



The Impact of Angklung Extracurricular Activities on the Development of Fine Motor Skills in Elementary School Students

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ABSTRACT

Fine motor skills are still a major concern in elementary education. The background of the study is based on the lack of studies that highlight the role of angklung art in children's fine motor skills. This study aims to analyze the implementation of angklung extracurricular activities in developing fine motor skills of elementary school students. The methodology used in this study is a descriptive qualitative approach with a case study method. Data were collected through observation, interview, and documentation data collection techniques with observation guidelines, interview guidelines, and documentation guidelines that have been validated by experts. The research sample was selected using a purposive sampling technique of ten Phase A students in grades 1 and 2 at SDN 212 Harapan who were members of the angklung beginner team with several specific criteria. The results of data processing and analysis found in this study indicate that angklung activities can improve hand-eye coordination, finger strength, and movement accuracy through multisensory activities that integrate audio aspects (listening to musical accompaniment), visual (seeing instructions from the trainer), and kinesthetic (processing audio-visual information into hand and finger movements when playing the angklung). Thus, angklung extracurricular activities can be a strategic alternative in supporting the holistic development of fine motor skills in elementary school students

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1. INTRODUCTION

Fine motor skills involve coordination, precision, and speed of hand and eye movements, thereby requiring appropriate stimuli for their development (Wahyuningrum & Watini, 2022). The ability to control hand and finger movements is a crucial indicator in children's fine motor development (Ningsih & Watini, 2022). To achieve this capability, children require consistent and gradual practice. Fine motor movements are influenced by the learning and practice process, and require good multisensory coordination to support daily activities such as writing or using tools (Meriyati et al., 2020). Therefore, a structured and continuous learning approach is necessary to ensure these skills develop optimally according to the child's developmental stage.

Fine motor skills remain a major concern in basic education, given their essential role in activities like writing and drawing. A 2021 report from the Ministry of Education and Culture (Kemendikbud) noted that approximately 45% of early-grade students have not achieved optimal fine motor skills, which can hinder academic ability and reduce self-confidence (Oktavian & Hakim, 2022). In fact, these skills are closely related to learning success, especially in tasks demanding precision and coordination (Apriyanti & Mulya, 2021). Thus far, research on fine motor development has generally focused on activities such as stringing beads, paper folding, stacking blocks, or buttoning shirts, which are simple visual-kinesthetic activities. However, in this study, extracurricular angklung activities are highlighted as a more complex alternative approach because they involve the simultaneous integration of hand movements, visual observation, and hearing. This opens new opportunities to explore how traditional musical arts can contribute more comprehensively to children's fine motor development.

Based on initial observation results, playing angklung not only trains children's musical skills but also encourages the skillful use of hands and fingers. Interviews with the angklung trainer at SDN 212 Harapan revealed that activities are divided into two teams: the beginner team (grades 1–2) and the advanced team (grades 3–4). The trainer emphasized the importance of mastering basic techniques, starting from the use of the left hand, which is rarely trained, to the technique of pinching the angklung with the thumb and index finger and shaking it maximally using the whole hand. This technique resembles the motion of writing and directly trains the small muscles of the hands and fingers, supporting gradual fine motor development.

Research linking fine motor skills with playing the angklung as a traditional musical instrument is still very limited, despite its massive potential to support arts education and child development. The activity of playing angklung involves hand and finger coordination, concentration, and precision in producing the right notes, effectively training fine motor skills (Budiwati, 2019). Techniques such as *kurulung*, *centok*, and *tengkep* require well-trained motor skills. However, studies specifically addressing the implementation of extracurricular angklung in the context of fine motor development in elementary school students remain minimal (Arini & Saputra, 2023). Most previous research has focused more on the musical, cognitive, or emotional aspects without examining the direct role of this activity on children's fine motor coordination.

In the context of education that demands a holistic approach, learning innovations involving various sensory systems are needed to develop children's fine motor skills. This research highlights extracurricular angklung activities as a means of fine motor development through a multisensory approach, which simultaneously includes audio (hearing), visual (sight), and kinesthetic (body movement) systems (Oktafianto et al., 2020). Unlike regular fine motor activities, playing angklung demands attention to visual cues, accuracy in hearing notes, and rhythmic hand movements, thereby encouraging simultaneous coordination of the senses and the body. Thus, the angklung functions not only as a traditional musical instrument but also as an effective educational medium to strengthen the fine motor skills of elementary school students. Therefore,

this research is crucial to deeply examine the implementation process, influential techniques, and the role of extracurricular angklung in developing students' fine motor skills. Hence, this study is entitled "The Role of Angklung Extracurriculars for the Development of Fine Motor Skills of Elementary School Students".

