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Influence of school environment on edu-physical fitness program success in 5-6 year-old children

Pengaruh lingkungan sekolah terhadap keberhasilan program *edu-physical fitness* anak usia 5-6 tahun

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ABSTRACT

The school environment plays an important role in supporting the motor development of children aged 5-6 years. Edu-Physical Fitness is a physical fitness learning approach packaged in the form of active and fun games, by the characteristics of early childhood development. This study aims to examine the influence of the school environment on the success of the implementation of the Edu-Physical Fitness program at Tunas Tridharma Plus Kindergarten Samarinda. This study uses a descriptive qualitative approach with observation techniques for the physical activity of children aged 5-6 years, in-depth interviews with four teachers, and documentation of the physical and social environmental conditions of the school. The results of the study indicate that the availability of adequate space for movement, safe and varied physical play equipment, active teacher support, and a school culture that emphasizes the importance of physical activity play a major role in increasing participation and effectiveness of the Edu-Physical Fitness program. These findings confirm that a conducive school environment is a crucial factor in supporting the development of physical fitness and motor skills in early childhood.

Key words: Children aged 5-6 years; edu-physical fitness; motor development.

Lingkungan sekolah memegang peranan penting dalam menunjang perkembangan motorik anak usia 5-6 tahun. *Edu-Physical Fitness* merupakan pendekatan pembelajaran kebugaran jasmani yang dikemas dalam bentuk permainan aktif dan menyenangkan, sesuai dengan karakteristik perkembangan usia dini. Penelitian ini bertujuan untuk mengkaji pengaruh lingkungan sekolah terhadap keberhasilan implementasi program *Edu-Physical Fitness* di TK Tunas Tridharma Plus Samarinda. Penelitian ini menggunakan pendekatan kualitatif deskriptif dengan teknik observasi aktivitas fisik anak usia 5-6 tahun, wawancara mendalam dengan empat orang guru, serta dokumentasi terhadap kondisi lingkungan fisik dan sosial sekolah. Hasil penelitian menunjukkan bahwa ketersediaan ruang gerak yang memadai, alat permainan fisik yang aman dan variatif, dukungan guru yang aktif, serta budaya sekolah yang menekankan pentingnya aktivitas jasmani, berperan besar dalam meningkatkan partisipasi dan efektivitas program *Edu-Physical Fitness*. Temuan ini menegaskan bahwa lingkungan sekolah yang kondusif merupakan faktor krusial dalam mendukung perkembangan kebugaran jasmani dan keterampilan motorik anak usia dini.

Kata kunci: Anak usia 5-6 tahun; *edu-physical fitness*; perkembangan motorik.

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INTRODUCTION

Early childhood motor development is an important foundation for achieving physical, cognitive, and social-emotional abilities in the future. Early childhood, especially at the age of 5-6 years, is a critical period in the development of children's gross and fine motor skills (Durand, M., 2017). In this phase, there is an acceleration of the maturity of the neuromuscular system that supports basic abilities such as balance, coordination, strength, and physical endurance (Faude & Donath, 2019). So that structured interventions in the form of physical activities are essential to optimize children's physical and motor development (Zeng et al., 2017). If during this period children do not get adequate movement stimulation, their potential for motor development can be hampered, which has an impact on delays in basic movement skills and academic readiness at the next level of education. The stimulation provided must be in accordance with the characteristics of the child's age and developmental needs (Saadah et al., 2017), so that the activities designed can provide a fun and meaningful learning experience.

One of the approaches that is currently being developed in the context of physical education for early childhood is Physical Fitness Education or Edu-Physical Fitness, which is a physical fitness learning model packaged in the form of educational, fun stretching games that are in accordance with the characteristics of child development (Cahyaningrum et al., 2024). This program not only aims to improve physical fitness, but also to form active habits and a healthy lifestyle from an early age. Edu-Physical Fitness has been proven to increase functional capacity, motor skills, and children's active involvement in physical activities. This approach emphasizes the importance of a learning process that is not only oriented towards fitness results but also pays attention to children's affective and social aspects, such as self-confidence, ability to work together, and enthusiasm for physical activity. With active involvement in structured games, children get the opportunity to learn while moving, explore the environment, and develop motor skills naturally. This makes Edu-Physical Fitness a relevant strategy to support the growth and development of early childhood in the context of formal education is a process of growth and development of children as a whole which includes physical, cognitive, language, socio-emotional, and moral aspects, which are supported by a structured and integrated learning environment in educational institutions (Immordino-Yang, 2019). In the context of formal education, this is realized through a curriculum and learning methods that are appropriate to the child's developmental stage and the support of a conducive school environment.

