



The Development of Kinesthetic Skills in the *Lembu* Dance Extracurricular Program at Elementary School

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Abstract: Extracurricular activities play a vital role in fostering students' holistic development by nurturing their potential, talents, and character. Traditional arts such as the *Lembu* Dance are particularly valuable for improving kinesthetic intelligence, as they involve body coordination, balance, flexibility, and an understanding of symbolic movements rooted in Indonesian culture. This study explored the contribution of the *Lembu* Dance to the development of kinesthetic intelligence among 15 students participating in extracurricular activities at Gondangrawe Elementary School. A qualitative descriptive case study approach was used, and data was collected through observation, interviews, and documentation. Thematic analysis was applied to identify patterns related to kinesthetic development. The findings show that the *Lembu* Dance significantly enhances students' kinesthetic abilities while also fostering psychological growth, including self-confidence, public speaking skills, and social interaction. Furthermore, the activity instills character values such as discipline, patience, and perseverance. However, challenges such as limited facilities, short practice durations, and varied student engagement hinder program implementation. To improve its effectiveness, adequate resources, flexible schedules, and innovative approaches, including the integration of technology, are recommended. Overall, this study highlights the *Lembu* Dance as both a cultural preservation effort and a holistic educational tool for students' physical, mental, and emotional development.

Keywords: *Lembu* Dance, kinesthetic intelligence, holistic education

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Introduction

Extracurricular activities play a crucial role in the holistic development of students, as they foster the growth of students' potential, talents, interests, and character (Ahyyar et al., 2020). According to Permendikbudristek Number 12 of 2024, extracurricular activities are an integral part of education designed to optimise students' potential, personality, abilities, and independence (Widianingsih & Suklani, 2024). These activities provide students with the opportunity to explore their abilities beyond formal learning, addressing cognitive, affective, and psychomotor aspects (Ramadhani & Ayriza, 2019). Furthermore, extracurricular activities enable students to apply theoretical knowledge in practical settings, supporting counselling services that help students discover and develop their potential in-depth (Musa et al., 2023).

One form of extracurricular activity that holds great educational significance is dance. Dance not only preserves cultural heritage but also enhances art appreciation, promotes motor skills development, and fosters creativity through rhythmic and aesthetic movements (Sabahiyah et al., 2023). As a traditional art form, dance reflects cultural and philosophical values that are intertwined with national identity. It serves as an educational medium to help students understand cultural values, creativity, and boost self-confidence (Djafar & Djafri, 2024). Among various traditional dances, the *Lembu* Dance holds profound cultural significance. This dance, rich in philosophical values, symbolises strength, wisdom, and the harmonious relationship between humans and nature. The movements in *Lembu* Dance

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represent both physical strength and aesthetic expression, reflecting the balance between creativity and discipline. Beyond cultural expression, *Lembu* Dance offers substantial educational benefits, particularly in the development of motor skills and kinesthetic intelligence (Tunggal et al., 2023).

Kinesthetic intelligence, a key aspect of Howard Gardner's theory of multiple intelligences, refers to a person's ability to learn through physical experiences and use their body as a tool for expressing ideas or solving problems (Putri & Usriyah, 2021). Students with high kinesthetic intelligence exhibit good motor coordination, muscle memory, and a preference for hands-on learning (Sholihatunnisa et al., 2024). In the context of *Lembu* Dance, kinesthetic intelligence can be developed through structured exercises that involve motor activity, mastery of rhythm, and understanding the symbolic meaning of movements. Previous studies have highlighted the significant potential of dance in fostering kinesthetic intelligence. Susetiyo et al. (2024) emphasised that dance improves both gross and fine motor skills through a systematic approach integrating movement, rhythm, and expression. Delia & Yeni (2020) argued that dance helps students align their movements with musical rhythms, promoting holistic learning (Suharja et al., 2024). Additionally, it is found that traditional dances like Minang and Saman not only train physical skills but also strengthen cooperation and concentration (Hermanto & Pamungkas, 2023).

