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# Supporting Preschool Pre-Reading Development through Illustrated Flashcards and Chain Word Play: A Quasi-Experimental Study in Indonesian Kindergartens

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Chain word play, Illustrated flashcards, Pre-reading skills, Emergent literacy, Kindergarten.

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## Abstract

Pre-reading development plays an important role in children's early literacy formation, yet questions remain over how different instructional routes support this process in preschool settings. Although visual media and language-based play are both widely used in early childhood classrooms, comparative evidence on their relative contribution to early literacy remains limited, particularly in everyday kindergarten contexts. This study examined the effects of illustrated flashcards and chain word play on the pre-reading skills of children aged 5 to 6 years and compared their relative performance under classroom conditions. A quantitative quasi-experimental design was employed using a non-equivalent group pretest-posttest structure. The participants were 60 kindergarten children from two early childhood education institutions in Yogyakarta, Indonesia, with 30 children in each intervention group. Pre-reading skills were assessed through an observation-based and performance-based instrument covering letter recognition, initial sound identification, word recognition, and simple word reading. Data were analysed using paired-sample and independent-sample t-tests after normality and homogeneity assumptions were satisfied. Both interventions were associated with statistically significant gains in children's pre-reading scores. However, the posttest comparison showed a significant difference between groups, with the illustrated flashcard group achieving stronger end-point performance. These findings suggest that visual-symbolic support may offer a more immediate advantage for early pre-reading development, while chain word play remains valuable for strengthening the oral and phonological foundations of literacy. The study contributes comparative evidence to current discussions on emergent literacy by showing that different instructional forms may not produce the same pattern of gain, even when both are pedagogically worthwhile.

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## Introduction

Early childhood is not simply an early segment of schooling. It is a period in which cognitive, linguistic, social, emotional, moral, and motor development unfolds rapidly and in mutual relation, making educational experience especially consequential for later learning trajectories (Piaget, 1964). For that reason, early childhood education is expected to provide structured yet developmentally appropriate stimulation that corresponds to children's readiness, modes of participation, and ways of making sense of the world (Bredenkamp & Copple, 1997; Widiastuti, 2022). In Indonesia, this orientation is also visible in the Regulation of the Minister of Education and Culture No. 137 of 2014, which places language among the core developmental domains to be fostered from the early years. This emphasis is well founded, because language mediates children's capacity to communicate, organise experience, engage with others, and encounter

the symbolic forms on which later academic learning depends (Baptista et al., 2018; Justice & Kaderavek, 2004).

The importance of language in early childhood has been widely established, not only in relation to school readiness but also in relation to children's broader social and emotional adjustment (Azzahroh et al., 2021; Pertiwi et al., 2025). Yet the existence of consensus on its importance has not produced equal clarity about how language should be cultivated in preschool classrooms. Young children do not learn effectively through abstract explanation, repetitive drill, or literacy routines detached from meaningful activity. Their learning depends on interaction, play, and concrete encounters with materials that allow language to be experienced as action and meaning rather than as verbal demand alone (Maronta et al., 2023; Piaget, 1964). This tension becomes more visible in pre-reading instruction. At this stage, children are beginning to recognise letters, notice sounds, identify familiar words, and connect print with meaning. These are not minor preparatory achievements. They constitute the basis of emergent literacy and mark children's first movement from oral language toward symbolic reading (Pratiwi et al., 2021; Whitehurst & Lonigan, 1998). What is at stake, therefore, is not only whether children are introduced to literacy, but how that introduction shapes the earliest formation of symbol-sound association and their disposition toward reading activity (Isna, 2019; Madyawati, 2016).

