

Effectiveness Of Implementing Early Childhood Gymnastics Learning Compared To Conventional Learning For Motor Skills.

Efectividad de la implementación del aprendizaje de gimnasia en la primera infancia en comparación con el aprendizaje convencional de habilidades motoras.

Anton Komaini, Teguh Satria, Alimuddin Alimuddin, Sonya Nelson, Heru Andika, Sri Gusti Handayani, Yayang Yulia Sari, Ilham Ilham

Universitas Negeri Padang (Indonesia)

Abstract. This research began with early childhood delays in mastering motor skills, this can be seen when learning is still observed or does not involve children in learning which has an impact on children's motor skills. This research aims to determine whether the motor skills of young children can be improved through the gymnastics approach compared to the conventional approach. The method used in this research was a quasi-experiment involving 12 girls in the experimental group and 12 girls in the control group. Data was obtained from motor skills and continued with descriptive data tests, normality tests, paired sample tests, and independent sample tests. The results of the research show that the 2-tailed sig value is <0.05 , meaning that there is a significant difference between children who are given gymnastics lessons compared to conventional lessons. In the future, the gymnastics approach will be more effective to apply to early childhood to master motor skills.

Keywords: Motor Skills, Gymnastics, Learning, children

Resumen. Esta investigación comenzó con retrasos en el dominio de las habilidades motoras en la primera infancia, esto se puede ver cuando aún se observa el aprendizaje o no involucra a los niños en el aprendizaje lo que repercute en las habilidades motoras de los niños. Esta investigación tiene como objetivo determinar si las habilidades motoras de los niños pequeños se pueden mejorar mediante el enfoque de gimnasia en comparación con el enfoque convencional. El método utilizado en esta investigación fue un cuasiexperimento en el que participaron 12 niñas en el grupo experimental y 12 niñas en el grupo de control. Los datos se obtuvieron de habilidades motoras y continuaron con pruebas de datos descriptivos, pruebas de normalidad, pruebas de muestras pareadas y pruebas de muestras independientes. Los resultados de la investigación muestran que el valor sig de 2 colas es $<0,05$, lo que significa que existe una diferencia significativa entre los niños que reciben lecciones de gimnasia en comparación con las lecciones convencionales. En el futuro, el enfoque de la gimnasia será más eficaz para aplicarlo en la primera infancia para dominar las habilidades motoras.

Palabras clave: Motricidad, Gimnasia, Aprendizaje, Niños

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Anton Komaini

antonkomaini@fik.unp.ac.id

Introduction

In order for children's movements to be as simple as possible, their motor development must follow the growth of their nervous and muscular systems, because every movement is the result of a complex pattern of interactions between various parts of the body that is regulated by the brain. Behavior and thoughts are closely related to motor development (Adolph and Hoch 2019; Sulistiyowati et al. 2022), the main time for children's motor development is during the first five years of life (Komaini 2017; Yılmaz and Sicim-Sevim 2020), and children's sensors are better at the age of 10 years (Busquets et al. 2018) basic motor skills (fundamental motor skills) must be possessed by children from an early age (Gandotra et al. 2020), which is the foundation for sports skills and physical activity (Liu et al. 2023; Pienaar, Gericke, and du Plessis 2021) It is important for children to master basic movements to achieve physical competence and a child's lifestyle (O'Hagan et al. 2022; Zeng et al. 2019), basic movement skills are really needed in sports, games, physical activities, basic movement competencies are grouped (a) locomotor (i.e. jumping, running, running), (b) object control (throwing, catching, hitting and rolling) (Chang and Gu 2018; Cohen et al. 2014; Healy, Obrusnikova, and Getchell 2021), Basic movements need to be taught to children two to seven years old (Kavanagh, Issartel, and Moran 2020) At this age, different

types of movement patterns need to be given (Chen et al. 2022; Perdana, Widiyanto, and Ilham 2021) because basic movements do not develop naturally, therefore basic movements must be taught and given assignments. which is appropriate to the child's developmental status (Lawson et al. 2021; Wang et al. 2020; Wick et al. 2017). Basic movements themselves are influenced by various factors such as economic, biological and environmental determinants as obstacles to children's basic movements (Komaini 2017; Pienaar et al. 2021; Zeng et al. 2019). Children who do not receive enough stimulus from educators is a problem that must be resolved to support children's motoric development.

