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The Role of Kinesthetic Movements in Jolly Phonics Instruction: Supporting Letter Sound Awareness among Toddlers

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Abstract. This study investigated the role of kinesthetic movements in supporting letter-sound awareness among toddlers aged 2 years at a child care center in Canggu, Bali. A qualitative descriptive design was employed to examine how movement-based phonics instruction facilitated early literacy development. Data were collected through classroom observations, field notes, and a Likert-scale observation checklist during eight instructional sessions involving 15 children. The analysis focused on four indicators: imitating the kinesthetic gesture, producing the letter sound, responding to a heard letter sound, and identifying the corresponding letter. The study was guided by the principles of structured teacher support and multimodal learning, which emphasize integrating verbal and physical experiences in early learning. Data were analyzed using an interactive qualitative approach involving data reduction, data display, and conclusion drawing. The findings revealed a gradual improvement in children's recognition of the five-target letter sounds across the instructional sessions. Letter sounds accompanied by more distinctive movements were acquired more quickly than those accompanied by less noticeable movements. The results suggested that kinesthetic movements effectively supported letter-sound awareness and contributed to early literacy development among toddlers.

Keywords: Jolly Phonics; Kinesthetic Movements; Letter-Sound Awareness; Multisensory Learning; Toddlers.

1. INTRODUCTION

Early childhood is a critical period for language development because children begin to recognize sounds, words, and linguistic patterns that form the foundation of later literacy skills (Anthony & Francis, 2005; Snow et al., 1998). During this stage, children develop essential pre-literacy abilities that support their future success in reading and writing. Letter sound awareness plays a crucial role in literacy acquisition because it helps children understand the relationship between spoken sounds and written symbols (Ehri, 2020). In addition, alphabet knowledge, including the ability to recognize letter names and sounds, provides an important foundation for the development of decoding and word recognition skills (Piasta & Wagner, 2010). Research has consistently shown that children who develop strong letter-sound awareness in the early years tend to become more proficient readers and writers, while those who struggle with sound-symbol recognition often face persistent literacy difficulties (Lonigan & Shanahan, 2008; Storch & Whitehurst, 2002). Given its significance, supporting letter sound awareness during the earliest years of childhood has become a key priority in early childhood education, leading educators and researchers to explore instructional methods that are both developmentally responsive and cognitively engaging.

One instructional approach that is widely used to support early literacy development is phonics instruction. Phonics is a method that teaches the relationship between letters and their corresponding sounds, enabling children to decode and produce words more effectively (Ehri,

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2020). One of the various phonics programs available, Jolly phonics stands out for its multisensory design, which integrates letter-sounds with stories, song, and kinesthetic hand gestures in each teaching session (Lloyd, 1998). This approach actively engages children through visual, auditory, and physical channels simultaneously, making it particularly well-suited for very young leaners. A growing body of research confirms the effectiveness of phonics-based instruction for early leaners. Ayuningtyas et al. (2025) found that phonics instruction improved children's beginning reading abilities, while Indriani et al. (2025) reported that phonics contributed to the development of early literacy skills among preschool children. Similarly, Juan Rubio (2025) found that the implementation of Jolly Phonics enhanced children's phonological awareness, and Nafgerin & Bakar (2023) reported improvements in reading and writing skills among preschool learners through the use of Jolly Phonics.

In addition to phonics instruction, recent research has highlighted the importance of multisensory learning in early literacy education. Multisensory learning involves the integration of multiple sensory channels, such as visual, auditory, tactile, and kinesthetic experiences, to facilitate children's learning processes. Research has suggested that children learn more effectively when information is presented through multiple sensory pathways because it increases opportunities for encoding and retrieval of new knowledge (Paivio, 1990). Solichah & Fardana (2024) found that kinesthetic activities were among the most effective components in multisensory early literacy programs, supporting children in encodingand retaining letter-sound information. Likewise, Ngura et al. (2025) found that phonics-based learning activities supported children's ability to recognize letters and connect sounds with written symbols. These findings suggest that physical involvement and active participation may play an important role in helping children understand and remember language sounds. Active bodily involvement has also been associated with stronger memory retention and deeper cognitive processing during early childhood learning activities (Clark & Paivio, 1991). However, despite the growing body of research on phonics instruction and multisensory learning, limited studies have specifically examined the role of kinesthetic movements within Jolly Phonics instruction for toddlers aged 2 years.

