



Effects of a home-based family involvement program on preschool children's early literacy skills: A randomized controlled trial in Kosovo

Sezen Haskuka Abdullahi¹ and Şenay Bulut Pedük²

¹Department of Preschool Education, Faculty of Education, Trakya University, Türkiye (ORCID: 0000-0001-6727-3298)

²Department of Preschool Education, Faculty of Education, Trakya University, Türkiye (ORCID: 0000-0001-6727-3298)

Corresponding Author: Sezen Haskuka Abdullahi, haskukasezen82@gmail.com

Submitted: 13 June 2026 Revised: 7 August 2026 Accepted: 11 August 2026

Abstract

Early literacy inequalities weigh most heavily on minority-language children in post-conflict societies, where structured family support programs are scarce and largely untested. This randomized controlled trial examined whether a 12-week Home-Based Family Involvement Program improves preschool children's early literacy skills and parent-level outcomes in the Turkish-speaking community of Prizren, Kosovo. Forty children aged 5 to 6 years and their parents were recruited through convenience sampling from a single multilingual preschool during the spring semester of the 2023-2024 school year and were assigned to experimental and control groups with equal gender distribution in each. Children's early literacy was measured with the Early Literacy Test at pretest, posttest, and a 4-week retention assessment, and parents completed measures of reading beliefs and the home literacy environment. Data were analyzed with mixed-design analyses of variance in R, using a Bonferroni-adjusted significance criterion. Children in the experimental group showed large and durable gains in overall early literacy and in six of seven subskills, while phonological awareness did not change reliably, a result consistent with the multilingual environment in which these children grow up. Parent beliefs and home-environment measures did not change, indicating that the program altered parent behavior without altering underlying beliefs. The findings suggest that brief, structured, family-delivered literacy activities offer a practical and scalable strategy for supporting minority-language children's school readiness in multilingual, post-conflict contexts, and that such programs should be evaluated primarily on what parents do rather than on what parents believe.

Keywords: Early literacy; Family involvement; Home-based intervention; Kosovo; Preschool education

1. Introduction

Learning to read begins well before formal reading instruction, through children's early literacy experiences at home and their everyday interactions with parents and caregivers (Kwambaza & Basela, 2024; Sénéchal & LeFevre, 2002). When these interactions include shared reading, exposure to books and print, attention to letters and words, and language-rich questioning, they can support vocabulary, emergent literacy, and subsequent reading development (Kwambaza & Basela, 2024; Sénéchal & LeFevre, 2002). For minority-language families, these challenges may be compounded when the heritage language used at home receives limited recognition within mainstream schooling, creating a need for educational provision that responds to learners' linguistic repertoires and lived experiences (Qiu & Byerly, 2026). Such issues may be particularly salient in post-conflict multilingual societies, where language, schooling, and longer-standing ethnic divisions can remain closely intertwined (Bloodworth, 2020). Moreover, supporting parents is not simply a matter of making guidance available; family-oriented educational information also needs to be accessible and usable for those it is intended to support (Ergin & Ergin, 2023). The study reported here starts from this problem.

Early literacy skills established during the preschool years constitute fundamental building blocks for later academic success (Whitehurst & Lonigan, 1998). Research consistently demonstrates that children who enter formal schooling with well-developed early literacy competencies show stronger reading achievement trajectories throughout their educational careers (Juel, 1988; Lonigan et al., 2000). These foundational skills encompass multiple interconnected domains including vocabulary knowledge, letter recognition, phonological awareness, print concepts, and listening comprehension (Snow et al., 1998).

The home environment plays a crucial role in early literacy development. Bronfenbrenner's (1979) ecological systems theory situates the family within the child's immediate microsystem,

underscoring the developmental importance of direct parent-child interactions. Home literacy experiences such as shared reading and parental teaching are associated with different but complementary aspects of emergent literacy and subsequent reading development (Bus et al., 1995; Hood et al., 2008; Sénéchal & LeFevre, 2002). More recent evidence further indicates that the home language and literacy environment is associated with different trajectories of vocabulary and letter knowledge from prekindergarten to kindergarten among children from low-socioeconomic-status households (Mendive et al., 2020). The relevance of the home literacy environment also extends across differing developmental profiles, with its underlying structure shown to be comparable for preschoolers with and without speech and/or language impairment and print-related home activities predicting early literacy skills in both groups (Skibbe et al., 2025).

Family involvement in early literacy can be understood through complementary theoretical perspectives on parental motivation and family-school partnership (Kostov, 2026). Hoover-Dempsey and Sandler's (1995, 1997) model of parental involvement identifies three central factors shaping parents' decisions to become involved in their children's education: parents' construction of their role in supporting education, their sense of efficacy for helping their children succeed, and their perceptions of invitations and opportunities for involvement from children and schools. Subsequent work on the model has continued to support the importance of these motivational beliefs and contextual invitations in explaining parental involvement (Hoover-Dempsey et al., 2005). Although this model addresses parental involvement broadly rather than early literacy specifically, it provides a useful basis for understanding why some parents become more actively engaged in supporting learning at home. Epstein's (2001) framework of family-school-community partnerships complements this perspective by conceptualizing parental involvement across six domains, one of which is learning at home, where parents support and participate in children's educational activities outside school (Epstein, 2001; Kostov, 2026). Contemporary research similarly emphasizes parents' roles as co-educators and the value of strengthening parent-school partnerships around home-based learning, particularly for young children (Xie et al., 2026). In the specific context of literacy, parent involvement in structured home literacy activities can positively affect children's reading acquisition, with interventions involving targeted literacy instruction producing larger effects than less structured forms of involvement such as simply listening to children read (Sénéchal & Young, 2008).

