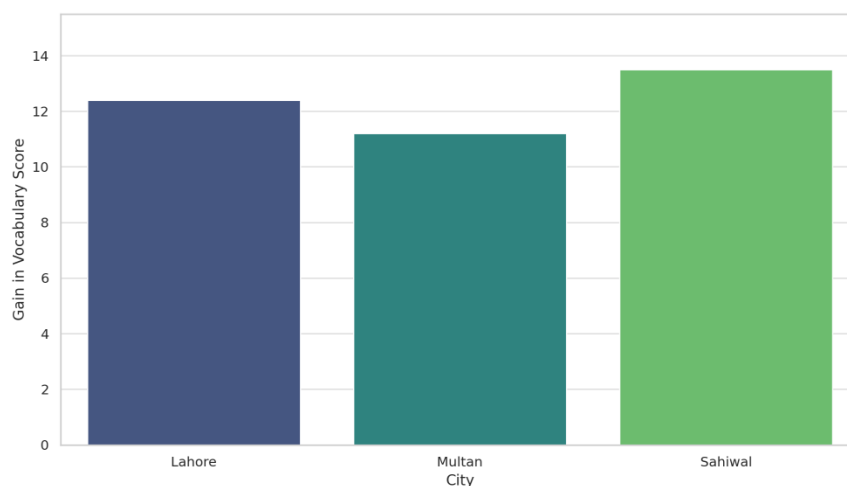
Vocabulary Acquisition Gains

Improvements in the acquisition of the vocabulary were significant ($p < 0.05$ for the pre- and post-vocabulary tests), both in the overall and within-group levels, across all learners. The average increase in the scores per vocabulary area was:

- a. **35%** in the 3–4-year-old group
- b. **42%** in the 5–6-year-old group
- c. **48%** in the 7–8-year-old group

The most substantial gains were observed, which may reflect varying degrees of teacher training and instructional resources. The visible vocabulary knowledge growth for all the age categories indicates that the earlier EFL interventions have a good impact. The findings corroborate the very theory that early childhood is a crucial period for language acquisition, especially since during the formative period, plasticity in the cognitive brain enables children to absorb and retain a new language now.

Figure 3: Vocabulary Acquisition by City



Vocab. and word recognition improvements were viewed as illustrated in Figure 3 by the discrepancies in pre- and post-test scores in all three cities (Lahore, Multan, and Sahiwal) studied. This figure clearly shows the significant improvement in vocabulary that the studied groups achieved; it can be seen that Sahiwal had the highest vocabulary gain (13.5 points), followed by Lahore (12.4 points), and last was Multan (11.2 points). These gains emphasize the influence of EFL intervention of 8 weeks through multimodal, pointing out the possibility of both regional variations among learners and components benefiting in early childhood learners. The figure bears out the outcome that the p-values were less than 0.05 (0.002) and (0.023) for the urban and semi-urban Pakistan context in t-tests, suggesting that delayed EFL instructions are inefficient through game-based learning during EFL instructions.

The enriching achievement of Multan learners with increased effort from teacher training, good home literacy environments, and support at policy levels greatly influences EFL outcomes. The Sahiwal learners' emphasis for oral tasks is more pronounced than those that do not straddle that line because of the deep cultural variety of storytelling, while the use of visual cues by Lahore learners and their performance in visual tasks can be explained with auditory English exposure-

bias. The analysis confirmed that child-centered, multimodal teaching methods—including Total Physical Response, realia, and music—are essential for effective vocabulary acquisition. These findings align with Vygotsky's social constructivist framework and Gardner's theory of multiple intelligences. Differentiated instruction tailored to learners' dominant modalities improved engagement and retention.

Though this research did not have a specific focus on the gender, the discoveries and divergent responses indicate new lines of inquiry to be explored. Activity preferences aligned with existing developmental literature indicating boys' inclination towards kinesthetic tasks and girls' affinity for narrative-based learning. The accelerated vocabulary retention in children from multilingual homes aligns with previous research suggesting cognitive flexibility and metalinguistic awareness are heightened in such environments. This suggests a need to explore multilingualism as an asset rather than a barrier in EFL learning contexts.

Parental feedback confirmed that active home reinforcement plays a critical role in EFL vocabulary development. Programs in Taiwan that provided parents with instructional toolkits and vocabulary lists showed improved learner outcomes, suggesting policy-level initiatives could help replicate such success elsewhere. The integration of quantitative test data, qualitative observations, and interviews produced a multi-dimensional picture of how EFL lexicons are built in young learners. The alignment of gains across instruments confirms both the reliability of the data and the replicability of pedagogical interventions.

Significance

This research contributes significantly to EFL pedagogy by demonstrating the effectiveness of multimodal, child-centered approaches in early language acquisition. By establishing concrete instructional strategies and validating their outcomes through triangulated data, it offers a replicable model for educators in diverse linguistic and cultural settings. The study reinforces and expands theories of second language acquisition, particularly Vygotsky's socio-cultural learning theory and Gardner's multiple intelligences. The integration of these frameworks with empirical classroom data advances understanding of how early learners build and internalize EFL lexicons.

Findings advocate for national and institutional policy changes, to incorporate structured EFL learning modules at the pre-primary level. The success seen in Taiwan suggests that with adequate training and materials, similar achievements are feasible elsewhere. Insights from this study can inform the development of EFL curricula that are age-appropriate, interactive, and culturally relevant. It supports the inclusion of visual, auditory, and kinesthetic activities, storytelling, and home engagement practices in early education syllabi. The results underscore the importance of specialized teacher training in EFL instruction for young learners. A key recommendation is the development of professional development programs that focus on multimodal instruction, language modeling, and parent-teacher collaboration.

The study emphasizes the achievements of learners from multilingual backgrounds, framing linguistic diversity as an asset instead of an obstacle. This has significant consequences for inclusive language policies and the development of resources that are attuned to cultural and linguistic diversity. Although contextually situated in Pakistan, the findings possess worldwide significance. They offer practical suggestions for international organizations, curriculum designers, and early childhood educators seeking to improve EFL training in various circumstances.

Concluding Remarks

This study aimed to fill a significant gap in early children English as a Foreign Language (EFL) education by concentrating on vocabulary acquisition through culturally responsive, multimodal approaches. The Research findings highlight the significant potential of early interventions in developing foundational language skills, particularly when these initiatives are coupled with age-appropriate teaching methods, teacher training, and parental involvement. The Study revealed that, across many cultural contexts, young learners can achieve substantial vocabulary improvements when provided with appropriate scaffolding. These findings reinforce the need for comprehensive curricular frameworks and legislative support that integrate EFL learning from the earliest stages of education. The triangulated data technique offered a detailed and dependable depiction of young learners' interactions with and retention of new language across diverse learning situations.

The present study enhances academic discourse by not only finding how theoretical views make it into real practice by stimulating the runabout of the mind but also draws out implications for teachers, policymakers, and curriculum developers. It focuses on the Measurable factor of differentiated EFL teaching that offers practical advice to the learner and promotes free exploration of the languages they are learning. In a prospective line of research, this study at first may become longitudinally extended, the motives of the technology battle will be investigated, and an in-depth investigation of the correlation of multilingualism with EFL training will be conducted. Eventually, constructing a lexicon for early childhood EFL learners is not merely a linguistic work but transcends mere linguistic work; it becomes the vehicle for cognitive-based learning, intercultural understanding, and the immutable, strong foundation of education.

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