Most previous studies have focused on preschool or kindergarten children and have primarily investigated reading, writing, or general phonological awareness outcomes. Little attention has been given to younger learners who are at the earliest stage of language and literacy development. Furthermore, the specific contribution of kinesthetic movements in supporting letter-sound awareness remains underexplored. This gap indicates the need for research that investigates how kinesthetic movements function within Jolly Phonics instruction

for toddlers. Therefore, this study aims to examine the role of kinesthetic movements in Jolly Phonics instruction in supporting letter-sound awareness among toddlers aged 2 years. The findings are expected to contribute to the understanding of early literacy instruction and provide insights for educators who work with very young language learners.

2. THEORETICAL FRAMEWORK

This study draws on two theoretical frameworks to analyze how kinesthetic movements in Jolly Phonics instruction support letter sound awareness among toddlers aged 2 years. The first framework is Vygotsky's Scaffolding Theory (1978), which explained that children's learning and development are most effectively supported through guided social interaction within the Zone of Proximal Development (ZPD). The ZPD refers to the gap between what a child can accomplish independently and what they can achieve with the assistance of a more knowledgeable individual, such as a teacher or caregiver. Within this zone, the teacher provides temporary and structured support, referred to as scaffolding, which enables the child to perform tasks beyond their current independent capacity. This support is gradually reduced as the child internalizes the skill and becomes more capable of performing it independently. In the context of Jolly Phonics instruction, scaffolding operates through the teacher's structured guidance across three learning modalities simultaneously. The teacher models the letter sound through a song, presents the letter image as a visual cue, and demonstrates the corresponding hand gesture as a kinesthetic cue, before inviting the child to imitate and eventually internalize each association. This guided process is particularly essential for toddlers aged 2 years, who depend heavily on adult-mediated, concrete, and movement-based experiences to construct early knowledge, since they have not yet developed the capacity to engage with letter-sound concepts in an abstract or self-directed manner.

The second framework is Paivio's Dual Coding Theory (1991), which provided a cognitive explanation for why the simultaneous combination of auditory and kinesthetic input in Jolly Phonics instruction is effective for letter sound encoding in young children. Dual Coding Theory proposed that the human cognitive system processes information through two distinct but interconnected systems: the verbal system, which handles spoken and written language, and the non-verbal system, which processes imagery, including visual, spatial, and sensorimotor representations. When both systems are activated simultaneously, the referential connections between verbal and non-verbal representations are strengthened, producing a more robust and durable memory trace. In the Jolly Phonics instructional sequence, the letter sound activates the verbal system through auditory processing, while the kinesthetic hand gesture

activates the non-verbal system through bodily movement and motor memory. When both channels are engaged together in each session, children's ability to retain and retrieve the letter sound-movement association is strengthened more effectively than when only one channel is used. These two theoretical frameworks therefore work in a complementary manner: Vygotsky's theory explained the social and instructional mechanism through which toddlers are guided toward letter sound awareness, while Paivio's theory explained the cognitive mechanism through which kinesthetic movement strengthens letter sound memory encoding.

Several researchers have examined the effectiveness of Jolly Phonics instruction in early literacy development. Nafgerin & Bakar (2023) investigated the use of the Jolly Phonics method in improving English reading and writing skills among preschool students and found that the multisensory approach of Jolly Phonics, which combined auditory, visual, and kinesthetic experiences, significantly contributed to children's ability to recognize and produce letter sounds. Similarly, Juan Rubio (2025) reported that the implementation of Jolly Phonics enhanced children's phonological awareness by helping them identify and produce English sounds more accurately. These findings suggested that structured phonics instruction supported by physical movement created more meaningful and memorable learning experiences for young children.

Research has also highlighted the importance of multisensory learning in supporting early literacy development. Solichah & Fardana (2024), in a scoping review of empirical studies on multisensory early literacy programs, identified kinesthetic activities as one of the key components that effectively supported early literacy development in children. Their findings affirmed that movement-based learning was not merely a motivational strategy but a cognitively meaningful pathway through which children encoded and retained letter-sound information. Likewise, Ngura et al. (2025) found that phonics-based learning activities supported children's ability to recognize letters and connect sounds with written symbols, particularly when learning was carried out through active and physical engagement.

Further evidence was provided by Indriani et al. (2025) and Ayuningtyas et al. (2025), who reported that systematic phonics instruction positively influenced children's early literacy skills by strengthening the relationship between letters and their corresponding sounds. These findings reinforced the role of structured and repeated phonics activities in building letter-sound awareness from an early age. Taken together, these prior studies supported the theoretical position of the present research, namely that kinesthetic movement within Jolly Phonics instruction serves as both a pedagogical scaffold and a dual-channel encoding

mechanism that actively supports the development of letter-sound awareness among toddlers aged 2 years.