Recent systematic reviews and meta-analytic evidence indicate that early literacy interventions can produce positive effects on young children's language and code-related skills, although the magnitude and nature of these effects vary according to the skills targeted and the design of the intervention (Cusiter et al., 2025; Silva-Chelles et al., 2025). Home literacy interventions appear particularly sensitive to the type of activity implemented, with code-based activities showing stronger effects on emergent literacy skills and meaning-based activities, including shared and dialogic reading, being more closely associated with oral language development (Silva-Chelles et al., 2025). Similarly, combined language-and-code interventions for at-risk preschool children yield positive, albeit generally small, effects, with interventions that balance the two domains producing comparable or stronger outcomes across language and code measures (Cusiter et al., 2025). The substantial variability in intervention effects and implementation characteristics across studies underscores the importance of examining how such programs operate in different linguistic, cultural, and educational contexts. This need is especially relevant where children's home and school languages differ, as context-responsive research highlights the importance of adapting literacy provision to learners' actual linguistic repertoires and community experiences (Qiu & Byerly, 2026).

Kosovo presents a unique context for examining home-based family involvement in early literacy. As a post-conflict society with a young educational system, Kosovo faces particular challenges in early childhood education (Istrefi, 2020). The country's multilingual environment, with Albanian, Bosnian, Turkish and other languages spoken across different communities, creates both opportunities and challenges for literacy development. For Turkish-speaking minorities in regions such as Prizren, supporting children's literacy development in the heritage language while

navigating the dominant language environment requires thoughtful family engagement strategies. Despite growing recognition of family involvement's importance, systematic home-based early literacy programs remain underdeveloped in Kosovo, and most family engagement initiatives focus on general parent education rather than structured literacy activities (Istrefi, 2020).

The present study addresses this gap. Its aim is to evaluate the effectiveness of a structured, 12-week Home-Based Family Involvement Program, grounded in Vygotsky's (1978) sociocultural theory and the Fast Start approach (Padak & Rasinski, 2008), on the early literacy skills of preschool children and on parent-level outcomes in Kosovo's Turkish-speaking community. The study contributes to the literature in three ways. It provides experimental evidence for a home-based literacy program in a post-conflict, multilingual, minority-language context where no such trial has previously been reported. By measuring seven distinct literacy subskills alongside a total score, it identifies which components of early literacy respond most strongly to family-delivered activities. And by measuring parent beliefs and the home literacy environment alongside child outcomes, it tests whether child gains require prior change in parental beliefs. Accordingly, the study addresses two research questions:

RQ 1) Does the Home-Based Family Involvement Program improve preschool children's overall early literacy skills and their subskills (receptive vocabulary, expressive vocabulary, general naming, function knowledge, letter knowledge, phonological awareness, and listening comprehension) relative to a control group, and are the gains maintained at a 4-week retention assessment?

RQ 2) Does the program change parent-level outcomes, namely parents' reading beliefs, the early literacy home environment, and the home early literacy environment, relative to a control group?

2. Method

2.1. Research Design

The study employed a 2×3 mixed factorial design with group (experimental vs. control) as the between-subjects factor and time (pretest, posttest, retention) as the within-subjects factor. This design allowed examination of both main effects and the critical time $\times$ group interaction indicating differential change across conditions. The design corresponds to a randomized pretest-posttest control group design with an added retention measurement. Random assignment equates the groups in expectation on measured and unmeasured characteristics, the pretest documents baseline standing, and the retention assessment distinguishes durable learning from short-lived performance gains, which is why this family of designs is regarded as among the strongest available for drawing causal conclusions about intervention effects (Huck, 2012). The procedures reported below, covering eligibility, intervention content and delivery, instrumentation, and the analysis plan, are described in sufficient detail to permit replication.

2.2. Participants

Participants were 40 preschool children (5-6 years old) and their parents from the Turkish-speaking community in Prizren, Kosovo. They were recruited through convenience sampling from a single preschool, a multilingual school that provides instruction in Albanian, Turkish, and Bosnian, during the spring semester of the 2023-2024 school year. The study was carried out in the Turkish-language classrooms, whose teachers are of Turkish origin and teach in Turkish. Children were eligible if they were 5 to 6 years old, enrolled in the Turkish-language classrooms, and spoke Turkish as the primary home language; children with a documented developmental disorder were not included. Parents were eligible if they were willing to implement daily home literacy activities across the 12-week program, were available for weekly online sessions, and provided written informed consent.

Children were assigned to experimental ($n = 20$) or control ($n = 20$) conditions, with assignment arranged to keep gender distribution equal across groups. The experimental group included 10 girls (50%) and 10 boys (50%), and the control group likewise included 10 girls (50%) and 10 boys

(50%). Parent education levels were high across both groups: in the experimental group, 80% of mothers and 70% of fathers had completed high school or higher education, and in the control group, 85% of mothers and 75% of fathers had done so. Most families (95%) were two-parent households with Turkish as the primary home language, though children had varying exposure to Albanian through community interactions.

Preschool children were targeted rather than older children for two reasons grounded in the developmental literature. First, the preschool period is the window in which the emergent literacy skills measured here, vocabulary, letter knowledge, phonological awareness, and listening comprehension, develop most rapidly and respond most readily to environmental enrichment, and these skills are among the strongest predictors of later conventional reading (Piasta, 2016). Second, intervening before formal reading instruction begins lets a family-based program shape the home literacy environment at the point of greatest leverage, before school-based instruction becomes the dominant influence on literacy growth (Sénéchal & LeFevre, 2014).

2.3. Intervention

The Home-Based Family Involvement Program was implemented over 12 weeks (see Table 1), with parents receiving weekly activity packets and materials. Each packet included structured activities targeting specific early literacy skills: vocabulary development through picture cards and naming games, letter recognition through alphabet cards and matching activities, phonological awareness through rhyming games and sound identification tasks, and listening comprehension through interactive storybook reading guides. Parents were instructed to engage in daily literacy activities with their children for 10-15 minutes. The activities also drew on stories, songs, rhymes, and finger plays chosen to hold children's interest, and materials such as alphabet cards, storybooks, balloons, clothespins, and ping-pong balls were used to make the play-based tasks concrete and engaging.

