



Babalu Dance and Holistic Development of Early Childhood: A Case Study on the Integration of Traditional Arts in Early Childhood Education

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Abstract

Traditional dance not only represents cultural heritage but also embodies pedagogical values that can be integrated into early childhood education. One such traditional dance that remains vibrant and practiced in the northern coastal region of Java is the Babalu Folk Dance, characterized by rhythmic, simple yet expressive movements. Although children's dance practices have flourished in informal educational settings, the utilization of traditional dance as a child development-oriented learning medium remains severely limited. This study originates from this gap, noting the lack of systematic exploration of the contribution of traditional dance movement variations to the holistic development of early childhood. This research aims to analyze the movement structure of Babalu Dance and evaluate its potential in supporting five key developmental domains of early childhood: gross motor, fine motor, cognitive, socio-emotional, and artistic appreciation. Employing a qualitative case study approach, this study was conducted at Sanggar Putra Budaya Batang, involving six children aged 4–6 years, six dance instructors, and six parents. Data collection techniques included participatory observation, semi-structured interviews, and visual documentation, followed by thematic analysis. The findings reveal that each movement category—head, hand, foot, and body—specifically contributes to various dimensions of child development. Body and foot movements support balance and coordination; hand movements strengthen fine motor skills; and the choreographic structure fosters cognitive, social, and expressive aspects. This study underscores the potential of Babalu Folk Dance as a culturally grounded contextual learning medium and recommends its integration into character- and traditional arts-based early childhood education curricula.

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Introduction

Early childhood education requires a holistic and contextual approach that nurtures children across cognitive, physical, emotional, social, and aesthetic domains. At this formative stage, children are in the sensorimotor and pre-conceptual periods, where learning is heavily influenced by multisensory engagement and symbolic representation. Performing arts, particularly dance, offer a rich medium for integrating rhythm, movement, emotion, and cultural meaning in ways that align with developmental needs (Palmiero et al., 2019; Tsompanaki, 2019). Despite growing recognition of the value of embodied learning, many early childhood programs remain focused on early literacy and numeracy skills, often overlooking culturally embedded and expressive forms of learning.

Within early childhood education, dance has yet to be systematically incorporated into national curricula, especially traditional dance forms. These dances, rich in cultural heritage and symbolic depth, are commonly perceived as ceremonial or performative, rather than pedagogical (Temple et al., 2020; Trisnawati & Sugito, 2020). In Indonesia, this disconnect is evident in how traditional arts are marginalized within formal early childhood learning environments. The dominance of modern or popular children's dance creations further

displaces region-specific traditional forms that carry unique moral, aesthetic, and symbolic value (Straits et al., 2019).

Although dance is broadly recognized as a powerful developmental tool, there is a distinct lack of systematic studies analyzing the movement structures of specific traditional dances in relation to early childhood development. Most prior research either focuses on modern dance or general arts programs and rarely explores how the components of traditional movement—such as rhythm, gesture, and choreography—correspond to particular developmental domains (Chen, 2023; Gong, 2019; Mureşan & Turda, 2022). To date, no studies have mapped the movement structure of Babalu Dance (*Tari Babalu* in Javanese) or examined its correlation with motor, cognitive, socio-emotional, and artistic development in early childhood education settings. This represents a significant research gap that the present study seeks to address.

The developmental benefits of dance in early childhood have been well-documented, particularly in the domain of motor development. Rhythmic and structured movements involved in dance help children develop both gross and fine motor coordination. Goodway et al. (2019) showed that preschool children who engaged in movement-based learning exhibited significant improvement in locomotor and manipulative motor skills. Similarly, Uminah et al. (2023) found that children participating in guided dance activities developed better body control, posture, and balance. These findings affirm the role of dance as a kinesthetic learning strategy that supports foundational physical competencies essential for early childhood growth.

Beyond physical development, dance has also been linked to cognitive and socio-emotional benefits. Artistic activities such as dance nurture memory retention, emotional regulation, empathy, and expressive abilities (Mureşan & Turda, 2022; Palmiero et al., 2019). Children involved in expressive arts often show higher levels of focus, creativity, and self-confidence. Dance, as a symbolic and affective medium, allows children to explore emotions and narratives in embodied ways, promoting both personal and social understanding. However, most of these studies focus on general or modern dance forms, with little attention paid to traditional dance as a culturally embedded vehicle for these developmental outcomes.

In addition, the importance of culturally responsive pedagogy has gained momentum in early childhood education discourse. Rubtsov (2020) emphasized that children learn more effectively when exposed to multisensory experiences rooted in familiar cultural contexts. In the Indonesian context, the Merdeka Belajar framework encourages the integration of local wisdom and cultural heritage in formal curricula. However, its implementation—especially in relation to performing arts—remains suboptimal (Priambada, 2023). Traditional dances are often viewed as ceremonial expressions, with minimal pedagogical adaptation for young learners. Consequently, early childhood education continues to be dominated by decontextualized materials and imported creative dance forms, leading to a disconnection between educational content and children's cultural identity.

Despite strong evidence supporting the role of dance in various domains of child development, studies that integrate traditional dance within culturally grounded pedagogical models remain scarce. Specifically, there is a lack of research that systematically examines the movement structure of traditional Indonesian dances and connects them to developmental goals in early childhood education. This gap becomes even more apparent in the case of Babalu Dance, a local heritage rich in symbolic meaning yet underutilized as a learning medium.

This study offers both empirical and theoretical contributions to the field. Empirically, it is the first to document and analyze the movement structure of Babalu Dance—a traditional art form originating from the northern coastal communities of Java—through field observation, interviews, and visual analysis. Theoretically, it proposes an integrative pedagogical framework in which traditional dance is positioned not merely as a cultural performance but as a meaningful educational medium. This study also builds a model of how traditional arts can be contextually embedded in early childhood education, promoting both developmental outcomes and cultural preservation.