In many early childhood settings, this formative stage is still approached through instructional patterns that sit uneasily with children's developmental characteristics. Pre-reading activities are often organised through monotonous repetition, worksheet completion, or teacher-led explanation that leaves limited room for participation, experimentation, and responsive interaction. Such practices are difficult to reconcile with the needs of children in the pre-operational period, whose learning relies on concrete representation, active involvement, and meaning-making rather than abstract verbal delivery in isolation (Piaget, 1948; Santrock, 2014). Similar concerns have also been raised in broader early literacy scholarship, where instructional arrangements that are poorly aligned with children's developmental needs have been shown to constrain rather than strengthen literacy growth (Justice et al., 2019). The issue, then, is not simply the presence of early literacy instruction, but the pedagogical form through which literacy is made available to children.

This is precisely where instructional media and activity design become analytically important. In early childhood classrooms, media do not merely support delivery. They mediate attention, shape children's entry into symbolic systems, and influence whether literacy is encountered as a meaningful activity or as a decontextualised demand. Work in early childhood pedagogy has long suggested that abstract content becomes more accessible when it is presented through concrete, engaging, and manipulable forms, yet classroom practice does not always mobilise this insight consistently (Sugiono & Kuntjojo, 2019; Zaini & Dewi, 2017). Illustrated word cards are one relevant example because they combine written words with visual representation in ways that can stabilise early symbol recognition and support children's first encounters with print. Existing studies indicate that such media can strengthen letter recognition, word familiarity, and early reading performance by helping children connect written forms with meaningful images (Septianingsih & Safitri, 2023; Rokhiah et al., 2022). This pedagogical logic is also consistent with Bruner's account of enactive, iconic, and symbolic representation, in which learning is strengthened when children move across layered forms of representation rather than confronting symbols in isolation (Bruner, 1966).

Recent international research has given this argument greater empirical weight. Visual and multimodal supports have been shown to strengthen alphabetic knowledge, print awareness, and early decoding, especially when verbal information is paired with meaningful visual cues rather than presented as isolated print exposure (Elimelech & Aram, 2020; Liu et al., 2024). A meta-analysis of computer-supported early literacy interventions reported similar tendencies, showing that multimodal designs can positively influence phonological awareness and related literacy skills when they are instructionally purposeful rather than technologically

ornamental (Verhoeven et al., 2020). Yet visual-symbolic support is not the only route through which emergent literacy develops. Language-based play remains central because it engages children in sound awareness, word generation, verbal exchange, and collaborative meaning-making. Chain word games, for instance, require children to retrieve, extend, and connect words through attention to initial sounds, thereby strengthening phonological awareness and vocabulary use within playful interaction. This aligns with evidence showing that chain word play can enhance language competence through sound-based rehearsal and cognitively engaging talk (Suruambo et al., 2024), while structured phonemic activities and guided play have likewise been found to improve phonological awareness, vocabulary, and children's active involvement in literacy learning (Goldstein et al., 2017; Toub et al., 2018).

What remains less settled is how these two pedagogical routes relate when they are examined side by side. Research has often discussed visual-symbolic scaffolding and phonological play as separate intervention traditions, even though both respond to the same underlying problem of how young children are introduced to literacy. One route privileges image, print, and multimodal representation as supports for early decoding. The other privileges oral interaction, sound manipulation, and playful verbal exchange as supports for phonological sensitivity. Both are plausible, and both are supported by prior work, but they do not necessarily activate the same processes with the same force. That distinction matters because teachers do not choose between theories in the abstract; they choose between activities that carry different assumptions about how early literacy grows. Comparative evidence remains limited, particularly in preschool contexts where these strategies operate as everyday classroom options rather than as isolated research treatments. In Indonesian kindergarten settings, the issue is even more pressing because literacy instruction is expected to remain developmentally appropriate, yet classroom practice is still often shaped by routine delivery, limited media variation, and uneven pedagogical experimentation.

