Movement reinforcement factors related to children's motor skills: a review study in sports education

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Review Articles

Movement reinforcement factors related to children's motor skills: a review study in sports education

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Authors' contribution:
A. Conception and design of the study; B. Acquisition of data; C. Analysis and interpretation of data; D. Manuscript preparation; E. Obtaining funding

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Abstract

Background and Study Aim. Children's motor development is one of the important aspects in shaping children's health and quality of life. Good motor skills not only enable children to participate in various physical activities, but also play a role in their social, emotional and cognitive development. Therefore, it is important for sports educators to understand the factors that influence children's motor development. This study aims to present a comprehensive review of the factors that reinforce children's motor development in the context of sport education.

Material and Methods. This study used a literature review design following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The data used in this study were published articles published in national and international journals. The search for publication articles was carried out using several journal database websites such as ScienceDirect and Google Scholar. Through the literature review, these articles identified key factors related to improving children's motor skills. After the exclusion criteria, only 4 articles were categorized.

Results. These factors include physical, psychological and environmental aspects that influence children's motor development. In this study, we investigated the relationship between factors such as physical exercise, children's psychological understanding of movement, the role of teachers in providing appropriate guidance, a supportive learning environment, and external factors such as healthy diet and lifestyle. The findings from this review highlight the importance of a holistic approach in supporting children's motor development.

Conclusion. Through a better understanding of the factors that influence children's motor movements, sport educators can design more effective and sustainable programs to improve motor skills as well as overall health at important developmental stages in children's lives.

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Introduction

The changing lifestyle of children in this modern era illustrates a significant transformation in their lifestyle and daily activities (Iswanto & Widayati, 2021). In the past, children often engaged in physical activities outside the home, such as playing soccer, cycling or just playing and exploring the surrounding environment (Driller et al., 2023). However, along with technological advances, there has been a shift towards a more sedentary lifestyle. Sedentary lifestyle is an activity or lifestyle that tends to do little physical activity or movement outdoors, only focusing on doing something that feels comfortable indoors such as playing gadjet, television or games and so on (Putranto et al., 2023). This happens a lot, especially among children.

Lifestyle is the attitude, values, and behavior that a person uses in spending his time in activities and can change due to the influence of circumstances and the environment (Arham & Agustang, 2021). Lifestyle is closely related to changing times and technological developments. These lifestyle changes have triggered concerns about the decline in physical activity levels, which can have a negative impact on children's health and development. Amidst the flow of information and digital entertainment, children tend to spend more time indoors and less time engaged in physical activities. Children's motor development not only includes gross and fine physical skills, but also has a significant impact on their cognitive, social and emotional aspects. The role of teachers and coaches in supporting movement development is key to countering the sedentarization trend and ensuring that children have a strong foundation in their motor skills.

The importance of motor skills for every student to have because it has benefits and influences on the development of students as a whole. Students will have a healthy and fit body because doing movement activities improves cardiorespiratory system fitness (Cohen et al., 2015), improve the performance of the metabolic and neuromuscular systems (Laukkanen et al., 2014), causing positive changes in physiological and anthropometric indices of health of normal weight and obese students (Lambrick et al., 2016), and determinants of fitness in adolescence (Barnett et al., 2008).

Growth and development in elementary school-age children are strongly influenced by the environment around them, such as family, social environment, and school environment (Fadhullah et al., 2020; Hu et al., 2022), and also stimulates children's physical fitness and motor development (Hu et al., 2022). In addition, in the school environment the teacher becomes an important agent in providing services to improve motor skills, in order to meet the development and growth and behavioral needs of each student in the future, knowing the phases of student development is an important part so that the phases of motor skills can all be carried out and the phase is mastered according to the age level of the student (Hidayati, 2017; Iswanto & Widayati, 2021; Khaulani et al., 2020; Mustafa & Sugiharto, 2020; Nugraha, 2015). Children's gross motor movements need to be well developed so that in the future they have good hard skills (Hadi et al., 2017; S. et al., 2020).