The implementation of the Edu-Physical Fitness program is highly dependent on the quality of the environment where the activity takes place, especially the school environment as the main context for early childhood

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learning. A physically supportive school environment such as the availability of a large and safe space for movement, age-appropriate play equipment and safety standards, and a room arrangement that allows free movement exploration to play a central role in creating optimal conditions for children's physical activity. In addition, strong social support through teacher involvement, a school culture that encourages physical activity, and positive interaction patterns between children and between teachers and children are important components in creating an active and enjoyable learning atmosphere (Ariani et al., 2024). An unconducive environment, such as limited space, lack of facilities and infrastructure, or minimal teacher involvement in physical activity, can be an obstacle for children to move freely and optimally (Aslan, 2023). Began to explore classroom climate and teacher strategies but still lack a comprehensive analysis of how physical and social school environments together affect children's participation and motor development in early childhood fitness programs. This results in the effectiveness of the physical fitness program that has been designed with an educational approach being reduced, or even not achieving the expected goals in supporting children's motor development optimally.

Although many studies have examined the effectiveness of physical activity in supporting early childhood motor development, most of them tend to emphasize program design or the types of activities implemented, rather than the broader learning context. Few studies have specifically investigated how the physical and social environment of the school influences the success of physical education programs, especially in the case of Edu-Physical Fitness for the 5-6 years age group. This age is a critical period in which children are highly sensitive and responsive to environmental stimuli, including physical layout, teacher behavior, and school culture. As such, the learning environment can significantly affect children's motivation, engagement, and learning outcomes.

The novelty of this study lies in its focus on the integration of physical and social environmental factors in formal early childhood education settings, and how these contribute to the effectiveness of the Edu-Physical Fitness program. Unlike previous studies that emphasize program content, this research provides empirical evidence of the environmental determinants that influence children's motor skill development and participation in physical activity. This study aims to analyze the contribution of both physical and social school environments to the successful implementation of the Edu-Physical Fitness program for children aged 5-6 years. The findings are expected to inform the development of contextual, environmentally integrated physical learning strategies that are developmentally appropriate. Thus, program success is not solely determined by children's physical performance but is strongly influenced by the interaction of physical, social, and emotional factors within the learning environment.

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METHOD

This research method uses a descriptive qualitative approach to describe in depth the influence of the school environment on the successful implementation of the Edu-Physical Fitness program in children aged 5-6 years. The location of the study was focused on Tunas Tridharma Plus Kindergarten Samarinda, which has integrated educational game-based physical activities into daily learning activities.

The population in this study consisted of all children aged 5-6 years enrolled in Tunas Tridharma Plus Kindergarten Samarinda during the academic year 2024/2025, as well as the teaching staff involved in the school's physical activity programs. The sample included: A group of children aged 5-6 years who participated in the Edu-Physical Fitness program and were observed during the activities. Four teachers who were directly involved in the implementation and supervision of the program (consisting of two teachers, one physical education teacher, and the school principal).

The sampling technique used was purposive sampling, a non-probability sampling method. This technique was chosen because the selected participants met specific criteria relevant to the research objectives, namely: active involvement in the Edu-Physical Fitness program and experience in conducting or participating in early childhood physical activity interventions.

To collect data, this study used the following research instruments: 1) A structured observation sheet to record children's physical activity behaviors, types of movement (e.g., running, jumping, balancing), and level of participation during Edu-Physical Fitness sessions. 2) Interview guide for semi structured interviews to explore teacher perspectives, including planning strategies, facilitation approaches, and perceived challenges or enablers in implementing the program. 3) Environmental documentation checklist and field notes to assess the availability, quality, and safety of physical facilities, as well as to document visual evidence of the play space, tools, and daily routines.