This study addresses that problem by examining the effects of illustrated flashcards and chain word play on the pre-reading skills of children aged 5 to 6 years and by comparing their relative effectiveness in kindergarten learning contexts. The significance of this comparison is not exhausted by its practical value, although practical guidance for teachers is certainly needed. More importantly, it allows the study to clarify whether early pre-reading development is more strongly supported by visual-symbolic mapping, by phonological interaction, or by the different learning mechanisms that each route makes available to children. By bringing cognitive-developmental insight, multimodal learning, and play-based language pedagogy into a single comparative frame, this study seeks to contribute a sharper account of how early reading readiness can be fostered through forms of instruction that are concrete, engaging, and developmentally responsive.

## Methods

### Research Design

This study employed a Systematic Literature Review (SLR) guided by the PRISMA 2020 statement to ensure procedural transparency and a traceable study-selection process. The review was designed to synthesize a heterogeneous body of literature addressing gamification, disaster mitigation, and early childhood learning. Because the included studies varied in design, scope, and evidentiary orientation, the review did not pursue meta-analysis. Instead, it adopted a narrative synthesis informed by thematic analysis in order to identify recurrent pedagogical patterns, conceptual convergences, and contextual gaps across the corpus.

### Search Strategy and Information Sources

This study adopted a quantitative approach using a quasi-experimental non-equivalent group pretest-posttest design. Two intact kindergarten groups received different instructional treatments, and both groups were assessed before and after the intervention. The design followed the structure  $O_1-X_1-O_2$  and  $O_3-X_2-O_4$ , in which O refers to pretest and posttest observation and X refers to the instructional treatment (Rogers & Révész, 2019). The first group

received instruction through illustrated flashcards, whereas the second group participated in chain word play activities. This design was selected because the study was conducted in natural classroom settings where random assignment was not feasible and where withholding literacy support from young children would have raised practical and pedagogical concerns. Rather than claiming full experimental control, the design was used to compare two developmentally appropriate instructional approaches under ordinary kindergarten conditions.

Because the groups were drawn from two existing kindergarten settings, the study relied on comparability procedures to reduce major threats to internal validity. The participating schools were selected from the same geographical area and shared similar curriculum implementation, socio-cultural background, and general classroom organisation. Both interventions were implemented over the same time span, with comparable instructional duration, session frequency, and classroom scheduling. The same assessment instrument and scoring procedures were used in both groups. These controls were intended to reduce variation associated with duration, instrumentation, and routine classroom timing, although the design still required cautious interpretation because intact groups may retain contextual differences that cannot be eliminated fully.

### **Research Sample**

The participants were 60 children enrolled in Group B, aged 5 to 6 years, from two kindergartens in Yogyakarta, namely TK ABA Karangkajen and TK Aisyiyah Nyai Ahmad Dahlan. The institutions were selected purposively because they were located in the same urban area and showed comparable characteristics in terms of curriculum use, student composition, and classroom level. Thirty children participated in each intervention group. The sample included boys and girls from socio-economic backgrounds broadly representative of urban early childhood education settings. Children in this age range were selected because the period immediately before entry into primary school is particularly important for strengthening language development, symbol recognition, and early pre-reading competence.

The use of intact groups was based on existing classroom organisation rather than individual random assignment. One kindergarten group received the illustrated flashcard intervention and the other received the chain word play intervention. This arrangement was chosen to preserve classroom continuity, minimise disruption to regular teaching routines, and prevent treatment contamination across groups. The consequence of this design is that instructional effects must be interpreted as group-based comparisons rather than as evidence of fully randomised causal separation.

### **Research Instruments**

Children's pre-reading skills were measured using a pre-reading assessment instrument developed from commonly used early literacy indicators in early childhood education. The instrument focused on four areas of performance: letter recognition, initial sound identification, word recognition, and simple word reading. These indicators were used to capture children's early movement from oral language toward print awareness and symbol-sound mapping. The assessment was administered through structured observation and performance-based tasks designed to remain developmentally appropriate for young children.