This study aims to analyze the movement structure of Babalu Dance and evaluate its contribution to five domains of early childhood development: gross motor skills, fine motor skills, cognitive abilities, socio-emotional growth, and artistic expression. The study also proposes a culturally grounded learning model that integrates traditional dance into early childhood education settings, both formal and non-formal. The findings of this study have practical and scholarly significance. From an educational perspective, the research provides a model for incorporating traditional performing arts into the early childhood curriculum in ways that are developmentally appropriate and culturally authentic. From a cultural standpoint, it contributes to safeguarding intangible cultural heritage by revitalizing traditional arts as living, educational practices. In alignment with UNESCO's mandate on cultural education and Indonesia's Merdeka Belajar curriculum, this study supports the creation of pedagogical strategies that are both locally relevant and globally informed (Loiacono & Fallon, 2018; Priambada, 2023). Ultimately, this research bridges the gap between cultural preservation and pedagogical innovation in early childhood learning.

Methods

This study uses a qualitative intrinsic case study design to explore the pedagogical value of Babalu Dance in early childhood education. This approach enables a holistic understanding of movement structures and cultural meaning, as they relate to child development through participatory experiences in a natural, community-based learning setting. To clarify the methodological flow, Figure 1 outlines the core components of the research: design, participants, setting, data collection, researcher role, ethical considerations, and analysis



Figure 1. Methodological framework

Research Design

Following the intrinsic case study model (Suyitno et al., 2023), the study focuses on a single, meaningful case—Babalu Dance—examined within its natural and cultural context. The qualitative approach was chosen to capture the symbolic, social, and affective dimensions of the dance learning process, which cannot be fully represented through quantitative methods. The study aims to illuminate how traditional dance practices support various domains of early childhood development within a non-formal, culturally grounded learning environment.

Research Subjects and Location

The study took place at Sanggar Putra Budaya Batang, a traditional arts community in Central Java that preserves and teaches regional dance forms to multiple generations, including early childhood learners. Weekly training sessions held on Sunday mornings provided a natural and culturally grounded environment for participatory observation.



Figure 2 . Training session environment of Babalu Dance at Sanggar Putra Budaya

Figure 2 shows a typical training session where children and instructors engage in warm-ups, illustrating the context for data collection. Participants were selected through purposive sampling (Creswell & Poth, 2016; Lewandowska et al., 2023; Morris & Paris, 2021), based on their active involvement in Babalu Dance instruction and practice. A total of 18 participants were involved, divided into three categories (see Table 1):

Table 1. Participant categories and selection criteria

Category	Number	Selection Criteria
Dance Instructors	6 people	Minimum 2 years of experience teaching Babalu Dance; active involvement; multi-generational group
Early Childhood Participants	6 children	Aged 4–6 years; actively participating in training sessions for more than 8 consecutive weeks
Parents of Participants	6 people	Direct accompaniment during training; observe daily child development

Additional demographic details of instructors and child–parent pairs are presented below.

Table 2. Dance instructors at Sanggar Putra Budaya

Insturctor Code (I)	Gender	Age	Role in the Studio
I1-N	Male	60 years	Senior choreographer
I2-Y	Female	56 years	Tradition mentor
I3-N	Female	52 years	Assistant Teacher
I4-S	Male	24 years	Young instructor
I5-C	Female	22 years	Junior Assistant Coach
I6-R	Female	20 years	Junior Assistant Coach

Table 3. Data of early childhood participants and parents participants

Child Code (A)	Age	Parent Code (O)
A1-N	5 years	O1

Child Code (A)	Age	Parent Code (O)
A2-S	5 years	O2
A3-Q	4 years	O3
A4-C	6 years	O4
A5-L	5 years	O5
A6-F	4 years	O6

Data Collection Techniques and Procedures

This study employed source and method triangulation (Patton, 2015) to enhance the validity and depth of findings, utilizing three main techniques: participatory observation, semi-structured interviews, and documentation.

Participatory Observation

Observations were conducted over eight weekly sessions, each lasting three hours (09:00–12:00) between January and February 2025. The researcher observed routine activities at Sanggar Putra Budaya, including warm-ups, group sessions, Babalu Dance practice, and cooldowns (see Table 4).

Table 4. Routine training activities at Sanggar Putra Budaya

Session	Activity
Warm-up	Rhythmic exercise
Group session	Early childhood group: <i>Tari Kelinci</i> (Rabbit Dance), <i>Tari Gembira</i> (Joyful Dance) Teen group: Gambyong dance
Main session	Babalu dance (mandatory for all participants)
Cool-down	Rhythmic clapping

The researcher utilized open observation sheets and field notes to record: (1) children's responses to instructions; (2) motor skills demonstrated during Babalu Dance movements; (3) social interactions within group practice; and (4) emotional expressions during performances.

Semi-Structured Interviews

Interviews were conducted with 12 informants (six instructors and six parents) immediately after sessions. Each interview lasted 30–45 minutes and followed an open-ended guide exploring the meaning of dance movements and their developmental impact. All interviews were audio-recorded (with consent) and transcribed verbatim.

Documentation Study

Visual documentation included photographs of practice sessions, video recordings captured via mobile phone, and choreographic notes. These materials were used to cross-validate observations and capture nuanced movement expressions for later analysis.

Throughout data collection, the researcher acted as the primary instrument (Creswell & Poth, 2016), applying flexible observation strategies responsive to field dynamics. Ethical protocols were strictly followed: verbal consent was obtained from sanggar leadership and all participants, who were fully informed of the study's purpose. Identities were anonymized, and no interventions or disruptions were introduced; all data were collected in the natural context of ongoing dance practices.