In its application, motion reinforcement learning requires reinforcement techniques that need to be developed by a teacher or trainer. Therefore, an in-depth understanding of motion reinforcement techniques and the role of teachers/trainers in the development and learning of motion is essential in supporting future generations to have strong motor skills, optimal health and awareness of the importance of an active lifestyle in living everyday life (Reviyanti & Reza, 2023). This study aims to provide a comprehensive overview of the factors that influence children's motor skills in the context of sports education. Understanding these factors is expected to help educators, parents and policy makers in designing effective and sustainable sports education programs to improve children's motor skills.

This study uses the literature review method by collecting and analyzing relevant previous studies. Data were collected from academic journals, books and other reliable sources that discuss children's motor skills and sports education. Thus, this study is expected to make a positive contribution to the development of sports education programs that are able to improve children's motor skills effectively and efficiently.

Materials and Methods

Search Strategy.

The search in this study started using the ScienceDirect and Google Scholar databases, which are considered as one of the indexing systems for citations (Samsuddin et al., 2020). The search strategy included a combination of keyword variations ("Sports Education" AND "Children's Motor Movements" AND "Motion Reinforcement Factors"). The search was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Mohamed Shaffril et al., 2019). In addition, PRISMA emphasizes review reports that evaluate randomized trials which can also be used as a basis in reporting systematic reviews for other types of studies (Moher et al., 2009).

Exclusion Criteria.

The exclusion criteria used were as follows: (1) Articles that were not published in journals indexed in the Scimago Journal Rank (SJR), (2) Articles in languages other than English, (3) Articles that did not explicitly mention motion reinforcement factors related to children's motor skills.

Procedure.

Initially, 2,223 publications were identified through database searches (ScienceDirect: 1,110 articles) and (Google Scholar: 1,113). After following the exclusion criteria, only 4 articles remained. Most of the items were discarded because the articles did not address the motion reinforcing factors associated with children's motor skills in sports education. All articles were extracted from the source and analyzed through Mendeley software to remove duplicate articles. The PRISMA flow can be seen in figure 1.