Basic movements themselves contribute to health and personality such as fitness, nutritional status, physical and mental academic achievement (Chen et al. 2022), although in the world reports among children and adolescents of basic movement skills are still low (Lawson et al. 2021; Pranoto et al. 2023), such as in England and Ireland Children's basic movement skills are still low due to a lack of physical activity in children and adolescents (Rainer, Jarvis, and Ganesh 2023). Adajunya stated that 6-13% of children have poor basic motor skills (Katagiri et al. 2021). Children who live in low-income environments (Premand and Barry 2022), and inadequate education cause the development of physical, cognitive, emotional and social skills (Guo, Guan, and Yan 2021), with poor motor skills.

better can simultaneously have a better stimulus (Lin et al. 2021). If the child's basic movements are not understood and are not addressed in the early stages of development, this will have an impact on delays in the child's future movements (Chen et al. 2022), To build a physically active lifestyle, and motor skills are important factors for children (Luz et al. 2019; Strotmeyer, Herrmann, and Kehne 2022). So gymnastics is an alternative to increasing body strength (Özçakır 2019), gymnastics activities contribute to children's cognitive growth and development which increases their physical motor activity abilities (Lin et al. 2021; Yılmaz and Sicim-Sevim 2020), through gymnastics teaches children how to use movements that allow them to freely imitate behavior of people, animals and things around them (Eriani, ..., and 2019 2019) lack of exercise results in children being unstable or failing to carry out movements (Rudd et al. 2017), in gymnastics movements there are more complex movements which make children enthusiastic about new movements and are not realize that the child has carried out locomotor movements, object control and balance (Gómez-Landero et al. 2021; Sridadi et al. 2021).

The purpose of this research is to find out the motor skills of girls when learning gymnastics. The findings from this research can provide insight into effective exercise to support girls' motor development. We postulated that children with higher levels of gymnastics would demonstrate better skills than children with lower levels of gymnastics.

Method

Study design

This research took the form of a quasi-experiment which aimed to see the effect of gymnastics on motor skills compared to learning gymnastics, with 12 participants in the experimental group and 12 people in the conventional group.

Procedure.

(1) Fill out the formula for each skill. (2) Provide a demonstration of the skills that will be implemented. (3)

Give participants the opportunity to try. (4) Provide additional demonstration if the child does not understand the task. (5) Carry out 3 trial tests and give a score for each performance criterion in the trial

Ethical Clearance.

To carry out this research, the researcher has asked for permission from the party concerned. By granting permission, the researcher continues this research by implementing exercise learning experiments and controls using an interventional approach.

Statistical Analysis.

After obtaining the data, the researcher summarized the ordinal data to determine the results of the research whether or not there was an influence of the exercise approach with the conventional approach, namely the data was processed using T-test statistics or the Independent Samples Test.

Results

To carry out this research, the researcher has asked for permission from the party concerned. By granting permission, the researcher continues this research by implementing exercise learning experiments and controls using an interventional approach.

The results of the research that has been carried out can be seen in the following table.

Table 1.

Descriptive Data					
	N	Minimum	Maximum	Mean	Std. Deviation
Pre-Tes Gymnastics	12	2.7	3.5	3.100	0.2412
Post-Tes Gymnastics	12	3.3	3.9	3.575	0.1658
Pre-Tes Konvensional	12	2.0	3.0	2.592	0.3175
Post-Tes Konvensional	12	2.6	3.2	2.942	0.1730
Valid N (listwise)	12				

With descriptive results, the data is valid and can be continued for a normality test to see the results obtained. By conducting a normality test, it can be seen that the data is normally distributed, which can be seen in table 2.

Table 2.

Post Test Motor Ability

	Children	Kolmogorov-Smirnova			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Basic Movement Skills	Gymnastics Pre-Test	0.161	12	0.200*	0.958	12	0.758
	Gymnastics Post-Test	0.190	12	0.200*	0.952	12	0.663
	Pre-Test Konvensional	0.161	12	0.200*	0.924	12	0.319
	Post-Test Konvensional	0.179	12	0.200*	0.942	12	0.531

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

With the 2-tailed sig result <0.05 , it can be said that there is a significant difference, so by conducting experimental research on gymnastics learning and the conventional approach, it can be seen that gymnastics learning has

a significant impact on children's basic movements compared to the conventional approach. seen in table 3 and table 4.