2. RESEARCH METHODOLOGY

This study uses a descriptive qualitative approach to obtain a holistic and in-depth picture of the phenomenon being studied, by compiling a systematic, factual, and accurate description of the characteristics and relationships between phenomena (Citriadin, 2020). The case study method was chosen because it can deeply explore an activity (Widhagdha & Ediyono, 2022). Case studies are also effective in answering questions about how an activity takes place and analyzing patterns that emerge in the process (Rahman, 2024). Data collection was conducted through non-participatory observation, semi-structured interviews, and documentation. The research instruments used included observation guidelines, interview guidelines, and documentation guidelines, which were validated by expert lecturers. The research was carried out during extracurricular angklung activities at SDN 212 Harapan from February to June 2025. The sample consisted of 10 students from the Phase A beginner angklung team (grades 1 and 2 elementary school), selected through purposive sampling based on several criteria: students who are active members of the angklung extracurricular, belong to Phase A grades 1 and 2, and experience difficulties in playing angklung, such as in how to hold and play the musical instrument.

3. RESULT AND DISCUSSIONS

Based on the results of observations, interviews, and documentation conducted, the findings can be described as follows:

Student Fine Motor Coordination Through Angklung Practice

The angklung extracurricular activities carried out gradually at SDN 212 Harapan have proven to have a positive impact on the fine motor skill development of grade 1 and 2 students in the Beginner team. During the six observations, significant progress was seen in hand and finger coordination, as well as the students' ability to respond to the trainer's visual and auditory cues. While at the beginning of the meetings many students were unable to hold the angklung with the correct hand position or produce the appropriate sound, by the final practice sessions, almost all students showed improvement in hand position accuracy, grip strength, and the ability to follow the musical rhythm simultaneously. The following are the observation findings over the six meetings.

Table 1. Observation Findings for Each Meeting

No	Observation	Observation Findings
1.	First Meeting Observation	Students began to be introduced to the basic techniques of playing angklung. There were still many difficulties in hand and finger coordination, requiring a more supportive learning approach. This became the basis for determining the focus of subsequent observations.
2.	Second Meeting Observation	Advanced techniques had not yet been taught to beginners; the initial focus was on basic techniques.
3.	Third	Improvements in mastering basic techniques were found,

	Meeting Observation	although errors still occurred in note duration and delayed note entries. Grip control, holding techniques, and the ability to follow instructions remained challenges for some students.
4.	Fourth Meeting Observation	Practice focused on group playing. Consistency of movement began to show, although the technique of pinching and sounding the angklung was still not uniform. Coordination between vision and movement showed positive progress.
5.	Fifth Meeting Observation	There was a significant improvement in eye coordination with the trainer's instructions and the ability to follow the musical rhythm. Students' focus during practice was more stable compared to previous meetings.
6.	Sixth Meeting Observation	During the dress rehearsal before the performance, students showed more mature skills: holding technique, hand and finger positions, and sound quality were optimal. Visual coordination and response to the trainer's directions were excellent.

The observation results over six meetings indicate a gradual improvement in students' fine motor skills. Initially experiencing difficulties with hand coordination, holding techniques, and focus, students began to show positive progress in following musical rhythms, trainer instructions, and producing more accurate angklung sounds. The extracurricular angklung activities proved to effectively support students' fine motor development.

Students demonstrated improvements in the precision of hand positions, grip strength, and the ability to follow the rhythm in unison. This is reflected in the appropriate holding positions of the angklung, as illustrated in the following figure:



Figure 1. *Hand and Finger Positions Holding the Angklung*

This is in line with Arnold Gesell's theory of fine motor development, which states that fine motor skills develop through repetitive practice in a conducive environment (Junaidin, 2024). In this case, playing the angklung provides two things simultaneously: first, as a direct stimulus through finger movements and multisensory coordination (hands, eyes, and ears) that are continuously trained repeatedly; and second, as a conducive learning environment because it is conducted in a structured, fun manner and involves positive social interactions. Therefore, the activity of playing angklung can be considered consistent with the principles of Arnold Gesell's theory in supporting the fine motor development of elementary school-aged children.