Despite the benefits of *Lembu* Dance, its implementation as an extracurricular activity in elementary schools faces several challenges. Most schools tend to prioritise cognitive learning over the development of kinesthetic aspects, leading to the underutilisation of dance as an educational tool (Amrullah & Suwarjo, 2018). Furthermore, issues such as limited resources, insufficient teacher training in integrating dance into the curriculum, and a lack of understanding of dance's value hinder its effective implementation. As a result, the potential of *Lembu* Dance in enhancing students' kinesthetic intelligence remains largely untapped. In addition to its educational benefits, traditional dance, including *Lembu* Dance, plays a key role in fostering pride in local culture (Yuliasma et al., 2023). Research by Anggia & Marzam (2024) showed that traditional dance can increase students' pride in their local cultural identity while supporting the achievement of national education goals, as outlined in Law Number 20 of 2003 concerning the National Education System (Trung & Hong, 2024).

This study addresses the gap in the literature by investigating the kinesthetic development of students participating in *Lembu* Dance extracurricular activities. It aims to provide both theoretical and practical insights into the role of *Lembu* Dance as an educational tool for developing kinesthetic intelligence. By filling this gap, this research will offer strategic recommendations for optimising dance extracurricular programs in elementary schools, particularly in Boyolali. Therefore, it seeks to contribute to the development of a more holistic approach to education in Indonesia, enhancing not only academic skills but also cultural appreciation and physical intelligence.

Methods

This study utilised a qualitative approach with a descriptive case study method to investigate the role of extracurricular *Lembu* Dance activities in enhancing students' kinesthetic intelligence. The qualitative approach was chosen because it allows for a comprehensive exploration of students' experiences in dance activities and their development of motor skills and expressive abilities (Lluch-Molins et al., 2022). Through this approach, the study aimed to produce a thorough understanding of how *Lembu* Dance activities influence the development of kinesthetic intelligence in elementary school students. The descriptive method enabled the researchers to collect data through narratives, stories, and in-depth descriptions. This approach focused on depicting the actual conditions of extracurricular dance activities, including dynamics, interactions, and students' direct experiences. Thus, the study provided a holistic view of how dance activities contribute to developing students' kinesthetic intelligence (Creswell & Guetterman, 2018).

The case study approach was employed because it is particularly suited for examining specific, contextual situations in depth. This research was conducted at Gondangrawe Elementary School, where 15 students participated in extracurricular *Lembu* Dance activities. The case study design enabled a comprehensive understanding of the factors influencing the implementation of dance activities and their impact on developing students' kinesthetic intelligence. By using this method, the researchers were able

to analyse the background, activity dynamics, and the outcomes achieved by students within a specific and holistic context (Damayanti & Mawardi, 2018).

The research procedures were carried out in several stages. The first phase involved initial planning, where the researcher conducted preliminary visits to the school to gather contextual information, establish rapport with the staff and participants, and obtain the necessary ethical approvals. In the second phase, data collection took place over a period of six weeks, utilising various qualitative methods. Data were collected through observations of the extracurricular dance sessions, recording student participation, interactions, and observable changes in motor skills and expression. Semi-structured interviews were conducted with students, teachers, and school staff to understand their perceptions of the *Lembu* Dance activities and their impact on students' kinesthetic intelligence. Additionally, the researcher performed document analysis, reviewing lesson plans, student progress records, and activity reports to gain insight into the structure and objectives of the extracurricular dance program. The third phase involved data transcription and organisation, where all interviews and field notes were transcribed and thematically categorised for further analysis.

The primary instruments used for data collection in this study included an observation checklist, which was developed to systematically document specific behaviors, interactions, and participation levels during the dance sessions. A semi-structured interview guide was used to direct the interviews, while still allowing for flexibility to explore participants' unique perspectives (Shaidullina et al., 2023). The document review protocol helped to analyse relevant school records and materials, providing additional context to the findings from observations and interviews (Dewi & Rukmini, 2019).

Data were analysed using thematic analysis, a widely used method for identifying and analysing patterns within qualitative data. The process began with familiarisation with the data, where the researcher read through all collected materials—interview transcripts, field notes, and documents—to become acquainted with the content. Next, the researcher engaged in coding, identifying key segments of data related to the research objectives, such as "kinesthetic development," "student engagement," and "teacher perspectives on dance." Themes were then identified by grouping related codes into broader categories, such as "impact on motor coordination," "emotional expression through dance," and "challenges in implementation." After the initial themes were identified, the researcher reviewed and refined the themes to ensure their relevance to the research objectives. Finally, the findings were reported in a narrative form, supported by direct quotes and observations, to illustrate how *Lembu* Dance activities contributed to the development of students' kinesthetic intelligence (Christian & Prasida, 2018; Arni et al., 2024). Through these research procedures and data analysis techniques, the study aimed to provide a comprehensive understanding of how extracurricular *Lembu* Dance activities contribute to enhancing kinesthetic intelligence in elementary school students, thereby effectively addressing the research objectives.