Data Analysis Techniques

Data analysis was conducted using a thematic analysis approach (O'Callaghan et al., 2024), following three key stages. In the open coding phase, meaningful segments were identified from interview transcripts, observation notes, and visual documentation. These included repeated phrases, behaviors, or descriptions such as "child more balanced," "memorized sequence," and "confident to perform." During the axial coding stage, these initial codes were clustered into broader thematic categories corresponding to five domains of early childhood

development: gross motor, fine motor, cognitive, social-emotional, and artistic appreciation. Finally, in the selective coding phase, five central themes were constructed to answer the research questions and interpret the role of Babalu Dance in supporting holistic child development. This analytic process is illustrated in Figure 3, which maps the progression from raw data to final themes through a structured coding sequence.

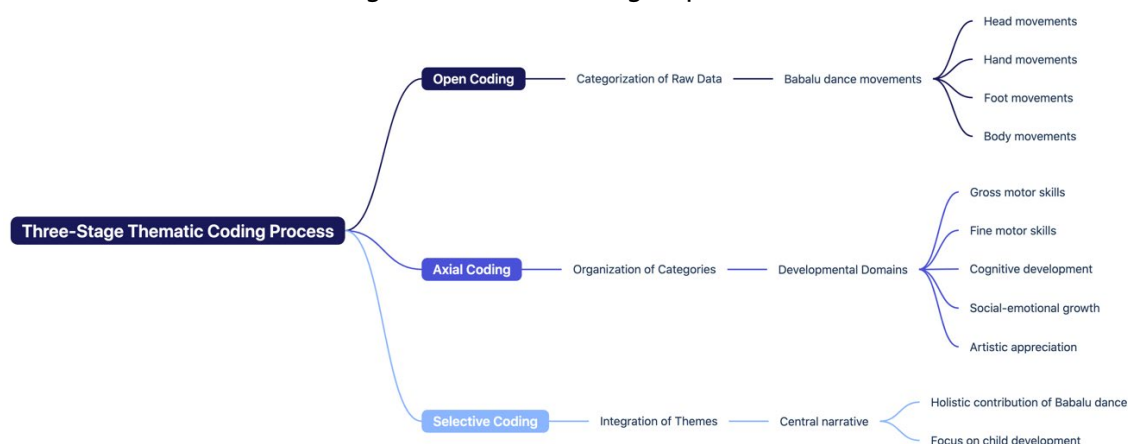


Figure 3. Thematic Analysis Flow: Open coding → axial coding → selective coding

To enhance the trustworthiness of the findings, several qualitative validation strategies were applied. Methodological triangulation combined multiple data sources—participatory observation, interviews, and documentation—to minimize bias and enrich interpretation. Member checking was conducted by sharing selected transcripts and preliminary themes with key informants (parents and instructors), ensuring that the interpretations aligned with their lived experiences. In addition, peer debriefing with colleagues in early childhood education and traditional arts provided critical feedback that sharpened theme formulation and reduced researcher bias. A complete audit trail was maintained to document each step of data collection, coding, and interpretation, ensuring transparency and replicability throughout the research process.

Result

This study identified five major themes through a systematic thematic analysis, encompassing open, axial, and selective coding processes. Each theme represents the relationship between specific movement categories in *Babalu Dance* and developmental domains in early childhood. The findings are presented according to these thematic categories, supported by observational, interview, and documentation data.

Table 5. Contributions of Babalu dance movement variations to early childhood development

Developmental Aspect	Relevant Movement Variations	Field Findings (Observation, Interview, Documentation)	Contribution to Early Childhood Development
Gross Motor Skills (Open Coding 1)	<i>Gejug, jinjit, ndegdeg</i>	Children showed improved balance after the third session. Instructors noted that body movements effectively train stability.	Improved balance, body control, and large muscle coordination.
Fine Motor Skills (Open Coding 2)	<i>Ukel-ukel, sembah</i> , hand clapping	Hand movements were easily imitated and repeated by children. Parents reported improved dexterity in hands and fingers.	Enhanced finger and hand coordination, aiding daily skills such as writing and beading.
Cognitive (Open Coding 3)	Sequential movement patterns, rhythm synchronization	Children began to memorize movement sequences and adjust to music after several sessions.	Improved memory, attention, and ability to follow sequential instructions.



Developmental Aspect	Relevant Movement Variations	Field Findings (Observation, Interview, Documentation)	Contribution to Early Childhood Development
Social-Emotional (Open Coding 4)	Paired exercises, group movements, <i>sembah</i>	Children showed increased confidence during performances and demonstrated cooperation and empathy in group practice.	Growth in self-confidence, empathy, teamwork skills, and emotional regulation.
Artistic Appreciation and Expression (Open Coding 5)	Facial expressions, <i>sembah</i> , symbolic movements, <i>malang kerik</i>	Children expressed emotions symbolically through movements; videos showed increased expressiveness.	Development of aesthetic sensibility, symbolic interpretation skills, and appreciation of local cultural arts.

To deepen these findings, a matrix was constructed to integrate types of movement, developmental domains, observed child behaviors, and data sources.

Table 6. Integrative Matrix of Movement Type, Developmental Domain, Child Behavior, and Data Source

Type of Movement	Developmental Domain	Examples of Child Behavior	Data Source
Gejag, jinjit, forward step, ndegdeg	Gross Motor Skills	Improved balance and stability; children move with better posture and large-muscle coordination	Observation, Interview (Instructor)
Ukel-ukel, <i>sembah</i> , hand clapping	Fine Motor Skills	Smooth finger and wrist motion; improved dexterity seen in drawing and beading	Observation, Interview (Parents)
Sequential movement patterns, rhythm sync	Cognitive	Memorizing sequences; anticipating musical cues; following instructions in order	Observation, Video Documentation
Paired exercises, group movements, <i>sembah</i>	Social-Emotional	Demonstrated empathy, cooperation; increased self-confidence during group performances	Observation, Interview (Teacher)
Facial expressions, <i>malang kerik</i> , symbolic movement	Artistic Appreciation & Expression	Children mimicked emotions; enhanced expressiveness and interest in local culture	Video Documentation, Interview

In addition to the thematic findings, the movement structure of *Babalu Dance* was analyzed using descriptive quantitative methods to better understand its contribution to early childhood development. Movements were categorized into four main types—hand, leg, body, and head—based on choreography documentation and movement coding derived from detailed analysis (see Appendix: *Data Ragam Gerak Babalu Dance*). This categorization enabled a clearer view of how different parts of the body are engaged in the dance and how these contribute to motor and expressive learning.

