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Movement Coordination Learning Model: Basic Motoric Skill For Elementary Students

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Abstract

This study aims to analyze the effect of the movement coordination learning model on the development of basic motor movements in elementary school-aged children. A total of 50 students became research subjects taken randomly from a total population of 83 people. This study uses an experimental model with "one group pre-test-post test design". The instrument used in this study was the Basic Motor Movement test, which consisted of agility tests, standing long jumps, wall fittings using tennis balls, sprints, flexibility, upright jumps, running coordination, and static balance tests. Data analysis used a statistical approach through SPSS series 20. This study concludes that the Movement Coordination Learning Model affects essential motor development in elementary school-age children. A program recommendation in the future should be planned and prepared for a long-term program to enable children to develop their fundamental motor movements and bring them to the point where they will be ready to improve their abilities at the next level because they have a strong foundation in their psychomotor development phase.

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INTRODUCTION

Education as a system is an effort to achieve the goals of education itself (Alfindasari & Surahman, 2014). It contains input, process or business and the results of that effort. The influence of progress and development in science and technology, as well as education and social sciences, one of the most recent fields of study, is also reflected in sports and education. Physical. The main view of physical education is focused on the fact that it is essential to increase the activeness of children in participating in various activities to provide practical benefits and efficient education through the functionality of the educational methods used in the teaching and learning process (Lengkana et al., 2020). Physical education is movement education as a medium to encourage efforts to develop motor skills, physical abilities, knowledge, sportsmanship, habituation to healthy lifestyles and character building (mental, emotional, spiritual and social) (Sudirjo, Susilawati, Lengkana, & Alif, 2019). Through physical education, children are encouraged to develop their potential further to have solid physical conditions and responsible, intelligent, creative personalities.

Movement education is essential to facilitate the learning needs and formation of complex movements, support rapid adaptation of movements in different conditions and make it easier to show economic and gentle movements (Mulya, Lengkana, & Agustryani, 2021). Movement education while children are actively carrying out activities is thought to have a positive effect on basic movements, physical awareness of the body, motor suitability (strength/power, coordination, speed, agility) and physical suitability (flexibility, strength, endurance) as well as increasing their level of socialization (Bakanligi, 2013). At the elementary school stage, One of the efficient teaching methods is movement coordination learning, which is used to develop large and small muscles in the psychomotor area in-game and activity classes. It was reported that the degree of coordination required for performance also matters with the increasing complexity of movements. Coordination skills are classified as motor learning, gliding, and adaptation (Randhawa & Jackson, 2020). Do not let the low level of coordination lead to poor neurodevelopmental conditions characterized by poor motor skills that interfere with children's daily activities. Running, walking, and jumping is essential for overall fitness and health development. Coordination is needed in every physical education learning activity because when you can start fast movements and stop, change direction and body control, one of which is good coordination.

Learning activities must attract attention and be challenging for students, both cognitively and psychomotor. This is to the opinion (of Crova et al., 2014) that cognitively and psychometrically challenging physical activity can significantly impact children aged 9-10 years who are overweight and underweight. The physical education program

implemented for six months which is enhanced includes activities that require cognitive (open skills) or only curricular physical education. So it is clear that all learning offerings can positively affect children if packaged in an exciting and challenging way. Therefore physical education material needs to be changed in terms of material presentation, not just monotonous and learning orientation does not lead directly to the growth and development of children. This is a problem for children in the future. Namely, there are limitations in doing a movement and rigidity in carrying out new movements, so it inhibits children's activities because they do not have good movement coordination. Coordination training is also very good considering that the age of 8-12 years is the "development of skills" phase (Johnson, 2001). Good coordination will result in excellent technical execution in any difficult position.