3. RESEARCH METHOD

A qualitative descriptive design was employed in this study to examine the role of kinesthetic movements in Jolly Phonics Group 5 instruction in supporting letter-sound awareness among toddlers aged 2 years. A qualitative approach was selected because the study was intended to observe and describe children's learning responses within their natural classroom setting rather than to measure outcomes through numerical testing (Creswell & Creswell, 2015; Merriam & Tisdell, 2016). The research was carried out at a Child Care Center in Canggu, Bali, over a period of more than one month and across eight instructional sessions. The participants were 15 toddlers aged 2 years who were actively enrolled in the Jolly Phonics program at the institution. The participants were selected through purposive sampling because specific criteria relevant to the research objectives were met, namely active participation in Jolly Phonics Group 5 instruction and being at an early stage of letter-sound development (Etikan, 2016). The class teacher who conducted the Jolly Phonics sessions was also included in the observational context because teacher scaffolding practices were considered central to the focus of the study.

Data were collected through direct classroom observation and field notes, which are commonly used techniques in qualitative educational research to capture naturally occurring behaviors and interactions (Merriam & Tisdell, 2016). Observations were guided by a Likert-scale observation checklist that was administered at three measurement points: Session 1, Session 4, and Session 8. Four indicators of letter-sound awareness development were assessed: the ability to imitate the kinesthetic gesture demonstrated by the teacher, the ability to produce the letter sound verbally, the ability to respond correctly when a letter sound was heard, and the ability to identify the correct letter on the board corresponding to the gesture and sound. These indicators were designed to capture both verbal and non-verbal dimensions of letter-sound encoding, consistent with the dual-channel learning framework applied in this study. A five-point Likert scale ranging from 1 (Never, 0–20% response rate) to 5 (Always, 81–100% response rate) was used to enable structured and systematic documentation of each child's progress across sessions.

The data were analyzed using the interactive model developed by Miles et al. (2014), which consisted of three stages: data condensation, data display, and conclusion drawing. During the data condensation stage, observational data obtained from field notes and checklists

were selected, categorized, and organized according to their relevance to the research focus. During the data display stage, the data were presented in descriptive tables and narrative summaries to facilitate the interpretation of patterns in children's letter-sound responses across sessions. During the conclusion-drawing stage, the findings were interpreted in relation to the theoretical perspectives underlying the study to explain the role of kinesthetic movement in supporting the development of letter-sound awareness. To enhance the credibility of the findings, data triangulation was conducted by comparing information obtained from observation checklists and field notes.

It is important to clarify the methodological position of the numerical data presented in this study. Although this study employs a qualitative descriptive design, the Likert-scale scores and positive response percentages reported in the findings serve exclusively as descriptive supporting data. Their function is to provide a structured and systematic representation of children's observable behavioral responses across the eight instructional sessions, thereby facilitating clearer description and interpretation of the progression patterns identified through qualitative observation. These numerical representations do not constitute quantitative statistical analysis, nor are they used for inferential or hypothesis-testing purposes. The percentage figures and Likert mean scores are therefore best understood as a descriptive device that complements and organizes the qualitative observational data, consistent with the conventions of qualitative descriptive research in which numerical tools may be employed to enhance the clarity and transparency of data presentation without altering the fundamentally interpretive and non-statistical nature of the analytical framework (Creswell & Creswell, 2015; Miles et al., 2014)

4. RESULT AND DISCUSSION

This study was carried out at an early childhood education institution in Canggu, Bali, over a period of more than one month. The research subjects consisted of 15 children aged 2 years who participated in Jolly Phonics Group 5 learning activities in the classroom. Learning activities were carried out routinely using a gradual approach, where each session began with a thematic song followed by kinesthetic movements representing each letter sound. The teacher then demonstrated a specific movement, and the children were asked to identify the letter sound that corresponded to the movement by selecting the letter available on the board. Data were collected through direct observation during the learning process.

Table 1 presents a brief profile of the research subject based on age and initial ability to recognize phoneme sounds before the intervention is carried out.

Linkert Scale

To systematically measure the development of letter sound awareness across sessions, a five-point Likert scale observation checklist was employed. The Likert scale was selected because it enables the structured quantification of behavioral responses that are inherently gradual in nature, which is appropriate for tracking the incremental progress of toddler learners across multiple instructional sessions. This instrument is aligned with the scaffolding framework of (Vygotsky, 1978), as the progression from lower to higher Likert scores reflects the gradual internalization of letter sound-movement associations as teacher scaffolding is reduced over time. The scale categories used in this study are presented in Table 1.

