https://e-journal.hamzanwadi.ac.id/index.php/porkes
Vol. 8, No. 3, pp. 1476-1484 December 2025
Doi: 10.29408/porkes.v8i3.31898

The Effect of Great Indonesian Children's Gymnastics on Children's Motor Movement Skills in Physical Education Learning in Elementary School

Lokananta Teguh Hari Wiguno[1*], Lalu Moh Yudha Isnaini[1], Rajip Mustafillah Rusdiyanto[1], Johan Irmansyah[2]

[1] Physical Education Helath and Recreation, Faculty of Sport Science, Malang State University, Indonesia
[2] Physical Education Helath and Recreation, Mandalika University of Education, Indonesia

[*]Correspondence: lokananta.teguh.fik@um.ac.id

Abstract

Motor movement skills are an important foundation in the physical and cognitive development of elementary school-age children. However, physical education learning in many schools is still less than optimal in developing the motor aspects as a whole through an approach that is in accordance with the characteristics of the child. This study aims to examine the influence of *the great Indonesian Children's Gymnastics* program on the motor movement ability of elementary school students. The method used was a experiment with *a* Pretest-Posttest Design with Control Group, involving 60 students in grades IV and V in one of the public elementary schools in Malang district. Motor ability measurement is carried out through four aspects: running, balance, agility and leg muscle strength. The results *of the paired sample t-test* showed a significant improvement in all aspects of motor movement after participating in the great Indonesian children's gymnastics program ($p < 0.05$). However, the level of significance indicated only a modest effect size, suggesting that the impact, while meaningful, was relatively small. These findings suggest that movement-based gymnastics designed in a fun and structured manner can contribute to the improvement of children's motor skills, although further refinement of the program may be needed to achieve stronger outcomes. This study concludes that Great Indonesian Children's Gymnastics can serve as an alternative learning strategy in elementary schools to support motor development, but its effectiveness requires further optimization.

Keywords: Great indonesian childeren's gymnastics; motor movement skils; physical education

Received: 30 July 2025 | Revised: 1, 29 September, 7 October 2025
Accepted: 8 November 2025 | Published: 15 November 2025

Introduction

Great Indonesian Children's Gymnastics is a government program that aims to improve the physical fitness of children in Indonesia (Sukmawati et al., 2025). More specifically, the program encourages children to be more physically active by doing gymnastics that are fun and easy to follow. In terms of music and movement, Indonesian children's gymnastics is full of joy and the movements are relatively easy so that they can be followed by children of various ages and backgrounds (Agusti et al., 2024). However, that's not the only goal. In addition to physical needs, this program is also designed to instill healthy habits from an early age, prevent obesity, and pattern the child's body position and coordination. If organized together by local schools and communities, Great Indonesia Children's Gymnastics can be expected to be part of children's routine activities throughout Indonesia.

There has been a growing awareness of the importance of physical activity in children's development in recent decades. Physical education learning in elementary school greatly affects the basic of children's motor movement skills (Husnah & Prayogo, 2018). This ability will help P, a balanced physical, cognitive, and emotional development. However, even so, physical education learning does not go smoothly in most cases where the learning method tends to be boring in school. Without a directed and structured learning method, children's motor development can be disrupted. Previous research has shown that structured physical activity, such as gymnastics, can help improve a child's motor concepts. (Simamora et al., 2024).

Research on well-designed physical activity programs can improve children's gross and fine motor skills (Novita et al., 2022.; Silaban et al., 2024; Simamora et al., 2024; Iswatiningrum & Sutapa, 2022). However, most of the existing programs are still based on traditional methods that are less adaptive to the developmental needs of Indonesian children. The Great Indonesian Children's Gymnastics Program is an innovation in physical education designed to answer the specific needs of children in Indonesia. The program combines elements of local culture with a modern approach to physical activity, which is expected to effectively improve children's engagement and motor skills. Problems faced in physical education in elementary schools include the lack of a structured gymnastics program that is in accordance with the needs of Indonesian children.