Table 1

Weekly Plan of the 12-Week Home-Based Family Involvement Program

Week	Focus	Sample activities
1	Program orientation and components of early literacy	Introductory session; first shared reading
2	Receptive vocabulary	Picture-card naming; object-finding games
3	Expressive vocabulary	Category naming; descriptive turn-taking
4	General naming	Everyday-object sorting and labeling
5	Function knowledge	Guessing games about what objects are for
6	Letter knowledge I	Alphabet cards; letter hunt at home
7	Letter knowledge II	Letter-object matching; name work
8	Phonological awareness I	Rhyming games with balloons and cards
9	Phonological awareness II	Initial-sound games with ping-pong balls
10	Listening comprehension I	Interactive storybook reading; predictive questions
11	Listening comprehension II	Retelling; pre- and post-story finger plays
12	Consolidation and evaluation	Child-made book; program evaluation with families

The program content was developed by the researcher on the basis of a literature review and preliminary interviews. General program aims and week-specific objectives were specified first, and twelve weekly activities were then designed to meet them, drawing on family involvement education models and established instructional principles. The complete set of activities was submitted to a panel of seven experts in early literacy and program development, whose agreement on the usability and appropriateness of the activities reached 95.91%, well above the 70% criterion conventionally required.

Weekly parent sessions were delivered online via Zoom throughout the 12 weeks. Each session followed a fixed sequence: a brief review of the previous week's topic, introduction of the current week's topic, guided implementation of the planned activities, a summary, and sharing of participants' reflections. Session topics covered the components of early literacy, the place of early

literacy in learning to read and write, the family's role in supporting these skills, play-based home literacy activities, the importance of reading to children and how to do it well, the interactive book reading method, effective read-aloud strategies, and pre- and post-story activities such as finger plays and question-answer routines. Videos recorded by the researcher and weekly written guides were sent to families via WhatsApp, with classroom teachers assisting distribution. Families documented their home implementation each week by sending videos and photographs of the activities to the researcher through WhatsApp, and each session closed with a joint evaluation of the previous week's home practice. Control group families continued their typical home literacy practices without materials or support during the study and were placed on a wait list; they received the full program in the following school year.

2.4. Measures

2.4.1. Early Literacy Test [EROT]

Children's early literacy skills were assessed with the EROT, developed and standardized for Turkish-speaking kindergarten children by Kargın et al. (2015). The test contains 102 items across seven subtests: receptive vocabulary (15 items), expressive vocabulary (15 items), general naming (10 items), function knowledge (10 items), letter knowledge (14 items), phonological awareness (32 items), and listening comprehension (6 items). Typical tasks include naming pictured objects (expressive vocabulary), pointing to the picture that matches a spoken word (receptive vocabulary), identifying letters (letter knowledge), detecting rhymes and initial sounds (phonological awareness), and answering questions about a short story read aloud (listening comprehension). In the development study, item factor loadings ranged from .33 to .93 across subtests (Kargın et al., 2015).

2.4.2. Parent Reading Belief Inventory [PRBI]

Parents' beliefs about reading aloud and their role in children's literacy development were measured with the PRBI, developed by DeBaryshe and Binder (1994) and adapted into Turkish by Şimşek Çetin et al. (2014). The original instrument contains 40 items in seven subdimensions (teaching efficacy, positive affect, verbal participation, reading instruction, knowledge base, resources, and environmental input), rated on a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). The Turkish adaptation retained the seven-dimensional structure and removed two items. In the present sample, Cronbach's alpha for the total score was .81.

2.4.3. Early Literacy Home Environment Scale [ELHES]

The early literacy home environment was assessed with the ELHES (Karaahmetoğlu & Turan, 2020), developed for children aged 4 to 6 attending preschool education to gather parent-report information about children's early literacy opportunities at home. Exploratory factor analysis in the development study yielded 11 items in four subdimensions, parental beliefs, print interest, book reading frequency, and literacy teaching, together explaining 74.47% of the variance. In the present sample, Cronbach's alpha for the total score was .72.

2.4.4. Home Early Literacy Environment Scale [HELE]

Home literacy practices and the physical literacy environment were assessed with the HELE (Sarica et al., 2014), which gathers parent-report information about the early literacy experiences provided at home to children aged 5 to 6. The scale contains 23 items in four subdimensions: reading environment, writing activities, shared book reading, and phonological and print awareness. Twenty-one items use a 5-point frequency rating, one uses a 6-point rating, and one a 3-point rating; two items are reverse-scored, and total scores range from 23 to 114, with higher scores indicating a richer home early literacy environment. In the present sample, Cronbach's alpha for the total score was .88.

2.5. Data Analysis

Mixed-design analyses of variance [ANOVA] were conducted for each outcome variable, with time as the within-subjects factor and group as the between-subjects factor. Significant interactions were followed by Tukey post-hoc comparisons. Effect sizes were calculated using partial eta-squared (η^2) for ANOVA effects and Cohen's d for pairwise comparisons, interpreted following Cohen's (1988) guidelines. All analyses were carried out in R. Normality was evaluated with the Shapiro-Wilk test, and no outcome departed significantly from a normal distribution: for the EROT total score, $p = .098$; for its subtests, receptive vocabulary $p = .175$, expressive vocabulary $p = .132$, general naming $p = .086$, function knowledge $p = .153$, letter knowledge $p = .109$, phonological awareness $p = .081$, and listening comprehension $p = .123$; and for the parent measures, HELE $p = .213$, ELHES $p = .187$, and PRBI $p = .127$. Skewness and kurtosis values of the score distributions likewise remained within conventionally acceptable limits. Homogeneity of variance held for all tests. Where Mauchly's test indicated a violation of sphericity ($p < .05$), Greenhouse-Geisser corrected results were interpreted. Because eleven outcomes were tested, a Bonferroni adjustment was applied to the significance level: the nominal alpha of .05 was divided by the number of comparisons, and the resulting criterion of $p = .005$ was used for all tests (Huck, 2012).