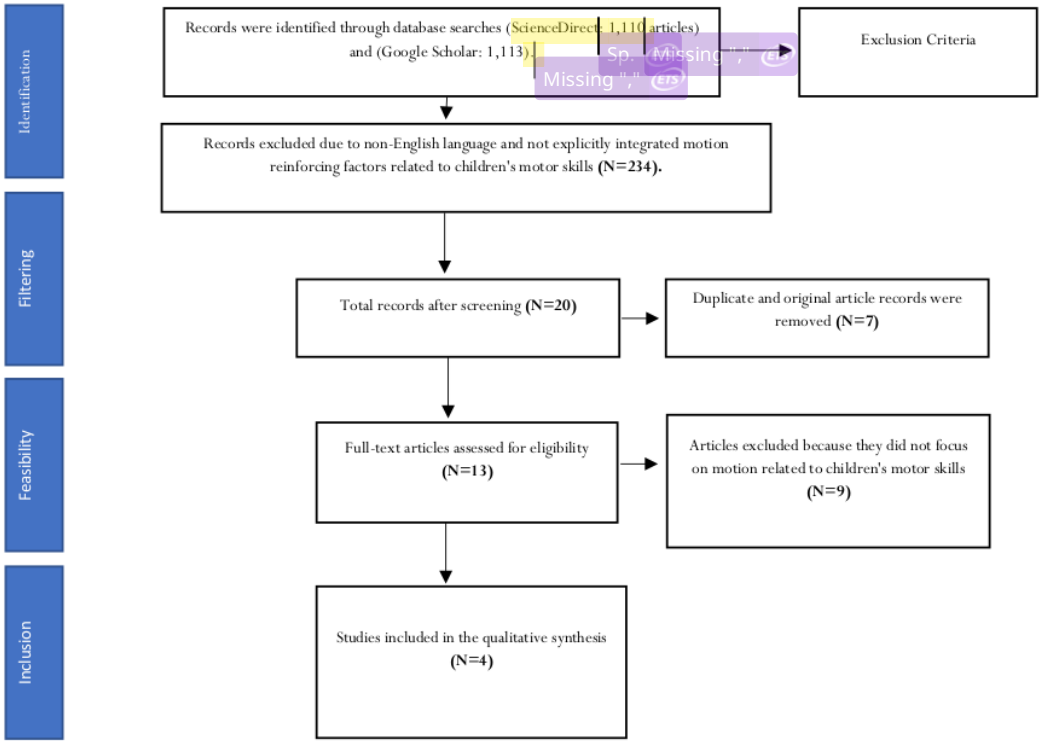

Figure 1. PRISMA Research Flow

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Results

The results of research using the Systematic Literature Review model and data extraction carried out from national and international articles, as as the main article with a variety of studies that have been conducted in various places. The literature obtained in particular is related to factors that affect motion reinforcement in learning and children's motor development as well as the role of teachers/trainers in strengthening children's motion. The results of these relevant journal articles will then be presented in the form of data tabulation. The following is a data tabulation of the results of the extracted journal articles. The research results can be seen in table 1.

Table 1. The summary of studies presenting BCAAs effect on athletic performance

Author, Year	Sample	Research Title	Research Results
(Ozbar et al., 2016)	70 Children aged 4-6 years	The effect of movement education program on motor skills of children	The aim of this study was to contribute to the improvement of basic motor skills of pre-school children between 4-6 years of age with the help of a movement education program. Another aim is to provide support to the development of activities in pre-school education programs. As a result, it was found in this study conducted to investigate the motor development of 4-6 year old children that the educational program caused significant differences in the motor development of children in the experimental group. As a result, it was determined that the educational program positively influenced the nature of children's motor development.
(Ceylan et al., 2014)	945 children aged 7-12 years.	The examining body composition, sprint and coordination characteristics of the children aged 7-12 years.	he purpose of this paper is to examine body composition, sprint parameters, and coordination in children aged 7-12 years by gender and age. To determine the body composition values of the children, the Body Mass Index was calculated. In addition, to determine sprint performance; the 30 m sprint test, for coordination skills; the eight-run test, was used. It was observed that the speed and coordination performance of girls and boys improved with age. Children's Body Mass Index increases due to the increase in body height and weight resulting from their physical evolution. The reason boys perform better than girls at all ages may be attributable to the different endocrine systems that begin with puberty. Differentiation in the endocrine system can affect body composition. It is thought that growth processes may play an important role in children's performance

(Cohen et al., 2014)	The sample in this study was 460 children	Fundamental movement skills and physical activity among children living in low-income communities: a cross-sectional study	he purpose of this study was to examine the relationship between basic movement skill competence and objectively measured moderate-to-vigorous physical activity (MVPA) throughout the school day among children attending primary schools in low-income communities. Object control skill competence appears to be a better predictor of children's MVPA during school-based physical activity opportunities compared to locomotor skill competence. Improved locomotor basic skills competence, particularly object control skills, may contribute to increased levels of children's MVPA throughout the day
(Kakebeeke et al., 2012)	Sample in the study 101 children aged 3 and 5 years old	Improvement in gross motor performance between 3 and 5 years of age1	This study examined the gross motor performance of 101 typically developing children aged between 3 and 5 years (48 boys, 53 girls, mean age = 3.9 years). statistically significant age differences were found, while for bouncing up and jumping down, none were apparent. The average motor performance did not differ between boys and girls in these tasks. The older the children, the better their performance on the tasks.

Discussion

This statement reflects the importance of the tabulated data from the journal article above, showing that the reinforcement of movement in learning and motor development is influenced by many factors, ranging from age, gender, activity level and conditions of the child's social environment.

