

Pakistan Journal of Criminal Justice
ISSN: 2958-9363 ISSN (E): 2958-9371
Volume 6, No.9, 2026, 65-85
DOI: https://doi.org/10.59075/pjcj.v6i9.346
Journal Homepage: https://journals.centeriir.org/index.php/pjcl

The Effect of Early Childhood Education on Children's Language Development in Gilgit-Baltistan

Nimra Khatoon[1], Muhammad Hadi Haideri[2*], Somi Qurban[3], Ali Kamran Noor[4]

[1]B.Ed. (Hons) Special Education, Department of Educational Development, Karakoram International University, Gilgit, Pakistan. Email: **nimraaly110@gmail.com**
[2]PhD in Special Education, Visiting Lecturer, Karakoram International University, Gilgit, Pakistan. Email**: Mhadi578@yahoo.com**
[3]B.Ed. (Hons) Special Education, Department of Educational Development, Karakoram International University, Gilgit, Pakistan. Email: **somiqurban7@gmail.com**
[4]B.Ed. (Hons) Special Education, Department of Educational Development, Karakoram International University, Gilgit, Pakistan. Email: **alikamrannoor@yahoo.com**

Abstract

Early childhood education (ECE) supports children's language development through classroom interaction and family engagement. This study examined parents' perceptions of ECE and language development among children aged 3–6 years in Gilgit-Baltistan. A quantitative descriptive survey involved 105 parents selected through simple random sampling. Data were collected using a self-developed 27-item, five-point Likert questionnaire and analyzed using descriptive statistics, independent-samples t-tests, and one-way ANOVA. Findings showed positive perceptions across the classroom and school environment, parental involvement, language development competencies, and socio-cultural and educational context. Home–school continuity (M = 4.40) and children's curiosity and questioning (M = 4.07) ranked highest; basic grammar (M = 3.51) and limiting screen time (M = 3.44) scored lower. Differences by respondents' gender were significant only in language development competencies; no significant urban–rural differences emerged. Educational qualification differences emerged in three domains. Findings reflect parental perceptions and do not establish a causal effect of ECE.

Keywords: Early Childhood Education, Language Development, Children's Language Acquisition, Gilgit-Baltistan, Communication Skills

© 2026 The Authors, Published by Center of Innovation in Interdisciplinary Research (CIIR).
This is an Open Access Article under the Creative Common Attribution Non-Commercial 4.0

Article History: Received: 15-09-2026 Accepted: 18-10-2026 Published: 05-11-2026

Corresponding Author's Email: Mhadi578@yahoo.com

Introduction

Early childhood is a critical period for the development of language skills that enable children to communicate, acquire knowledge, and establish social relationships. During these formative years, children gradually develop receptive and expressive language abilities, including vocabulary acquisition, listening comprehension, sentence formation, verbal expression, and conversational skills. These competencies provide an important foundation for subsequent literacy development, classroom participation, and school readiness (Yang et al., 2021; West et al., 2024). Early Childhood Education (ECE) can contribute to this developmental process by providing structured learning experiences, meaningful communication opportunities, storytelling, songs, play-based activities, and interactions with teachers and peers. Consequently, early learning environments offer children opportunities to practise and strengthen their language abilities before entering formal schooling.

The quality of early childhood learning experiences is particularly important for children's language development. Responsive teachers who encourage conversations, explain unfamiliar vocabulary, respond to children's questions, and extend verbal interactions can create language-rich learning environments. Hansen and Broekhuizen (2021), examining the quality of language-learning environments in early childhood settings, found that responsive staff, extended conversations, and supportive interactions were associated with children's vocabulary development. Similarly, Yang et al. (2021) reported that teacher–child interaction quality, particularly classroom management and instructional support, predicted subsequent receptive vocabulary development. Further experimental evidence was provided by West et al. (2024), whose cluster-randomized controlled trial demonstrated improvements in children's oral language skills following a structured preschool language-enrichment programme. These findings indicate that the contribution of ECE to language development depends not only on children's participation in early learning programmes but also on the quality of instructional experiences and communication opportunities available to them.

Beyond formal educational settings, parents and caregivers play an important role in supporting children's language development through everyday conversations, shared reading, storytelling, singing, and responsive communication. These activities expose children to new vocabulary, sentence structures, and opportunities for verbal expression. Dowdall et al. (2020), in a systematic review and meta-analysis of 19 randomized controlled trials, found that shared picture-book reading interventions produced positive effects on children's expressive and receptive language skills. Similarly, Mustonen et al. (2024) reported that frequent parental reading, storytelling, and singing were associated with different aspects of preschool children's language abilities. However, Noble et al. (2019), in a separate meta-analysis, found that the overall effects of shared book reading on children's language skills were relatively small, particularly at follow-up and when compared with active control conditions. Taken together, these findings suggest that parental involvement and home-based language activities are valuable components of children's language development, although their contribution should be considered alongside the quality of early educational experiences.

The relationship between early childhood education and language development becomes more complex in multilingual environments, where children may communicate in their mother tongues at home while encountering additional languages in educational institutions and wider society. Their opportunities to listen, speak, understand instructions, and participate in classroom conversations may be influenced by the languages used in their learning environments. Zheng et al. (2021), in a scoping review of multilingual development in early childhood education, identified interactional, linguistic, and cultural strategies as important approaches for supporting multilingual learners. However, language

opportunities may not always be equally distributed among children from different linguistic backgrounds. Choi et al. (2023), examining preschool classrooms, found that dual-language learners received less adult talk and experienced more periods without adult–child conversations than their English-monolingual peers. These findings highlight the importance of recognizing children's home languages and providing inclusive communication opportunities within early childhood settings.

In Pakistan, access to organized early childhood education and the quality of educational provision vary across geographical and socioeconomic contexts. Yousafzai et al. (2018), through a cluster-randomized controlled trial in rural Pakistan, demonstrated that a youth-led early childhood care and education programme improved children's school-readiness outcomes. Although the study examined broader school readiness rather than language development specifically, it provides evidence of the potential contribution of structured early learning programmes within the Pakistani context. In addition, Rehman et al. (2020) examined the implementation of the National Curriculum for Early Childhood Education in private schools of District Gilgit. Their findings identified challenges related to teaching resources, classroom conditions, teacher practices, and communication with children from different linguistic backgrounds. This regional evidence highlights the importance of examining not only access to ECE but also the quality and linguistic responsiveness of early learning environments.