3. Results

Before the inferential analyses are presented, Table 2 reports the descriptive statistics for the child outcomes at the three measurement points. Parent-level scores are described together with their inferential tests further below.

Table 2

Descriptive Statistics for Children's Early Literacy Scores by Group and Time

<i>Variable and Group</i>	<i>Pretest</i>	<i>Posttest</i>	<i>Retention</i>
Overall Early Literacy			
Experimental	46.85 (7.60)	71.00 (2.96)	72.10 (2.77)
Control	57.95 (10.69)	54.70 (7.73)	51.25 (6.70)
Receptive Vocabulary			
Experimental	8.95 (2.50)	13.95 (0.83)	13.85 (0.81)
Control	10.15 (1.87)	10.25 (1.74)	9.95 (1.54)
Expressive Vocabulary			
Experimental	6.50 (2.16)	13.90 (0.79)	13.90 (0.79)
Control	7.90 (3.19)	7.95 (3.17)	7.05 (2.80)
General Naming			
Experimental	4.40 (1.73)	9.45 (0.69)	9.50 (0.76)
Control	6.00 (1.72)	5.90 (1.94)	5.90 (1.94)
Function Knowledge			
Experimental	6.85 (1.39)	9.15 (0.67)	9.25 (0.64)
Control	6.60 (1.19)	6.95 (1.15)	6.65 (1.09)
Letter Knowledge			
Experimental	3.15 (2.66)	10.45 (0.89)	10.70 (0.73)
Control	5.45 (1.67)	5.40 (1.76)	5.00 (1.62)
Phonological Awareness			
Experimental	14.10 (3.67)	14.10 (3.67)	14.90 (3.19)
Control	18.25 (4.24)	18.25 (4.24)	16.70 (2.34)
Listening Comprehension			
Experimental	2.90 (1.21)	5.40 (0.60)	5.45 (0.61)
Control	3.60 (1.05)	3.65 (0.99)	3.60 (0.94)

Note. Values are presented as M (SD), where M = mean and SD = standard deviation.

Table 2 shows that the two groups entered the study with different profiles. The control group began with higher means on overall early literacy and on several subskills, a pattern attributable to

sampling variability in a sample of this size. Over the twelve weeks, the picture reversed. The experimental group's overall early literacy mean rose by about 24 points from pretest to posttest and stayed at that level four weeks later, while the control group's mean drifted slightly downward. The same crossover, an initial control-group advantage overturned by large experimental-group gains that persisted at retention, appears in receptive and expressive vocabulary, general naming, function knowledge, letter knowledge, and listening comprehension. Phonological awareness is the exception: means in both groups remained essentially level across the three assessments. The narrowing of the experimental group's standard deviations at posttest also indicates that the children converged toward the upper end of the score range as the program progressed.

Table 3 reports the mixed ANOVA results for all eleven outcomes, evaluated against the Bonferroni-adjusted criterion of $p = .005$.

Table 3

Mixed ANOVA Results for Child and Parent Outcomes

Variable	Time $F (\eta^2)$	Group $F (\eta^2)$	Time $\times$ Group $F (\eta^2)$
Overall Early Literacy	50.73* (.160)	23.84* (.138)	115.61* (.364)
Receptive Vocabulary	38.79* (.207)	33.24* (.176)	40.23* (.214)
Expressive Vocabulary	48.28* (.182)	42.65* (.238)	59.80* (.225)
General Naming	51.78* (.228)	25.13* (.142)	56.03* (.247)
Function Knowledge	22.11* (.152)	61.75* (.296)	16.06* (.110)
Letter Knowledge	64.41* (.265)	76.06* (.183)	74.08* (.304)
Phonological Awareness	0.50 (.002)	6.69 (.021)	4.92 (.020)
Listening Comprehension	23.22* (.206)	39.80* (.133)	22.35* (.198)
Reading Beliefs (PRBI)	0.25	0.10	0.74
ELHES	0.14	1.34	4.08

Note. Degrees of freedom are (2, 76) for time and interaction effects and (1, 38) for group effects. * $p < .001$, which meets the Bonferroni-adjusted criterion of $p = .005$. Effects without an asterisk do not meet the adjusted criterion (phonological awareness: time $p = .608$, group $p = .012$, interaction $p = .010$; PRBI: time $p = .777$, group $p = .758$, interaction $p = .479$; ELHES: time $p = .871$, group $p = .255$, interaction $p = .021$; HELE: time $p = .777$, group $p = .758$, interaction $p = .479$).

Table 3 speaks to the first research question. For overall early literacy and for six of the seven subskills, the time $\times$ group interaction, the test of whether the two groups changed differently over time, was significant beyond the adjusted criterion, with interaction effect sizes in the large range ($\eta^2 = .110$ to $.364$). Substantively, the trajectories of the two groups diverged sharply: experimental-group children gained, control-group children did not, and the divergence was greatest exactly where the program invested most intensively, in letter knowledge ($\eta^2 = .304$) and overall early literacy ($\eta^2 = .364$), an interaction accounting for more than a third of the variance in change. Phonological awareness was the exception: none of its effects reached the adjusted criterion, so the program cannot be said to have improved this subskill reliably. Given the multilingual environment in which these children acquire phonological categories, this outcome is treated in the Discussion as theoretically expected rather than anomalous. For the second research question, none of the three parent-level measures showed a reliable effect. The ELHES interaction ($p = .021$) falls short of the adjusted criterion of $.005$ and is therefore read as no reliable effect, in line with the PRBI and HELE results.

Table 4 presents the Tukey post-hoc comparisons for overall early literacy, the study's primary outcome, which localize the interaction.