Results and Discussion

Results

The extracurricular activity of the ox dance at Gondangrawe Elementary School is one of the activities carried out to realise the school's Vision: the formation of intelligent, skilled, pious, cultured, and noble students as well as one of the programs to realise the second school mission, namely Encouraging and helping each student to recognise their potential so that it can be developed more optimally. Based on the interview with the dance extracurricular trainer at Gondangrawe Elementary School, it was explained that the primary purpose of the dance extracurricular program is to develop students' talents and interests in dance while also preserving regional culture and traditions. The dance extracurricular activities are held routinely every Monday from 1:00 to 3:00 p.m. The implementation is carried out in two central locations: the library room and the schoolyard. The dance trainer in the Ox Creative Art extracurricular activity at Gondangrawe Elementary School is a 25 years old woman. In addition to her role as a class teacher, she also actively guides extracurricular dance activities at school. Under her guidance, students have achieved third place in the FLS2N competition at the sub-district level. Her dedication and expertise in dance make her an important figure in developing students' artistic talents.

The results of this study describe how the *Lembu* Dance, as part of the dance extracurricular at Gondangrawe Elementary School, can develop students' kinesthetic intelligence. The *Lembu* Dance is a modern dance art rooted in Indonesian society's culture and traditions, depicting the ox's symbolism as an animal with significant historical and spiritual value in the lives of agrarian communities. Through this dance, students are not only trained to master physical movements but are also invited to understand the cultural and moral values contained in each element of the dance. The movements in this dance emphasise the harmony between physical strength and gentleness, manifested in a combination of graceful hand movements and solid footsteps. Properties such as masks, ox horn ornaments, and colorful costumes emphasise the theme of the dance and depict the spirit of cooperation and prosperity of agrarian communities.

This dance extracurricular activity has a function that is more than just entertainment. Dance activities involve a complex learning process in which students are trained to improve their body coordination, balance, flexibility, and physical strength. In addition, through structured training, students are taught to understand moral values, such as maintaining a balance between humans, nature, and tradition, thereby developing physically, mentally, and emotionally. Previous studies have shown that dance effectively improves kinesthetic intelligence by involving fine and gross motor coordination integrated with emotion and artistic expression (Scheff et al., 2010). With innovative choreography, *Lembu* Creation Dance becomes more relevant to the younger generation, attracting their attention to local culture and providing a fun, educational experience. This demonstrates that dance can serve as a holistic learning medium that integrates art, culture, and the development of students' kinesthetic potential (Farindhani & Wangid, 2019).

Based on observations, the *Lembu* Dance demonstrates the complexity of movements that involve various kinesthetic elements of the body, including the head, body, hands, and feet, with a high level of coordination. Each movement is designed to train a specific aspect of kinesthetic intelligence. Explanations related to the movements can be seen in Figures 1 to 4.

a. Head Movements to the Right and Left Mimic the Motion of an Ox's Head

These kinesthetic movements involve rhythmic and controlled rotations of the neck, upper back, and shoulder muscles. The sternocleidomastoid, splenius capitis, and scalene muscles work alternately to turn the head side to side, while the trapezius and levator scapulae help stabilize the head and maintain balance. Typically performed at a slow tempo, this movement imitates the natural, deliberate motion of animals. It requires coordinated engagement of the neck muscles and proper body posture to ensure smooth execution and prevent tension, as illustrated in Figure 1.



Figure 1. Head Movement

b. Body Movements Slightly Forward and to the Left Side

Kinesthetic control through a coordinated engagement of core, back, and hip muscles. The rectus abdominis and external oblique muscles on the left side work to bend the torso laterally, while the erector spinae and quadratus lumborum stabilize the spine during the movement. The gluteus medius and tensor fasciae latae in the hip region help maintain pelvic alignment and support. This movement is typically executed with controlled weight distribution on the left leg, requiring upper body coordination to maintain a balanced and stable posture. It mimics natural body shifts and demands awareness of posture to avoid strain, as shown in Figure 2.