Gilgit-Baltistan provides a particularly relevant context for examining early language development because of its geographical characteristics and linguistic diversity. Children in the region grow up in communities where languages such as Shina, Balti, Burushaski, Wakhi, and Khowar are spoken, while Urdu and English also have important roles in formal education and wider communication. Consequently, children may encounter differences between the languages spoken within their families and those used in educational settings. Khan and Zaki (2022), in their analysis of Pakistan's language education policy documents, found that English and Urdu occupy prominent positions in educational policy discourse, whereas local languages receive comparatively limited attention. Similarly, Hussain and Gill (2023), examining the changing language ecology of Gilgit-Baltistan, highlighted challenges affecting the continued use and transmission of local languages. The Gilgit-Baltistan Education Strategy (2015–2030) also recognizes the importance of mother-tongue considerations during children's transition into Urdu- and English-medium schooling. These perspectives demonstrate the importance of understanding how early learning environments respond to children's linguistic backgrounds and provide opportunities to develop language skills across different communication contexts.

Against this background, the present study examines parents' perspectives on the relationship between early childhood education and children's language development in Gilgit-Baltistan. Focusing on children aged 3–6 years, the study considers parents' observations of children's vocabulary development, listening and speaking abilities, comprehension, verbal expression, sentence formation, communication, and social interaction. It also examines children's access to ECE/ECD programmes across districts, the role of multilingual home and educational environments, and challenges affecting the availability and quality of early childhood education. By considering these interconnected factors, the study seeks to provide context-specific evidence that may help parents, teachers, educational institutions, and policymakers strengthen early learning opportunities and support children's language development in the region.

Research Gap

Previous research has established the importance of early childhood learning environments, teacher–child interactions, parental linguistic support, and multilingual educational practices in children's

language development (Hansen & Broekhuizen, 2021; Dowdall et al., 2020; Zheng et al., 2021). Studies conducted in Pakistan have also examined the contribution of early childhood care and education programmes to children's school readiness (Yousafzai et al., 2018). Within Gilgit-Baltistan, existing research has addressed the implementation of early childhood education curricula, regional language diversity, and the challenges affecting local languages (Rehman et al., 2020; Hussain & Gill, 2023). However, these investigations have generally examined educational provision, language policy, or individual aspects of child development rather than bringing these factors together to examine parents' perspectives on children's language development in the regional context.

In particular, limited empirical evidence is available concerning how participation in ECE/ECD programmes, the quality of early learning opportunities, and multilingual home and educational environments are perceived to relate to language development among children aged 3–6 years in Gilgit-Baltistan. Furthermore, differences in access to early childhood programmes across districts and challenges affecting their availability and quality require greater contextual attention. The present study addresses this geographical and empirical gap by examining parents' observations of children's language development alongside access to early learning opportunities, multilingual language experiences, and challenges associated with ECE/ECD provision. Through this integrated investigation, the study aims to contribute locally relevant evidence for improving early childhood education practices and supporting children's language development in Gilgit-Baltistan.

Research Objectives

1. To examine the effect of early childhood education on the language development of children in Gilgit-Baltistan.
2. To assess the current level of access to and enrollment in early childhood education/development (ECE/ECD) programs across the districts of Gilgit-Baltistan.
3. To explore how the multilingual environment of Gilgit-Baltistan influences young children's language acquisition within early childhood education settings.
4. To identify the key challenges affecting the provision and quality of early childhood education in Gilgit-Baltistan.
5. To compare the language development of children enrolled in early childhood education (ECE) programmes with those who are not enrolled in ECE programmes in Gilgit-Baltistan.
6. To examine the significant differences in children's language development across different districts and linguistic backgrounds in Gilgit-Baltistan.

Theoretical Framework

The present study is based on Lev Vygotsky’s (1978) Sociocultural Theory, which explains that children's learning and development take place through social interaction, language, and cultural experiences. This theory claims that children's knowledge and language is gained through their interactions with parents, teachers, peers and other individuals in their environment. Vygotsky emphasized that social interaction plays an important role in children's learning because they develop new skills and understanding through communication and guidance from others. This theory provides a suitable foundation for examining the effect of early childhood education on children's language development.

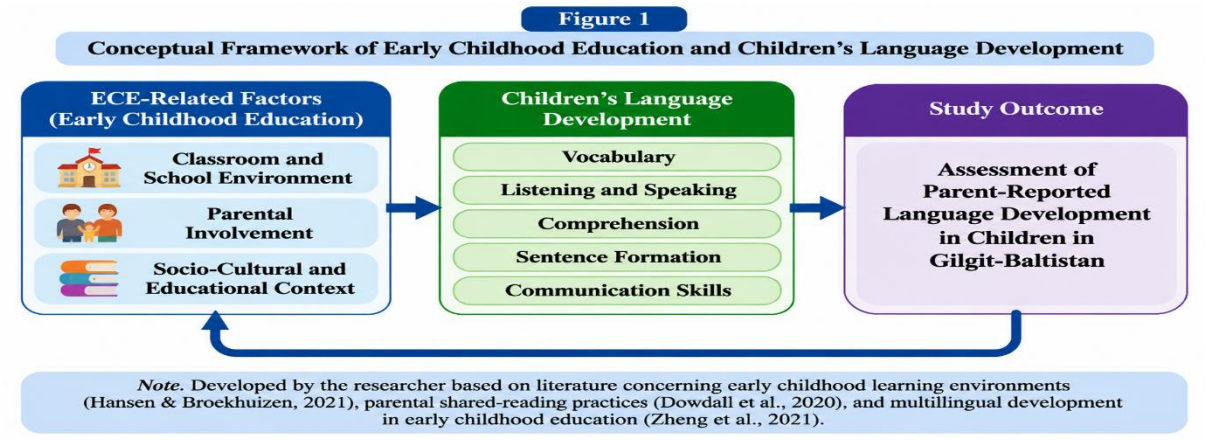
The theory in early childhood education is that children will learn language more effectively if they are engaged in meaningful communication and learning activities. Children can be supported in their

language development through the use of stories, questioning, group talk, songs, classroom activities and interaction with others children. Likewise, parents can help in the progression during everyday conversations, shared reading and Storytime. These social experiences provide children with opportunities to learn new words, improve listening and speaking skills, form sentences, and express their thoughts and feelings.

Vygotsky's Sociocultural Theory is particularly relevant to the present study because Gilgit-Baltistan is a linguistically diverse region where children are exposed to different home languages, including Shina, Balti, Burushaski, Wakhi, and Khowar, along with Urdu and English in educational settings. Therefore, children's language development needs to be understood within their social, cultural, family, and educational environments. Interaction with teachers and peers, parental involvement, and opportunities to use different languages can influence children's language-learning experiences.

In this study, Sociocultural Theory provides the theoretical basis for understanding the relationship between early childhood education and children's language development. It helps explain how classroom interaction, parental support, and the multilingual environment contribute to the development of children's vocabulary, listening comprehension, speaking ability, sentence formation, and communication skills. Therefore, this theory supports the examination of how early childhood education provides social and learning opportunities that may improve children's language development in Gilgit-Baltistan.