Low motor skills of children due to suboptimal teaching methods. There is a lack of empirical data on the effectiveness of local gymnastics programs such as great Indonesian Children's Gymnastics in improving children's motor skills (Karyadi & Suri, 2024; Ramli, 2024). This study proposes an intervention through the Great Indonesian Children's Gymnastics program which is expected to provide a significant improvement in children's gross and fine motor skills. Provide a more interesting and effective physical education learning method. Produce empirical data that supports the development of physical education programs based on local culture. This study aims to measure the impact of the great Indonesian Children's Gymnastics program on children's motor skills in elementary school.

Assess changes in students' motivation and participation in physical education learning. Develop gymnastics modules based on research results that can be widely implemented. With an innovative approach based on local needs, this research is expected to provide practical and

sustainable solutions to improve the quality of physical education in Indonesia. Through this research, it is hoped that there will be an improvement in the quality of physical education learning, as well as the formation of a generation of children who are healthier and more skilled in motor skills, which will have a positive impact on their lives in the future. The urgency of this research lies in the urgent need for physical education programs that not only improve children's motor skills, but also support their general health and wellness.

Method

This study uses a quantitative approach with a quasi-experimental design to measure the influence of great Indonesian Children's Gymnastics on children's motor movement skills in physical education learning in elementary schools (Okilanda et al., 2025). This research will be carried out in several stages, with systematic data collection methods and in-depth analysis to ensure the validity of the research results. The research flow chart describes the research activities carried out clearly based on each stage. This activity is a reference for researchers in realizing the planned targets. The research procedure developed a great Indonesian children's gymnastics program consisting of a series of gymnastic movements specifically designed to improve children's motor skills and compile research instruments such as observation sheets, motivation questionnaires, and standard motor test kits.

The instrument was chosen because it is suitable for fourth and fifth grade elementary school children and has been used in various previous studies as an indicator of students' basic motor skills (Widodo, 2014; Putro et al., 2024; Nugroho, 2023). The assessment norms in this study were compiled based on motor test result categories that have been widely used in similar studies in Indonesia. The study sample consisted of 4th and 5th grade elementary school students in Malang Regency who were randomly selected. Students were divided into two groups: an experimental group that participated in the great Indonesian Children's Gymnastics program and a control group that had not yet implemented conventional physical education learning.

The implementation of the great Indonesian children's gymnastics program intervention was implemented for 12 weeks, with a frequency of three times per week. Each gymnastics session lasts for 30 minutes, starting with warm-ups, cores, and cool-downs. Data collection of motor ability measurement data was carried out before and after the intervention using motor test kits. Motivational questionnaires and observation sheets were used to measure changes in students' motivation and participation in physical education learning. Data were analyzed using a t-test to measure significant differences between the experimental and control groups. Qualitative analysis was conducted to support quantitative findings by identifying patterns of motivation and student participation.

The outcome of the study Improving Motor Ability The achievement indicator was an increase in motor test scores in the experimental group compared to the control group. Student motivation and participation Indicators of achievement of increasing questionnaire scores, motivation and active participation of students in physical education activities. The indicators of the effectiveness of the gymnastics program were measured through significant differences in the results of motor tests before and after the intervention. Student involvement was

measured through observation of student participation in gymnastics activities and physical education learning.

The dissemination of research results, scientific articles and gymnastics modules developed based on the results of the research is expected to be adopted by elementary schools. With a systematic approach and clear research stages, it is hoped that this research can make a significant contribution to improving children's motor movement skills and the quality of physical education learning in elementary schools.

Result

This study aims to determine the influence of the *great Indonesian Children's Gymnastics* program on the motor movement ability of elementary school children in the context of physical education learning. The sample in this study consisted of 60 students in grades IV and V of elementary school, who were selected through purposive sampling techniques. The method used is *a quasi-experimental* experiment with *a one group pretest-posttest design*. The average score of students' motor movement ability before and after treatment is shown in table 1 below.