The use of these instruments allows for triangulation between child behavior, teacher insight, and environmental conditions, thus providing a comprehensive understanding of how school environments support or hinder physical development in early childhood.

Data were analyzed qualitatively through the stages of data reduction, data presentation, and concluding, with a thematic approach to identifying the main factors influencing program success.

FINDINGS AND DISCUSSIONS

Findings

The results of this study indicate that the successful implementation of the Edu-Physical Fitness program for children aged 5-6 years at Tunas Tridharma

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Plus Kindergarten Samarinda is influenced by three main factors: the physical environment of the school, teacher involvement, and the school culture supporting physical activity. The data were obtained through participant observation, semi-structured interviews, and documentation of both physical and social environmental conditions.

Observations revealed that schools with more complete facilities demonstrated higher levels of physical activity and motor skill involvement among children. The environment provided open play areas, varied and safe equipment, and supportive spatial design. A comparison of schools with complete versus limited facilities is presented below:

Table 1. Observation results: children's physical activity and school environment

Observed Aspect	Indicator	School with Adequate Facilities	School with Limited Facilities
Children's movement space.	Size and surface of the outdoor play area.	120 m², open space, non-slippery surface.	40 m², uneven surface, partially covered.
Physical play equipment.	Types and variety.	Balls, mini tunnels, balance beams.	Large rubber balls only.
Participation in Edu-Physical Fitness.	Percentage of active participation.	85% of children are actively engaged.	60% of children showed limited engagement.
Types of movements observed.	Gross motor movement variety.	Running, jumping, crawling, balancing.	Mostly limited to running and throwing.

Source: Field Observations at Tunas Tridharma Plus Kindergarten, Samarinda.

These findings show that children engaged in environments with sufficient physical resources tend to demonstrate more frequent and varied movement behaviors and exhibit greater enjoyment in physical activities.

Interviews with four teachers (two homeroom teachers, one physical education teacher, and the principal) highlighted the crucial role of teacher involvement in facilitating physical activities. Key statements and their interpretations are summarized below:

Table 2. Interview findings: teacher perspectives

Respondent	Key Statement	Data Interpretation
Teacher A (35 y/o).	"When children have enough space and interesting tools, they become more enthusiastic to move."	Equipment variety increases engagement and exploration.
Teacher B (25 y/o).	"We instill active habits, so children are used to moving and become more disciplined and involved."	School culture affects behavioral readiness.
Principal.	"We regularly train teachers to understand how to facilitate early childhood physical activities."	Continuous training improves program implementation.

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PE Teacher.	"We modify games to suit the children's abilities while still being enjoyable."	Pedagogical adaptation enhances participation.

Teachers emphasized the importance of structured planning, variation in activities, and an understanding of child development stages to ensure active and safe involvement.

Documentation data provided visual and written evidence supporting the observational and interview findings. The following table summarizes the documented materials:

Table 3. Documentation findings: environment and activity evidence

Documented Aspect	Key Findings
Photographs of the play area.	Large open spaces with soft mat flooring and age-appropriate equipment.
Activity photos.	Children appeared physically active, engaged, and joyful during sessions.
Equipment illustrations.	Sketches of tunnels, varied balls, and balance boards.
Field notes.	High levels of child participation were noted when facilities were complete.

These results confirm that a supportive school environment, both in terms of physical infrastructure and social interaction, significantly contributes to the effectiveness of the Edu-Physical Fitness program for young children.

Discussion

The physical environment of the school has proven to be fundamental in supporting children's gross motor development. Observations at Tunas Tridharma Plus Kindergarten Samarinda revealed that schools with open play areas, non-slippery surfaces, and varied, age-appropriate equipment (e.g., balls, mini tunnels, balance tools) were more effective in stimulating physical activity. The data shows that participation in Edu-Physical Fitness activities reached 85% in schools with complete facilities, compared to only 60% in those with limited physical environments. This reinforces the assertion by Matthews and Lippman (2020) that the quality of educational infrastructure such as spatial layout, flooring, and design must be evidence based on foster physical engagement. Furthermore, Fardlillah and Suryono (2019) emphasized that physical environment design, both inside and outside the classroom, should consider lighting, color, ventilation, and ergonomic furniture to ensure a safe and stimulating learning experience for children.