Each child's responses were scored using the instrument rubric, and the resulting item scores were combined into composite pretest and posttest scores for statistical analysis. Before the main study, the instrument underwent expert review by two specialists in early childhood education and one specialist in language development. The review focused on content relevance, clarity of task instruction, and developmental appropriateness. Revisions were made to refine item wording, task presentation, and alignment between indicators and observable performance. Instrument reliability was examined through a pilot administration involving children with characteristics comparable to those of the study participants. The reliability analysis using Cronbach's alpha indicated acceptable internal consistency above the

conventional threshold of 0.70, supporting the instrument's use for group comparison in this study.

### **Intervention Procedures**

The interventions were conducted during regular classroom learning sessions over six weeks, with two sessions per week, resulting in twelve sessions in total. Each session lasted approximately 30 to 40 minutes, in line with the duration of structured learning activities commonly implemented in kindergarten classrooms. The researcher coordinated the intervention schedule with classroom teachers so that both groups received instruction under comparable classroom conditions and within similar daily routines.

In the illustrated flashcard group, children engaged with cards displaying pictures accompanied by corresponding written words. Activities included identifying letters, matching pictures with words, recognising familiar printed forms, and participating in guided reading games designed to strengthen visual association between image, symbol, and word. In the chain word play group, children participated in structured language games that required them to generate words based on the initial sound of a previously stated word. These activities were intended to stimulate phonological awareness, vocabulary recall, verbal participation, and sound-based connection-making. The researcher worked closely with classroom teachers to maintain consistency in implementation, sequence, and instructional emphasis across the intervention period.

### **Control of Confounding Variables**

Several steps were taken to reduce the influence of confounding variables. First, both groups consisted of children in the same age range and were drawn from kindergartens operating within a comparable curricular and socio-cultural environment. Second, the dosage of the intervention was held constant across groups in terms of number of sessions, duration of sessions, and overall intervention period. Third, teachers received procedural guidance so that the activities were delivered in line with the study design rather than being modified substantially during implementation. Fourth, both groups were assessed using the same instrument and scoring procedure.

Pretest administration also served an important diagnostic role by establishing children's initial pre-reading profile before the intervention. Because the design did not involve random allocation, the findings were interpreted with attention to baseline condition, group comparability, and the possibility that classroom context could still influence outcomes. For this reason, the study treated the results as evidence of comparative instructional performance within intact educational settings rather than as proof of unrestricted causal control.

### **Ethical Considerations**

The study was conducted in accordance with ethical principles for research involving young children and received prior permission from the participating schools and the relevant educational authorities. Parents or legal guardians were informed about the aims of the study, the learning activities, the assessment procedures, and the voluntary nature of participation before data collection began. Written informed consent was obtained before children were included in the study, and all intervention activities were integrated into regular classroom routines without exposing participants to harmful, high-pressure, or developmentally inappropriate procedures. Particular attention was given to children's comfort, safety, and dignity throughout the research process, and participation took place in forms appropriate to the classroom setting. No identifying personal information was reported in the dataset or manuscript, and all scores were processed in anonymised form and presented only at group level to protect confidentiality.

### **Data Analysis**

Data were analysed using SPSS version 25. The dataset consisted of pretest and posttest scores for both intervention groups. The analysis was designed to answer two related questions:

whether children’s pre-reading performance improved after each intervention and whether the two instructional approaches differed in post-intervention outcome. Prior to hypothesis testing, the assumptions for parametric analysis were examined. Normality of score distribution was assessed using the Shapiro-Wilk test because the number of participants in each group was below 100. Homogeneity of variance was examined through Levene’s test.

After the assumptions were satisfied, the analysis proceeded in three stages. First, paired-sample t-tests were used to examine changes between pretest and posttest scores within the illustrated flashcard group and within the chain word play group. These tests were used to determine whether each intervention was associated with a statistically significant improvement in children’s pre-reading performance. Second, an independent-sample t-test was used to compare posttest scores between the two groups in order to determine whether one instructional approach yielded higher end-point performance than the other. Given the non-equivalent nature of the groups, the between-group comparison was interpreted cautiously and in relation to the comparable intervention structure and pretest-based initial profile. Statistical significance was set at 0.05 for all analyses.