Motion Reinforcing Factors in Children's Motor Skills

Children's motor skills are an important component of physical and cognitive development that is closely related to daily activities and performance in sports education. Motor skills include body coordination, balance, agility, strength and accuracy of movement. Sport education plays a significant role in developing these skills through a variety of physical activities that are structured and specifically designed to stimulate children's motor skills.

The first article aims of this study is to contribute to the improvement of basic motor skills of pre-school aged children between 4-6 years of age with the help of a movement education program. The other aim is to provide support to the development of activities in pre-school education programs. As a result, it was found in this study conducted to investigate the motor development of children aged 4-6 years that the educational program caused significant differences in the motor development of children in the experimental group. As a result, it was determined that the educational program positively influenced the nature of children's motor development (Ozbar et al., 2016).

Furthermore, the second article aims of this paper is to examine body composition, sprint parameters, and coordination in children aged 7-12 years by gender and age. To determine the body composition values of the children, the Body Mass Index was calculated. In addition, to determine sprint performance; 30 m sprint test, for coordination skills; eight-run test, was used. It was observed that the speed and coordination performance of girls and boys increased with age. The Body Mass Index of children increases due to the increase in body height and weight resulting from their physical evolution. The reason boys perform better than girls at all ages may be attributable to the different

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endocrine systems that begin with puberty. Differentiation in the endocrine system can affect body composition. It is thought that growth processes may play an important role in children's performance (Ceylan et al., 2014).

In the third article the aim of this study was to examine the relationship between locomotor basic skills competence and objectively measured moderate-to-vigorous physical activity (MVPA) throughout the school day among children attending primary schools in low-income communities. Object control skill competency appeared to be a better predictor of children's MVPA during school-based physical activity opportunities compared to locomotor skill competency. Improved competence in basic locomotor skills, particularly object control skills, may contribute to increased levels of children's MVPA throughout the day (Cohen et al., 2014).

Finally, the fourth article examined the gross motor performance of 101 typically developing children aged between 3 and 5 years (48 boys, 53 girls, mean age = 3.9 years). Results showed statistically significant age differences were found, while for rising and jumping down, none were apparent. Average motor performance did not differ between boys and girls in these tasks. The older the children, the better their performance on these tasks (Kakebeeke et al., 2012).

Based on this exposure, it is recognized that movement reinforcement in children's learning and motor development is influenced by a number of complex and varied factors. The following is a further explanation of the factors that may influence movement reinforcement in the context of learning and motor development including; (1) Age factors have a major impact on children's physical and motor abilities. At certain stages of development, children can be more responsive to certain movement strengthening exercises. In addition, motion reinforcement programs need to be tailored to the appropriate stage of motor development to achieve optimal results. (2) Biological differences between the sexes may affect the response to motion strengthening exercises. Some studies have shown differences in the development of strength and motor skills between boys and girls. Therefore, motion strengthening programs may need to be adjusted to take these differences into account. (3) Physical activity levels can generally affect movement strengthening. Children who regularly engage in physical activity may have a better fitness base, which may affect the response to motion strengthening exercises. Conversely, children who are less active may require a more cautious approach. (4) Environmental factors, such as family support, accessibility to sports facilities, and the physical culture around the child, can play an important role in the effectiveness of a movement strengthening program. A supportive environment can provide additional motivation and opportunities to engage children in physical activity.

Psychosocial aspects, such as children's motivation, interest and self-perception of physical activity, can also influence their participation in movement enhancement programs (Dewi & Faridah, 2022). Creating a positive environment and providing intrinsic motivation can increase the effectiveness of the program. Support from teachers, coaches, and the educational environment can contribute to the success of a movement reinforcement program (Šumar et al., 2022). Positive engagement and adequate support can motivate children to actively participate in movement strengthening activities (Harianto et al., 2023). A further benefit that can be obtained is that students can learn from their experiences by doing movement activities. When doing movement activities, children can explore their environment so that it can stimulate cognitive development and academic achievement (Fedewa & Ahn, 2011; Tandon et al., 2016), recognizing body movement, body awareness, spatial awareness, quality of movement, and the link between movement skills and limbs (Abels & Bridges, 2010).

