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The Development of Music-Accompanied Gymnastics to Improve Motor Skills in Early Childhood

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Abstract

Motor skill development in early childhood is a vital aspect of supporting holistic child growth. This study aims to develop a music-accompanied gymnastics model designed to enhance motor skills in early childhood. The research employed a Research and Development (R&D) approach using the ADDIE model, which consists of analysis, design, development, implementation, and evaluation phases. The results show that gymnastics accompanied by music is effective in improving children's motor skills, such as agility, coordination, imaginative thinking speed, rhythmic counting ability, as well as increasing motivation and participation in physical activities. Educators responded positively to the use of rhythmic music enhanced with percussion instruments such as castanets. These findings suggest that music-accompanied gymnastics can serve as an engaging and effective instructional strategy to support optimal motor development in early childhood

Keywords: *Motor Skills, Early Childhood, Movement Exercises, Music Accompaniment*

Abstrak

Perkembangan keterampilan motorik pada anak usia dini merupakan aspek penting dalam mendukung tumbuh kembang secara menyeluruh. Penelitian ini bertujuan untuk mengembangkan model senam dengan iringan musik yang dapat meningkatkan keterampilan motorik anak usia dini. Pendekatan yang digunakan adalah Research and Development (R&D) dengan model pengembangan ADDIE, yang meliputi tahap analisis, desain, pengembangan, implementasi, dan evaluasi. Hasil penelitian menunjukkan bahwa senam dengan iringan musik efektif dalam meningkatkan keterampilan motorik anak, seperti kelincahan, koordinasi, kecepatan berpikir imajinatif, kemampuan berhitung dengan irama, serta meningkatkan motivasi dan partisipasi anak dalam aktivitas gerak. Pendidik memberikan tanggapan positif terhadap penggunaan musik senam yang dilengkapi dengan alat musik ritmis seperti kastanyet. Temuan ini menunjukkan bahwa senam dengan iringan musik dapat menjadi alternatif strategi pembelajaran yang menarik dan mendukung optimalisasi perkembangan motorik anak usia dini.

Kata Kunci: Keterampilan Motorik, Anak Usia Dini, Latihan Gerak, Iringan Musik

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INTRODUCTION

Early childhood represents a period of rapid growth and development, during which children exhibit significant potential, high energy levels, and boundless imagination (Amalina et al., 2024; Desmita et al., 2023; Sari et al., 2023). Appropriate stimulation during this critical phase is essential to foster various developmental domains, including moral and religious values, physical abilities (encompassing both gross and fine motor coordination), cognitive functions, language skills, artistic expression, and the cultivation of socio-emotional behaviors (Hu et al., 2017; Shiddiq et al., 2021; Wulandari et al., 2024).

The development of physical abilities in early childhood is particularly crucial, as well-developed motor skills form the foundation for optimal overall growth (Atabik, 2018; Kamelia, 2019; Priyanti & Warmansyah, 2021). These skills encompassing movement capabilities, coordination, and body balance significantly influence broader physical development. Well-coordinated bodily movements aid children in building muscle strength, flexibility, and endurance necessary for daily activities (Dewi et al., 2021; Mukhtar, 2018). Furthermore, proficient motor skills contribute to cognitive, social, and emotional development, as physically active children often exhibit higher self-confidence, improved peer collaboration, and enhanced problem-solving abilities (Djuanda & Adipura, 2020; Partriani et al., 2020; Warmansyah et al., 2021). Consequently, fostering motor skills through physical activities, such as gymnastics, plays a vital role in establishing a balanced foundation for both physical and non-physical development.

Motor skill development holds equal importance alongside other developmental areas. These skills enable children to perform daily activities independently, bolster self-confidence, and facilitate easier social interactions. Proper stimulation during growth phases significantly impacts the development of social, emotional, and cognitive capacities in later stages of life (Bisma et al., 2023; Jumriatin & Anhusadar, 2022; Yuningsih et al., 2024). Amini et al. (2022), elucidate that motor development is closely linked to the maturation of motor centers in the brain. Motor skills evolve in tandem with the maturation of neural pathways and muscles. Each simple movement executed by a child results from complex interactions among various body parts regulated by the brain, which serves as a central component of the nervous system governing both physical and mental activities.