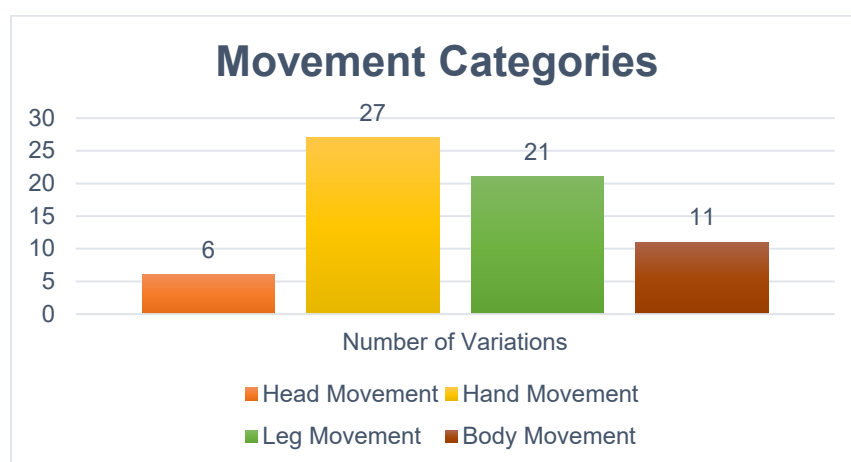


Figure 4. Babalu Dance's Movement Categories

As illustrated in Figure 4, hand movements dominate the choreography with 27 variations, followed by 21 leg, 11 body, and 6 head movements. This distribution highlights the centrality of upper and lower limb coordination in Babalu Dance, especially through expressive and repetitive patterns that support both fine and gross motor development. Hand gestures provide opportunities for enhancing finger control and bilateral coordination, while leg movements promote balance and large-muscle coordination—key aspects of preschool physical milestones (Goodway et al., 2019).

Beyond its physical function, the movement structure of Babalu Dance reflects its symbolic roots, where gestures carry cultural narratives and emotional meanings. From a pedagogical standpoint, this makes the dance especially relevant for contextualized motor learning. According to embodied learning theory (Rubtsov, 2020) and sensorimotor development frameworks, children internalize knowledge more effectively when movements are embedded in culturally meaningful contexts. Thus, this analysis not only maps movement frequency but also demonstrates Babalu Dance's potential as an integrated tool for physical, cognitive, and cultural development in early childhood education.

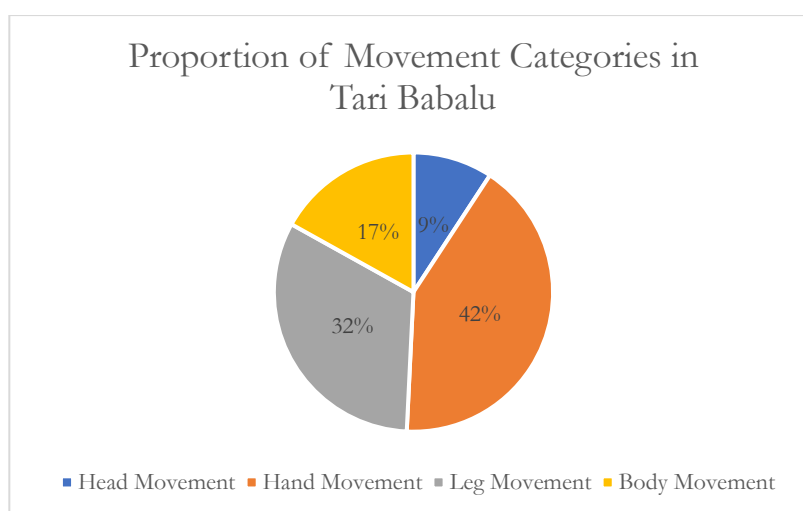


Figure 5. Proportion of movement categories in Babalu Dance based on movement type

Figure 5 illustrates the proportion of movement types in *Babalu Dance*, with hand gestures comprising the largest share (42%), followed by leg (32%), body (17%), and head movements (9%). These proportions underscore the dance's strong emphasis on upper and lower limb coordination, with direct implications for early childhood motor development. The dominance of hand and leg movements supports fine and gross motor skills essential for preschool tasks such as writing, buttoning, or manipulating small objects (Goodway et al., 2019). Leg movements contribute to gross motor development, fostering balance, spatial awareness, and dynamic stability.

Although less frequent, body and head movements serve vital roles in posture regulation, flexibility, and expressive intent. Head gestures in particular enhance spatial orientation and emotional communication, aligning with embodied learning theory which highlights the cognitive function of culturally meaningful movement (Kosmas & Zaphiris, 2020). Culturally, the prominence of hand gestures reflects the symbolic aesthetic of Javanese dance, where movement conveys values, emotions, and local narratives. As such, *Babalu Dance* functions not only as a physical activity, but also as a contextual pedagogical tool—merging motor development with cultural identity formation. These insights offer valuable guidance for designing integrated early childhood curricula, where traditional dance supports developmentally appropriate practices (DAP) across multiple domains.