The existence of motor skills encourages to improve psychological and mental health (Lobstein et al., 2015)motor skills are beneficial for social and emotional development (Strong et al., 2005). The magnitude of the benefits that can be obtained by students in learning motor skills should be a serious concern for parents and teachers. Students who learn movement skills not only improve their movement abilities but can also improve cognitive, affective, and socio-emotional abilities.

Conclusion

Strength training in motor learning refers to the use of exercises focused on developing muscular strength and endurance to improve motor skills. This approach aims to improve physical ability, muscle control and balance, all of which are important factors in movement learning. By understanding and considering these factors, movement strengthening programs in the context of motor learning can be more effectively designed and tailored to the individual needs of the child. A holistic and evidence-based approach will have a positive impact on children's motor development and overall health. Future researchers can add other keywords and databases such as ERIC, EBSCO (SPORTDiscus and Psy-chology & Behavioral Sciences Collection) and other databases in the article search.

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Conflict of Interest And Funding

There is no conflict of interest.

References

Abels, K. W., & Bridges, J. M. (2010). *Teaching movement education: Foundations for active lifestyles*. Human Kinetics.

Arham, M., & Agustang, A. (2021). Perubahan Media Bermain Dan Pergeseran Gaya Hidup Anak Di Lingkungan Bulu Kecamatan Mattiro Bulu Kabupaten Pinrang. *Pinisi Journal of Sociology Education Review*, *1*(2), 22–29.

Barnett, L. M., Van Beurden, E., Morgan, P. J., Brooks, L. O., & Beard, J. R. (2008). Does childhood motor skill proficiency predict adolescent fitness? *Medicine and Science in Sports and Exercise*, *40*(12), 2137–2144. https://doi.org/10.1249/MSS.0b013e31818160d3

Ceylan, H. I., Saygin, O., & Irez, G. B. (2014). The Examining Body Composition, Sprint and Coordination Characteristics of the Children Aged 7-12 Years. *The Anthropologist*, *18*(3), 859–867. https://doi.org/10.1080/09720073.2014.11891617

Cohen, K. E., Morgan, P. J., Plotnikoff, R. C., Callister, R., & Lubans, D. R. (2014). Fundamental movement skills and physical activity among children living in low-income communities: A cross-sectional study. *International Journal of Behavioral Nutrition and Physical Activity*. https://doi.org/10.1186/1479-5868-11-49

Cohen, K. E., Morgan, P. J., Plotnikoff, R. C., Callister, R., & Lubans, D. R. (2015). Physical activity and skills intervention: SCORES cluster randomized controlled trial. *Medicine and Science in Sports and Exercise*, *47*(4), 765–774. https://doi.org/10.1249/MSS.0000000000000452

Dewi, R., & Faridah, E. (2022). Method and Motivation in Teaching Elementary School Students to Throw and Catch the Ball. *AL-ISHLAH: Jurnal Pendidikan*, *14*(3), 3507–3516. https://doi.org/10.35445/alishlah.v14i3.1635

Driller, M. W., Dunican, I. C., Omond, S. E. T., Boukhris, O., Stevenson, S., Lambing, K., & Bender, A. M. (2023). Pyjamas, Polysomnography and Professional Athletes: The Role of Sleep Tracking Technology in Sport. In *Sports* (Vol. 11, Issue 1, p. 4). https://doi.org/10.3390/sports11010014

Fadhullah, R. F., Teguh, L., & Wiguno, H. (2020). Pertumbuhan dan Perkembangan Motorik Kasar Pada Kelas Rendah Sekolah Dasar. *Sport Science and Health*, *2*(8), 401–414. https://doi.org/10.17977/um062v2i82020p401-414