Preliminary observations conducted on October 2, 2023, at a specific early childhood education institution revealed suboptimal stimulation of children's motor skills. Physical activities were infrequently integrated; for instance, children exhibited difficulty navigating compound stairs independently. Additionally, morning warm-up routines prior to learning sessions were inadequately implemented. This lack of physical engagement led to challenges in maintaining children's focus during learning activities, as they had not expended sufficient energy beforehand.

If unaddressed, this situation may hinder the optimal development of children's motor skills, subsequently impeding the achievement of comprehensive learning

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objectives. To mitigate this issue, the current study proposes the integration of gymnastics activities into the opening routines of early childhood education programs. It is anticipated that such activities will enhance children's motor skills, promote independent movement, augment musicality, and improve cognitive and social abilities.

Gymnastics tailored for young children effectively cultivates gross motor skills, including coordination, balance, and body flexibility (Kurniawati et al., 2022; Linda & Rifki, 2020). Simamora et al., (2024) posits that gymnastics comprises physical exercises designed to harmoniously develop a child's personality. These activities involve fundamental movements encountered in daily life, such as walking, running, and jumping, which strengthen major muscle groups and improve posture. Research by Maghfiroh, (2020) indicates that combining gymnastics with music enhances children's motor coordination, offering additional benefits in terms of fitness and flexibility. Moreover, early childhood gymnastics should adopt an enjoyable and creative approach, incorporating music to reinforce movement rhythms and motivate children (Angri Lismayani, 2023).

Furthermore, gymnastics accompanied by music has demonstrated positive effects on children's cognitive and socio-emotional development. Hsieh et al., (2017) assert that music in gymnastics not only aids in refining motor skills but also stimulates imagination and cognitive abilities, such as memorizing movements and counting beats. Appropriately selected music can increase children's engagement in physical activities and deepen their understanding of the movements performed. This aligns with findings by Sulistyowati & Sukamti, (2018), who observed that music with suitable tempos boosts children's motivation to participate in gymnastics. Additionally, Rudd et al., (2017b) highlighted that enjoyable physical activities through gymnastics strengthen children's social and emotional bonds.

Prior studies, such as Yu et al., (2025), have shown that integrating music into gymnastics enhances gross motor skills in early childhood, focusing on balance, agility, and body coordination. Similarly, Erlandson et al.,(2011) found that aerobic gymnastics with musical accompaniment improves motor coordination, albeit with an emphasis on stamina. Wulandari et al., (Wulandari et al., 2024) noted that fast-tempo music increases children's involvement in physical activities; however, their study did not examine its impact on gross motor skills. Rudd et al., (2017a) emphasized improvements in fine motor skills through music-infused gymnastics but did not address gross motor aspects. Meanwhile, Rose et al., (2019) concentrated on flexibility and agility without thoroughly exploring balance.

Despite existing literature highlighting the benefits of music-integrated gymnastics on various aspects of motor development, there remains a paucity of comprehensive studies focusing on the holistic enhancement of gross motor skills—specifically agility, coordination, imaginative thinking speed, rhythmic counting ability, and motivation—within early childhood settings. Additionally, limited research has explored the integration of percussion instruments, such as castanets, to enrich the musical component of gymnastics routines.

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This study aims to develop and evaluate a music-accompanied gymnastics model, incorporating percussion instruments, designed to enhance gross motor skills in early childhood. The research employs the ADDIE (Analysis, Design, Development, Implementation, Evaluation) instructional design model to systematically create and assess the effectiveness of this integrated approach in fostering motor skill development among young children.

METHODS

This study employed a Research and Development (R&D) approach aimed at producing an innovative instructional product. The product developed in this study is a music-based gymnastics program titled "Senam", designed as a pedagogical tool to enhance motor skills in early childhood education. The gymnastics music is intended for daily use during the opening session of the learning routine. The research followed the ADDIE model, which includes five sequential stages: Analysis, Design, Development, Implementation, and Evaluation.

Analysis Phase

During the analysis phase, the researcher conducted a comprehensive needs assessment through classroom observations, interviews with early childhood educators, and informal conversations with children. The findings indicated several challenges, including limited understanding among educators regarding the importance of physical motor activities and difficulties in creating appropriate gymnastics music. This analysis informed the necessity for a structured and engaging physical activity integrated with music.