Figure 6. Hand movement (*Sembah*) in Babalu Dance



Figure 7. Foot movement (*Jinjit*) in Babalu Dance



Figure 8. Head movement (*Toleh*) in Babalu Dance



Figure 9. Body movement (*Putar ke kiri*) in Babalu Dance

Figures 6 through 9 illustrate selected examples of *Babalu Dance* movements, each representing a key movement category: hand, foot, head, and body. These movements serve not only aesthetic purposes but also support a wide range of developmental functions. For instance, hand gestures train fine motor control and bilateral coordination; foot movements develop balance and spatial awareness; body movements support posture and flexibility; and head gestures enhance neck stability and symbolic expression. Together, they represent a choreography that is simultaneously expressive and developmentally purposeful.

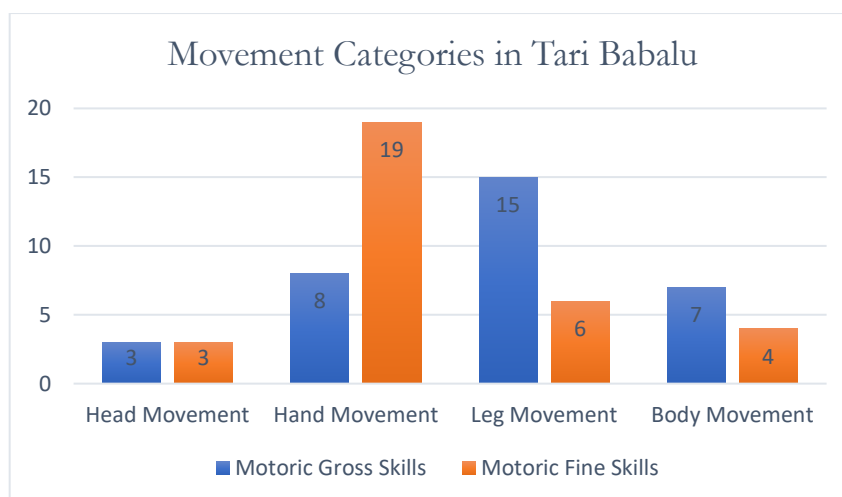


Figure 10. Movement categories in Babalu dance

To quantify these functions, Figure 10 categorizes movement elements by domain, showing that hand movements contribute most significantly to fine motor development (19 movement elements), aligning with preschool readiness skills like cutting, drawing, and manipulating small objects (Goodway et al., 2019). In contrast, leg and body movements dominate gross motor support (15 and 7 elements), enhancing coordination, strength, and balance—core indicators of early physical milestones. Though less numerous, head movements (three per domain) remain important for postural control, self-regulation, and spatial orientation (Lee & Galloway, 2012).

Viewed through the lens of embodied cognition patterns (Kosmas & Zaphiris, 2020), the whole-body engagement in *Babalu Dance* stimulates not only physical development but also cognitive and emotional processes. Each movement type contributes distinct yet complementary roles, making the dance a rich, integrated learning experience. Pedagogically, these findings offer a clear framework for educators to design culturally relevant, movement-based modules that support both fine and gross motor skills. By strategically sequencing gestures and movements, teachers can promote physical literacy while preserving local artistic heritage. In this way, *Babalu Dance* functions as a contextual learning model, bridging traditional values with developmentally appropriate practices.

Body and Leg Movements Support Gross Motor Development

Observations across eight training sessions showed that body and leg movements in *Babalu Dance* significantly enhanced gross motor skills among participants aged 4–6. In the early sessions (1–2), children struggled with balance and coordination. For instance, Participant A3-Q hesitated during transitions and expressed, “*Aku takut jatuh, boleh peluk kakak dulu?*” (“I’m afraid of falling, can I hug the teacher first?”), reflecting both physical instability and emotional caution. By the middle phase (sessions 3–5), noticeable improvements emerged. Movements such as stepping, turning, and swaying became more fluid, with children showing greater control. Participant A1-N remarked, “*Aku bisa maju sekarang, kayak tadi di lagu!*” (“I can move forward now, just like in the song!”), signaling increased motor confidence and rhythm awareness. Field notes and video analysis confirmed more synchronized group movements and smoother transitions without prompting.

In the final sessions (6–8), children displayed stable posture, spatial awareness, and self-initiated transitions. Instructor I1-N observed, “Initially, many children struggled to maintain balance, but after regular practice, they began to move confidently within the rehearsal space.” Instructor I2-Y added that structured repetition of movement patterns trained large muscle groups and improved body alignment. Parental observations complemented these findings. Informants O1 and O4 reported that their children became more active and less prone to falling in daily activities. As O1 shared, “*Sekarang dia bisa lari lebih stabil, bahkan mulai suka loncat-*

loncat waktu main di rumah" ("Now he runs more steadily and even enjoys jumping at home"). Interestingly, while teachers emphasized form and rhythm, parents focused on functional movement outside the studio. Children themselves often expressed their progress playfully; A6-F shared proudly, *"Aku sekarang bisa nari kayak Kakak"* ("Now I can dance like the older kids").



Figure 11. Body and leg movement in Babalu dance

Figure 11 captures these developments, showing children engaged in coordinated body and leg movements involving balance and spatial orientation. Their synchronized actions reflect motor mastery, rhythm awareness, and growing social interaction—key indicators of gross motor and emotional development in early childhood. Overall, *Babalu Dance* offers a culturally embedded structure for enhancing body control, strength, and confidence through rhythmic repetition and symbolic movement.

Coordination of Hand and Finger Movements Strengthens Fine Motor Skills

Observations across eight sessions showed that hand-based movements—particularly rotation, clapping, and rhythmic clapping—played a central role in developing fine motor skills among younger participants, especially A3-Q and A6-F. During early sessions (1–2), many children struggled with rhythm and control. A6-F, for example, expressed, *"Tanganku bingung, Kak"* ("My hands are confused, Kak"), signaling difficulty with finger coordination. By the middle phase (sessions 3–5), improvements became visible. Children could sustain hand positions and synchronize with musical cues more consistently. Visual documentation from session 6 showed A3-Q performing movements with precision and focus, proudly telling a peer, *"Lihat tanganku, kayak yang diajarin!"* ("Look at my hands, just like we were taught!"). By sessions 6–8, most participants demonstrated clear dexterity and rhythmic stability, especially during sembah sequences and synchronized clapping routines, indicating refined motor planning and bilateral hand use.