Physical ability is also closely related to psychological factors. Because when the physical ability is excellent, then there is a feeling in the individual that he is more confident, a feeling of having good social support and high self-esteem. This is evidenced by research from (Skinner & Piek, 2001) that the ability to coordinate movement in children aged 8-10 years and adolescents aged 12-14 years have significant movement problems. Meanwhile, according to research results from (Cummins, Piek, & Dyck, 2005), good or bad coordination skills significantly affect psychological factors. Based on the results of the author's observations that the level of movement coordination in elementary school students in the Sumedang district needs to match the expected criteria. This may be due to the minimal experience in learning motion. Coordination is an essential movement ability in physical education, so coordination ability is called the foundation or basis of all kinds of preparation for training when children are further involved in sports achievements (Niznikowski, 2016). Several previous studies from (Arifianto & Raibowo, 2020) regarding coordination exercises in the form of videos for junior-level tennis athletes from (Mardiani, 2020) concerning learning outcomes of motion coordination through cooperative models (Rahayu, 2014) regarding learning models and motion coordination on the results of learning hockey skills, and (Syahruddin, Saleh, & Rizal, 2017) regarding eye-hand coordination through a learning-based model play for mentally disabled children.

Based on several previous studies, the authors have yet to find research focusing on applying motion coordination models to elementary school children. Based on the explanation above, the researcher is interested in digging deeper to apply several models of motion coordination learning in elementary school-aged children to achieve optimal and quality child growth and development.

METHODS

This research uses an experimental model with a "one group pre-test-post test

design" to find the influence and relationship between the dependent and independent variables (Leung, 2019; Ramadan & Juniarti, 2020). The motion coordination learning model is the independent variable, and the primary motor movement development is the dependent variable.

The research population totalled 83 participants consisting of low-grade students. The sample was determined to be as many as 50 (25 women-25 men). The sample group was determined by considering an equal number of male and female students and using a random selection technique. Research done. During the treatment period, the experimental group was given activities using the Coordination learning model, which had several variations and included activities to develop Basic Motor Movements for 12 weeks with a meeting frequency of three times a week.

The instrument used in this study is the Basic Motor Movement test (Szabo, Neagu, & Sopa, 2020), such as agility, standing long jump, wall fitting using a tennis ball, sprint, flexibility, upright jumping, running and static coordination and static balance tests. Because the test could not be carried out at one time, there were fears of injury. The researchers took the initiative to schedule a test over five days, with details on the first day, the "agility" test and the "standing long jump". On day 2, the "speed" and "Wall pass with a tennis ball" tests, and on day 3, the "flexibility" and "sprint" tests. On day 4, "straight jump" and " walking coordination" and on day 5, the "static balance" test. During the exercises, the movements were demonstrated to the children as much as once, and the children paid attention to directions and instructions. Then the children are given feedback, corrections and reinforcement. The stages of treatment in the implementation of the research include several things.

Table 1 Movement Coordination Learning Model

1	Exercises aimed at the perfection of primary movement forms and for the treasury of motor experience	They correct all common forms of movement, such as Running, Jumping, Throwing and Climbing
2	Exercises intended to clarify and perfect coordination skills	Target shooting practice with various tools is limited to a specific time, bouncing the ball. Directional exercises (Jumping on target, Bouncing the ball on the track, Race-jumping and throwing a rolling ball) Balance training (Jumping, Gymnastics/throwing/holding the ball on the balance beam and hitting the ball, swimming/running etc.) Reaction drills (Start the exercise from a different starting point and different signals) Rhythm training (running or playing ball according to a predetermined rhythm, the opponent's movements must be followed) They are intended for perfecting coordination skills. This exercise is intended for advanced athletes.

FINDINGS AND DISCUSSION

Findings

After the data is obtained, the next step is to analyze the data using a statistical approach using the IBM SPSS version 20 application, which is then interpreted in the form of data description, and discussion of each SPSS output. The first step is to carry out a normality test to determine whether the data obtained is in a normal distribution. A normality test is also performed to determine the parametric or non-parametric statistical test steps.

Table 2 Normality Test

	Shapiro Wilk Test		
	Statistic	Df	Sig.
Basic Motor Movement	0,029	50	0,201

Referring to the decision criteria for the test results above, the probability value (Sig.) for the sample tested based on Shapiro Wilk obtained the value of Sig. 0.201 > 0.05. Based on the results of the data analysis, it can be concluded that the basic motor movement data are at the NORMAL distribution level. The next statistical test is the independent sample t-test which is conducted to determine whether there is a significant difference between the average pre-test and post-test. basic motor movements.