Table 3.
Normality Test Results Data

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	α 0,05				
					Lower	Upper			
Pair 1	Pre-Tes Gymnastics Post-Tes Gymnastics	-0.48	0.24	0.07	-0.63	-0.32	-6.81	11	0.000
Pair 2	Pre-Tes Konvensional Post-Tes Konvensional	-0.35	0.21	0.06	-0.48	-0.22	-5.87	11	0.000

Table 4.
Homogeneity Test Results Data

		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	α 0,05	
									Lower	Upper
Basic Movement Skills	Equal variances assumed	0.03	0.87	9.16	22	0.000	0.63	0.07	0.49	0.78
	Equal variances not assumed			9.16	21.96	0.000	0.63	0.07	0.49	0.78

Discussion

The approach to using gymnastics is an activity that trains children's imagination and creates creativity in imitating the actions of objects, animals and humans around them. The gymnastics approach has physical, mental and intellectual space (Özçakır 2019), and trains the physical motor skills of young children. With the gymnastics approach, it can be seen that children who previously did not dare to interact and be active after the children's gymnastics approach was implemented are now able to run with courage and stability (Busquets et al. 2018; Rudd et al. 2017), different from the conventional approach, children given a conventional treatment approach are not too different. So it is answered that when children are given a gymnastics learning approach, it is better for children's motor skills than the conventional approach. Developing physical motor skills in early childhood can become more positively involved socially and cognitively (Dapp, Gashaj, and Roebbers 2021; Melo et al. 2020) and become motivation for sports in the future (Dapp et al. 2021; Komaini et al. 2024) with lifelong physical activity (Simpson et al. 2023) seen after carrying out higher levels of exercise with children. who have not received exercise. Individual development is influenced by the experience of motor maturity, as a result, childhood is considered important for the development of motor abilities (Dapp et al. 2021; Wood et al. 2020), which can be accommodated and controlled well through exercise.

Through gymnastics, children can learn how to move their bodies, including running, jumping, rolling, swinging, statistics (Yılmaz and Sicim-Sevim 2020) which is a good way to improve balance and object handling without hindering the overall development of movement or coordination (Rudd et al. 2017), reflected in the emergence of new skills in the process of fine movement and encouraging physical growth in early childhood by building muscle endurance. Usually good motor skills must be developed deliberately because they do not develop naturally with age (Busquets et al. 2018). Children who have good basic movements tend to be involved in high levels of physical activity (Olajos et al. 2020) compared to children who have delays in basic movements. (Han et al. 2018), new motor skill behaviors that require new motor development strategies in various domains, triggering, guiding, and encouraging broad motor skills (Adolph and Hoch 2019).

It is important during childhood to develop motor skills, which is one of the factors that determines an active lifestyle in adolescence and old age (Lin et al. 2021), during childhood physical activity must be at least 60 minutes a day (Menescardi et al. 2023; Nazaruk and Tokarewicz 2020; Wälti et al. 2022), so that children can understand complex ideas and react skillfully to the physical demands of daily life. Poor motor skills impact social and emotional functioning (Lopes et al. 2022; Onyango et al. 2021).

Several previous studies showed that children aged 4-5 years were given exercise. Meanwhile, children 5-6 years old who are active in gymnastics achieve high scores in speed, agility, balance, bilateral coordination, strength, upper limb coordination, response speed, and visual-motor control compared to groups of children who are not active in sports (Yılmaz and Sicim-Sevim 2020), research previously used Pre Experimental and One Group Pre Test-Posttest Design models in children aged 4-5 years, there was an influence of exercise on motor development.

We can say that gymnastics is very beneficial, especially for early childhood motor skills, so far we only know that children's motor skills can be improved by playing, gymnastics also plays a role in improving children's motor skills at an early age.

Conclusions

The results of the research show that there are differences in the physical motor development of young children aged

5-6 years before and after being given gymnastics. Based on the differences obtained from the research results, the background is the exercise process which involves a lot of large muscles, compared to normal playing activities. There is an influence of gymnastics on the motor skills of young children aged 5-6 years, using gymnastics gives children the freedom to express body movements according to the children's imagination, so that children's motivation to carry out gymnastics activities is full of enthusiasm.

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Datos de los/as autores/as y traductor/a:

Anton Komaini	antonkomaini@fik.unp.ac.id	Autor/a
Teguh Satria	teguh2662@gmail.com	Autor/a
Alimuddin Alimuddin	alimuddin@fik.unp.ac.id	Autor/a
Sonya Nelson	sonyanelson@fik.unp.ac.id	Autor/a
Heru Andika	heruandik0407@gmail.com	Autor/a
Sri Gusti Handayani	srigusti@fik.unp.ac.id	Autor/a
Yayang Yulia Sari	yayangyuliasari64@gmail.com	Autor/a
Ilham Ilham	ilhamf@fik.unp.ac.id	Autor/a
Editage	request@editage.com	Traductor/a