Parental reports aligned with these findings. Informant O3 observed increased skill in tasks like drawing and stringing beads. "Now," O3 noted, "my child has better control in daily activities that used to be difficult." Instructor I3-N added that the dance's repetition built finger control in an engaging and playful way: *"It trains coordination without them realizing they're learning."* While teachers focused on rhythm and technique during practice, parents noticed improvements in everyday functions—grasp strength, dressing, and self-help routines. Children, meanwhile, described their progress through imaginative metaphors. A3-Q shared, *"Tanganku bisa nari kayak kupu-kupu sekarang!"* ("My hands can dance like butterflies now!"), reflecting both motor confidence and symbolic understanding.



Figure 12. Hand and Finger Movements in Babalu dance

Figure 12 reinforces these insights, depicting children engaged in coordinated hand gestures with visible concentration and precision. The group setting fosters peer learning, as children observe and mirror each other's movements. Over time, these structured and meaningful activities enhance not only fine motor control but also focus, expression, and cultural engagement. Overall, *Babalu Dance* supports fine motor development through rhythmically structured, symbolically rich hand movements. These findings align with developmentally appropriate practice (DAP) and embodied learning theory, which emphasize sensorimotor engagement as a foundation for both cognitive and functional growth (Tsompanaki, 2019; Uminah et al., 2023).

Choreographic Structure Facilitates Cognitive Development

Observations over eight training sessions showed that the structured phases of *Babalu Dance*—introductory, developmental, and peak—provided a reliable cognitive framework for children to internalize movement patterns and improve focus. In the initial sessions (1–2), participants like A2-S and A5-L often hesitated, relying on cues from peers or instructors. One child asked, “*Tadi dulu gerakannya apa ya?*” (“What was the first move again?”), highlighting early challenges in sequencing and recall.

By the middle sessions (3–5), children began to anticipate movement changes and synchronize with the music. A5-L expressed pride after a full sequence: “*Aku ingat semua gerakannya sekarang!*” (“I remembered all the moves now!”), reflecting enhanced working memory and attention. In the final phase (6–8), children demonstrated self-monitoring, often correcting their alignment mid-sequence without prompts. Field notes and video recordings confirmed these developments, showing full routines performed with fluency and musical synchronization—signs of temporal awareness and executive control.

Instructor I2-Y explained, “Children learn to follow instructions progressively, and the clear structure of the dance helps them develop cognitive abilities such as focus and sequence recall.” Parents also noticed spillover effects; O5 shared, “Now my child is more attentive—not only in dance but also when following steps at home.” Teachers focused on in-class attention and accuracy, while parents observed improved concentration and self-direction in daily routines. Children framed their experience in playful cognitive terms. A2-S stated, “*Aku hafal semua gerakannya, kayak main puzzle gerak!*” (“I remembered all the movements—like solving a movement puzzle!”), showing how dance supported pattern recognition and conceptual learning.

Pedagogically, the repetitive, structured choreography of *Babalu Dance* supports auditory-motor integration, working memory, and executive functioning—core components of early cognitive development. These findings align with information-processing theory, which

emphasizes routine and predictability as keys to improving memory encoding, attention span, and cognitive flexibility in young children (Tsompanaki, 2019; Uminah et al., 2023). More than artistic expression, *Babalu Dance* offers a culturally grounded model of instructional design that fosters cognitive growth in meaningful, child-centered ways.

Dance Practice Process Fosters Socialization and Positive Emotional Development

Over eight structured sessions, *Babalu Dance* training supported significant growth in the social-emotional development of children, especially participants A1-N and A6-F. In the early phase (Sessions 1–2), many children were hesitant to interact. A6-F, for instance, quietly shared, “*Aku malu nari sendiri...*” (“I’m shy to dance alone”), reflecting emotional inhibition and low peer engagement. By sessions 3–5, children increasingly engaged in collaborative movement and peer encouragement. A1-N was heard saying during a paired activity, “*Kita bareng ya, nanti pas muter*” (“Let’s do the turn together”), signaling social bonding and coordination. Observations noted improvements in turn-taking, emotional regulation, and teamwork, especially during group choreographies. Children began offering reminders, adjusting costumes for peers, and showing mutual support.

In the final sessions (6–8), participants displayed greater confidence and expressiveness, especially during the culminating group performance. Video footage captured laughter, synchronized dancing, and confident self-expression. A6-F exclaimed, “*Aku berani nari depan temen-temen sekarang!*” (“Now I’m brave enough to dance in front of my friends!”), highlighting emotional growth and pride. Parents and teachers affirmed this transformation. O1 noted, “*My previously quiet child has become more expressive and excited every time they practice*,” while I3-N observed a clear boost in self-confidence and group participation. Informants emphasized slightly different outcomes—teachers focused on expressive clarity and cooperation during practice, while parents noticed increased enthusiasm and emotional openness at home.

Children, meanwhile, described their joy in group performance. A1-N shared, “*Aku suka pas barengan, rasanya kayak nari sama temen di panggung*” (“I like the group part—it feels like dancing with friends on a stage”). The group-based and symbolically expressive nature of *Babalu Dance* nurtures social identity, empathy, and emotional resilience in a playful, culturally meaningful setting. As such, the training serves not only as an artistic activity but as a social-emotional learning environment—where movement becomes a vehicle for connection, self-expression, and character development.