Table 1. Likert Scale for Observation of Letter Sound Awareness Indicators.

Score	Category	Response Rate	Observable Behaviour
1	Never	0 - 20%	The child does not imitate gestures, produce sounds, respond, or identify the letter
2	Rarely	21 - 40%	The child occasionally shows one indicator with heavy teacher prompting
3	Sometimes	41 - 60%	The child demonstrates target behaviors inconsistently across the four indicators
4	Often	61 - 80%	The child frequently shows correct responses with minimal teacher scaffolding
5	Always	81 - 100%	The child consistently and independently demonstrates all four target indicators

Each session score per letter sound was derived from the mean of four observation indicators: (1) imitating the kinesthetic gesture, (2) producing the letter sound verbally, (3) responding to a heard letter sound, and (4) identifying the correct letter on the board. These four indicators collectively reflect the multisensory dimensions of letter-sound awareness described by Paivio (1986), encompassing verbal encoding through sound production and response, and non-verbal encoding through kinesthetic gesture and letter identification.

Subject Profile

Table 2 presents a brief profile of the research subjects based on age and initial ability to recognize letter sounds before the intervention was carried out.

Table 2. Profile of Research Subject.

Subject	Age	Initial Capabilities	Remarks
A	2 Years	Recognize 3-5 letter-sounds	Able to follow teacher scaffolding well and respond consistently to movement-sound cues
B	2 Years	Recognize all letter-sounds	Requires minimal scaffolding; responds actively to both verbal and kinesthetic input
C	2 Years	Recognize 1-2 letter-sounds	Requires repeated scaffolding; difficulty maintaining focus limits consistent dual-channel encoding
D	2 Years	Recognize 3-4 letter-sounds	Responds well to scaffolding with moderate teacher prompting

E	2 Years	Recognize all letter-sounds	Requires minimal scaffolding; responds actively to both verbal and kinesthetic input
F	2 Years	Not yet familiar with letter-sounds	Requires intensive scaffolding; lack of focus and inattentiveness prevent letter sound-movement association from being established
G	2 Years	Recognize 1-2 letter-sounds	Requires repeated scaffolding; difficulty maintaining focus limits consistent dual-channel encoding
H	2 Years	Not yet familiar with letter-sounds	Requires intensive scaffolding; lack of focus and inattentiveness prevent letter sound-movement association from being established
I	2 Years	Recognize all letter-sounds	Requires minimal scaffolding; responds actively to both verbal and kinesthetic input
J	2 Years	Recognize 2-3 letter-sounds	Requires moderate scaffolding; beginning to connect letter sounds with kinesthetic movements
K	2 Years	Recognize 1-2 letter-sounds	Requires repeated scaffolding; difficulty maintaining focus limits consistent dual-channel encoding
L	2 Years	Recognize all letter-sounds	Requires minimal scaffolding; responds actively to both verbal and kinesthetic input
M	2 Years	Not yet familiar with letter-sounds	Requires intensive scaffolding; lack of focus and inattentiveness prevent letter sound-movement association from being established
N	2 Years	Not yet familiar with letter-sounds	Requires intensive scaffolding; lack of focus and inattentiveness prevent letter sound-movement association from being established
O	2 Years	Recognize 2-3 letter-sounds	Requires moderate scaffolding; beginning to connect letter sounds with kinesthetic movements

This study involved 15 toddlers enrolled in a Child Care Center through the Jolly Phonics program. Based on Table 2, all subjects were classified as 2 years old according to the institution's grouping standards. The initial ability analysis was therefore carried out using standardized developmental achievements at the same grade level, without separating age differences by month. The remarks in Table 2 were formulated based on each child's observed position within the Zone of Proximal Development and the level of scaffolding required, as described by Vygotsky (1978), as well as their capacity to engage both the verbal and non-verbal cognitive channels simultaneously, as explained by Clark & Paivio (1991).

Children B, E, I, and L

Children B, E, I, and L were already able to recognize all Group 5 letter sounds before the instructional intervention. Based on observation, these children required minimal scaffolding from the teacher and consistently responded to both verbal and kinesthetic input from the earliest sessions. According to Vygotsky (1978), children who enter instruction with

a higher level of prior knowledge occupy a ZPD that is closer to independent performance, meaning they require less adult mediation to internalize new associations. In terms of Dual Coding Theory (Clark & Paivio, 1991), these children demonstrated the ability to simultaneously activate both the verbal channel through letter-sound recognition and the non-verbal channel through kinesthetic gesture imitation, enabling faster and more durable letter-sound-movement encoding throughout the sessions.