Fedewa, A. L., & Ahn, S. (2011). The effects of physical activity and physical fitness on children's achievement and cognitive outcomes: a meta-analysis. *Research Quarterly for Exercise and*

e-ISSN:2988-4942

Sport, *82*(3), 521–535. https://doi.org/10.1080/02701367.2011.10599785

Hadi, H., Royana, I. F., & Setyawan, D. A. (2017). Keterampilan Gerak Dasar Anak Usia Dini Pada Taman Kanak-Kanak (TK) di Kota Surakarta. *Jurnal Ilmiah Penjas*, *3*(2), 61–73. http://ejournal.utp.ac.id/index.php/JIP/article/view/588

Harianto, E., Gustian, U., Supriatna, E., Shalaby, M. N., & Taiar, R. (2023). Stimulating game performance skills in students: experimental studies using net games. *Tanjungpura Journal of Coaching Research*, *1*(2), 63–70. https://doi.org/10.26418/tajor.v1i2.65009

Hidayati, A. (2017). Merangsang pertumbuhan dan perkembangan anak dengan pembelajaran tematik terpadu. *Sawwa: Jurnal Studi Gender*, *12*(1), 151–163. https://doi.org/10.21580/sa.v12i1.1473

Hu, B. Y., Wu, Z., & Kong, Z. (2022). Family Physical Activities Choice, Parental Views of Physical Activities, and Chinese Preschool Children's Physical Fitness and Motor Development. *Early Childhood Education Journal*, *50*(5), 841–853. https://doi.org/10.1007/s10643-021-01190-5

Iswanto, A., & Widayati, E. (2021). Pembelajaran pendidikan jasmani yang efektif dan berkualitas. *Majalah Ilmiah Olahraga (MAJORA)*, *27*(1).

Kakebeeke, T. H., Caflisch, J., Locatelli, I., Rousson, V., & Jenni, O. G. (2012). Improvement in gross motor performance between 3 and 5 years of age. *Perceptual and Motor Skills*. https://doi.org/10.2466/10.13.25.PMS.114.3.795-806

Khaulani, F., Nevlyarni, & Murni, I. (2020). Fase dan tugas perkembangan anak usia sekolah dasar. *Jurnal Ilmiah Pendidikan Dasar*, *7*(1), 51–59. https://doi.org/10.30659/pendas.7.1.51-59

Lambrick, D., Westrupp, N., Kaufmann, S., Stoner, L., & Faulkner, J. (2016). The effectiveness of a high-intensity games intervention on improving indices of health in young children. *Journal of Sports Sciences*, *34*(3), 190–198. https://doi.org/10.1080/02640414.2015.1048521

Laukkanen, A., Pesola, A., Havu, M., Sääkslahti, A., & Finni, T. (2014). Relationship between habitual physical activity and gross motor skills is multifaceted in 5- to 8-year-old children. *Scandinavian Journal of Medicine and Science in Sports*, *24*(2), 102–110. https://doi.org/10.1111/sms.12116

Lobstein, T., Jackson-Leach, R., Moodie, M. L., Hall, K. D., Gortmaker, S. L., Swinburn, B. A., James, W. P. T., Wang, Y., & McPherson, K. (2015). Child and adolescent obesity: part of a bigger picture. *The Lancet*, *385*(9986), 2510–2520. https://doi.org/10.1016/S0140-6736(14)61746-3

Mohamed Shaffril, H. A., Samah, A. A., Samsuddin, S. F., & Ali, Z. (2019). Mirror-mirror on the wall, what climate change adaptation strategies are practiced by the Asian's fishermen of all? In *Journal of Cleaner Production* (pp. 232, 104–117). https://doi.org/10.1016/j.jclepro.2019.05.262