## Result

The statistical findings are reported in the same order as the analytical procedures outlined in the Methods section. The section begins with the assumption tests used to justify parametric analysis, then moves to the hypothesis tests addressing score changes within each intervention group and posttest differences between groups. Each table is introduced in relation to the specific analysis it reports so that the numerical output remains tied to the logic of the results rather than appearing as a detached SPSS extract.

### Normality Test

Normality was examined first to determine whether the pretest and posttest scores in both groups were distributed normally. Because each group consisted of 30 participants, the Shapiro-Wilk test was used. All significance values exceeded 0.05, indicating that the pretest and posttest distributions in both experimental groups met the normality assumption. This allowed the analysis to proceed with parametric tests. The detailed values are presented in Table 1.

Table 1. Shapiro-Wilk Normality Test Results

Tests of Normality				
	Class	Shapiro-Wilk		
		Statistic	df	Sig.
Result	Pre Eks 1	0.978	30	0.167
	Post Eks 1	0.968	30	0.075
	Pre Eks 2	0.95	30	0.774
	Post Eks 2	0.937	30	0.489

Table 1 shows that every significance value remained above the 0.05 criterion. On that basis, the pretest and posttest scores for both groups were treated as normally distributed.

### Homogeneity Test

After normality had been established, homogeneity of variance was tested to determine whether the score distributions across groups were sufficiently comparable for further parametric analysis. Levene’s test was used for this purpose. Across all reported variants of the test, the significance values remained above 0.05, indicating that the variance was homogeneous. The results are shown in Table 2.

Table 2. Levene's Test of Homogeneity of Variance

Test of Homogeneity of Variance				
		df1	df2	Sig.
Result	Based on Mean	1.286	3	0.283
	Based on Median	1.223	3	0.304
	Based on Median and With adjusted df	1.223	3	0.305
	Based on trimmed Mean	1.259	3	0.292

As reported in Table 2, none of the significance values fell below the 0.05 threshold. The dataset was therefore retained for parametric hypothesis testing.

### Hypothesis Testing

With the assumptions satisfied, hypothesis testing was carried out to examine changes in pre-reading performance within each group and to compare posttest outcomes between the two instructional conditions. Three hypotheses were tested in line with the analytical plan. The first two addressed pretest-posttest change within each group, while the third examined whether posttest scores differed significantly across groups.

#### Hypothesis 1:

Illustrated word cards significantly improved children's pre-reading skills. The paired-sample t-test produced  $t(29) = 9.069$ , with  $p < .001$ , indicating a statistically significant difference between pretest and posttest scores in the illustrated flashcard group. Table 3 presents the numerical summary of this test.

Table 3. Result Hypothesis 1

t-value	t-table	df	p	Description
9.069	2.04	29	0.000	t-value > t-table = Significant

The values in Table 3 confirm a statistically significant pretest-posttest change in the illustrated flashcard group.

#### Hypothesis 2:

Chain word play also led to a significant improvement in children's pre-reading skills. The paired-sample t-test yielded  $t(29) = 7.619$ , with  $p < .001$ , showing a statistically significant difference between pretest and posttest scores in the chain word play group. The corresponding summary appears in Table 4.

Table 4. Result Hypothesis 2

t-value	t-table	df	p	Description
7.619	2.04	29	0.000	t-value > t-table = Significant

Table 4 likewise indicates a statistically significant change from pretest to posttest in the chain word play group.

#### Hypothesis 3:

An independent-sample t-test was used to compare posttest scores between the two experimental groups. The analysis produced  $t(58) = 4.627$ , with  $p < .001$ , indicating a statistically significant difference in posttest performance between the two instructional groups. The numerical summary is given in Table 5.