Conceptual Framework



The conceptual framework of the present study is informed by research on early childhood learning environments, parental involvement, and multilingual language development (Hansen & Broekhuizen, 2021; Dowdall et al., 2020; Zheng et al., 2021). It illustrates the relationship between Early Childhood Education (ECE) and children's language development through three contextual dimensions: classroom and school environment, parental involvement, and socio-cultural and educational context.

The first dimension, **Classroom and School Environment,** focuses on the quality of early learning experiences, teacher–child interactions, classroom communication, and opportunities for language-based activities. The second dimension, **Parental Involvement,** considers parental support through conversations, shared reading, storytelling, and other home-based language activities. The third dimension, **Socio-Cultural and Educational Context,** addresses children's linguistic backgrounds, mother-tongue experiences, multilingual exposure, and the language practices of educational settings.

Children's language development is examined through five areas: vocabulary, listening and speaking skills, comprehension, sentence formation, and communication skills. These areas provide a basis for understanding children's language abilities within their home and educational environments (Dowdall et al., 2020; Yang et al., 2021).

The framework provides a conceptual basis for examining how ECE-related experiences and contextual factors are perceived to relate to children's language development in Gilgit-Baltistan. It also recognizes the influence of family and socio-cultural environments on children's early language-learning experiences.

Literature Review

Early Childhood Education (ECE) provides children with an important learning environment where they can develop language and communication skills through structured activities and social interaction. The quality of early education plays an important role in children's learning because children need supportive teachers, appropriate learning materials, and regular opportunities to communicate. Markussen-Brown et al. (2017), in a meta-analysis of language- and literacy-focused professional development programmes, found improvements in educators' classroom practices and structural quality, although the effects on children's outcomes varied across different measures. Similarly, Brunsek et al. (2020), in a systematic review and meta-analysis, reported generally small positive associations between early childhood educators' professional development and children's learning outcomes. Their findings highlighted that the benefits were stronger when educational activities were directly related to children's learning needs. These studies suggest that the quality of early childhood education is an important factor in creating effective language-learning opportunities for young children.

Classroom and School Environment

The classroom and school environment provides children with opportunities to develop language through interaction with teachers and other children. Activities such as storytelling, singing rhymes, group discussions, picture reading, and language games encourage children to listen, speak, and learn new words. Koutsoftas et al. (2017), in a study involving 150 preschool teachers, examined different instructional practices and highlighted the importance of classroom climate and teaching approaches in early childhood education. Similarly, Phillips et al. (2018) examined language-support practices in preschool classrooms and found that several strategies, particularly explicit vocabulary instruction, were not frequently used. Their findings highlighted the need to strengthen teachers' language-support practices. Furthermore, Cabell et al. (2019) found that the quality of interactive book reading was positively associated with children's language and literacy development. They also noted that classroom organization was a factor in helping students to develop their vocabulary. These findings indicate that a supportive classroom, appropriate educational materials, and effective teacher–child communication can provide valuable opportunities for children's language development.

Parental Involvement and Children's Language Development

Parents play an important role in children's early language development because the home environment provides regular opportunities for communication and learning. Children's vocabulary and speaking skills can be helped by activities that involve reading books, telling stories, asking questions, introducing new words and talking about what they experience each day. Leech et al. (2018) examined a parent-focused intervention involving parents of four-year-old children and found that the intervention

increased parents' use of conversations about topics beyond immediate daily experiences. These improvements continued during the following weeks. Similarly, Demir-Lira et al. (2019) examined parent–child book-reading interactions and found that early shared reading predicted children's later receptive vocabulary and reading comprehension, even after considering other parental language input and family background. These studies highlight the importance of active parental participation in children's learning. Regular communication at home, shared reading, storytelling, and cooperation between parents and teachers can provide children with additional opportunities to practice and improve their language skills.

Language Development Competencies

Children's language development involves several related abilities, including vocabulary acquisition, listening comprehension, speaking, sentence formation, and effective communication. These skills enable children to communicate their needs, follow instructions, ask questions, describe experiences and communicate with others. Spencer et al. (2020) investigated a multi-level dual-language intervention for preschool students and found that the intervention led to gains on a variety of oral language measures, such as receptive oral language, expressive oral language, and listening comprehension. Their findings demonstrated the importance of planned language activities in supporting different areas of children's communication development. These language competencies are particularly important during early childhood because they provide a foundation for children's participation in classroom activities and everyday communication. Therefore, examining vocabulary, listening and speaking skills, comprehension, sentence formation, and communication ability provides a useful understanding of children's language development.

Socio-Cultural and Educational Context

Family background, social interaction, cultural experience and languages spoken in family and school also affect children's language development. The home and school environments work together to provide children with opportunities to learn and practice different languages. Schmerse et al. (2018), in a longitudinal study of early childhood learning environments, found that the quality of the home learning environment was related to children's grammatical development, while preschool process quality also contributed to early language development. Similarly, Raikes et al. (2019), in a study of 1,961 dual-language learners, found that the use of children's home language alongside English in preschool classrooms supported children's home-language comprehension without reducing their English language growth. Schmerse (2021) also highlighted the importance of classroom peer environments, finding that children learning a second language showed stronger language growth in classrooms where peers had higher language skills. These findings demonstrate that family communication, cultural background, home languages, and interaction with peers are important parts of children's language-learning experiences. This is especially important for Gilgit-Baltistan, where children's formative years are spent in a multilingual world and they may have two languages at home and in educational institutions.

Synthesis of the Reviewed Literature

The reviewed studies demonstrate that children's language development is connected with the quality of early childhood education, classroom and school environment, parental involvement, and socio-cultural and educational experiences. Being engaged with supportive teachers, having meaningful classroom activities, communicating with the family, sharing reading, and having opportunities to socially interact with others can all serve as rich language-learning experiences for children. Previous research also

highlights the importance of vocabulary, listening and speaking, comprehension, sentence formation, and communication skills as important areas of early language development. However, findings from international studies cannot fully explain the experiences of children living in different linguistic and educational settings. Therefore, the present study focuses on these factors within the context of Gilgit-Baltistan by examining parents' observations and perceptions of children's language development and their early learning experiences.