Figure 2. Body Movement

c. Hand Movement

In this movement, both hands are clenched beside the head, resembling ox horns, alternating movements to the right and left. The kinesthetic movement of both hands clenched beside the head, resembling ox horns, involves alternating movements to the right and left, requiring coordination of the shoulder, arm, and neck. The deltoid muscle maintains the position of the raised arm beside the head, while the biceps brachii, triceps brachii, and brachialis help maintain the stability of the elbow when the hand is clenched. Movements to the right and left involve the pectoralis major, trapezius, and rotator cuff muscles, which support the shifting of the shoulders and arms. Additionally, the sternocleidomastoid and splenius capitis muscles in the neck assist in directing the movement of the head to align with the movement of the hands. This movement creates a rhythmic pattern that resembles the movement of ox horns, with balance and control in the upper body. This can be seen in Figure 3.



Figure 3. Hand Movement

d. Leg Movement

Both legs are opened and slightly bent in this movement. Kinesthetic movement with both legs open and slightly bent reflects a stable and dynamic posture that involves the synergistic work of the leg, hip, and core muscles. The quadriceps muscles in the front thighs hold the knees in a half-bent position, while the hamstrings in the back of the thighs help maintain control and flexibility. The gluteus maximus and gluteus medius support the hips and pelvis, maintaining balanced posture. The adductor muscles in the inner thighs and the abductors in the outer thighs keep the legs open, while the gastrocnemius and soleus in the calves help stabilise the ankles. This movement is also supported by core muscles, such as the rectus abdominis and obliques, to ensure body balance when in this position. This can be seen in Figure 4.



Figure 4. Leg Movement

However, interviews with dance teachers revealed several factors that inhibited the implementation of this extracurricular activity. One of the main obstacles is the limited practice time. The duration of practice, which only lasts two hours each week, is inadequate to convey the material in depth, especially when students need additional time to understand and memorise the movements correctly. The process of repeating movements is often interrupted, which ultimately hinders the achievement of optimal progress. Additionally, the variety of student interests and abilities presents significant challenges. Students with varying levels of enthusiasm and ability require different learning approaches, which can be challenging to balance within limited practice time. Limited facilities are also an obstacle to implementing this activity. Although media such as audio and video are used as support, the absence of an ideal practice room and tools such as a large mirror makes it difficult for students to improve their posture and movements visually (Li & Qi, 2025), limited facilities are often a barrier to learning the arts, especially those requiring adequate physical expression space. Student commitment is also problematic because not all students are genuinely interested in dance. Some students participate in this activity solely due to the influence of friends, which leads to a lack of seriousness in their practice and negatively impacts the overall learning atmosphere (Lluch-Molins et al., 2022). These obstacles reduce the effectiveness of extracurricular implementation and limit students' development in mastering *Lembu* Dance (Kakar et al., 2019).

Despite various obstacles, implementing this dance extracurricular activity still significantly benefits students. To increase its effectiveness, improvements are needed in several aspects, such as extending the duration of practice, providing adequate supporting facilities, and adopting a more inclusive learning approach to accommodate the diverse needs of students (Freedman, 2022). With these steps, *Lembu* Dance has the potential to become a more effective means of developing kinesthetic intelligence, building character, and preserving local culture. This shows that dance can be an integral part of holistic education, providing positive impacts for students and the sustainability of cultural values amidst the flow of modernisation (Soomro et al., 2023).

Discussion

The results of this study indicate that extracurricular *Lembu* Dance activities at Gondangrawe Elementary School have made significant contributions to the development of students' kinesthetic intelligence (Syarifah, 2019). Based on the data collected through observations, interviews, and document analysis, it was evident that *Lembu* Dance improved students' motor coordination, balance, flexibility, and understanding of movement patterns (Rosi & Susmiarti, 2023). These findings are consistent with the views of Mudianingrum et al. (2024), who stated that dance is an effective medium for developing both fine and gross motor skills, as it involves a complex integration of body movement, rhythm, and artistic expression.

The analysis of the *Lembu* Dance movements revealed how the structured exercises trained specific aspects of kinesthetic intelligence. For instance, the head movements that mimicked an ox's motions helped improve neck and upper body coordination, enhancing balance and muscle control (Lokoviti & Pitsi, 2025). Similarly, the body lean, hand movements resembling ox horns, and leg movements required precise coordination of various muscle groups, fostering the development of physical strength, body awareness, and coordination. These elements of *Lembu* Dance correspond with Juwita et al. (2020), who highlighted that dance enhances students' ability to align movements with musical rhythms, promoting a holistic approach to learning (I Ketut et al., 2024; Magulod, 2019).

