

The Effect of Gross Motor Movement Training on the Physical Condition of Grade V and VI Students at MI NW Selaparang

Muhammad Nurullah Habibi¹, *Elya Wibawa Syarifoeeddin², Ali Imran³

*Corresponding Author: Elya Wibawa Syarifoeeddin, e-mail: elyawibawa@undikma.ac.id

¹Physical Education and Health Study Program, Faculty of Sport, Health, and Community Sciences, Universitas Pendidikan Mandalika, Mataram, Indonesia

Abstract

Objectives: This study aimed to determine the effect of gross motor movement training on the physical condition of Grade V and VI students at MI NW Selaparang.

Materials and Methods: This study used a quantitative pre-experimental method with a one-group pre-test and post-test design. The participants were 20 male students from Grade V and VI at MI NW Selaparang. The treatment consisted of gross motor movement exercises, including 30-, 40-, and 50-meter sprint training, shuttle run training, and throwing-and-catching ball exercises. The physical condition components measured in this study were speed, agility, and coordination. Data were collected using performance tests and analyzed using a paired sample t-test.

Results: The results showed that gross motor movement training improved students' physical condition. The 40-meter sprint test improved from a pre-test mean of 6.80 seconds to a post-test mean of 5.88 seconds, with a t-count of 3.143 > t-table 1.729. The zig-zag run test improved from 8.58 seconds to 7.44 seconds, with a t-count of 10.342 > 1.729. Coordination also improved from a mean score of 10.25 to 14.95, with a t-count of 15.136 > 1.729. These findings indicate significant improvements in speed, agility, and coordination after the intervention.

Conclusions: Gross motor movement training had a significant effect on improving the physical condition of Grade V and VI students at MI NW Selaparang. Sprint training improved speed, shuttle run training improved agility, and throwing-and-catching ball exercises improved coordination.

Keywords: gross motor movement, physical condition, speed, agility, coordination

Introduction

Physical education is one of the important subjects taught in schools (Kuswoyo et al., 2020; Renshaw et al., 2010; Renshaw & Chow, 2019). The core of physical education is learning to move and learning through movement (Hollis et al., 2017; Kuswoyo et al., 2020; Roberts et al., 2019). Through physical education, students are expected to use their bodies more effectively in performing basic and complex movement skills needed in daily life (Charles et al., 2017; Boguszewski et al., 2016; Schmidt & Wrisberg, 2008).

Elementary school age is an important period for physical, motor, cognitive, and psychosocial development (Dewi, 2021a; Donnelly et al., 2016). At this stage, children are still highly interested in play-based activities. Therefore, learning activities that involve movement, games, and physical exercises



are highly suitable for supporting their growth and development.

Gross motor skills refer to the ability to move the body using large muscles, involving most or all parts of the body. These skills include running, jumping, throwing, catching, balancing, and changing direction (Sapri & Kurniah, 2018; Wawrzyniak et al., 2022). In physical education, gross motor development is important because it forms the foundation for students' physical fitness and future sport skills (Dudley et al., 2011; Sutiyono et al., 2021).

Teachers need to understand students' motor abilities in order to design appropriate learning materials and training methods. When teachers understand students' physical and motor characteristics, the learning process becomes more effective and efficient. In contrast, inappropriate learning methods may reduce students' participation and limit the achievement of physical education goals.

Based on this background, this study was conducted to examine the effect of gross motor movement training on the physical condition of Grade V and VI students at MI NW Selaparang. The physical condition components measured in this study included speed, agility, and coordination.

Materials and Methods

Study Design

This study used a pre-experimental design with a one-group pre-test and post-test model (Sugiyono, 2012). This design was used to compare students' physical condition before and after receiving gross motor movement training.

Pre-test	Treatment	Post-test
T1	X	T2

Description:

T1 = Initial test before treatment

X = Gross motor movement training

T2 = Final test after treatment

Participants

The participants in this study were 20 male students from Grade V and VI at MI NW Selaparang. The participants were selected based on the research needs and were involved in all stages of the study, including the pre-test, treatment, and post-test.