Child A

Child A recognized 3 to 5 letter sounds at the initial stage and was consistently able to follow teacher scaffolding throughout the sessions. This suggests that Child A had entered a productive ZPD zone where teacher-provided movement-sound cues were sufficient to support continued letter-sound development (Vygotsky, 1978). The ability to follow instructional cues consistently also indicates that both the verbal and non-verbal cognitive channels were being activated in a coordinated manner, supporting steady dual-channel encoding progress across sessions (Clark & Paivio, 1991)

Child D

Child D recognized 3 to 4 letter sounds at the initial stage and responded well to teacher scaffolding with moderate prompting. Based on Vygotsky (1978) framework, this child's ZPD position allowed for productive engagement with kinesthetic instruction when teacher guidance was consistently provided. From a Dual Coding Theory perspective (Clark & Paivio, 1991), Child D showed developing capacity to process both the letter-sound stimulus through the verbal channel and the corresponding movement cue through the non-verbal channel, with dual-channel encoding becoming more stable as sessions progressed.

Children J and O

Children J and O recognized 2 to 3 letter sounds at the initial stage and required moderate scaffolding to connect letter sounds with their corresponding kinesthetic movements. According to Vygotsky (1978), children at this level of initial ability benefit from structured teacher guidance that gradually introduces letter sound-movement associations within their ZPD. From the perspective of Clark & Paivio Dual Coding Theory (1991) these children were in the process of building referential connections between the verbal channel through auditory letter sound input and the non-verbal channel through kinesthetic gesture, with both channels beginning to activate together as the sessions progressed with teacher support.

Children C, G, and K

Children C, G, and K each recognized only 1 to 2 letter sounds at the initial stage and required repeated scaffolding across sessions. Although their initial letter-sound recognition

ability was equivalent, all three shared the same observable pattern during instruction: difficulty maintaining focus during activities, which limited the consistent activation of both cognitive channels required for letter sound-movement encoding. According to Vygotsky (1978), children at this level of ZPD readiness require sustained and repetitive teacher scaffolding, including frequent modelling, verbal prompting, and guided participation, to gradually internalize letter sound-movement associations. From the perspective of Clark & Paivio Dual Coding Theory (1991), the attentional difficulties observed in these children reduced the consistency of dual-channel encoding, as the simultaneous activation of the verbal channel through the letter sound and the non-verbal channel through the kinesthetic movement was frequently disrupted by inattention. As teacher scaffolding was consistently provided across sessions, gradual improvement in their letter-sound responses was nonetheless observed.

Children F, H, M, and N

Children F, H, M, and N had not yet recognized any of the Group 5 letter sounds before the intervention and required the most intensive and individualized scaffolding throughout the observed sessions. All four children shared the same observable pattern during instruction: a lack of focus and inattentiveness when the teacher explained and demonstrated movements, which prevented the initial formation of letter sound-movement associations. According to Vygotsky (1978), children who have not yet entered the ZPD for a given skill require maximum scaffolding, including repeated modelling, one-on-one guidance, and structured sensory stimulation, before they can begin to internalize the target association independently. From the perspective of Clark & Paivio Dual Coding Theory (1991), the inattentiveness of these children meant that neither the verbal channel through the letter sound nor the non-verbal channel through the kinesthetic movement was being processed reliably during instruction, which significantly slowed the formation of referential connections between the two cognitive systems. Despite these challenges, gradual improvement was observed in later sessions as the teacher provided more individualized scaffolding and repeated exposure to the letter sound-movement pairings.

Recapitulation of Positive Response Rates per Letter Sound

Table 3 presents the recapitulation of positive response percentages per letter sound across the three measurement sessions, based on the proportion of children demonstrating the four target behaviors per session.

Table 3. Recapitulation of Positive Response Rates per Letter Sound.