Design Phase

In the design stage, the instructional framework was developed, comprising the selection and organization of basic motor movements aligned with early childhood developmental stages. The researcher also designed movement variations incorporating elements of imagination and cognitive stimulation. This stage ensured that each movement sequence was developmentally appropriate, engaging, and capable of fostering holistic motor skill development.

Development Phase

The development phase involved collaboration with professional musicians to compose original music tailored to the previously designed movement sequences. The musical composition was harmonized with the rhythm, tempo, and duration of each motor activity to ensure alignment with the physical capabilities and interests of young children. The resulting product consisted of synchronized music and structured movement guidelines that formed a complete gymnastics routine.

Implementation Phase

The prototype was piloted at TK Tunas Satria, involving early childhood educators who tested the product and provided feedback on the quality of the movements, lyrics, and musical rhythm. A small-group trial was also conducted with

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children to evaluate the practical application of the gymnastics music. Observations focused on key indicators of motor skill development, such as improved balance, coordination, and children's confidence in executing the movements.

Evaluation Phase

Evaluation was conducted to assess the effectiveness and feasibility of the product. The results demonstrated that the gymnastics music successfully stimulated muscle strength, concentration, and improved motor movements in a structured and enjoyable manner. These outcomes aligned with the primary objective of the product, which was to enhance children's gross motor skills through integrated music and movement activities.

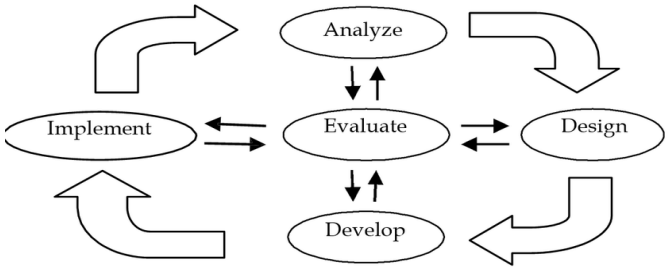

Figure 1. The ADDIE Instructional Design Model

Data Collection Instruments

Multiple instruments were utilized to gather data from various sources:

Expert Validators: Two physical education experts were provided with the gymnastics material and the music file for validation. Similarly, a music expert assessed the musical components using a structured validation form.

Teacher Interviews: A semi-structured interview guide was used to collect in-depth insights regarding the current state of motor skill instruction and the need for supportive learning media.

Observation Sheets: These were employed to document children’s motor skill progression, particularly focusing on their execution of gymnastics movements during the trials.

The data collected from these instruments provided a basis for determining the appropriateness and potential of the product for implementation in early childhood learning environments.

Data Analysis Techniques

A qualitative descriptive analysis approach was used, focusing on expert feedback recorded in the validation sheets. Product feasibility was evaluated using a Likert scale ranging from 1 (very poor) to 5 (excellent), filled out by content experts. In parallel, a performance rubric was used to assess children's motor skill levels in categories such as Not Yet Developed, Developing, Well Developed, and Very Well

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Developed. A success criterion was established: if over 75% of the children achieved a rating of Well Developed or higher, the product was considered highly feasible for educational use. Conversely, a success rate below 75% would suggest that the product requires further revision before implementation.

RESULTS AND DISCUSSION

The initial research findings show that both the teachers and children at TK Tunas Satria, Pondok Pinang, Kebayoran Lama, face several challenges in implementing basic movement activities. Observations, interviews, and direct observations revealed that there is a limited understanding among teachers regarding the importance of motor stimulation for children, as well as a lack of variation in the media used to support physical movement activities in the opening phases of the learning process.

Analysis Phase

Based on the findings from the observations and interviews, several key issues were identified; 1) Teachers' understanding of the importance of motor skills in supporting other aspects of child development, such as cognitive, language, arts, and socio-emotional development, is not yet optimal; 2) There is a lack of opening activities that involve physical exercises as daily warm-up activities for children; 3) Teachers have not developed the awareness to prepare children through motor activities before starting the main activities. 4) There is a low frequency of implementing basic movement stimulation on a routine and varied basis in the opening activities; 5) There is a lack of varied and enjoyable movement methods that can increase children's enthusiasm, self-confidence, and motor skills; 6) Music is not optimally used as a supporting medium to stimulate motor movement in a fun and motivating way; 7) Teachers' limited ability to create appropriate exercise music leads to a tendency to use the same music for an extended period, creating a barrier for innovation, especially in schools without music teachers or specific funding.