Research Methodology

This study employed a quantitative, descriptive survey research design to examine the effect of Early Childhood Education (ECE) on children's language development in Gilgit-Baltistan. The study focused on parents' observations and perceptions regarding children's language development and their early learning experiences. The target population consisted of parents of children aged 3–6 years in Gilgit-Baltistan. A total of 105 parents were selected using Simple random sampling technique. The research instrument was a structured, self-developed questionnaire based on the relevant literature and research objectives. The questionnaire consisted of five sections. Section A collected demographic information, including gender, age, educational qualification, occupation, residential area, and district. Sections B, C, D, and E covered classroom and school environment, parental involvement, children's language development competencies, and socio-cultural and educational context, respectively. The questionnaire included 27 closed-ended statements measured through a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

The content validity of the questionnaire was examined by an experts from the Department of Educational Development, Karakoram International University and the relevant suggestions were incorporated before finalizing the instrument. The internal consistency reliability of the research was tested using Cronbach's alpha, Overall Questionnaire Cronbach's alpha was .825 for 27 items, which indicating good internal consistency and reliability of the research instrument. For factor wise Cronbach's alpha of .747 is for Classroom and School Environment (6 Items), .787 is for Parental Involvement (7 Items), .781 is for Language Development Competencies (8 Items) and .728 is for Socio-Cultural and Educational Context (6 Items). Participants were informed about the purpose of the study, and their participation was voluntary. The responses collected were sorted out and made ready for statistical analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize demographic information and examine parents' responses. Independent-samples t-tests were applied to examine differences according to gender and residential area, while one-way ANOVA was used to examine differences across respondents' educational qualification groups. Levene's test was used to assess the homogeneity of variances, and Games–Howell post hoc comparisons were applied where appropriate. Statistical significance was considered at the .05 level. Ethical considerations were maintained throughout the research process by ensuring informed consent, voluntary participation, confidentiality of responses, and the use of collected information exclusively for academic purposes.

Results

Table 1: **Demographic Characteristics of Respondents**

Variable	Category	Frequency	Percentage
Gender	Male	22	21.0
	Female	83	79.0

	Total	105	100.0
Age	25–30	61	58.1
	31–35	27	25.7
	36–40	12	11.4
	41–45	5	4.8
	Total	105	100.0
Qualification	1–8	5	4.8
	10th	8	7.6
	FA	29	27.6
	BA/BSc	45	42.9
	MPhil	8	7.6
	Uneducated	10	9.5
	Total	105	100.0
Occupation	Teacher	27	25.7
	Doctor	1	1.0
	Homemaker	22	21.0
	Other	13	12.0
	Uneducated	42	40.0
	Total	105	100.0
Area	Urban	42	40.0
	Rural	63	60.0
	Total	105	100.0
District	Gilgit	45	42.9
	Ghizer	11	10.5
	Hunza	15	14.3
	Nagar	34	32.4
	Total	105	100.0

Table 1 presents the demographic characteristics of the 105 respondents. Most respondents were female (83, 79.0%), while 22 (21.0%) were male. The largest age group was 25–30 years (61, 58.1%), followed by 31–35 years (27, 25.7%). Regarding qualification, 45 respondents (42.9%) had a BA/BSc, while 29 (27.6%) had FA. For occupation, the category recorded as "Uneducated" was the largest (42, 40.0%), followed by teachers (27, 25.7%) and homemakers (22, 21.0%). Most respondents lived in rural areas (63, 60.0%), compared with 42 (40.0%) from urban areas. By district, the largest number of respondents came from Gilgit (45, 42.9%) and Nagar (34, 32.4%), followed by Hunza (15, 14.3%) and Ghizer (11, 10.5%).

Table 2: **Descriptive Statistics for Classroom and School Environment**

Item	**SD n (%)**	**D n (%)**	**N n (%)**	**A n (%)**	**SA n (%)**	**M**	**SD**
The classroom is full of colorful charts, pictures, and storybooks.	1 (1.0%)	5 (4.8%)	16 (15.2%)	67 (63.8%)	16 (15.2%)	3.88	0.76
My child regularly sings rhymes, plays language games, and listens to stories at school.	4 (3.8%)	10 (9.5%)	11 (10.5%)	62 (59.0%)	18 (17.1%)	3.76	0.98
The teacher encourages the children	3	4	20	50	28	3.91	0.93

to speak up and share their own ideas.	(2.9%)	(3.8%)	(19.0%)	(47.6%)	(26.7%)		
Group activities at school give my child a good chance to talk and play with other kids.	2 (1.9%)	5 (4.8%)	15 (14.3%)	63 (60.0%)	20 (19.0%)	3.90	0.83
The toys, flashcards, and tools at school genuinely help my child learn new words.	3 (2.9%)	3 (2.9%)	24 (22.9%)	57 (54.3%)	18 (17.1%)	3.80	0.86
When my child mispronounces a word, the teacher kindly helps them say it right.	3 (2.9%)	8 (7.6%)	13 (12.4%)	53 (50.5%)	28 (26.7%)	3.90	0.98

Table 2 presents respondents' views about the classroom and school environment. The mean scores show generally positive responses across the six statements, ranging from 3.76 to 3.91. The highest mean was recorded for the statement that teachers encourage children to speak up and share their ideas (M = 3.91, SD = 0.93). The lowest mean was reported for children's participation in rhymes, language games, and stories at school (M = 3.76, SD = 0.98). Overall, the responses indicate positive perceptions of classroom activities and teacher support for children's language learning.

Table 3: **Descriptive Statistics for Parental Involvement**

Item	**SD n (%)**	**D n (%)**	**N n (%)**	**A n (%)**	**SA n (%)**	**M**	**SD**
I regularly sit down to read books or tell bedtime stories to my child.	3 (2.9%)	17 (16.2%)	21 (20.0%)	49 (46.7%)	15 (14.3%)	3.53	1.02
Every day, I ask my child about what they did and learned at school.	3 (2.9%)	6 (5.7%)	13 (12.4%)	53 (50.5%)	30 (28.6%)	3.96	0.95
I actively try to teach my child new words during daily routines (like eating or playing).	3 (2.9%)	17 (16.2%)	16 (15.2%)	52 (49.5%)	17 (16.2%)	3.60	1.03
We limit mobile/TV time so our child spends more time talking with the family.	3 (2.9%)	22 (21.0%)	24 (22.9%)	38 (36.2%)	18 (17.1%)	3.44	1.09
I make sure to attend parent-teacher meetings to talk about my child's progress.	4 (3.8%)	6 (5.7%)	12 (11.4%)	57 (54.3%)	26 (24.8%)	3.90	0.97
I try to practice the language games or activities at home that they learned at school.	0 (0.0%)	11 (10.5%)	28 (26.7%)	51 (48.6%)	15 (14.3%)	3.67	0.85
I buy or look for simple educational toys and books to keep at home.	1 (1.0%)	14 (13.3%)	19 (18.1%)	56 (53.3%)	15 (14.3%)	3.67	0.92

Table 3 presents respondents' perceptions of parental involvement in children's language development. The mean scores ranged from 3.44 to 3.96, indicating generally favorable responses. Asking children every day about what they did and learned at school received the highest mean (M = 3.96, SD = 0.95). Limiting mobile or television time to provide more opportunities for family conversation received the lowest mean (M = 3.44, SD = 1.09). The findings suggest that parents reported involvement through

daily conversations, parent–teacher meetings, home language activities, and learning materials.