Symbolic Movements Foster Artistic Appreciation and Cultural Identity

Across eight sessions, the symbolic movements of *Babalu Dance*—such as *sembah*, *malang kerik*, and ritual gazes—emerged as central to fostering artistic sensitivity and cultural identity in early childhood learners. In the initial sessions (1–2), children performed these gestures mechanically, often questioning their purpose. A2-S asked, “*Kenapa tangannya harus begini, Kak?*” (“Why do our hands have to move like this, Kak?”), signaling curiosity about meaning behind movement. By sessions 3–5, children began imbuing gestures with emotional intent and expressive control. Video recordings showed synchronized expressions—gentle bows during *sembah*, softened gazes in *malang kerik*—indicating growing aesthetic awareness. A5-L remarked after a performance, “*Ini gerakan buat hormat, kayak di cerita tadi*” (“This is a movement of respect, like in the story”), showing integration of symbolic meaning and narrative memory.

In the final sessions (6–8), children demonstrated greater fluency and intentionality. The dance shifted from imitation to genuine expression. Parent O6 noted, “*My child now bows with meaning—not just movement, but feeling.*” Instructors echoed this sentiment; I4 stated, “*Children are beginning to understand that Babalu Dance is not just an ordinary dance, but a living part of culture that must be respected and preserved.*” These insights reinforce the role of traditional arts in nurturing emotional depth, moral values, and cultural connection. Children described these experiences through vivid, imaginative language. A5-L said, “*Kalau aku gerakin tangan gini, rasanya kayak jadi tokoh di cerita nenek*” (“When I move my hands like this, I feel

like a character in Grandma's story"), illustrating how symbolic gestures activate embodied storytelling and identity-building.

Comparative perspectives reveal: teachers emphasized expressive accuracy and cultural literacy; parents observed increased pride and cultural attachment; while children interpreted the gestures through role-play and narrative imagination. This reflects how movement becomes a vehicle for meaning, allowing children to participate in their cultural heritage not just as observers, but as expressive actors.

Pedagogically, this aligns with developmentally appropriate practice (DAP) and symbolic play theory, where gesture and role enactment support value internalization, emotional expression, and cultural belonging. Through *Babalu Dance*, children learn not only to move—but to feel, honor, and embody the values and stories of their community.

Discussion

This discussion explores how *Babalu Dance's* movement repertoire supports five core domains of early childhood development, drawing on developmental theory and empirical findings. Thematic analysis reveals how dance movements act as multimodal stimuli—promoting not just motor coordination, but also cognitive engagement, socio-emotional interaction, and aesthetic awareness. Within this framework, *Babalu Dance* is positioned not merely as cultural performance but as a pedagogical tool—delivering an integrated, contextualized, and culturally grounded learning experience in the era of globalized early childhood education.

Motor Skill Development

Children's gross motor development depends on repetitive, full-body activities that engage large muscle groups and enhance balance and coordination (Goodway et al., 2019; Tsompanaki, 2019; Uminah et al., 2023). Movements such as gejug, jinjit, and ndegdeg in Babalu Dance stimulate these skills through rhythmic shifts, controlled steps, and lower body engagement. Similar to basic aerobic drills, these movements also activate the vestibular system—supporting postural control and spatial orientation. This aligns with findings by (Bégel et al., 2021; Marinšek & Denac, 2020; McGann et al., 2020), who show that structured dance improves sensorimotor integration and motor function, even among children with developmental challenges.

Equally, Babalu Dance's hand-based movements—ukel-ukel, sembah, and rhythmic clapping—promote fine motor refinement. These actions strengthen finger coordination, bilateral hand use, and wrist flexibility, all foundational for writing, tool use, and other functional skills in preschoolers (O'Brien & Kuhaneck, 2020). Studies on dance and music-based movement training (Bégel et al., 2021; Díaz-Pérez et al., 2021; Top et al., 2020). show significant improvements in children's manual coordination and precision. This study confirms that traditional dance offers not just artistic value but a developmentally rich sensorimotor pathway. Rather than relying solely on generic movement exercises, integrating local dance forms like Babalu Dance provides embodied learning that is meaningful, rhythmic, and culturally resonant—enhancing both gross and fine motor readiness in early learners.

Cognitive and Socio-Emotional Impact

Babalu Dance's structured and rhythmic choreography supports early cognitive development by engaging working memory, sequencing, and concentration. Drawing from Piaget's theory, children at this stage organize experiences through patterns—making dance an effective medium for training sequential memory and pattern recognition (Rubtsov, 2020). Vygotsky's concept of the zone of proximal development is also reflected in the dance practice, where peer interaction and instructor guidance help children master complex sequences through imitation and scaffolding. Recent research supports the cognitive benefits of structured physical activities that integrate coordination and rhythm. Fong Yan et al. (2024) found that dance enhances attention control and executive functioning in young children. Thus, *Babalu Dance* offers a natural context for developing cognitive flexibility and self-regulation, bridging movement and mental engagement.

Socially, the group-based format of the dance cultivates cooperation, empathy, and confidence. Initially reserved children became more expressive and interactive during the training, consistent with Erikson's "initiative vs. guilt" stage, where children develop self-esteem through active participation (Rogers, 2018). The safe, expressive setting allows for emotional exploration and peer bonding. Vygotsky also emphasizes the role of cultural interaction in emotional regulation (de Faria & de Camargo, 2024).

Kotaman et al. (2024) demonstrated that creative dance improves social competence in preschoolers, supporting this study's observation that *Babalu Dance* fosters not only movement skills but also affective growth. Even simple acts—like turn-taking or performing as a group—serve as early forms of character education, grounded in culturally meaningful practice.