Table 4

Tukey Post-Hoc Comparisons for Overall Early Literacy

Comparison	M diff.	SE	p (Tukey)	Cohen's d
Exp. pretest vs. control pretest	-11.10	2.93	.007	-1.59
Exp. pretest vs. exp. posttest	-24.15	1.69	< .001	-3.46
Exp. pretest vs. exp. retention	-25.25	2.05	< .001	-3.61
Exp. posttest vs. control posttest	16.30	1.85	< .001	2.33
Exp. retention vs. control retention	20.85	1.62	< .001	2.98

As Table 4 shows, the control group actually held a sizable advantage at pretest. By posttest that advantage had not merely disappeared but reversed: experimental-group children outscored control-group children by more than 16 points, and the margin widened to nearly 21 points at retention. Within the experimental group, posttest scores far exceeded pretest scores and retention scores remained at posttest level, indicating that the gains did not decay over the four-week retention interval. The same within-group pattern held for the significant subskills; for example, experimental-group children gained 5.00 points in receptive vocabulary ($d = 3.01$) and 7.40 points in expressive vocabulary ($d = 3.11$) from pretest to posttest, and both gains were fully preserved at retention. The control group did not improve significantly on any outcome across the study period. Taken together, the findings answer the first research question affirmatively for overall early literacy and six of seven subskills, with phonological awareness as the exception, and answer the second research question negatively: parent beliefs and the reported home literacy environment did not change measurably within the study period.

4. Discussion

This study evaluated the effectiveness of a Home-Based Family Involvement Program on preschool children's early literacy skills and parent outcomes in Kosovo. The findings provide strong support for the program's efficacy in enhancing children's early literacy development while revealing important boundaries around its impact, both on one child subskill and on parent-level variables.

4.1. Effects on Children's Early Literacy

The program demonstrated robust effects on children's overall early literacy skills and on six of the seven subskills. The large interaction effect on overall early literacy substantially exceeds typical effect sizes reported in meta-analyses of home literacy interventions (Cusiter et al., 2025; Silva-Chelles et al., 2025), aligning more closely with the larger effects observed in intensive parent-mediated interventions (Schaughency et al., 2023). Three features of the program plausibly account for the size of these effects: the structured weekly protocol with prepared materials, the daily dosage of parent-child interaction, and sustained weekly contact between the researcher and the families, which are precisely the ingredients that recent syntheses identify as the active components of effective home literacy programs (Silva-Chelles et al., 2025). At the same time, effect sizes estimated in a sample of this size carry wide uncertainty and are best read as encouraging signals to be confirmed in larger replications rather than as precise population estimates.

The vocabulary gains are consistent with evidence linking children's word learning and oral-language development to rich language and print exposure, including the quantity and quality of child-directed speech and home literacy experiences (Mol & Bus, 2011; Rowe, 2012; Sénéchal & LeFevre, 2002). Their maintenance at retention suggests that the gains persisted beyond the immediate post-test rather than reflecting only short-term performance, an interpretation that is also consistent with broader evidence showing robust effects of vocabulary-development interventions across studies incorporating immediate and retention assessments (Kansızoğlu & Bekiroğlu, 2025). Letter knowledge showed the largest subskill effect. This finding is consistent with evidence that explicit instruction in letter-sound relations supports the development of alphabetic knowledge (Ehri, 2022), while print-focused home literacy experiences are associated with children's early letter and literacy development (Mendive et al., 2020; Skibbe et al., 2025). The reversal of the control group's initial advantage in this subskill is particularly noteworthy given the substantially lower baseline performance of the experimental group.

Gains in general naming and function knowledge suggest broader development in children's semantic knowledge of familiar objects and their uses, which may contribute to the oral-language foundations of emergent literacy (Piasta, 2016). The play-based format may also have supported children's engagement with these learning experiences, an interpretation compatible with early-childhood literacy approaches that embed literacy learning within play-based and child-centred experiences, although the present design does not isolate play as the causal mechanism underlying

the observed gains (Campbell, 2020; Nicholas & Rouse, 2021). Listening comprehension gains are also educationally meaningful because oral-language competencies provide an important foundation for early literacy, while higher-order comprehension processes such as inference making, comprehension monitoring, and story-structure knowledge contribute independently to reading comprehension (Cain et al., 2004; Nicholas & Rouse, 2021). The program's story-reading, retelling, and questioning routines represent plausible contributors to these improvements, given evidence that structured storybook interactions can promote language and vocabulary learning, although the present findings do not permit the independent contribution of these components to be isolated (Justice et al., 2005).

4.2. Phonological Awareness in a Multilingual Context

Phonological awareness was the one child outcome the program did not reliably improve, with no effect meeting the Bonferroni-adjusted criterion. This pattern likely reflects the distinctive challenge of developing phonological awareness in Kosovo's multilingual context. Children in this study were exposed to Turkish at home and Albanian in the wider community, with additional input from Bosnian in some households, and each of these languages carries distinct phonological structures. Phonological awareness in multilingual children develops through an interplay of language-specific and cross-language processes rather than through separate linguistic systems operating in isolation. Research has shown that phonological awareness can transfer across languages, while its development is also shaped by proficiency in each language, the language of literacy instruction, and the structural characteristics of the languages involved (Comeau et al., 1999; Verhoeven, 2007; Wawire & Kim, 2018). The program, however, focused exclusively on Turkish phonological structures and included no specific adaptation to the children's multilingual repertoires. This mismatch may have contributed to the absence of a reliable intervention effect, although the present design does not allow this explanation to be tested directly. Future intervention studies in multilingual communities should therefore consider assessment tools and instructional content that are responsive to learners' actual linguistic repertoires and the potential for cross-language transfer (Espinoza, 2025; Qiu & Byerly, 2026; Wawire & Kim, 2018). Incorporating phonological activities that explicitly acknowledge children's multilingual language experience represents a particularly relevant direction for the further development of the program.