Table 1. Descriptive statistics of students' motor abilities before and after treatment

Variabel	Group	Pretest (Mean ± SD)	Posttest (Mean ± SD)	Difference
Speed	Eksperimen	5.89 ± 0.42	5.72 ± 0.38	-0.16
	Control	5.87 ± 0.40	5.85 ± 0.41	-0.01
Agility	Eksperimen	11.54 ± 0.65	11.29 ± 0.61	-0.25
	Control	11.52 ± 0.60	11.45 ± 0.63	-0.07
Balance	Eksperimen	18.35 ± 2.80	19.20 ± 2.75	+0.84
	Control	18.40 ± 2.95	18.60 ± 2.90	+0.20
Explosive Power	Eksperimen	138.2 ± 12.1	142.4 ± 11.7	+4.2
	Control	137.8 ± 12.4	138.5 ± 12.3	+0.7

Table 2. Independent T-Test results comparison of differences in improvement between groups

Variabel	t-value	p-value	Information
Speed	-2.35	0.022*	Signifikan
Agility	-2.04	0.046*	Signifikan
Balance	2.10	0.041*	Signifikan
Leg Muscle Explosiveness	2.27	0.026*	Signifikan

The results showed that there was a significant difference between the experimental and control groups in all four aspects of motor ability ($p < 0.05$), although the increase in scores in the experimental group was practically small. This shows that the interventions provided have an effect on improving students' motor skills, but their effectiveness still needs to be improved in the next implementation. Although the t-test results showed a statistically significant difference ($p < 0.05$) between the experimental and control groups in all aspects of motor ability, namely speed, agility, balance, and limb muscle explosiveness, the magnitude of the improvement was relatively small.

For example, the speed increase is only 0.16 seconds, agility is 0.24 seconds, balance is 0.85 seconds, and the explosive power of the leg muscles is 4.1 cm. This difference, although statistically significant, does not show a large effect in practical terms, which means that the impact on improving motor performance is still moderate to low. This can be due to the limited duration of the intervention, the intensity of the exercise that has not been maximized, or individual factors such as motivation and initial physical condition. Thus, these findings indicate that intervention programs have the potential to improve motor skills, but need further optimization in terms of method, frequency, and duration in order to have a more meaningful impact practically.

The results of the analysis showed that all variables experienced a significant increase after the treatment was given. The significance value (< 0.05) shows that there is a significant influence of the implementation of great Indonesian Children's Gymnastics on the motor movement ability of school students. The findings of this study show that the great Indonesia Children's Gymnastics program has a positive and significant influence on improving the motor movement skills of elementary school children. This is in line with the opinion (Simamora et al., 2024) that structured physical activity in childhood plays an important role in the development of basic motor skills.

The great Indonesian children's gymnastics program is designed with a fun, simple, and repetitive movement pattern, which is in accordance with the developmental characteristics of elementary school-age children. The movement component in this gymnastics facilitates the strengthening of motor aspects such as coordination, balance, muscle strength, and agility. Practically, this gymnastics also increases students' motivation in participating in physical education learning. Children show high active participation, enthusiasm, and cooperation during the activity. Thus, great Indonesian children's gymnastics not only has an impact on the physical motor, but also the social and emotional aspects of students.

Discussion

The results of the study showed that there was a significant improvement in children's motor movement skills after participating in the *great Indonesia Children's Gymnastics program*. All aspects tested were balance, agility, speed, and strength of the leg muscles experienced statistically significant increases in scores. This indicates that the great Indonesian children's gymnastics program is effective in supporting the development of basic motor skills of elementary school students. The results of this study critically show that great Indonesian Children's Gymnastics makes a real contribution to improving the motor movement skills of elementary school children, including balance, agility, coordination, and leg muscle strength.

These findings confirm that structured and enjoyable physical activity-based interventions are able to effectively stimulate the child's neuromuscular system. This is in line with the theory of motor development (Kamaludin et al., 2020; Haumahu et al., 2021; Wahyuni & Darsinah, 2023) which states that varied and repetitive experience of movement is an important foundation in the development of basic motor skills. Children's involvement in rhythmic and progressive gymnastics activities seems to not only improve the physical aspect, but also strengthen motivation and active involvement in PJOK learning.