In addition to infrastructure, the role of teachers as facilitators emerged as another key factor. Teachers who are well-versed in child development and possess strong pedagogical skills can adapt activities to suit individual needs,

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maintaining children's motivation and ensuring safety. One teacher expressed that providing adequate space and interesting equipment made children more enthusiastic and willing to attempt various movements. This observation aligns with Hellison et al. (2025), who highlight the importance of teaching personal and social responsibility through physical activity. Moreover, teachers who are confident and capable can enhance children's self-efficacy, reduce injury risks, and promote positive social interactions during physical education. Saripudin (2019) further notes that understanding the stages of motor development is essential for both teachers and parents to ensure comprehensive support for children's growth.

The third contributing factor is the presence of a supportive school culture that integrates physical activity into daily routines. Practices such as morning exercise, stretching based games, and outdoor physical play instill active habits in young children. As stated by one teacher, cultivating this culture helps children value fitness from an early age while also improving their focus and engagement. This is consistent with the perspective of Mollborn and Lawrence (2018), who emphasize the interplay of family, peers, and school environments in shaping children's health behaviors. Documentation findings further support this, showing that children in schools with active cultures display better physical and mental readiness and are less likely to exhibit passive behavior.

Supporting efforts by teachers in providing opportunities and facilities for movement, as shown by Adatul'aisy et al. (2023), is essential in facilitating optimal development. Adequate time for motor activities, accompanied by proper supervision, is critical to early childhood physical development (Fitriani & Adawiyah, 2018). Fakhrurrazi (2018) also emphasizes that effective learning strategies should be responsive to the learning conditions and focused on achieving intended educational outcomes through appropriate method selection.

The success of Edu-Physical Fitness is not the result of isolated variables but the synergistic integration of physical environment, teacher involvement, and school culture. Sando (2021) supports this finding by stating that wide movement spaces and suitable play equipment are associated with higher child engagement in physical activity. Khomaeny et al. (2020) also recommends the need for a programmed and habitual approach to physical activity supported by natural environmental interventions. The development of fine and gross motor skills such as coordination, agility, and flexibility is heavily influenced by the consistency of movement-based stimulation (Nurachadijat & Selvia, 2023). In this regard, teachers with specialized training in physical education for young children have been found to significantly improve motor learning outcomes (Demchenko et al., 2021).

Moreover, school culture serves as a long-term foundation in shaping multidimensional health behaviors in children. According to Mollborn and

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Lawrence (2018), children demonstrate varying patterns of risk and resilience, which are largely influenced by their surrounding environments. Therefore, fostering an active culture from early childhood has implications for lifelong health and well-being. Senjawiani et al. (2025) add that applying a holistic learning model placing the child at the center enhances creativity, social skills, and meaningful engagement through enjoyable activities.

In summary, the successful implementation of the Edu-Physical Fitness program is the result of a dynamic interplay between environmental readiness, pedagogical competence, and cultural reinforcement. These findings affirm that a holistic and engaging physical education experience for early childhood depends not solely on the program content, but on the collaborative support system built around the child.

CONCLUSION

Based on the research results, it can be concluded that the success of the Edu-Physical Fitness program is greatly influenced by the synergy between an adequate physical environment, the role of competent teachers, and a school culture that supports physical activity. These three factors complement each other and create learning conditions that are conducive to the development of motor skills and physical fitness of children aged 5-6 years. A physical environment that provides safe and varied play facilities provides opportunities for children to be active and develop motor skills. Teachers who are actively involved in the planning and implementation of physical activities can increase children's motivation and involvement in the program. Meanwhile, a school culture that consistently instills the importance of physical activity encourages children to form healthy living habits from an early age.

RECOMMENDATION

To enhance the success of Edu-Physical Fitness programs, schools are encouraged to provide safe and developmentally appropriate physical facilities, invest in continuous teacher training in early childhood physical education, and establish a culture of regular physical activity through daily routines. Synergistic support from all stakeholders, including parents, educators, and administrators, is essential in creating a safe and motivating learning environment. Additionally, future research with a broader quantitative approach is recommended to measure the specific impact of each environmental factor on children's motor development and physical fitness.

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