Letter Sound	Kinesthetic Movements	Session 1 (%)	Session 4 (%)	Session 8 (%)	Improvement
Z	Placing both hands next to the chest while imitating the shape of a bee's wings. Move your hands to the right and left while vibrating your fingers	33%	53%	80%	+47%
W	Placing both palms in front of the chin while blowing	53%	73%	93%	+40%
NG	Open both hands while bending by moving up and down	60%	80%	93%	+33%
V	Open your palms and lean in front of your chest in an inclined position, as if you were holding the steering wheel of a car	27%	47%	67%	+40%
OO, oo	Put both hands behind their backs and then perform a bowing motion	20%	40%	60%	+40%

Based on Table 3, all five Group 5 letter sounds demonstrated a consistent increase in positive response rates from Session 1 to Session 8. This pattern of progressive improvement is consistent with the scaffolding mechanism described by Vygotsky (1978), in which structured and repeated teacher guidance through modelling, prompting, and guided participation enables children to gradually internalize letter sound-movement associations that they initially cannot perform independently. As the teacher repeatedly modelled each kinesthetic movement alongside its corresponding letter sound and letter image, children's reliance on direct teacher support decreased, and their independent letter sound responses became more consistent and accurate across sessions.

The letter sounds “W and NG” recorded the highest response percentages from Session 1, at 53% (8 out of 15 children) and 60% (9 out of 15 children) respectively, continuing to increase to 93% by Session 8. These results can be understood through the lens of Clark & Paivio (1991), which posits that information is encoded most effectively when both the verbal system and the non-verbal system are activated simultaneously. The movement for “W”, which involves blowing air while placing both palms in front of the chin, activates the kinesthetic dimension of the non-verbal channel through a large and physically felt bodily action, while the letter sound simultaneously engages the verbal channel. Likewise, the rhythmic hand-bending movement for “NG” provides a strong non-verbal kinesthetic anchor that corresponds

directly to the auditory letter sound stimulus. When both channels are engaged together, the referential connections between verbal and non-verbal representations are strengthened, resulting in faster and more durable letter sound memory encoding, which is precisely what is reflected in these two letter sounds' rapid progression across sessions (Clark & Paivio, 1991).

In contrast, the letter sounds “V and OO, oo” showed the lowest percentages in Session 1, at 27% (4 children) and 20% (3 children) respectively. Although both increased by Session 8 to 67% and 60%, these figures remain below the achievement of the other letter sounds. From a Dual Coding Theory perspective, the slower acquisition of these letter sounds can be explained by the weaker or more ambiguous connection between their kinesthetic movements and the corresponding sounds. The letter sound “V” is a labiodental sound that is largely absent from the Indonesian phonological system, meaning that the verbal channel receives a sound signal with no prior referential representation in the child's existing linguistic knowledge. Without a pre-existing verbal anchor, the kinesthetic movement alone must carry a greater encoding burden, which slows the formation of a strong verbal-to-non-verbal referential connection (Clark & Paivio, 1991). The letter sound “OO, oo”, having two sound variants, introduces dual verbal signals that compete for association with a single kinesthetic movement, creating potential confusion in the encoding process. This aligns with Dual Coding Theory's core prediction that ambiguity in either the verbal or non-verbal channel reduces the efficiency of dual coding and slows letter-sound internalization (Clark & Paivio, 1991)

The letter sound “Z” occupied a middle position with an initial response of 33% (5 children), rising to 80% (12 children) by Session 8, recording the greatest overall improvement at +47%. From a scaffolding perspective (Vygotsky, 1978), the progressive improvement in “Z” demonstrates the effectiveness of sustained and repetitive teacher scaffolding over multiple sessions. Although the “Z” sound is relatively unfamiliar in the children's mother tongue, the teacher's consistent modelling of the bee-wing hand movement with finger vibrations provided a visually and kinesthetically distinctive scaffold that gradually supported children in forming the letter sound-movement association. From a Dual Coding Theory standpoint (Clark & Paivio, 1991), the vibratory sensation of the “Z” gesture provides a memorable non-verbal kinesthetic signal that, when consistently paired with the “Z” sound across eight sessions, eventually establishes a strong referential connection between the verbal and non-verbal systems.

Likert Mean Scores per Letter Sound

To provide a structured quantitative overview of children's letter-sound awareness development, the positive response percentages from Table 3 were converted into Likert mean

scores using the five-point scale described in Table 1. A score of 1 corresponds to a response rate of 0 to 20% (Never), score 2 to 21 to 40% (Rarely), score 3 to 41 to 60% (Sometimes), score 4 to 61 to 80% (Often), and score 5 to 81 to 100% (Always). The resulting mean scores per letter sound per session are presented in Table 4.

Table 4. Likert Mean Scores per Letter Sound per Session.