The implications of these findings lead to the importance of integrating national culture-based gymnastics such as great Indonesian children's gymnastics into the physical education curriculum, especially in the elementary age phase. In contrast to the traditional approach that often focuses on competitive sports, the great Indonesian children's gymnastics program offers an inclusive and adaptive learning approach to children's developmental needs (Suriad, 2025). The main contribution of this research lies in the empirical evidence that local movement-based activities can be an effective pedagogical strategy in improving the quality of PJOK learning. Thus, these results expand the literature that supports the importance of contextual and culture-based physical education in forming the foundations of healthy and sustainable child movement.

This increase is in line with the theory of motor development which states that children's motor skills are optimally developed through systematically designed, varied, and enjoyable physical activities (Bukhari et al., 2019; Pradipta et al., 2022; Uhacham & Sutapa, 2020). Great Indonesian children's gymnastics meets these criteria by presenting rhythmic and progressive movements that are adjusted to the stage of child development. Movements in great Indonesian children's gymnastics such as jumping, twisting motions, jumping in place, and dynamic body movement are believed to be able to stimulate the work of large muscles and involve overall body coordination.

Repeated exercises through this series of gymnastics strengthen children's neuromuscular and improve their motor control. These findings are also supported by previous research that stated that structured great Indonesian children's gymnastics activities can significantly improve coordination and balance skills in early childhood (Maisaroh & Amalia, 2025; Riyan et al., 2018; Rohfirsta & Zulfahmi, 2024; Saputra & Susanti, 2023). However, although the results were statistically significant, the effect size was relatively small. Several factors may explain this limitation. First, the duration of the intervention was limited, which may not have been sufficient to produce stronger effects. Second, the level of student engagement in the program likely varied, leading to differences in the consistency of practice.

Third, the measurement instruments used in this study only covered four aspects of motor ability, which may not fully capture other areas of motor development that could have shown greater improvement. These limitations suggest that while the Great Indonesian Children’s Gymnastics program holds promise as an alternative learning strategy in elementary schools, its effectiveness still requires further optimization. Future research should consider longer intervention periods, enhanced student participation, and broader assessment tools to better capture the program’s potential impact on children’s motor development. From the aspect of learning implementation, the great Indonesian Children's Gymnastics program also contributes to increasing student motivation in participating in physical education lessons.

The characteristics of simple, rhythmic, and music-based movements make children feel happy and motivated to move actively. This is especially important in the context of learning Physical education in elementary school, where learning objectives are not only oriented to physical skills, but also to the development of students' interests and active participation. Furthermore, the success of this program also reflects the importance of choosing a learning model that suits the characteristics of children. Physical education teachers need to consider an

approach that emphasizes not only the final outcome of skills, but also on the process of motor development through meaningful learning experiences.

In this case, great Indonesian children's gymnastics can be an alternative learning model that is integrative between elements of health, movement, and character education. However, the limitation in this study is the use of pseudo-experimental design Advanced research with pure experimental design and longitudinal observation can provide a more comprehensive picture of the long-term impact of the application of this gymnastics in the PJOK curriculum.

Conclusion

Based on the results of data analysis and discussion, it can be concluded that **great** Indonesian Children's Gymnastics has a significant effect on improving the motor movement ability of elementary school children. All aspects of motor movement measured balance, agility, coordination, and leg muscle strength experienced significant improvements after students followed the six-week gymnastics program. This gymnastics has proven to be effective because it is designed according to the characteristics of the child's development, is fun, and involves movement patterns that stimulate muscle work and overall body coordination. In addition to providing a physical impact, SAIH also supports active, participatory, and fun PJOK learning in elementary schools. Thus, SAIH can be recommended as a form of routine exercise in physical education learning to support the optimal development of students' motor skills.

Author Statement

The author states that this article is an original work that has never been published before and is not in the process of being reviewed in other journals. All sources used have been clearly listed and in accordance with scientific writing ethics. The author is solely responsible for the content of this article. Thank you to the State University of Malang for the support and funding provided so that this research can be carried out properly. This assistance is very meaningful in supporting the smooth research process until the preparation of this article.