These findings became the basis for the researcher to develop a children's exercise music media as an alternative solution. This media is expected to be used in daily opening activities to stimulate children's basic motor skills in a directed and enjoyable manner.

Design and Implementation Phase

After identifying the problems, the next phase involved designing a product in the form of children's exercise music media. The design began with preparing a structured learning activity plan that included the stages: opening, warming up, main activities, cooling down, and closing. The researcher developed a series of movements that were structured and safe, while still allowing space for children to express themselves imaginatively.

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The designed basic movements were combined with cognitive stimulation through the coordination of movement, lyrics, and rhythm of the music. The design process also took language development into consideration by incorporating easy-to-remember and enjoyable lyrics. In this phase, the researcher collaborated with a musician to compose a song titled "Senam" (Exercise), specifically designed to suit the developmental characteristics of early childhood motor skills.

The initial design of the "Senam" song lyrics involves several stages of movement focusing on physical activities such as raising hands, moving the head, and body steps like walking in place, stepping right and left, and alternating movements. The lyrics begin with movements such as raising hands, moving to the right and left, followed by head movements like turning to the right, left, and back to the front. Additionally, there are other variations of movements like lifting the right and left shoulders, spreading hands sideways, rotating wrist joints, and alternating bending legs. The song also encourages participants to perform actions such as walking on tiptoes, jumping, and playing hopscotch. These movements are repeated in the same rhythm with counting 1-2-3-4, providing a foundation for body coordination and movement consistency in each part of the song.

The lyrics contain various movement instructions such as raising arms, turning the head, walking in place, stepping to the right and left, and mimicking animal movements like a robot or giraffe. Each section is structured with an 8-count rhythm to help children recognize patterns and develop coordination between hearing and movement. These movements also aim to stimulate various motor skills such as balance, agility, and muscle strength. The implementation phase will then be carried out through field trials of the product, which will be explained in the results section.

Develop Phase

Table 2. Movements and Lyrics

Lirics	Movement
1-2-3-4	Tangan ke atas
Tangan ke kanan, tangan ke kiri	"Bertangan" ke atas, ke kanan, dan ke kiri
1-2-3	Gerakan 2x8: Ber ke atas
2x8: Ber ke kanan atas	2x8: Ber ke kiri atas
2x8: Ber ke kanan atas	Tangan ke pinggang, kepala tengok kanan, kembali depan
Kepala tengok kiri, kembali depan	**1-2-3-4-5-6-7-8**
Kepala tengadah, kembali depan	Kepala menunduk, kembali depan
1-2-3-4-5-6-7-8	Ayo ber tangan, gerakkan kepala
Tengok kanan, kembali depan, tengok kiri, kembali depan	**1-2-3-4-5-6-7-8**
Kepala tengadah, kembali depan	Kepala menunduk, kembali depan
1-2-3-4-5-6-7-8	Sekarang gerakkan kepala
Tengok kanan, kembali depan, tengok kiri, kembali depan	**1-2-3-4-5-6-7-8**