Trainer's Strategy in Encouraging Fine Motor Skills

The trainer's role in the angklung extracurricular activities is a crucial factor in the successful development of students' fine motor skills. Based on interview results:

Table 2. Summary of Interview Findings

No	Observation	Observation Findings
1.	Basic Angklung Practice	Focuses on hand position, strengthening the left-hand muscles, conducted in approximately the first 4 meetings.
2.	Basic & Advanced Techniques	Advanced techniques are not yet taught to beginners; the initial focus remains on basic techniques.
3.	Hand-Eye Coordination	Trained using the direct pointing method to improve visual and motor reflexes.
4.	Learning Methods	Uses fun approaches such as storytelling and musical games.
5.	Material Adjustment	Materials are adjusted to abilities; Phase A students are trained separately first.
6.	Fine Motor Assessment	Assessed based on hand strength, angklung position, and sound quality.
7.	Fine Motor Development	There is an improvement in coordination, accuracy, and student confidence.
8.	Trainer's Role	The trainer also develops character and coordinates with classroom teachers.

The trainer not only implements technical training but also develops contextual and enjoyable learning approaches. Strategies such as strengthening left-hand muscles, practicing angklung holding techniques, and using the "direct pointing" technique to train visual reflexes are carried out gradually. Storytelling methods and tone games are also utilized so that students are more interested and easily grasp the concepts of sound and rhythm. This approach perfectly suits the characteristics of Phase A students, who are in the early stages of development. The trainer's efforts in designing learning methods tailored to the students' age and abilities show effectiveness in stimulating children's comprehensive fine motor skills.

Documentation Support for Finding Validity

The observation and interview findings are reinforced by documentation in the form of lesson plans (RPP), progress notes, and evaluation reports. An analysis of the RPP documents reveals a systematic learning structure. Furthermore, the analysis of students' fine motor skill progress notes reflects individual advancements in hand position, grip strength, and movement coordination from meeting to meeting, which are also evident in the evaluation reports.

Photos and videos from the beginning of the practice serve as observation tools while supporting documentation during the research process. Videos of students performing while playing the angklung demonstrate achievements that reflect consistent and directed practice. As a form of appreciation and motivation, the results of these practices were performed in a competition. The SDN 212 Harapan beginner angklung team successfully won 2nd Runner Up at the West Java Provincial level competition, providing concrete evidence that this activity is effective in supporting fine motor development, as well as building self-confidence and students'

readiness to perform in public.



Figure 2. Performance of the SDN 212 Harapan Beginner Angklung Team

The consistency between the field findings and the documentary evidence shows that extracurricular angklung activities not only exert a subjective influence but are also objectively proven through visual and administrative data collected during the research.

Position and Focus Factors in Motor Response

Students' involvement and experience in extracurricular angklung activities contribute greatly to sensitivity to cues and the smoothness of fine motor coordination. The following table presents the identity data of the research sample as a basis for understanding the characteristics of the students involved in the angklung extracurricular activities. This data includes vital information supporting the analysis of fine motor skill development during the research process.

Table 3. Research Sample Demographic Data

No	Name	Grade	Age (Years)	Gender	Length of Extracurricular Participation (Months)
1.	AMS	1	7	L	6
2.	AR	1	7	L	6
3.	SA	1	7	P	6
4.	AS	1	7	L	6
5.	KRA	1	7	L	6
6.	ASA	2	8	P	12
7.	SRDA	2	8	L	12
8.	NAK	2	8	P	9
9.	AAD	2	8	P	12
10.	ADA	2	8	L	9

The effectiveness of receiving cues from the trainer during angklung activities is determined not only by the students' visual abilities but also by technical factors such as standing position in the formation and individual experience levels. Students standing in the back row, such as KRA, often experienced delays in responding to the trainer's instructions compared to students in the front row or those who had participated in the angklung extracurricular longer. Furthermore,

line of sight and direct interaction with the trainer are crucial factors influencing learning effectiveness.