Table 5. Result Hypothesis 3

t-value	t-table	df	p	Description
4.627	2.002	58	0	t-value > t-table = Significant

As shown in Table 5, the posttest comparison between the two groups reached statistical significance.

Taken together, the results indicate that both instructional approaches were

associated with significant improvements in pre-reading scores, and that the posttest comparison between groups also showed a statistically significant difference.

## Discussion

The results show that both interventions were associated with significant gains in children's pre-reading scores, but the pattern of improvement was not identical across groups. The stronger posttest performance in the illustrated flashcard group suggests that, at this stage of literacy development, children may benefit more immediately from instructional support that makes the relation between image, print, and meaning more explicit. This does not reduce chain word play to a secondary strategy. Rather, it indicates that the two approaches may support different entry points into early literacy, with one working more directly through visual-symbolic mapping and the other through phonological and oral engagement. Read in this way, the findings speak less to a simple contest between media and more to the different mechanisms through which pre-reading abilities begin to form.

### Visual Scaffolding and Early Decoding Development

The stronger result associated with illustrated flashcards can be understood in relation to the demands of early decoding. For children aged five to six, printed words still carry a high degree of abstraction, and literacy tasks become more manageable when symbols are anchored to concrete visual referents. Paivio's account of dual coding remains relevant here because it explains why verbal information paired with images may be processed and retrieved more efficiently than verbal information presented alone (Paivio, 1986). A similar logic appears in Bruner's discussion of enactive, iconic, and symbolic representation, where learning becomes more stable when children move through layered forms of representation rather than encountering written symbols in isolation (Bruner, 1966). The present findings are in line with studies showing that visual and multimodal supports can strengthen alphabetic knowledge, early decoding, and print awareness when they are embedded in meaningful activity rather than treated as passive display (Elimelech & Aram, 2020; Liu et al., 2024; Taylor & Leung, 2020). They also resonate with broader evidence that digital and multimodal literacy tools can produce positive effects on early literacy-related outcomes, although the magnitude and durability of those gains remain sensitive to instructional design and implementation quality (Amorim et al., 2020; Kim et al., 2021; Thomas et al., 2025; Verhoeven et al., 2020).

### Language Interaction and Phonological Awareness in Chain Word Play

Even so, the significance of chain word play should not be understated. Its contribution appears less tied to immediate visual recognition and more closely related to the oral and phonological foundations of literacy. In that sense, the result is compatible with Vygotsky's view that higher mental functions develop through socially mediated activity, especially when children participate in shared tasks that extend what they can do with the support of others (Vygotsky, 1978). Chain word play places children in precisely that kind of situation: they must listen, retrieve, anticipate, and respond within a sequence that depends on collective language use. Marie Clay's work on emergent literacy is also helpful here because it reminds us that early reading does not begin only when children decode print accurately, but when they start building control over the systems of language and print through repeated, meaningful encounters (Clay, 1991). The present finding that chain word play also produced significant gains is therefore not surprising. It sits comfortably alongside studies showing that phonological activities, guided play, and language-rich interaction can strengthen early literacy foundations, including sound awareness, vocabulary growth, verbal fluency, and engagement with literacy tasks (Bennett et al., 2023; Cavanaugh et al., 2017; Derby, 2023; Goldstein et al., 2017; Toub et al., 2018).

### Positioning the Findings in the Wider Early Literacy Debate

What the comparison makes visible is not only that one intervention outperformed the other at

posttest, but that early literacy instruction may need to be understood as development along at least two related pathways. One pathway foregrounds visual-symbolic access, helping children notice, stabilise, and recognise relations between printed forms and meaning. The other foregrounds oral-phonological work, helping children become more attentive to sound, sequence, and verbal patterning. The present study suggests that, within the limited time frame of this intervention, visual scaffolding offered a more immediate advantage for the measured outcomes. That conclusion, however, should not be overstated. The design relied on intact groups rather than random assignment, and each treatment was implemented in a different kindergarten context. For that reason, the findings are better read as evidence of comparative instructional performance under ordinary classroom conditions than as a definitive causal hierarchy between methods.