Letter Sound	Session 1 Mean	Session 4 Mean	Session 8 Mean	Improvement	Category (S8)
Z	1.7	2.7	4.0	+2.3	Often
W	2.7	3.7	4.7	+2.0	Always
NG	3.0	4.0	4.7	+1.7	Always
V	1.4	2.4	3.4	+2.0	Sometimes
OO,oo	1.0	2.0	3.0	+2.0	Sometimes

As shown in Table 4, the Likert mean scores confirm the progressive improvement documented in the percentage data of Table 3. By Session 8, the letter sounds “W and NG” both achieved a mean score of 4.7, placing them in the Always category, which corresponds to a response rate of 81 to 100%. This reflects the strong dual-channel encoding process described by Clark & Paivio (1991), wherein the combination of a large, physically salient kinesthetic gesture with a clearly audible letter sound produces a highly durable memory trace in children's developing cognitive systems. The letter sound “Z” reached a mean score of 4.0 at Session 8, placing it in the Often category and recording the largest mean score improvement across the three sessions at +2.3 points, which reflects the cumulative effect of sustained teacher scaffolding (Vygotsky, 1978) and repeated dual-channel activation over time.

The letter sounds “V and OO, oo” reached mean scores of 3.4 and 3.0, respectively, at Session 8, both categorized as Sometimes. These scores indicate that, although meaningful progress was achieved, the majority of children were still in the process of consolidating the letter sound-movement associations for these two sounds at the end of the eight observed sessions. From the perspective of Vygotsky Scaffolding Theory (1978), this suggests that additional instructional sessions with more intensive teacher scaffolding, including individualized prompting and repetition, would be required for these children to move through their ZPD and achieve more independent and consistent letter-sound recognition for “V and OO, oo”. From the perspective of Dual Coding Theory (Clark & Paivio, 1991), the ambiguity in the verbal channel for both of these letter sounds continues to reduce the efficiency of dual-channel encoding, and further repeated pairing of gesture and sound is needed to strengthen the referential connections between the two cognitive systems.

Individual variation in Likert scores further reflects the behavioral profiles described in Table 2. Children with high initial letter sound recognition and strong engagement, such as

Children B, E, I, and L, contributed to higher session averages and showed the most consistent progress across all four observation indicators. Children with lower initial responsiveness, such as Children F and Child H, contributed to the lower end of session averages but demonstrated meaningful improvement following more individualized scaffolding from the teacher in later sessions, which is consistent with Vygotsky (1978), emphasis on the essential role of responsive adult mediation in supporting children's progress within the ZPD.

Taken together, the findings of this study affirm that kinesthetic movements within Jolly Phonics instruction support letter sound awareness among toddlers aged 2 years through two complementary theoretical mechanisms. First, consistent with Vygotsky's Scaffolding Theory (1978), the teacher's structured guidance encompassing modelling of movements, verbal prompting, and guided participation provides the ZPD-aligned support through which toddlers gradually internalize letter sound-movement associations across sessions. The progressive increase in Likert mean scores from Session 1 to Session 8 reflects this scaffolding dynamic, wherein children's reliance on teacher support decreases as their independent letter sound recognition becomes more consistent. Second, consistent with Clark & Paivio Dual Coding Theory (1991), the simultaneous activation of the verbal channel through letter sounds and the non-verbal channel through kinesthetic body movements strengthens the referential connections between these two cognitive systems, producing more durable letter sound memory traces. These findings contribute to the growing body of evidence supporting the integration of kinesthetic modalities in early phonics instruction, and specifically affirm the pedagogical value of the kinesthetic component of Jolly Phonics for the youngest learners in early childhood educational settings.

5. CONCLUSION

This study demonstrated that kinesthetic movements in Jolly Phonics Group 5 instruction consistently supported letter-sound awareness development among toddlers aged 2 years. Data collected across eight instructional sessions with 15 participants revealed a progressive increase in positive response rates and Likert mean scores across all five target letter sounds, namely Z, W, NG, V, and OO, oo, from Session 1 to Session 8. Letter sounds supported by large and physically distinctive kinesthetic movements, such as W and NG, were acquired more rapidly, reaching a Likert mean score of 4.7 (category: Always) by Session 8, while letter sounds with less familiar sound properties or dual sound variants, such as V and OO, oo, required more sustained instructional reinforcement, reaching mean scores of 3.4 and 3.0, respectively.

These findings confirmed that kinesthetic movement functions as both a scaffolding mechanism, as described by Vygotsky, (1978), and a dual-channel encoding tool, as explained by Clark & Paivio (1991), that actively supports letter-sound awareness in toddler learners. Early childhood educators are therefore encouraged to integrate kinesthetic movement consistently and intentionally into phonics instruction, recognizing body movement as a meaningful cognitive pathway rather than a supplementary activity. Future research is recommended to examine the role of kinesthetic movements across a wider range of letter sound groups and to explore the long-term impact of movement-integrated phonics instruction on broader early literacy outcomes.