Table 4: **Descriptive Statistics for Language Development Competencies**

Item	SD n (%)	D n (%)	N n (%)	A n (%)	SA n (%)	M	SD
My child can easily tell me what they need or how they feel using full sentences.	1 (1.0)	7 (6.7)	14 (13.3)	59 (56.2)	24 (22.9)	3.93	0.85
If I give my child two or three directions at once, they understand and follow them.	0 (0.0)	10 (9.5)	17 (16.2)	61 (58.1)	17 (16.2)	3.81	0.82
I have noticed a big jump in the number of words my child knows since they started school.	1 (1.0)	8 (7.6)	17 (16.2)	51 (48.6)	28 (26.7)	3.92	0.91
My child can confidently name everyday things, colors, and animals.	2 (1.9)	4 (3.8)	17 (16.2)	60 (57.7)	21 (20.2)	3.90	0.83
My child speaks correctly without getting confused by basic grammar.	3 (2.9)	11 (10.5)	29 (27.6)	53 (50.5)	9 (8.6)	3.51	0.90
My child is curious and constantly asks questions like “Why?”, “How?”, or “What?”	3 (2.9)	6 (5.7)	11 (10.5)	46 (43.8)	39 (37.1)	4.07	0.98
My child can retell a simple story or talk about a past event in the right order.	1 (1.0)	6 (5.7)	20 (19.0)	61 (58.1)	17 (16.2)	3.83	0.80
My child is not shy and talks comfortably with guests or relatives.	3 (2.9)	9 (8.6)	24 (22.9)	38 (36.2)	31 (29.5)	3.81	1.05

Table 4 presents respondents’ perceptions of children’s language development competencies. The mean scores ranged from 3.51 to 4.07. The highest mean was reported for children’s curiosity and tendency to ask questions such as “Why?”, “How?”, or “What?” (M = 4.07, SD = 0.98). The lowest mean was reported for speaking correctly without confusion in basic grammar (M = 3.51, SD = 0.90). The responses indicate generally positive parental perceptions of children’s vocabulary, comprehension, sentence use, and communication skills.

Table 5: **Descriptive Statistics for Socio-Cultural and Educational Context**

Item	SD n (%)	D n (%)	N n (%)	A n (%)	SA n (%)	M	SD
We love talking with our child at home and often make time to tell them family stories or bedtime stories.	2 (1.9%)	17 (16.2%)	16 (15.2%)	45 (42.9%)	25 (23.8%)	3.70	1.06
I feel that my own education and life experiences help me comfortably guide my child as	3 (2.9%)	8 (7.6%)	17 (16.2%)	54 (51.4%)	23 (21.9%)	3.82	0.96

they learn to speak and express themselves.							
We make sure our child spends plenty of time talking and playing with relatives, neighbors, and friends to help them pick up new words.	3 (2.9%)	14 (13.3%)	17 (16.2%)	55 (52.4%)	16 (15.2%)	3.64	0.99
Our home has fun things that spark language skills, such as colorful pictures, books, educational toys, or drawing materials.	4 (3.8%)	16 (15.2%)	12 (11.4%)	56 (53.3%)	17 (16.2%)	3.63	1.05
When our child watches cartoons or listens to stories on TV or phones, we choose things that fit our family's values and culture.	2 (1.9%)	11 (10.5%)	22 (21.0%)	54 (51.4%)	16 (15.2%)	3.68	0.93
We stay connected with what our child is learning at their ECE center/school and practice the same language habits at home.	3 (2.9%)	2 (1.9%)	12 (11.4%)	68 (64.8%)	19 (18.1%)	4.40	4.76

Table 5 presents respondents' views about the socio-cultural and educational context of children's language development. The mean scores reported in the table ranged from 3.63 to 4.40. The highest mean was recorded for staying connected with children's learning at their ECE centre or school and practising the same language habits at home (M = 4.40, SD = 4.76). The lowest mean in the table was reported for having language-supporting materials at home, such as pictures, books, educational toys, or drawing materials (M = 3.63, SD = 1.05). Overall, respondents reported positive home and family practices related to children's language-learning experiences.

Table 6: Independent-Samples t-Test of Study Variables by Gender

Variable	**Male n; M (SD)**	**Female n; M (SD)**	**t**	**df**	**p**	**MD**	**95% CI (Lower, Upper)**
Language Development Competencies	22; 4.1136 (0.37183)	83; 3.7780 (0.58498)	3.290	51.875	.002	0.33567	0.13094, 0.54039
Classroom School Environment	22; 4.0682 (0.38716)	83; 3.8032 (0.62586)	1.888	103	.062	0.26497	0.01332, 0.54325
Parental Involvement	22; 3.7532 (0.57004)	83; 3.6627 (0.66879)	0.581	103	.562	0.09060	0.21847, 0.39966
Socio-cultural and Educational Context	22; 3.8712 (0.47679)	83; 3.7952 (1.11114)	0.313	103	.755	0.07603	0.40646, 0.55852

Note. M = mean; SD = standard deviation; MD = mean difference; CI = confidence interval.

Table 6 presents the independent-samples t-test results by gender. A statistically significant difference was found for language development competencies, t(51.875) = 3.290, p = .002. Male respondents reported a higher mean score (M = 4.1136, SD = 0.37183) than female respondents (M = 3.7780, SD =

0.58498). No statistically significant gender differences were reported for classroom and school environment (p = .062), parental involvement (p = .562), or socio-cultural and educational context (p = .755). Although male mean scores were higher for these factors, the differences were not statistically significant at the .05 level.

Table 7: Independent-Samples t-Test of Study Variables by Residential Area

Variable	Urban M (SD)	Rural M (SD)	t	df	p	MD	95% CI (Lower, Upper)
Classroom school environment	3.78 (0.58)	3.91 (0.60)	-1.145	103	.255	-0.135	-0.369, 0.099
Parental involvement	3.67 (0.63)	3.69 (0.66)	-0.192	103	.848	-0.025	-0.282, 0.232
Language development competencies	3.74 (0.55)	3.92 (0.56)	-1.607	103	.111	-0.179	-0.399, 0.042
Socio-cultural and educational context	3.67 (0.60)	3.90 (1.20)	-1.132	103	.260	-0.228	-0.626, 0.171

Table 7 compares respondents' scores from urban and rural areas. No statistically significant difference was found for classroom and school environment, t(103) = -1.145, p = .255; parental involvement, t(103) = -0.192, p = .848; language development competencies, t(103) = -1.607, p = .111; or socio-cultural and educational context, t(103) = -1.132, p = .260. Rural respondents reported slightly higher mean scores across all four factors, but none of the differences reached the .05 significance level.