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Kepala tengadah, kembali depan	Kepala menunduk, kembali depan
1-2-3-4-5-6-7-8	Angkat bahu kanan, angkat bahu kiri
Angkat bergantian kanan-kiri	Angkat bahu kanan, angkat bahu kiri
2x8: Angkat bahu kanan, kiri	Dua tangan ke depan, gerakkan jari-jari
Rentangkan ke samping, putar pergelangan	Pegang jari kaki, kembali ke pinggang
Putar badan ke kanan, putar badan ke kiri	2x8: Dua tangan ke depan, gerakkan jari-jari
2x8: Rentangkan ke samping, putar pergelangan	2x8: Pegang jari kaki, kembali ke pinggang
Hitungan: 1-2, 5-6	Putar badan ke kanan, hitungan -4-3, 7-8, putar ke kiri
Musik transisi	**Jalan di tempat sambil ber tangan**
Melangkah ke kanan, melangkah ke kiri	Bergantian kanan-kiri sambil ber tangan
Jalan di tempat	Melangkah ke kanan, melangkah ke kiri, bergantian kanan-kiri
Aku dapat berjalan seperti robot	**1-2-3-4-5-6-7-8**
Kita ulangi	1-2-3-4-5-6-7-8
Berjalan seperti robot	1-2-3-4-5-6-7-8
Mundur	1-2-3-4-5-6-7-8
Langkah jerapah	1-2-3-4
Horeee aku bisa, mundur	Langkah jerapah
1-2-3-4-5-6-7-8	Hentakan tumit kanan dan kiri
Tumit kanan-kiri	1-2-3-4-5-6-7-8
Tekuk kaki ke belakang bergantian	Kanan-kiri, kanan-kiri
Ber tangan	1-2-3-4-5-6-7-8
Tangan lenggang kanan-kiri	Lenggang kanan-kiri bergantian
Lalala, lilili...	Kita berputar-putar
Lenggangkan tangan kanan dan kiri	1-2-3-4-5-6-7-8
Aku dapat berjalan jinjit tinggi	1-2-3-4-5-6-7-8
Mundur	1-2-3-4-5-6-7-8
Melompat ke depan	Anggukkan kepala, melompat ke belakang
Anggukkan kepala	Ayo kita meloncat dengan dua kaki
1-2-3-4-5-6-7-8	Mundur 1-2-3-4-5-6-7-8
Aku bisa engklek	Engklek depan-belakang
Berlari di tempat	1-2-3-4
Lompat tinggi jadi patung	Ulangi, lompat tinggi jadi patung
1-2-3-4	Lompat tinggi jadi patung
Berlari 1-2-3-4	Lompat tinggi jadi patung
Kedua tangan ayun kanan-kiri	Angkat tinggi ke atas, turun perlahan

Expert Validation

In addition to providing assessments of the "Senam" music composition, the experts offered valuable input to optimize the work. Their feedback was directly evaluated using the ADDIE model, particularly at the evaluation stage. This allowed for immediate improvements, which were implemented in the recording studio.

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Table 3. Expert Validation Results

No	Evaluation Aspect	Indicator	Statement/Validator	1	2	3
1	**Music Design**	a. Rhythm and Counting	1. Rhythm division for opening, warm-up, core, calming, and closing music	5	5	5
			2. Counting related to movement transitions	3	4	5
		b. Lyrics and Rhythm	3. Alignment of lyrics with music rhythm	4	3	5
			4. Appropriateness of rhythm for young children (AUD)	4	3	5
		c. Use of Castanets	5. Helps children create rhythm	3	3	5
			6. Helps with counting	3	3	4
2	**Exercise Choreography**	a. Movement Stages	7. Movement steps	5	5	5
			8. Dominant movement pattern	5	5	4
			9. Imaginative movement	4	5	4
			10. Balance	4	5	4
			11. Joy, pleasure, cheerfulness in movement	4	5	4
			12. Movement coordination	4	5	4
			13. Creativity	5	5	4
		b. Structural Stages (KBM)	14. Opening, warm-up, core, calming, closing stages	4	4	4
			15. Lyrics in the song	4	4	4
3	**Stimulation of Child Development**	a. Developmental Aspects	16. Physical development	5	5	5
			17. Cognitive development	4	4	4
			18. Language development	3	3	3
			19. Artistic development	3	3	3
			20. Behavioral attitude conditioning	4	3	4
Total			80	82	85	
%			79%	82%	85%	

The expert validation results from both the sports and children's music specialists show a positive assessment. The evaluation was based on the aspects of children's exercise music creation, and the experts highly appreciated the contributions to early childhood development. They recommended intensifying the development of activities designed for young children. The total scores from the three validators were 80, 82, and 85, which when converted to percentages result in 80%, 82%, and 85%. This indicates a very high level of validity, with an average validity percentage of 82%. Therefore, it can be concluded that the music for "Senam" is deemed suitable for use.