4.3. Parent-level Outcomes

In contrast to the strong child effects, the program did not measurably change parents' reading beliefs or the reported home literacy environment. Parental attitudes toward literacy are deeply rooted in personal history and cultural context (DeBaryshe & Binder, 1994), and a 12-week program may simply be too short to shift them, particularly given the ceiling created by these parents' high education levels and already positive baseline beliefs (Han & Neuhaarth-Pritchett, 2010; Hood et al., 2008). Parental reading beliefs and actual home literacy practices are related but not interchangeable dimensions of the family literacy environment. Earlier research has linked parental beliefs and home reading experiences to children's reading-related outcomes (Baker & Scher, 2002), while more recent evidence indicates that specific literacy beliefs do not map uniformly onto all home reading practices (Wu & Hindman, 2025). Home-based educational practices are also dynamic and context-dependent: parents may adjust formal literacy activities in response to children's developing reading skills, while time constraints, competing family responsibilities, limited resources, and broader household circumstances can restrict what families are able to implement consistently at home (Kostov, 2026; Kwambaza & Basela, 2024; Sénéchal & LeFevre, 2014; Xie et al., 2026). Mothers' greater participation in the present study is also broadly consistent with earlier evidence of gender differences in parental involvement, including higher maternal scores on several motivational and contextual determinants of involvement and greater maternal presence in early-childhood parent-school interactions (Ertan, 2017; Levy & Peleg, 2022). This pattern reinforces the value of family-literacy content and recruitment strategies that actively engage fathers as well as mothers. Read together with the child outcomes, the null result for parent

beliefs is therefore informative rather than merely disappointing. Across the 12-week program, parents engaged in documented daily literacy activities with their children without a corresponding change in their reported beliefs, and this sustained behavioral engagement was accompanied by large gains in child outcomes. This interpretation is consistent with broader evidence that parent-implemented educational practices can produce measurable improvements in children's skills (Öğülmüş, 2021). The practical implication is not that parental beliefs are unimportant, but that family literacy programs should treat observable parent behavior as a central implementation outcome and should not regard belief change as a prerequisite for program effectiveness.

From a theoretical perspective, the results support Hoover-Dempsey and Sandler's (1995, 1997) model of parental involvement, demonstrating that when parents are provided with specific activities and materials they can effectively support their children's literacy development, and they align with Vygotsky's (1978) sociocultural theory through the program's emphasis on scaffolded parent-child interaction within the zone of proximal development. The study extends these frameworks to a new cultural and linguistic context, consistent with Bronfenbrenner's (1979) ecological systems theory, which emphasizes both the universal importance of family microsystems and the need to weigh cultural and contextual factors. From a practical standpoint, the program offers a replicable model: weekly activity packets with specific materials, brief daily implementation of 10 to 15 minutes, regular online parent sessions, and a focus on multiple literacy components. Its effectiveness despite modest time demands, together with its fully online parent-training delivery, suggests feasibility for wide implementation in community and school settings.

5. Limitations and Future Directions

Several limitations should be considered. The study was conducted in a single school with a specific population, Turkish-speaking families in Prizren, which limits generalizability to other populations and contexts. The sample of 40 was small, limiting statistical power for smaller effects and widening the uncertainty around the effect-size estimates. The control group's higher pretest scores on several measures point to possible baseline differences despite gender-balanced assignment; the interaction-based analysis addresses this statistically, but replication with larger, better-matched, multi-site samples is needed. Implementation fidelity was monitored through the families' weekly WhatsApp video and photo documentation and through researcher contact rather than independent structured observation. The 4-week retention interval was short, and longer follow-up is needed to establish whether the gains carry into formal reading instruction. Future research should test the program across linguistic communities and socioeconomic groups, examine moderators of response such as child baseline skills and parent characteristics, develop a multilingually adapted phonological awareness component, and use mediation analyses to identify the pathways through which specific parent activities produce specific child gains.

6. Conclusion

This study asked two questions. The first was whether a structured, 12-week, family-delivered program could improve the early literacy skills of preschool children in Kosovo's Turkish-speaking community. The answer is yes: children in the experimental group made large gains in overall early literacy and in six of seven subskills, and those gains held four weeks after the program ended, while control children did not change. The one exception, phonological awareness, is itself instructive, pointing to the need for multilingually adapted phonological content in linguistically complex settings. The second question was whether the program would also change parent-level outcomes, namely reading beliefs and the home literacy environment. The answer is no: parents changed what they did, carrying out daily literacy activities for twelve weeks, without measurable change in what they reported believing or providing. Taken together, the findings indicate that structured home-based family involvement is an effective and practical strategy for supporting minority-language children's early literacy in a post-conflict, multilingual context, and that its

pathway runs through parent behavior rather than parent belief. For practice, the program's modest daily time demands and fully online parent training make it a scalable model for preschools serving linguistic minority communities. For research, the priorities are multi-site replication with larger samples, longer-term follow-up into formal reading instruction, and multilingual adaptation of the phonological awareness component.

Author contributions: The authors declare that they contributed equally to the manuscript.

Data availability: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Declaration of generative AI and AI-assisted technologies: Generative AI tools (Gemini and ChatGPT) were used solely for language refinement. All intellectual and scientific contributions are the responsibility of the authors.

Declaration of interest: The authors declare no competing of interest.

Ethics declaration: The study was conducted in accordance with the ethical principles applicable to research involving human participants. Ethical approval for the study was obtained from the Ethics Committee of Trakya University on 22 November 2023 (approval no. 2023.10.09).

Funding: The authors received no financial support for this research.