Table 8: **One-Way ANOVA of Study Variables Based on Respondents' Qualification**

Variable	SS Between	SS Within	df Between	df Within	F	p
Classroom–School Environment	3.824	32.664	5	99	2.318	.049
Parental Involvement	7.145	36.498	5	99	3.876	.003
Language Development Competencies	4.559	28.365	5	99	3.182	.010
Socio-Cultural and Educational Context	2.312	103.803	5	99	0.441	.819

Table 8 presents the one-way ANOVA results for differences across respondents' educational qualification groups. Statistically significant differences were found in classroom and school environment, F(5, 99) = 2.318, p = .049; parental involvement, F(5, 99) = 3.876, p = .003; and language development competencies, F(5, 99) = 3.182, p = .010. No statistically significant difference was found for socio-cultural and educational context, F(5, 99) = 0.441, p = .819. Thus, the results indicate qualification-based differences in three of the four study factors.

Table 9: **Test of Homogeneity of Variances (Levene's Test)**

Variable	Levene's Statistic	df1	df2	p
Classroom school environment	2.563	5	99	.032
Parental involvement	0.727	5	99	.605
Language development competencies	1.447	5	99	.214
Socio-cultural and educational context	1.057	5	99	.389

Table 9 presents Levene's test results for the four study variables. The homogeneity of variance assumption was not met for classroom and school environment, $F(5, 99) = 2.563$, $p = .032$. The assumption was met for parental involvement, $F(5, 99) = 0.727$, $p = .605$; language development competencies, $F(5, 99) = 1.447$, $p = .214$; and socio-cultural and educational context, $F(5, 99) = 1.057$, $p = .389$. The table reports unequal variances for classroom and school environment and equal variances for the other three factors.

Table 10: **Games–Howell Post Hoc Comparisons for Classroom and School Environment by Qualification**

(I) Qualification	(J) Qualification	Mean Difference (I–J)	Std. Error	p
1–8	10th	0.28	0.45	.984
1–8	FA	0.16	0.43	.998
1–8	BA/BAc	0.11	0.43	1.000
1–8	Mphil	0.15	0.44	.999
1–8	Uneducated	0.42	0.45	.926
10th	FA	0.12	0.17	.979
10th	BA/BAc	0.39	0.19	.350
10th	Mpil	0.13	0.21	.990
10th	Uneducated	0.70	0.23	.074
FA	BA/BAc	0.27	0.12	.243
FA	Mphil	0.01	0.16	1.000
FA	Uneducated	0.58	0.18	.070
BA/Bac	Mphil	0.26	0.18	.685
BA/Bac	Uneducated	0.31	0.20	.634
MPhil	Uneducated	0.57	0.22	.169

Table 10 presents Games–Howell pairwise comparisons for classroom and school environment across qualification groups. None of the pairwise comparisons was statistically significant at the .05 level (all p values > .05). The largest reported mean differences included the comparison between respondents with 10th-grade education and uneducated respondents (MD = 0.70, p = .074), and between respondents with FA and uneducated respondents (MD = 0.58, p = .070); however, these comparisons were not statistically significant.

Table 11: **Games–Howell Post Hoc Comparisons for Parental Involvement by Qualification**

(I) Qualification	(J) Qualification	Mean Difference (I–J)	Std. Error	p
1–8	10th	-0.93	0.35	.088
1–8	FA	-0.36	0.29	.825
1–8	BA/BAc	-0.50	0.29	.501

1–8	MPhil	-0.39	0.35	.866
1–8	Uneducated	0.20	0.33	.991
10th	FA	0.57	0.24	.186
10th	BA/BAc	0.43	0.23	.450
10th	MPhil	0.54	0.30	.493
10th	Uneducated	1.13	0.29	.002
FA	BA/BAc	-0.14	0.14	.923
FA	MPhil	-0.03	0.24	1.000
FA	Uneducated	0.56	0.22	.130
BA/Bac	MPhil	0.11	0.23	.997
BA/Bac	Uneducated	0.70	0.21	.016
Mphil	Uneducated	0.59	0.29	.318

Table 11 presents the Games–Howell post hoc comparisons for parental involvement. Statistically significant differences were found between respondents with 10th-grade qualifications and uneducated respondents (MD = 1.13, p = .002), and between respondents with BA/BSc qualifications and uneducated respondents (MD = 0.70, p = .016). All other pairwise comparisons were not statistically significant (p > .05).

Table 12: **Games–Howell Post Hoc Comparisons for Language Development Competencies by Qualification**

(I) Qualification	(J) Qualification	Mean Difference (I–J)	Std. Error	p
1–8	10th	-0.54	0.31	.489
1–8	FA	-0.26	0.26	.919
1–8	BA/BAc	0.01	0.25	1.000
1–8	MPhil	-0.43	0.31	.719
1–8	Uneducated	0.20	0.29	.984
10th	FA	0.28	0.21	.771
10th	BA/BAc	0.55	0.21	.092
10th	MPhil	0.11	0.27	.998
10th	Uneducated	0.74	0.25	.049
FA	BA/BAc	0.26	0.13	.309
FA	MPhil	-0.17	0.21	.965
FA	Uneducated	0.46	0.20	.191
BA/Bac	MPhil	-0.44	0.21	.279
BA/Bac	Uneducated	0.19	0.19	.906
Mphil	Uneducated	0.63	0.25	.138

Table 12 presents the Games–Howell post hoc comparisons for language development competencies. A statistically significant difference was found between respondents with 10th-grade qualifications and uneducated respondents (MD = 0.74, p = .049). The remaining pairwise comparisons were not statistically significant (p > .05). This indicates that the qualification-related difference in language development competency scores was concentrated in this specific comparison.

Discussion

The study examined parents' perceptions of children's language development across four factors:

classroom and school environment, parental involvement, language development competencies, and socio-cultural and educational context. Overall responses were positive. These findings represent parental observations, not standardized assessments of children's language or proof that ECE attendance alone caused the reported outcomes.

Classroom and School Environment: Mean scores ranged from 3.76 to 3.91. Teachers encouraging children to speak and share ideas received the highest mean (M = 3.91), while group activities and kind correction of pronunciation each received a mean of 3.90. Rhymes, language games, and storytelling received the lowest mean (M = 3.76). Respondents thus appreciated teacher encouragement and opportunities for communication, while language activities may be needed to be done more regularly. This is consistent with Yang et al. (2021), who found that classroom management and instructional support predicted children's receptive vocabulary. Ha et al. (2025) also identify educator–child interaction as an important part of process quality in early childhood education. These studies underline the value of interactive and language-rich classrooms.

Parental Involvement: Parental involvement scores ranged from 3.44 to 3.96. Asking children about their school day received the highest mean (M = 3.96), followed by attending parent–teacher meetings (M = 3.90). Limiting mobile or television time (M = 3.44) and reading books or telling bedtime stories (M = 3.53) received lower means. This indicates that, while some planned home literacy activities were reported, everyday conversation and school communication were reported more strongly. However, shared reading is still considered important, as Galea et al. (2025) noted the positive association between shared reading at home and children's language and vocabulary, and Dowdall et al. (2020) found that reading picture books can positively influence children's expressive and receptive language. This means that parents' communication with children could be improved by increasing the frequency of them telling stories and reading together.