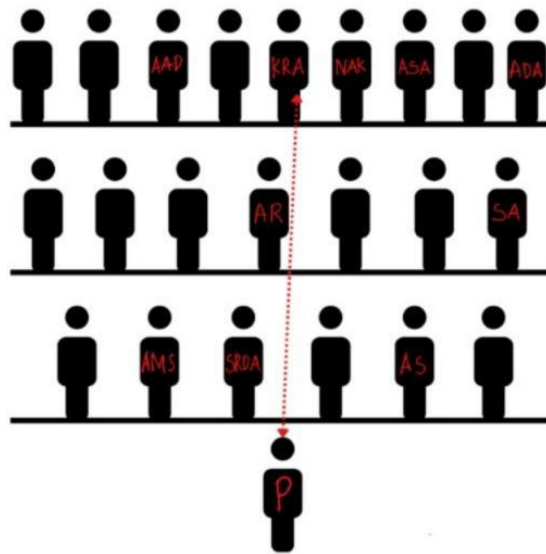


Figure 3. *Layout of Angklung Players' Positions*

The strategy for positioning students during angklung practice needs to be carefully designed, considering the conditions, abilities, and needs of each individual. This adjustment is essential so that every student, whether a beginner or experienced, has an equal opportunity to receive learning stimuli optimally. With proper placement, students can more easily catch the trainer's cues, improve movement coordination, and maximize the learning process that comprehensively supports fine motor skill development. Therefore, the student positioning strategy in practice must be adjusted to individual conditions and needs to ensure all students can thoroughly receive learning stimuli.

Integration of Musical Techniques and Neuroscience in Motor Stimulation

Practicing basic angklung playing techniques such as *kurulung* (long movement) and *centok* (short movement) directly contributes to the development of students' fine motor skills. These techniques require hand movement precision, wrist stability, and coordination among visual, auditory, and kinesthetic senses.

Significant progress was found in the consistency of movements and the coordination between eyes, ears, and hands. The activity of playing angklung involves multisensory integration, where students must listen to commands, pay attention to visual cues, and move the musical instrument rhythmically. This process stimulates cooperation between the senses and the motor system, thereby strengthening sensorimotor coordination. These findings indicate that music-based activities such as the angklung are effective in training and developing children's fine motor skills.

This approach aligns with the theory of neural connectivity in child development, which states that repetitive activities involving the sensorimotor system can strengthen motor neural networks in the brain (O'Brien & Kuhaneck, 2020). This means that playing the angklung is not merely a musical activity but also serves as an exercise that functionally stimulates brain connectivity, particularly in the sensorimotor cortex and cerebellum areas. This makes angklung activities an educational as well as therapeutic medium for developing fine motor skills.

Angklung as an Alternative for Fine Motor Development

Playing the angklung simultaneously integrates audio, visual, and kinesthetic stimuli, activating various brain areas. This practice strengthens neural connectivity that plays a role in movement coordination, sensory perception, and motor planning, thus supporting the formation of more precise fine motor control. Students become more skilled at using small muscles, especially in their hands and fingers, and can coordinate movements more accurately. Thus, playing the angklung not only trains physically but also strengthens the brain's foundational work that supports fine motor skills.

The results of this study strengthen the findings from research by [Salsabilla et al. \(2024\)](#), stating that angklung training positively impacts fine motor skills, especially in hearing-impaired students. Although that study focused on children with special needs, the present study proves that regular students also experience positive development through similar activities. This shows that traditional music-based approaches like the angklung are inclusive and effective for various groups of learners.

Extracurricular angklung activities provide a real contribution to developing students' fine motor skills through a systematic, enjoyable, and contextual training process. This activity not only improves manipulative abilities but also shapes discipline, self-confidence, and teamwork skills. These results expand upon previous studies such as [Nabilla \(2023\)](#), which examined the role of maracas in improving fine motor skills. In this study, playing the angklung, which has more complex techniques than the maracas, presents a higher challenge in terms of coordination, consistency, and response to rhythm. Therefore, the angklung can serve as an alternative extracurricular activity that not only preserves culture but is also effective in developing the psychomotor skills of elementary school-aged children.

4. CONCLUSION

This study shows that extracurricular angklung activities contribute significantly to the development of elementary school students' fine motor skills, specifically among Phase A students in grades 1 and 2 who are members of the beginner team. The gradual, structured, and contextual practice process encourages improved hand strength, movement coordination, and consistency in following rhythms. Angklung playing techniques that rely on the integration of multisensory coordination among visual, auditory, and kinesthetic stimuli have proven capable of stimulating the entire nervous system's work, effectively supporting the development of fine motor control.