Beyond physical coordination, the dance also contributed to psychological and emotional development. The practice of repetitive movements helped build patience, perseverance, and discipline—values that are integral to the development of a student's character. Interviews with dance teachers emphasised that these non-cognitive aspects of dance, such as fostering self-confidence, enhancing public speaking abilities, and strengthening social skills, were equally important outcomes of the extracurricular activity. This aligns with findings by Tysha & Handyaningrum (2022) who noted that creative dance activities promote emotional resilience and self-esteem in students.

However, the study also identified several challenges that hindered the optimal effectiveness of the *Lembu* Dance extracurricular program. One of the main issues was limited practice time. With only two hours per week allocated for practice, it became difficult for students to internalise the dance movements and refine their skills fully. This limitation in practice time is consistent with research by

Marsiano et al. (2019) who discussed how time constraints can impact the success of extracurricular activities, particularly those requiring physical exertion and skill mastery. The short duration of practice sessions affected students' ability to memorise and perform the movements accurately, ultimately slowing their progress (Diva & Marzam, 2024; Winarti et al., 2019). Another challenge was the variety in student abilities and interest levels. Some students were highly engaged, while others showed less enthusiasm, impacting the overall dynamics of the group. This issue is explained by Munir & Zaheer (2021), who pointed out that students' varying levels of interest and commitment to extracurricular activities can create difficulties in managing group activities effectively (Khoo et al., 2024). To overcome this, teachers have been found to adopt different approaches to cater to individual student needs; however, this has created additional challenges in balancing the learning pace for the entire group (Welong et al., 2020).

The study also found that limited facilities, such as the absence of an ideal practice room and supportive tools like mirrors, made it harder for students to refine their posture and movement. Fitriana (2017) noted that the lack of adequate learning spaces is a common barrier to arts education, especially for activities that require physical expression (Hasibuan et al., 2019). Despite these obstacles, the teachers' dedication and use of available resources helped ensure that students still benefited from the dance program (Putri & Widiyono, 2022). In relation to previous literature, the study supports the argument that traditional dance can significantly contribute to the development of kinesthetic intelligence. Similar to research by Susetiyo et al. (2024) and Sholihatunnisa et al. (2024), the findings show that dance not only enhances physical coordination but also improves psychological aspects such as emotional control, self-confidence, and social interaction (Turmuzy et al., 2024). Furthermore, the symbolic meaning embedded in traditional dances, such as the *Lembu* Dance, strengthens students' cultural understanding, which is essential for their personal and social development, as highlighted by Suhendra et al. (2019). This suggests that *Lembu* Dance, as a form of cultural expression, provides a multifaceted educational experience, merging physical, emotional, and cultural learning in a single extracurricular activity (Hardi et al., 2022).

In conclusion, while the study identified several challenges, it also confirmed that *Lembu* Dance plays a crucial role in enhancing students' kinesthetic intelligence, as well as contributing to their emotional and character development. To optimise the effectiveness of this extracurricular activity, it is essential to address the limitations of practice time, improve facilities, and adopt more inclusive teaching strategies. Additionally, increasing parental support and ensuring flexible scheduling would further enhance the sustainability and success of the *Lembu* Dance program at Gondangrawe Elementary School. This study confirms the potential of dance as a holistic educational tool that not only enhances physical abilities but also cultivates essential life skills, such as perseverance, cooperation, and cultural appreciation.

Conclusion

This study concludes that the *Lembu* Dance, as part of the extracurricular program at Gondangrawe Elementary School, significantly contributes to the development of students' kinesthetic intelligence. The dance activities enhance motor coordination, balance, flexibility, and body awareness, while also fostering self-confidence, discipline, and perseverance. These outcomes align with the research objectives of exploring how dance can improve kinesthetic intelligence and support students' holistic development. However, challenges such as limited practice time, inconsistent student engagement, and inadequate facilities hinder the program's full potential. To optimise its impact, extending practice durations, improving facilities, and adopting more inclusive learning strategies are recommended to address diverse student needs. Ultimately, the *Lembu* Creation Dance not only promotes physical development but also nurtures emotional and social skills, establishing it as a valuable educational tool for supporting students' overall growth.

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