Language Development Competencies: Mean scores ranged from 3.51 to 4.07. Children's curiosity and tendency to ask questions received the highest mean (M = 4.07), followed by expressing needs and feelings in full sentences (M = 3.93) and vocabulary growth (M = 3.92). Correct use of basic grammar received the lowest mean (M = 3.51). This resulted in parents having a more positive attitude to curiosity and daily communication than to grammatical correctness. ECE activities could provide further opportunities to explain ideas, retell stories, and practice sentence formation. These results are based on parental perceptions, however, and are not standardized language evaluations.

Cultural Background and Social Environment: The highest mean was for staying connected with the child's ECE center or school and practicing similar language habits at home (M = 4.40). A lower mean (M = 3.63) was given to home learning materials which included books, pictures and educational toys. This suggests that home–school continuity was valued, while learning resources may need more attention. In multilingual settings, Zheng et al. (2021) identified translanguaging, interaction-based, linguistic, and culture-based strategies as ways to support children's language development. However, the present results do not compare children by home language and cannot show which language practices produce stronger outcomes in Gilgit-Baltistan.

Differences Across Respondent Groups: A significant difference was found in gender comparison only on language development competencies, which was a higher mean for the male respondents compared to the female respondents ($p = .002$). Differences by gender were not significant for the other factors. These results concern respondents' gender, not children's gender. No statistically significant urban–rural differences were found, although rural mean scores were slightly higher. Educational qualification

showed significant overall differences in classroom environment ($p = .049$), parental involvement ($p = .003$), and language development competencies ($p = .010$), but not in socio-cultural and educational context ($p = .819$). Post hoc tests identified differences in parental involvement between uneducated respondents and those with 10th-grade or BA/BSc qualifications, and in language development competencies between 10th-grade and uneducated respondents. No individual qualification-group comparison was significant for classroom environment. The homogeneity-of-variance assumption was also not met for this factor; therefore, its ANOVA result requires caution.

the findings highlight the importance of supportive classroom interaction, parental communication, home literacy activities, and links between home and school. The reported tables do not provide direct comparisons between ECE-enrolled and non-enrolled children or between districts and home-language groups. The present analyses therefore cannot confirm the independent effect of ECE attendance or differences across districts and language groups.

Conclusion

The present study examined parents' perceptions of the relationship between Early Childhood Education (ECE) and children's language development in Gilgit-Baltistan. Overall, the findings showed positive perceptions across classroom and school environment, parental involvement, language development competencies, and socio-cultural and educational context. Parents particularly reported positive development in children's curiosity, questioning, vocabulary, and ability to express their needs and feelings. However, basic grammar skills and some home-based language-learning activities require further attention. The statistical findings showed significant gender differences only in language development competencies, while no significant differences were found between urban and rural respondents. Educational qualification was associated with significant differences in classroom and school environment, parental involvement, and language development competencies, but not in socio-cultural and educational context. In sum, it is important to point to the role of supportive classroom environments, active parental participation, meaningful communication, and home-school collaboration in supporting children's language development. However, as the study was based on parents' responses, its findings should be interpreted as parental perceptions rather than direct evidence of a causal effect of ECE. Further research using larger samples and direct assessments of children's language skills is recommended to develop a deeper understanding of language development in the diverse educational and linguistic context of Gilgit-Baltistan.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are proposed to improve early childhood education and support children's language development in Gilgit-Baltistan.

For Policymakers and the Department of Education

1. The government should expand early childhood education facilities, particularly in underserved and remote mountainous areas of Gilgit-Baltistan, to improve children's access to early learning opportunities.

2. The pre-primary education system should receive appropriate funding, with clear quality standards and regular monitoring to improve the provision of early childhood education.

3. Early childhood education policies should recognize children's mother tongues and local languages alongside Urdu and English to support language learning in the multilingual context of Gilgit-Baltistan.

For ECE Teachers and Schools

4. Teachers should receive regular training in language-rich teaching practices, including storytelling, rhymes, songs, language games, conversation, and group activities to strengthen children's speaking and communication skills.

5. Teachers should encourage children to express their ideas, ask questions, participate in classroom discussions, and practice correct sentence formation to improve their language development competencies.

6. Schools should provide appropriate learning materials, including storybooks, picture cards, educational toys, and other low-cost teaching aids to create a supportive classroom environment.

7. Children's home languages should be used as supportive learning resources in classrooms rather than being excluded from early language-learning activities.

For Parents and Communities

8. Parents should communicate regularly with their children in their home languages, read books, share family stories, and encourage everyday conversations to strengthen children's vocabulary and communication skills.

9. Parents should maintain regular contact with ECE teachers, attend parent–teacher meetings, and practice language activities at home that children learn at school.

10. Parents and communities should promote awareness of the importance of early childhood education and encourage children's participation in early learning programmes.

11. Parent awareness activities should be accessible to families with different educational backgrounds, particularly to strengthen parental support for children's language development.

For NGOs and Development Partners

12. NGOs and development partners should collaborate with government institutions to support community-based and mobile early childhood education programmes in remote valleys of Gilgit-Baltistan.

13. Support should be provided for teacher development, local-language curriculum development, and the preparation of storybooks in children's mother tongues.

For Future Researchers

14. Future researchers should use larger and more diverse samples from different districts of Gilgit-Baltistan to develop a broader understanding of early childhood education and children's language development.

15. Future studies should combine parents' responses with direct classroom observations and assessments of children's language skills to obtain a clearer understanding of their language development.

16. Longitudinal research should be conducted to examine children's language development over time and understand the longer-term contribution of early childhood education.

17. Further research should explore mother-tongue-based and bilingual early childhood education models within the different linguistic communities of Gilgit-Baltistan.