Referensi

Agusti, S., Safitri, A. N., Kurniawati, P., & Leriantika, S. (2024). Stimulating Spinal Cord Function Through Rhythmic Gymnastics for Children Aged 5-6 Years. *Educational Insights*, *2*(1), 72-78. https://doi.org/10.58557/eduinsights.v2i1.45

Bukhari, K., Efendi, Z. M., & Jama, J. (2019). The Development of Physical and Sport Education Learning Model by Using Small Games. *Journal of Physics: Conference Series*, *1387*(1). https://doi.org/10.1088/1742-6596/1387/1/012014

Haumahu, C. P., Rampisela, T. P. T., & Wenno, Y. H. (2021). Pengembangan Modul Pembelajaran Permainan Tradisional Untuk Meningkatkan Aspek Sosioemosional Anak Kelas 3 Sekolah Dasar. *Prosiding Seminar Nasional Bimbingan dan Konseling Universitas Pattimura*, *1*(1), 29–35.

Husnah, A. U., & Prayogo, B. H. (2018). Pengaruh Senam Irama Terhadap Perkembangan

Motorik Kasar Anak Usia 4-5 Tahun di TK Muslimat NU Gesang Kabupaten Lumajang. *Journal of Early Childhood and Inclusive Education*, *1*(2), 108-116. https://doi.org/10.31537/jecie.v1i2.454

Iswatiningrum, I., & Sutapa, P. (2022). Pengaruh Senam Si Buyung dan Senam Irama Ceria Terhadap Kemampuan Motorik Kasar. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, *6*(4), 3369-3380. https://doi.org/10.31004/obsesi.v6i4.2373

Kamaludin, K., Ngadiman, N., Festiawan, R., Kusuma, I. J., & Febriani, A. R. (2020). Pengembangan Permainan Pecah Piring Sintren: Pemanfaatan Olahraga Tradisional pada Pembelajaran untuk Meningkatkan Kemampuan Motorik Kasar Anak. *Tegar: Journal of Teaching Physical Education in Elementary School*, *3*(2), 37-45. https://doi.org/10.17509/tegar.v3i2.24447

Karyadi, A. C., & Suri, N. (2024). Improving Gross Motor Skills of 5-6-Year-Old Children Through Rhythmic Gymnastics Activities at PAUD Surya Kasih. *Edutechnium Journal of Educational Technology*, *2*(2), 55-62. https://edutechnium.com/journal/index.php/edutechnium/article/view/75

Maisaroh, A., & Amalia, S. N. (2025). Perspektif Siswa Terhadap Senam Anak Indonesia Hebat (Saih) di UPT SD Negeri Kaligambir 02. *Jurnal Terapan Pendidikan Dasar dan Menengah*, *5*(2), 61-64. https://ojs.unublitar.ac.id/index.php/jtpdm/article/view/1895

Novita, N., Fatriani, M., & Rohaya, R. (2022). Pengaruh Senam Fantasi Terhadap Perkembangan Motorik Kasar Anak Usia Prasekolah di PAUD SPNF SKB Negeri KM 5 Kota Palembang. *Nursing Care and Health Technology Journal (NCHAT)*, *2*(1), 1-7.

Nugroho, W. (2023). Profil Kemampuan Motorik Dasar Siswa Kelas V SD Negeri 013848 Gedangan Kabupaten Asahan. *JSH: Journal of Sport and Health*, *5*(1), 42–48. https://doi.org/10.26486/jsh.v5i1.3734

Okilanda, A., Utama, J., & Putra, A. R. (2025). Learning of Gross Motor Skills Based on Fun Games: a Study of Coordination Development in 5–6-Year-Old Children. *Pedagogy of Physical Culture and Sports*, *29*(4), 233-242. https://doi.org/10.15561/26649837.2025.0401

Pradipta, D., G., Suherman, S., W., Suhartini, B., Yuliawan, D., & Maliki, O. (2022). The Utilization of "si Buyung" Gymnastics in Improving Early Childhood Gross Motor Skills. *Jurnal Sportif : Jurnal Penelitian Pembelajaran*, *8*(1), 157–168. https://doi.org/10.29407/js_unpgri.v8i1.17616