### Research Contribution, Limitations, and Future Research

The contribution of this study lies in that narrower but still useful clarification. Much of the early literacy literature supports visual aids, phonological activities, guided play, and digital tools, yet these strands are often discussed separately. By placing illustrated flashcards and chain word play in direct comparison, the study shows that different pedagogical routes may not produce the same pattern of gain, even when both are educationally worthwhile. This matters for classroom practice because teachers often work with limited time, limited materials, and uneven pedagogical support. In such settings, choosing or sequencing instructional strategies becomes consequential. The present findings suggest that visual supports may be especially effective when the immediate aim is to strengthen children's first engagement with print, while language-based games remain important for sustaining the phonological and interactive dimensions of emergent literacy.

The study also has clear limitations, and these need to remain visible in the interpretation. The sample was relatively small and confined to two kindergarten settings within one urban area. The intervention period was short, and the design did not include random assignment or a true control group. Most importantly, because each intervention was attached to a different intact group, some portion of the observed difference may reflect classroom or school context rather than instructional treatment alone. These limitations do not erase the value of the findings, but they do set firm boundaries around the claims that can be made.

Future research would benefit from testing these instructional routes across a longer time span, with larger samples and more robust group allocation procedures. It would also be useful to examine whether the apparent advantage of visual scaffolding remains stable over time or whether phonological play shows stronger delayed effects as children move further into conventional reading. Comparative work involving paper-based, game-based, and digital formats would also help clarify whether the decisive factor lies in the medium itself or in the type of cognitive and social support it enables. Such work would place early literacy research in a stronger position to explain not only whether a strategy works, but how, for whom, and under what classroom conditions.

### Conclusion

This study shows that both illustrated flashcards and chain word play were associated with significant improvement in children's pre-reading skills, although the pattern of gain was not the same across the two interventions. Within the scope of this study, illustrated flashcards appeared to provide a stronger immediate advantage for the assessed outcomes, suggesting that visual-symbolic support may be especially helpful when children are beginning to connect print, image, and meaning. At the same time, the positive result obtained through chain word play indicates that early literacy development cannot be reduced to visual recognition alone, since oral interaction and phonological engagement also remain central to how children enter literacy. The comparison therefore points less to a single best method than to the need to recognise that different instructional forms may support different dimensions of pre-reading development. In that sense, early literacy instruction in kindergarten is better understood as a

matter of pedagogical fit than as a simple choice between competing activities.

These conclusions should, however, be read within the limits of the study design. Because the intervention was conducted in intact classroom groups over a relatively short period, the findings do not justify broad causal claims or a definitive hierarchy between methods. What they do offer is a more grounded basis for thinking about how young children may respond differently to visual-symbolic scaffolding and to phonological play in ordinary classroom settings. This has relevance beyond the immediate case, since debates in early literacy education continue to revolve around the balance between direct support for print recognition and richer forms of language-based interaction. By showing that both routes are educationally valuable, while also suggesting that they may not yield the same pattern of outcome, this study contributes a modest but useful clarification to ongoing discussion on how early reading readiness can be fostered in developmentally appropriate ways.

### **Declarations**

#### **Author Contribution Statement**

Rizqy Aisyah Leonia: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Writing – original draft, Project administration, Correspondence. Nurul Khotimah: Methodology, Validation, Supervision, Writing – review & editing. Budi Rachman: Validation, Resources, Supervision, Writing – review & editing. Muhammad Naufal Fairuzillah: Investigation, Data curation, Visualization, Writing – review & editing.

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#### **Data Availability Statement**

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

#### **Declaration of Interests Statement**

The authors declare no competing interests.

#### **Additional Information**

No additional information is available for this paper.

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