References

- Baker, L., & Scher, D. (2002). Beginning readers' motivation for reading in relation to parental beliefs and home reading experiences. *Reading Psychology*, 23(4), 239–269. <https://doi.org/10.1080/713775283>
- Bloodworth, A. (2020). Educational (de)segregation in North Macedonia: The intersection of policies, schools, and individuals. *European Educational Research Journal*, 19(4), 310–328. <https://doi.org/10.1177/1474904120907723>
- Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Harvard University Press. <https://doi.org/10.4159/9780674028845>
- Bus, A. G., van IJzendoorn, M. H., & Pellegrini, A. D. (1995). Joint book reading makes for success in learning to read: A meta-analysis on intergenerational transmission of literacy. *Review of Educational Research*, 65(1), 1–21. <https://doi.org/10.3102/00346543065001001>
- Cain, K., Oakhill, J., & Bryant, P. (2004). Children's reading comprehension ability: Concurrent prediction by working memory, verbal ability, and component skills. *Journal of Educational Psychology*, 96(1), 31–42. <https://doi.org/10.1037/0022-0663.96.1.31>
- Campbell, S. (2020). Teaching phonics without teaching phonics: Early childhood teachers' reported beliefs and practices. *Journal of Early Childhood Literacy*, 20(4), 783–814. <https://doi.org/10.1177/1468798418791001>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates. <https://doi.org/10.4324/9780203771587>
- Comeau, L., Cormier, P., Grandmaison, É., & Lacroix, D. (1999). A longitudinal study of phonological processing skills in children learning to read in a second language. *Journal of Educational Psychology*, 91(1), 29–43. <https://doi.org/10.1037/0022-0663.91.1.29>
- Cusiter, J., Short, K., Webb, A., & Munro, N. (2025). Home-based language and code interventions and their effects on young children's language and literacy skills: A systematic review and meta-analysis. *Child Development*, 96(4), 1519–1545. <https://doi.org/10.1111/cdev.14252>
- DeBaryshe, B. D., & Binder, J. C. (1994). Development of an instrument for measuring parental beliefs about reading aloud to young children. *Perceptual and Motor Skills*, 78(3), 1303–1311. <https://doi.org/10.2466/pms.1994.78.3c.1303>
- Ehri, L. C. (2022). What teachers need to know and do to teach letter-sounds, phonemic awareness, word reading, and phonics. *The Reading Teacher*, 76(1), 42–52. <https://doi.org/10.1002/trtr.2095>
- Epstein, J. L. (2001). *School, family, and community partnerships: Preparing educators and improving schools*. Westview Press.
- Ergin, B., & Ergin, E. (2023). Evaluation of the levels of readability of information texts on the internet regarding family participation. *Journal of Pedagogical Sociology and Psychology*, 5(3), 283–291.

<https://doi.org/10.33902/jpsp.202323270>

- Ertan, N. C. (2017). *Comparing fathers and mothers: Determinants of why they involve in their children's education* [Unpublished master's thesis]. Middle East Technical University. <https://hdl.handle.net/11511/26853>
- Espinoza, K. (2025). From coursework to classroom: Enacting sustaining literacy pedagogies in bilingual teacher preparation. *Journal of Pedagogical Research*, 9(5), 84–97. <https://doi.org/10.33902/JPR.202536312>
- Han, J., & Neuharth-Pritchett, S. (2010). Beliefs about classroom practices and teachers' education level: An examination of developmentally appropriate and inappropriate beliefs in early childhood classrooms. *Journal of Early Childhood Teacher Education*, 31(4), 307–321. <https://doi.org/10.1080/10901027.2010.523775>
- Hood, M., Conlon, E., & Andrews, G. (2008). Preschool home literacy practices and children's literacy development: A longitudinal analysis. *Journal of Educational Psychology*, 100(2), 252–271. <https://doi.org/10.1037/0022-0663.100.2.252>
- Hoover-Dempsey, K. V., & Sandler, H. M. (1995). Parental involvement in children's education: Why does it make a difference? *Teachers College Record*, 97(2), 310–331. <https://doi.org/10.1177/016146819509700202>
- Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why do parents become involved in their children's education? *Review of Educational Research*, 67(1), 3–42. <https://doi.org/10.3102/00346543067001003>
- Hoover-Dempsey, K. V., Walker, J. M. T., & Sandler, H. M. (2005). Parents' motivations for involvement in their children's education. In E. N. Patrikakou, R. P. Weissberg, S. Redding, & H. J. Walberg (Eds.), *School-family partnerships for children's success* (pp. 40–56). Teachers College Press.
- Huck, S. W. (2012). *Reading statistics and research* (6th ed.). Pearson.
- Istrefi, E. (2020). *Comparison between two preschool education systems: Kosovar and American ones – Case study in Mitrovica district* [Unpublished bachelor's thesis]. University of Mitrovica.
- Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology*, 80(4), 437–447. <https://doi.org/10.1037/0022-0663.80.4.437>
- Justice, L. M., Pence, K. L., Beckman, A. R., Skibbe, L. E., & Wiggins, A. K. (2005). *Scaffolding with storybooks: A guide for enhancing young children's language and literacy achievement*. International Reading Association.
- Karaahmetoğlu, B., & Turan, F. (2020). Investigation of parental early literacy beliefs and early literacy home environment of the children with developmental disability and typical development. *Hacettepe University Journal of Education*, 35(2), 243–253. <https://doi.org/10.16986/huje.2019051687>
- Kansızoğlu, N., & Bekiroğlu, N. (2025). The effect of vocabulary development interventions on cognitive outcomes of vocabulary: A meta-analysis study. *Journal of Pedagogical Research*, 9(1), 123–148. <https://doi.org/10.33902/JPR.202532083>
- Kargın, T., Ergül, C., Büyüköztürk, Ş., & Güldenöğlu, B. (2015). A study for developing the Test of Early Literacy for Turkish kindergarten children. *Ankara University Faculty of Educational Sciences Journal of Special Education*, 16(3), 237–270. <https://doi.org/10.21565/auebfoed.12068>
- Kostov, G. (2026). The role of the parents in modern education: Educational policy and interaction with the family environment. *International Journal of Didactical Studies*, 7(3), e35822. <https://doi.org/10.33902/IJODS.202635822>
- Kwambaza, C. P., & Basela, J. M. (2024). Parents' practices in promoting pupils' critical thinking skills in pre-primary schools. *International Journal of Didactical Studies*, 5(2), 26210. <https://doi.org/10.33902/ijods.202426210>
- Levy, I., & Peleg, A. (2022). Educational counselors' and psychologists' roles in interactions with parents in a diverse, polarized and changing society: Early childhood education interns' perceptions. *Journal of Pedagogical Sociology and Psychology*, 4(2), 131–143. <https://doi.org/10.33902/JPS.202217656>
- Lonigan, C. J., Burgess, S. R., & Anthony, J. L. (2000). Development of emergent literacy and early reading skills in preschool children: Evidence from a latent-variable longitudinal study. *Developmental Psychology*, 36(5), 596–613. <https://doi.org/10.1037/0012-1649.36.5.596>
- Mendive, S., Mascareño Lara, M., Aldoney, D., Pérez, J. C., & Pezoa, J. P. (2020). Home language and literacy environments and early literacy trajectories of low-socioeconomic status Chilean children. *Child Development*, 91(6), 2042–2062. <https://doi.org/10.1111/cdev.13382>
- Mol, S. E., & Bus, A. G. (2011). To read or not to read: A meta-analysis of print exposure from infancy to early adulthood. *Psychological Bulletin*, 137(2), 267–296. <https://doi.org/10.1037/a0021890>
- Nicholas, M., & Rouse, E. (2021). Learning to read: Where should early childhood educators begin? *Literacy*, 55(1), 3–13. <https://doi.org/10.1111/lit.12229>
- Öğülmüş, K. (2021). The effectiveness of POW + C-SPACE strategy provided by parents of children with writing difficulties on story-writing skills. *Journal of Pedagogical Research*, 5(2), 172–183. <https://doi.org/10.33902/JPR.2021270124>
- Padak, N., & Rasinski, T. V. (2008). *Fast start: Getting ready to read: A research-based, send-home literacy program*