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Evaluation Phase

Small-Scale Trial Evaluation

The small-scale trial for the "Senam" program was conducted from October 16 to November 3, 2023, with sessions held twice a week. Initially, the children were hesitant to participate in the movements, showing shyness and laughter due to lack of confidence. During the second meeting, they were still not fully engaged in the activities. However, by the third meeting, the children began to focus more, and by the fourth meeting, they were performing the exercises with better enthusiasm. The use of percussion instruments was introduced, and by the fifth and sixth meetings, the children were performing well. On the seventh meeting, a field trial was conducted with 10 children to assess whether they could perform the "Senam" movements independently. The evaluation used the following scale: (1) **Belum Berkembang (BB)**: Not yet developed; (2) **Mulai Berkembang (MB)**: Beginning to develop; (3) **Berkembang Sesuai Harapan (BSH)**: Developing as expected; (4) **Berkembang Sangat Baik (BSB)**: Developing very well

Table 4.2: Small-Scale Trial Evaluation Results

Code	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**Evaluation (%)**
A1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4	4	4
A2	3	3	3	4	4	4	4	4	4	4	4	3	4	4	4	4	3	3	4	3	4
A3	4	3	4	4	4	4	4	4	3	4	4	3	4	4	4	4	3	3	4	3	4
A4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
A5	3	3	3	4	4	3	4	4	4	4	4	3	4	4	4	4	3	3	4	3	4
A6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4	4	4
A7	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	4
A8	3	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4	3	4
A9	4	4	4	4	4	4	4	4	3	4	4	4	4	4	4	4	3	3	4	3	4
A10	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4	4	4

Evaluation Results Summary:

The small-scale trial involved 10 children and assessed their performance in the "Senam" program. The evaluation used a scale ranging from "Belum Berkembang" (BB) to "Berkembang Sangat Baik" (BSB). Based on the results, the overall performance of the children showed encouraging improvements over the sessions. Most of the children were able to develop their skills and confidence as the program progressed.

Discussion

The findings of this study demonstrate that the development of the "Senam" music program effectively enhances motor skills among early childhood learners in Group B of TK Tunas Satria, Pondok Pinang, Kebayoran Lama, South Jakarta. The primary aim of the program was to provide motor stimulation through a pedagogically sound musical design that aligns with the developmental characteristics of young children. The validation process yielded highly favorable results, with average scores

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ranging from 4 to 5, indicating that children not only enjoyed the music but also responded positively to it. This suggests the music can serve as a valuable tool for stimulating creativity, self-expression, brain development, character formation, physical coordination, and social skills (Kurniawati et al., 2022).

These results align with previous research demonstrating the significant role of music in enhancing both gross and fine motor development in early childhood (Thapa & Rodríguez-Quiles, 2023). The integration of percussion instruments into the "Senam" program further increased children's engagement, as it combined gross motor movements with fine motor coordination, thus providing a more holistic motor experience (Rose et al., 2019). Additionally, the rhythmic patterns embedded within the musical structure contributed to the enhancement of children's sensory integration and proprioceptive awareness, as supported by studies on rhythm-based interventions in early childhood education (Suwono, 2022).

From an instructional perspective, the "Senam" music program also contributed positively to the teaching and learning process. It introduced a dynamic variation in classroom activities, helping educators create a more joyful and interactive learning environment. Feedback from educators indicated that the music was not only feasible for classroom use but also effective in engaging children, thereby increasing the overall quality of instructional delivery. This confirms findings from Widjanarko & Andaryani, (2022), who emphasize the role of music in classroom management and emotional regulation among young learners.

While the validation results underscore the program's success, some basic movements and variations still require further stimulation and refinement. Therefore, continuous development of the "Senam" music product is essential to maximize its impact. This includes expanding its application through collaborative efforts among educators to co-create more engaging and developmentally appropriate music-based physical activities (Simamora et al., 2024). Future iterations of the program could also explore the inclusion of culturally relevant musical elements to deepen the children's emotional and cognitive connection with the activities, as highlighted in studies on culturally responsive music education (Maghfiroh, 2020).

The "Senam" music program serves as an innovative and impactful approach to fostering early childhood motor development. Its multi-dimensional benefits, supported by both quantitative outcomes and qualitative feedback, affirm its relevance as a pedagogical tool. Ongoing enhancements and collaborative development are recommended to further strengthen its effectiveness in early childhood education settings.

CONCLUSION

This study concludes that the developed music-accompanied gymnastics model effectively enhances motor skills in early childhood. Through the ADDIE development stages, the product was validated and proven to improve agility, coordination, rhythm, and motivation in physical activities. Small-scale trials showed most children reached

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the "Very Well Developed" and "Developing as Expected" categories. The use of rhythmic music and percussion instruments increased engagement and made movement activities more enjoyable. Therefore, this model serves as a practical and innovative learning strategy to support optimal motor development in early childhood.

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