Art Appreciation and Reinforcement of Children's Cultural Identity

The symbolic movements in Babalu Dance, such as *sembah* (a respectful gesture), *malang kerik*, and specific head motions, represent more than mere technical execution—they convey profound values of respect, politeness, and spirituality. Monteiro et al. (2024) argues that young children are capable of grasping cultural meanings through symbolic representation, particularly within artistic media. Matthews (2021) further emphasizes that artistic expression, grounded in embodied understanding and sensory methods, plays a vital role in empowerment and learning, standing alongside verbal literacy in education. Supporting this, research by Good et al., (2021) highlights the significant role of traditional dance in reinforcing children's cultural identity, especially amidst the cultural homogenization propelled by globalization. Through various community programs and initiatives, traditional dances serve as platforms for cultural expression and identity formation among youth. In this context, Babalu Dance offers a pertinent medium to cultivate aesthetic awareness and introduce local values in an intuitive and enjoyable manner. The implication is that arts education based on local culture contributes not only to child development but also functions as a strategy for preserving collective identity from an early age.

Synthesis, Implications, and Contributions of the Study

The findings demonstrate that *Babalu Dance* holds integrative pedagogical value, weaving together motor, cognitive, socio-emotional, and cultural domains within a singular, expressive practice. Theoretically, this study affirms that expressive movement is not peripheral but central to holistic child development—particularly when grounded in cultural context. Gross motor movements like *gejug*, *jinjit*, and *ndegdeg* strengthen coordination and balance, aligning with rhythmic motor theories (Liparoti & Minino, 2021). Hand movements such as *ukel-ukel* and *sembah* enhance fine motor skills essential for writing, grasping, and object manipulation. Cognitively, children's improved recall, patterning, and rhythm synchronization reflect Piaget's view of schema development through concrete experiences (Bentley et al., 2023). Socially, group choreography fosters empathy and expressive confidence, echoing Vygotsky's theory of socially mediated learning (Rubtsov, 2020).

Symbolic gestures like *sembah* and *malang kerik* promote early cultural literacy, enabling children to embody local values through movement—supporting Zhang-Yu et al. (2021) assertion that art shapes identity from early childhood. The five main themes derived from coding (motor, cognitive, social-emotional, aesthetic, and cultural) highlight not just function, but also symbolic and narrative dimensions embedded in traditional dance. This study's key novelty lies in systematically mapping traditional movement categories to developmental domains, offering a structural, pedagogical lens often absent from generalized studies of dance in education. Rather than treating dance as affective or performative only, it is positioned here as a deliberate educational model rooted in local heritage and child-centered development.

Practically, the research proposes a new direction for curriculum integration—where traditional dance is not merely celebratory but forms the basis of daily developmental learning. Implications include: (1) Curriculum Design: Developing modules based on simple, repetitive, and meaningful movements like those in *Babalu Dance*; (2) Teacher Training: Equipping

educators with the knowledge to implement arts- and culture-based learning; and (3) Cultural Revitalization: Positioning traditional dance within formal education ensures its transmission to younger generations, not only as heritage, but as embodied pedagogy. In essence, *Babalu Dance* becomes a living classroom—a convergence of rhythm, emotion, culture, and development—affirming the role of local art in building the whole child.

Limitations and Recommendations for Future Research

This study has several limitations. First, it was conducted in a single sanggar in Batang, limiting the generalizability of findings. Second, the three-month duration did not allow for evaluation of long-term developmental outcomes. Third, the purely qualitative design restricted the ability to measure progress using standardized developmental metrics. Despite these constraints, the study provides deep contextual insights into how traditional dance supports child development. Future research should adopt a mixed-methods approach, combining qualitative observations with quantitative assessments. Expanding to other cultural settings across different regions would enhance the robustness and applicability of findings. Additionally, developing a Babalu Dance-based learning module for early childhood educators—along with training on cultural interpretation and movement pedagogy—would support broader implementation. Cross-sector collaboration among artists, educators, and curriculum designers is essential to sustain both the educational and cultural essence of traditional performing arts.

Conclusion

The findings of this study indicate that Babalu Dance has pedagogical potential to support early childhood development in a contextual and culturally relevant manner. As a traditional performing art from the northern coast of Java, Babalu Dance provides integrated movement patterns that stimulate multiple developmental domains: gross motor, fine motor, cognitive, socio-emotional, and artistic appreciation. The observed improvements in children's balance, coordination, memory, and social expressiveness suggest that traditional dance can serve as a holistic learning medium. Moreover, the symbolic meanings embedded in each movement act as a vehicle of cultural literacy, allowing children to internalize local values through embodied practices. However, the study's scope remains limited to *Sanggar Putra Budaya Batang* with a small purposive sample, which restricts the generalizability of the findings. The research duration of three months is also insufficient to examine long-term developmental impacts. Additionally, the qualitative design employed lacked standardized quantitative tools to measure learning outcomes more precisely.

To overcome these limitations, further studies are encouraged to adopt mixed-methods approaches that combine qualitative richness with quantitative rigor. Expanding the scope to include various *sanggar* or early childhood education institutions across regions would enhance representativeness and contextual diversity. Developing a structured learning model based on Babalu Dance and integrating it into formal early childhood curricula could broaden its pedagogical application. Teacher training is essential to ensure fidelity in interpreting and delivering the dance's educational and cultural dimensions. Collaborative efforts among artists, educators, and curriculum developers are key to sustaining cultural heritage while enriching early learning environments.

Declarations

Author contribution statement

Galuh Fatma Hediarti was responsible for the conceptualization and design of the study, conducting data collection in the field, and drafting the initial manuscript. Ikha Sulis Setyaningrum took the lead in data analysis, validation of findings, and editing the manuscript to ensure academic rigor and coherence. Both authors actively contributed to scholarly discussions, the development of the theoretical framework, and critically reviewed the final draft. All authors have read, provided feedback on, and approved the final version of the manuscript for publication.

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request. Documentation includes observation notes, interview transcripts, and visual records collected during fieldwork at Sanggar Putra Budaya Batang.

Declaration of interests statement

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

Additional information

This research was conducted with the support and permission of Sanggar Putra Budaya Batang as the community partner. The study followed ethical considerations in working with children, including obtaining informed consent from parents or guardians of participating children. No external ethical review was required due to the non-interventional and observational nature of the study.

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