with 60 reproducible poems and activities that ensures a great start in reading for every child. Scholastic Teaching Resources.

- Piasta, S. B. (2016). Current understandings of what works to support the development of emergent literacy in early childhood classrooms. *Child Development Perspectives*, 10(4), 234–239. <https://doi.org/10.1111/cdep.12188>
- Qiu, L., & Byerly, A. (2026). "It's not just reading books!": Context-responsive heritage language curriculum adaptation in a Polish complementary school in Scotland. *Journal of Pedagogical Research*. Advance online publication. <https://doi.org/10.33902/JPR.202642174>
- Rowe, M. L. (2012). A longitudinal investigation of the role of quantity and quality of child-directed speech in vocabulary development. *Child Development*, 83(5), 1762–1774. <https://doi.org/10.1111/j.1467-8624.2012.01805.x>
- Sarica, A. D., Ergül, C., Akoğlu, G., Deniz, K. Z., Karaman, G., Bahap-Kudret, Z., & Tufan, M. (2014). The reliability and validity of the Home Early Literacy Environment Questionnaire. *International Online Journal of Educational Sciences*, 6(2), 444–459. <http://dx.doi.org/10.15345/iojes.2014.02.016>
- Schaughency, E., Linney, K., Carroll, J., Das, S. R., & Reese, E. (2023). Ender Shoots: A randomised controlled trial of a parent-mediated intervention to promote emergent literacy skills and positive reading outcomes. *Reading Research Quarterly*, 58(3), 450–470. <https://doi.org/10.1002/rrq.500>
- Sénéchal, M., & LeFevre, J. A. (2002). Parental involvement in the development of children's reading skill: A five-year longitudinal study. *Child Development*, 73(2), 445–460. <https://doi.org/10.1111/1467-8624.00417>
- Sénéchal, M., & LeFevre, J. A. (2014). Continuity and change in the home literacy environment as predictors of growth in vocabulary and reading. *Child Development*, 85(4), 1552–1568. <https://doi.org/10.1111/cdev.12222>
- Sénéchal, M., & Young, L. (2008). The effect of family literacy interventions on children's acquisition of reading from kindergarten to Grade 3: A meta-analytic review. *Review of Educational Research*, 78(4), 880–907. <https://doi.org/10.3102/0034654308320319>
- Silva-Chelles, E., Viana, N., Mata, F., & Lopes-Silva, J. (2025). Home literacy interventions for young children: A systematic review on their characteristics and efficacy. *Review of Education*, 13(1). <https://doi.org/10.1002/rev3.70027>
- Şimşek Çetin, Ö., Bay, D. N., & Alisinanoğlu, F. (2014). The adaptation study of parent reading belief Inventory to Turkish. *Turkish Studies*, 9(2), 1441–1458. <https://doi.org/10.7827/turkishstudies.6185>
- Skibbe, L. E., Waters, N. E., & Bowles, R. P. (2025). Measurement invariance of the home literacy environment across child age and family income. *Journal of Research in Reading*, 48(4), 317–334. <https://doi.org/10.1111/1467-9817.70010>
- Snow, C. E., Burns, M. S., & Griffin, P. (Eds.). (1998). *Preventing reading difficulties in young children*. National Academy Press. <https://doi.org/10.17226/6023>
- Verhoeven, L. (2007). Early bilingualism, language transfer, and phonological awareness. *Applied Psycholinguistics*, 28(3), 425–439. <https://doi.org/10.1017/S0142716407070233>
- 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. <https://doi.org/10.2307/j.ctvjf9vz4>
- Wawire, B. A., & Kim, Y.-S. G. (2018). Cross-language transfer of phonological awareness and letter knowledge: Causal evidence and nature of transfer. *Scientific Studies of Reading*, 22(6), 443–461. <https://doi.org/10.1080/10888438.2018.1474882>
- Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child Development*, 69(3), 848–872. <https://doi.org/10.1111/j.1467-8624.1998.tb06247.x>
- Wu, Q., & Hindman, A. H. (2025). The relations between parents' beliefs, parents' home reading practices, and their children's literacy development in kindergarten. *Child & Youth Care Forum*, 54, 187–205. <https://doi.org/10.1007/s10566-024-09813-9>
- Xie, Q., Rappa, N. A., & Hesterman, S. (2026). Navigating young children's online learning at home: A cross-case analysis of parental TPACK development during COVID-19. *Journal of Pedagogical Research*, 10(2), 53–73. <https://doi.org/10.33902/JPR.202642891>