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *Journal of Clinical Epidemiology*, *62*(10), 1006–1012. https://doi.org/10.1016/j.jclinepi.2009.06.005

Mustafa, P. S., & Sugiharto, S. (2020). Keterampilan motorik pada pendidikan jasmani meningkatkan pembelajaran gerak seumur hidup. *Sporta Saintika*, *5*(2), 199–218. https://doi.org/10.24036/sporta.v5i2.133

Nugraha, B. (2015). Pendidikan jasmani olahraga usia dini. *Jurnal Pendidikan Anak*, *4*(1), 557–564. https://doi.org/10.21831/jpa.v4i1.12344

Ozbar, N., Mengutay, S., Karacabey, K., & Sevindi, T. (2016). The effect of movement education program on motor skills of children. *Studies on Ethno-Medicine*. https://doi.org/10.1080/09735070.2016.11905518

Putranto, J. S., Heriyanto, J., Kenny, Achmad, S., & Kurniawan, A. (2023). Implementation of virtual reality technology for sports education and training: Systematic literature review. *Procedia Computer Science*, *216*, 293–300. https://doi.org/https://doi.org/10.1016/j.procs.2022.12.139

Reviyanti, R., & Reza, M. (2023). Improving Gross Motoric Skills Through Traditional Engrang

Games Modif Group B. *Wahana*, *75*(1). https://doi.org/10.36456/wahana.v75i1.7307

S., T. S., Nasirun, M., & D, D. (2020). Aplikasi Gerak Lokomotor Sebagai Media Untuk Meningkatkan Kemampuan Motorik Kasar Pada Kelompok B1. *Jurnal Ilmiah Potensia*, *5*(1), 16–24. https://doi.org/10.33369/jip.5.1.16-24

Samsuddin, S. F., Shaffril, H. A. M., & Fauzi, A. (2020). Heigh-ho, heigh-ho, to the rural libraries we go! - a systematic literature review. In *Library and Information Science Research*. https://doi.org/10.1016/j.lisr.2019.100997

Strong, W. B., Malina, R. M., Blimkie, C. J. R., Daniels, S. R., Dishman, R. K., Gutin, B., Hergenroeder, A. C., Must, A., Nixon, P. A., Pivarnik, J. M., Rowland, T., Trost, S., & Trudeau, F. (2005). Evidence based physical activity for school-age youth. *Journal of Pediatrics*, *146*(6), 732–737. https://doi.org/10.1016/j.jpeds.2005.01.055

Šumar, D., Ćeleš, N., & Mededović, B. (2022). Relations Between Motor Abilities And Basketball Skills Of 13-14 Year Old Students. *Sportske Nauke i Zdravlje*, *12*(2). https://doi.org/10.7251/SSH2202189S

Tandon, P. S., Tovar, A., Jayasuriya, A. T., Welker, E., Schober, D. J., Copeland, K., Dev, D. A., Murriel, A. L., Amso, D., & Ward, D. S. (2016). The relationship between physical activity and diet and young children's cognitive development: A systematic review. *Preventive Medicine Reports*, *3*, 379–390. https://doi.org/10.1016/j.pmedr.2016.04.003

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Sp. This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

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PAGE 4

Prep. You may be using the wrong preposition.

Sp. This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

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Article Error You may need to use an article before this word.

Sp. This word is misspelled. Use a dictionary or spellchecker when you proofread your work.

Proofread This part of the sentence contains an error or misspelling that makes your meaning unclear.

PAGE 5

Article Error You may need to remove this article.

P/V You have used the passive voice in this sentence. You may want to revise it using the active voice.

Hyph. Review the rules for using punctuation marks.

Prep. You may be using the wrong preposition.

PAGE 6

Article Error You may need to use an article before this word. Consider using the article **the**.

P/V You have used the passive voice in this sentence. You may want to revise it using the active voice.

Missing "," Review the rules for using punctuation marks.

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PAGE 7

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