References

1. Choi, J. Y., Van Pay, C. K., & Beecher, C. C. (2023). Preschool language exposure and use: A comparison study of dual-language learners and English monolingual children. Infant and Child Development, 32(3), e2420. https://doi.org/10.1002/icd.2420
2. Dowdall, N., Melendez-Torres, G. J., Murray, L., Gardner, F., Hartford, L., & Cooper, P. J. (2020). Shared picture book reading interventions for child language development: A systematic review and meta-analysis. Child Development, 91(2), e383–e399. https://doi.org/10.1111/cdev.13225
3. Hansen, J. E., & Broekhuizen, M. L. (2021). Quality of the language-learning environment and vocabulary development in early childhood. Scandinavian Journal of Educational Research, 65(2), 302–317. https://doi.org/10.1080/00313831.2019.1705894
4. Hussain, S., & Gill, A. (2023). From linguicism to language attrition: The changing language ecology of Gilgit-Baltistan. International Journal of Linguistics and Culture, 4(1), 1–18.
5. Khan, M. A., & Zaki, S. (2022). Corpus assisted critical discourse analysis of Pakistan's language education policy documents: What are the existing language ideologies? SAGE Open, 12(3), 1–19. https://doi.org/10.1177/21582440221121805
6. Mustonen, R., Torppa, R., & Stolt, S. (2024). Parental linguistic support in a home environment is associated with language development of preschool-aged children. Acta Paediatrica, 113(8), 1852–1859. https://doi.org/10.1111/apa.17257
7. Noble, C., Sala, G., Peter, M., Lingwood, J., Rowland, C., Gobet, F., & Pine, J. (2019). The impact of shared book reading on children's language skills: A meta-analysis. Educational Research Review, 28, Article 100290. https://doi.org/10.1016/j.edurev.2019.100290
8. West, G., Lervåg, A., Birchenough, J. M. H., Korell, C., Rios Diaz, M., Duta, M., Cripps, D., Gardner, R., Fairhurst, C., & Hulme, C. (2024). Oral language enrichment in preschool improves children's language skills: A cluster randomised controlled trial. Journal of Child Psychology and Psychiatry, 65(8), 1087–1097. https://doi.org/10.1111/jcpp.13947
9. Yang, N., Shi, J., Lu, J., & Huang, Y. (2021). Language development in early childhood: Quality of teacher-child interaction and children's receptive vocabulary competency. Frontiers in Psychology, 12, Article 649680. https://doi.org/10.3389/fpsyg.2021.649680
10. Yousafzai, A. K., Rasheed, M. A., Rizvi, A., Shaheen, F., Ponguta, L. A., & Reyes, C. R. (2018). Effectiveness of a youth-led early childhood care and education programme in rural Pakistan: A cluster-randomised controlled trial. PLOS ONE, 13(12), e0208335. https://doi.org/10.1371/journal.pone.0208335
11. Zheng, Z., Degotardi, S., & Djonov, E. (2021). Supporting multilingual development in early childhood education: A scoping review. International Journal of Educational Research, 110, Article 101894. https://doi.org/10.1016/j.ijer.2021.101894
12. Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes

(M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Harvard University Press.
13. Galea, C., Jones, A., Ko, K., Salins, A., Robidoux, S., Noble, C., & McArthur, G. (2025). Home-based shared book reading and developmental outcomes in young children: A systematic review with meta-analyses. Frontiers in Language Sciences, 4, Article 1540562. https://doi.org/10.3389/flang.2025.1540562
14. Ha, N. T. N., Tham, M., & Hurley, P. (2025). Process quality in early childhood education and care in Australia: A systematic literature review. Early Childhood Education Journal, 53, 2193–2206. https://doi.org/10.1007/s10643-024-01735-4
15. Brunsek, A., Perlman, M., McMullen, E., Falenchuk, O., Fletcher, B., Nocita, G., Kamkar, N., & Shah, P. S. (2020). A meta-analysis and systematic review of the associations between professional development of early childhood educators and children's outcomes. Early Childhood Research Quarterly, 53, 217–248. https://doi.org/10.1016/j.ecresq.2020.03.003
16. Cabell, S. Q., Zucker, T. A., DeCoster, J., Melo, C., Forston, L., & Hamre, B. (2019). Prekindergarten interactive book reading quality and children's language and literacy development: Classroom organization as a moderator. Early Education and Development, 30(1), 1–18. https://doi.org/10.1080/10409289.2018.1514845
17. Demir-Lira, Ö. E., Applebaum, L. R., Goldin-Meadow, S., & Levine, S. C. (2019). Parents' early book reading to children: Relation to children's later language and literacy outcomes controlling for other parent language input. Developmental Science, 22(3), e12764. https://doi.org/10.1111/desc.12764
18. Koutsoftas, A. D., Dubasik, V. L., & DiDonato, A. M. (2017). Preschool teachers' endorsement of instructional practices: An interprofessional exploration. Educational Research, 59(1), 36–53. https://doi.org/10.1080/00131881.2016.1267581
19. Leech, K., Wei, R., Harring, J. R., & Rowe, M. L. (2018). A brief parent-focused intervention to improve preschoolers' conversational skills and school readiness. Developmental Psychology, 54(1), 15–28. https://doi.org/10.1037/dev0000411
20. Markussen-Brown, J., Juhl, C. B., Piasta, S. B., Bleses, D., Højen, A., & Justice, L. M. (2017). The effects of language- and literacy-focused professional development on early educators and children: A best-evidence meta-analysis. Early Childhood Research Quarterly, 38, 97–115. https://doi.org/10.1016/j.ecresq.2016.07.002
21. Phillips, B. M., Zhao, Y., & Weekley, M. J. (2018). Teacher language in the preschool classroom: Initial validation of a classroom environment observation tool. Early Education and Development, 29(3), 379–397. https://doi.org/10.1080/10409289.2017.1408371
22. Raikes, H. H., White, L., Green, S., Burchinal, M., Kainz, K., Horm, D., Bingham, G., Cobo-Lewis, A., St. Clair, L., Greenfield, D., & Esteraich, J. (2019). Use of the home language in preschool classrooms and first- and second-language development among dual-language learners. Early Childhood Research Quarterly, 47, 145–158. https://doi.org/10.1016/j.ecresq.2018.06.012
23. Schmerse, D. (2021). Peer effects on early language development in dual language learners. Child Development, 92(5), 2153–2169. https://doi.org/10.1111/cdev.13588
24. Schmerse, D., Anders, Y., Flöter, M., Wieduwilt, N., Roßbach, H.-G., & Tietze, W. (2018). Differential effects of home and preschool learning environments on early language development. British Educational Research Journal, 44(2), 338–357. https://doi.org/10.1002/berj.3332
25. Spencer, T. D., Moran, M., Thompson, M. S., Petersen, D. B., & Restrepo, M. A. (2020). Early efficacy of multitiered dual-language instruction: Promoting preschoolers' Spanish and English oral language. AERA Open, 6(1), 1–16. https://doi.org/10.1177/2332858419897886

26. Custode, S. A., Bailey, J., Sun, L., Katz, L., Ullery, M., Messinger, D., Bulotsky-Shearer, R. J., & Perry, L. K. (2024). Preschool language environments and social interactions in an early intervention classroom: A pilot study. Journal of Early Intervention, 46(3), 338–355. https://doi.org/10.1177/10538151231176176
27. Stavans, A., & Jessner, U. (Eds.). (2022). The Cambridge handbook of childhood multilingualism. Cambridge University Press. https://doi.org/10.1017/9781108669771