REFERENCES

Anthony, J. L., & Francis, D. J. (2005). Development of phonological awareness. *Current Directions in Psychological Science*, *14*(5), 255–259. https://doi.org/10.1111/j.0963-7214.2005.00376.x

Ayuningtyas, T., Iswara, P. D., Sopandi, W., & Sujana, A. (2025). The Effect of the Phonics Method Using Beginning Reading Media on Primary School Students' Beginning Reading Skills. *Mimbar Sekolah Dasar*, *12*(1), 63–81. https://doi.org/10.53400/mimbar-sd.v12i1.81908

Clark, J. M., & Paivio, A. (1991). Dual coding theory and education. *Educational Psychology Review*, *3*(3), 149–210. https://doi.org/10.1007/BF01320076

Creswell, J. W., & Creswell, J. D. (2015). *Research Design Qualitative, Quantitative, and Mixed Methods Approaches* (5th ed.). SAGE Publication. https://doi.org/10.4018/978-1-4666-8116-3.ch010

Ehri, L. (2020). The Science of Learning to Read Words: A Case for Systematic Phonics Instruction. *Reading Research Quarterly*, *55*(3).

Etikan, I. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1. https://doi.org/10.11648/j.ajtas.20160501.11

Indriani, I. S., Christianti, M., & Hayati, N. (2025). Application of Phonics Method for Early Literacy Development of Preschool Children. *Jurnal Pendidikan Progresif*, *15*(1), 119–138. https://doi.org/10.23960/jpp.v15i1.pp119-138

Juan Rubio, A. D. (2025). Rise of Phonological Awareness in Spanish Early Childhood Education Students. *Brno Studies in English*, *50*(2), 85–105. https://doi.org/10.5817/BSE2024-2-4

Lloyd, S. (1998). *The Phonics Handbook* (3rd ed.). Jolly Learning Ltd. https://doi.org/10.4324/9781003619185

Lonigan, C. J., & Shanahan, T. (2008). Developing Early Literacy: Report of the National Early Literacy Panel. *National Center Family Literacy*, *2*(1). National Institude for Literacy.

Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative Research: A Guide to Design and Implementation* (4th ed.). Jossey-Bass.

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook* (3rd ed.). SAGE Publication. https://www.metodos.work/wp-content/uploads/2024/01/Qualitative-Data-Analysis.pdf

Nafgerin, G. G., & Bakar, K. A. (2023). The use of the Jolly Phonics method in improving English reading and writing skills among preschool students. *International Journal of Academic Research in Business and Social Sciences*, *13*(12), 3726–3738. https://doi.org/10.6007/IJARBSS/v13-i12/20219

Ngura, E. T., Fono, Y. M., & Wea, H. R. (2025). Optimizing Children's Early Literacy Through Contextual Implementation of The Phonics Method in Rural Early Childhood Institutions. *EDUKASIA: Jurnal Pendidikan Dan Pembelajaran*, *6*(2), 819–830. https://doi.org/10.62775/edukasia.v6i2.1504

Paivio, A. (1990). Mental Representations: A dual coding approach. *Mental Representations: A Dual Coding Approach*, 1–322. https://doi.org/10.1093/acprof:oso/9780195066661.001.0001

Piasta, S. B., & Wagner, R. K. (2010). Learning letter names and sounds: Effects of instruction, letter type, and phonological processing skill. *Journal of Experimental Child Psychology*, *105*(4), 324–344. https://doi.org/10.1016/j.jecp.2009.12.008

Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing Reading Difficulties in Young Children*. National Academy Press.

Solichah, N., & Fardana, N. A. (2024). Exploring multisensory programs as early literacy interventions: a scoping review. *International Journal of Evaluation and Research in Education*, *13*(5), 3411–3418. https://doi.org/10.11591/ijere.v13i5.28991

Storch, S. A., & Whitehurst, G. J. (2002). Oral Language and Code-Related Precursors to Reading: Evidence from a Longitudinal Structural Model. *Development Psychology*, *38*(6), 934–947.

Vygotsky, L. S. (1978). *Mind in Society: The Development of Higher Mental Processes*. Harvard University Press. https://w.pauldowling.me/rtf/2021.1/readings/LSVygotsky_1978_MindinSocietyDevelopmentofHigherPsycholo.pdf