Table 3. Pre-Post Test Results for Basic Motor Movements

Test		Mean ± SD	T test		
			T	sd	P
Agility	Pre-test	5,09 ± ,67	17,32	49	,000
	Post-test	7,56 ± ,93			
Speed	Pre-test	6,76 ± ,57	11,06	49	,000
	Post-test	5,54 ± ,23			
Standing Long Jump	Pre-test	80,04 ± 12,15	-7,90	49	,000
	Post-test	92,29 ± 8,32			
Wall Pass	Pre-test	8,12 ± 2,09	-6,58	49	,000
	Post-test	10,52 ± 3,68			
Sprint	Pre-test	7,69 ± ,78	7,35	49	,000
	Post-test	7,34 ± ,68			
Flexibility	Pre-test	13,60 ± 2,67	-11,15	49	,000
	Post-test	15,72 ± 2,41			
Vertical Jump	Pre-test	16,13 ± 2,71	-13,08	49	,000
	Post-test	18,23 ± 2,81			
Running Coordination	Pre-test	5,23 ± 8,01	7,33	49	,000
	Post-test	4,57 ± 7,78			
Static Balance	Pre-test	13,23 ± 10,53	-4,28	49	,000
	Post-test	17,34 ± 12,12			

Based on the results of the "paired sample t" test in Table 3 above, data analysis was carried out to determine whether there was a significant difference between the average Pre- and Post-test agility, speed, Standing Long Jump, throwing a sprinting ball, flexibility, vertical jump, running coordination and static balance values related to the experimental group, the difference between the experimental group means found the difference between the mean statistically at the p.0.00 level <0.05. This difference was proven to support the post-test. Other test results above show that the Movement Coordination Learning Model effectively increases children's motor skills' physical capacity, and competence. The difference in results that support the post-test is likely due to the effectiveness of the activities that involve Movement education through the coordination learning model that is carried out.

Discussion

The development of the basic motoric movements of the children in the experimental group who practised Movement Education through the Coordination method developed much better. It became significant in supporting the experimental group. This result is supported by several other kinds of literature, such as (Lloyd, Saunders, Bremer, & Tremblay, 2014; Newell, 2020) that, in the development of motor skills, physical development and compatibility in the development of components of different sports, absolute developmental values, when compared with other children, it was shown to be higher and more significant in children where different models of movement education were practised in a planned and long-term manner.

The coordination learning model approach increases children's physical capacity, motor skills, and physiological and psychological maturation. In this case, the prowess of motor skills is about the participation and involvement of physical activity. It should be part of various indicators of an effective Physical Education curriculum (Mostafavi, Ziaee, Akbari, & Haji-Hosseini, 2013). For this reason, promoting such activities in schools will be beneficial for developing motor skills and provide students with knowledge, skills, abilities and confidence actively, both now and throughout their lives (Ramadan, 2022).

Previous research focused on developing children's motor skills from various types of physical activity was very limited. (Özkara & Kalkavan, 2021) They reported that play behaviour and physical activity were significantly related to motor skills. In particular, children participating in high gross motor activities with high activity levels were more likely to have good running skills. In contrast, children participating in low fine motor activities with low activity levels were likelier to have reasonable visual motor control and balance (Riyanti, Sandro, & DW, 2017).

Fundamental motor skills have been considered the primary goal of physical education programs (Febrianto, Sulaiman, & Hidayah, 2022; Kurniawan, Junaidi, & Hidayah, 2022), as

evidence shows that the sequence of development is in the behaviour of motor skills with mastery of fundamental motor skills as a prerequisite for the introduction of particular sports and games (Goodway, Ozmun, & Gallahue, 2019). In addition, it is essential for children to learn basic motor skills from an early age, as they are a prerequisite for successful participation in health-related physical activities during childhood and even during adulthood (Simpson, Ellison, Carnegie, & Marchant, 2021).

CONCLUSION

Based on the research results ' the findings above show that the movement coordination learning model is effective in increasing physical capacity and basic motor skills. Thus, physical activity in the context of physical education is carried out using a more coordinated learning model approach useful to facilitate the level of growth and development of children in the future. Physical education teachers should be encouraged to develop research-based learning activities characterized by a play approach to encourage student enthusiasm, outreach and participation.

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