Putro, B. N., Kristiyanto, A., Hidayatullah, M. F., & Handayani, I. G. A. K. R. (2024). Validity and Reliability of Motor Competence Assessment as an Instrument Measuring Fundamental Motor Skills for 12-Year-Olds in Indonesia. *Retos: nuevas tendencias en educación física, deporte y recreación*, (58), 462-468. https://doi.org/10.47197/retos.v58.106612

Riyan, Setiawati, E., & Hendrianingtyas, M. (2018). Pengaruh Senam Sehat Anak Indonesia Terhadap Kinerja Fungsi Eksekutif pada Anak dengan Underweight. *Jurnal Kedokteran Diponegoro*, *7*(1), 74–80. https://ejournal3.undip.ac.id/index.php/medico/article/view/19391

Ramli, S., Faridy, F., & Juwita, R. P. (2024). A The Effect of Physical Fitness Exercise on Gross Motor Skills of Children Aged 5-6 Years at Darmawanita Kindergarten in Jantho

City. *Al Hikmah Indonesian Journal of Early Childhood Islamic Education*, *8*(1), 156-166. https://doi.org/10.35896/ijecie.v8i1.780

Rohfirsta, F., & Zulfahmi, M. N. (2024). Analysis of Gross Motor Development of Children Aged 4-5 Years through the Implementation of the Smart Basket Game. *EduBasic Journal: Jurnal Pendidikan Dasar*, *6*(1), 13–26. https://doi.org/10.17509/ebj.v6i1.65195

Silaban, R. E., Zamili, U., & Herlina, E. S. (2024). Pengaruh Senam Direct Intruction Terhadap Pengembangan Motorik Kasar Anak Usia 5-6 Tahun di Tk Cerdas Ceria Tapian Nauli Kecamatan Sipoholon. *Jurnal Miftahul Ilmi: Jurnal Pendidikan Agama Islam*, *1*(3), 47-57. https://doi.org/10.47861/khirani.v2i2.958

Suriad, A. (2025). Meta-review of Physical Education's Role in Enhancing Social Welfare and Equity Among Indonesian Youth. *Retos: Nuevas Tendencias en Educación Física, Deporte y Recreación*, (68), 1616-1634. https://dialnet.unirioja.es/servlet/articulo?codigo=10254034

Simamora, A. N., Sigalingging, G. P., Naipospos, Y. A., Situmorang, F., & Siregar, F. S. (2024). Pengaruh Senam Irama Terhadap Perkembangan Motorik Anak. *Harmoni Pendidikan: Jurnal Ilmu Pendidikan*, *1*(3), 153-161. https://doi.org/10.62383/hardik.v1i3.443

Sukmawati, N., Tumaloto, E., Sunarti, E., Tauchid, A., Kardika, R. W., & Endrawan, I. B. Effectiveness of The Sumatera Selatan Bersatu Gymnastics Model in the Improvement of Students' Physical Fitness. *International Journal of Disabilities Sports and Health Sciences*, *8*(1), 67-75. https://doi.org/10.33438/ijdshs.1522329

Saputra, D. R., & Susanti, D. T. (2023). Pengaruh Senam Sehat Anak Indonesia terhadap Kebugaran Jasmani Siswa Kelas V SDN 131/Ii Skb Kabupaten Bungo Provinsi Jambi. *Jurnal Muara Olahraga*, *5*(2), 54–66. https://doi.org/10.52060/jmo.v5i2.1255

Uhacham, A., & Sutapa, P. (2020). *Development of Physical Education Training Model for Upper Grade Student in Elementary School*. *401*(Iceri 2019), 386–391. https://doi.org/10.5220/0009786903860391

Wahyuni, M. P. N., & Darsinah, D. (2023). Strategi Pengembangan Literasi Baca Tulis (Praliterasi) untuk Menunjang Pengetahuan Anak. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, *7*(3), 3604–3617. https://doi.org/10.31004/obsesi.v7i3.4799

Widodo. (2014). Strategi Peningkatan Aktivitas Jasmani Siswa Sekolah Dasar di Luar Pembelajaran Pendidikan Jasmani, Olahraga, dan Kesehatan di Indonesia. *Jurnal Pendidikan dan Kebudayaan*, *20*(2), 281–294. https://doi.org/10.24832/jpnk.v20i2.144