These findings align with Arnold Gesell's theory of motor development and the theory of neural connectivity, emphasizing the importance of repetitive practice in a supportive environment as a key to children's motor maturity. Furthermore, the students' success in the provincial level competition serves as concrete evidence that this approach is not only educationally beneficial but also has performative potential. Thus, extracurricular angklung activities deserve consideration as a holistic and inclusive alternative learning method to comprehensively support children's growth and development—physically, socially, and emotionally. Specifically, within the context of this research, angklung activities are proven effective in promoting the fine motor skill development of elementary school students through structured, fun, and culture-based practice. This activity not only trains the fine muscles of the hands and fingers but also strengthens inter-sensory coordination, improves concentration, and fosters self-confidence and cooperation among students. With an integrated multisensory approach, the angklung becomes a learning medium that is not only pedagogically relevant but also capable of providing a meaningful and transformative learning experience for students.

5. REFERENCE

- Apriyanti, P., & Mulya, B. S. (2021). Meningkatkan kemampuan motorik halus pada anak usia 2–5 tahun. *Jurnal Kesehatan Abdurahman Palembang*, 10(2), 28–36.
- Arini, S. H. D., & Saputra, D. N. (2023). Pelatihan angklung sebagai bekal kemampuan motorik dan afektif bagi siswa SDN Gunung Geulis 02. *Jurnal Pengabdian Masyarakat Varia Humanika*, 4(1), 12–21.
- Budiwati, D. S. (2019). Aplikasi model pendidikan AUD berbasis seni musik sebagai upaya mengembangkan kepekaan motorik pada guru-guru di wilayah Selaawi Garut. *Irama: Jurnal Seni Desain dan Pembelajarannya*, 1(2), 1–8.
- Citriadin, Y. (2020). *Metode penelitian kualitatif: Suatu pendekatan dasar* (1st ed.). Sanabil Creative.
- Junaidin, J. (2024). Peran orang tua dalam perkembangan sosial motorik anak-anak attention deficit hyperactivity disorder. *Al-Qalam: Jurnal Kajian Islam dan Pendidikan*, 16(1), 90–98.
- Meriyati, M., Kuswanto, C. W., Pratiwi, D. D., & Apriyanti, E. (2021). Kegiatan menganyam dengan bahan alam untuk mengembangkan kemampuan motorik halus anak. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 5(1), 729–742.
- Nabilla, T. (2023). Pengaruh bermain alat musik marakas terhadap keterampilan motorik halus anak usia 4–5 tahun di RA Al-Hidayah (Undergraduate thesis). Universitas Islam Negeri Syarif Hidayatullah Jakarta.
- Ningsih, D. Y., & Watini, S. (2022). Implementasi model ATIK untuk meningkatkan motorik halus anak dalam kegiatan menggambar menggunakan crayon di PAUD Saya Anak Indonesia. *JlIP: Jurnal Ilmiah Ilmu Pendidikan*, 5(2), 646–651.
- O'Brien, J. C., & Kuhaneck, H. (Eds.). (2020). *Case-Smith's occupational therapy for children and adolescents* (8th ed.). Elsevier.
- Oktafianto, K., Masitoh, S., & H. (2020). The effect of multisensory methods of early childhood's fine motor development. *International Journal of Scientific and Research Publications*, 10(1), 307–309.
- Oktavian, I., & Hakim, A. A. (2022). Kemampuan motorik anak sekolah dasar berdasarkan perbedaan status sosial ekonomi keluarga. *Jurnal Kesehatan Olahraga*, 10(2), 89–96.
- Rahman, F. R. (2024). Analisis metode hand sign Kodaly dalam pembelajaran seni angklung pada kegiatan ekstrakurikuler kelas rendah SDN Cipagolo I Bandung (Undergraduate thesis). Universitas Pendidikan Indonesia.
- Salsabilla, R. D., Kuryanto, M. S., & Fajrie, N. (2024). Pengaruh bermain seni angklung terhadap kemampuan gerak motorik halus pada siswa disabilitas rungu. *Magelaran: Jurnal Pendidikan Seni*, 7(1), 425–430.
- Wahyuningrum, M. D. S., & Watini, S. (2022). Inovasi model ATIK dalam meningkatkan motorik halus pada anak usia dini. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 6(5), 5384–5396.
- Widhagdha, M. F., & Ediyono, S. (2022). Case study approach in community empowerment research in Indonesia. *Indonesian Journal of Social Responsibility Review*, 1(1), 71–76.