Training Program

The treatment consisted of gross motor movement exercises designed to improve students' physical condition. The exercises included:

1. Sprint training at distances of 30, 40, and 50 meters to improve speed.
2. Shuttle run training to improve agility.
3. Throwing-and-catching ball exercises to improve coordination.

The training was conducted for six meetings.

Data Collection

Data were collected using performance tests. The physical condition components measured were:

1. Speed, measured using the 40-meter sprint test.
2. Agility, measured using the zig-zag run test.
3. Coordination, measured using the throwing-and-catching ball test.

Statistical Analysis

The data were analyzed using a paired sample t-test. The t-count value was compared with the t-table value at a 5% significance level with 19 degrees of freedom. The t-table value was 1.729.

Results

Speed Test Results

The result of the 40-meter sprint test showed an improvement after the students received gross motor movement training.

Table 1. Results of the 40-Meter Sprint Test

Test	Mean Score
Pre-test	6.80 seconds
Post-test	5.88 seconds
Improvement	13.53%
t-count	3.143
t-table	1.729

The t-count value was higher than the t-table value, namely $3.143 > 1.729$. This means that sprint training had a significant effect on students' speed.

Agility Test Results

The zig-zag run test also showed improvement after the treatment.

Table 2. Results of the Zig-Zag Run Test

Test	Mean Score
Pre-test	8.58 seconds
Post-test	7.44 seconds
Improvement	13.40%
t-count	10.342
t-table	1.729

The t-count value was higher than the t-table value, namely $10.342 > 1.729$. This indicates that shuttle run training had a significant effect on students' agility.

Coordination Test Results

The throwing-and-catching ball test showed the highest improvement among the measured components.

Table 3. Results of the Coordination Test

Test	Mean Score
Pre-test	10.25
Post-test	14.95
Improvement	24.39%
t-count	15.136
t-table	1.729

The t-count value was higher than the t-table value, namely $15.136 > 1.729$. This means that throwing-and-catching ball exercises significantly improved students' coordination.

Discussion

The results of this study showed that gross motor movement training had a significant effect on the physical condition of Grade V and VI students at MI NW Selaparang. Improvements were found in all measured components, namely speed, agility, and coordination.

The improvement in speed was shown by the decrease in the average 40-meter sprint time from 6.80 seconds to 5.88 seconds. This finding indicates that repeated sprint training can help students improve their running performance. This result is in line with (Kobal et al., 2017; Roth et al., 2021), who stated that physical conditioning exercises can improve basic physical components, including speed, endurance, strength, and agility.

The improvement in agility was reflected in the zig-zag run test. The students' average time decreased from 8.58 seconds to 7.44 seconds. This shows that shuttle run training can improve students' ability to change direction quickly and efficiently. This finding supports the view of (Widiastuti, 2015), who explained that agility is an important component of physical fitness and can be improved through movement exercises that involve speed, reaction, and direction changes.

The highest improvement was found in coordination. The mean coordination score increased from 10.25 to 14.95, with an improvement percentage of 24.39%. This result indicates that throwing-and-catching ball exercises were effective in improving students' eye-hand coordination and movement control. This finding is consistent with (Fort-Vanmeerhaeghe et al., 2016; Jumiya et al., 2023) Ma'mun



and Saputra who stated that motor learning is developed through repeated movement experiences and structured practice.

The findings of this study are also supported by (Dewi, 2021b; Wulandari et al., 2023) who found that elementary school students' gross motor abilities are closely related to their physical activity experiences. Similarly, (Griffo et al., 2020; Lonsdale et al., 2013) reported that physical activity has a positive relationship with motor skills. These studies strengthen the argument that regular movement-based activities can support students' physical and motor development.

Furthermore, Monicha (2020) (Fizi et al., 2023; Sapta et al., 2022) found that circuit-based games improved children's gross motor skills. (Azlan et al., 2020; Nurwiyanto et al., 2021) also reported that traditional games could improve children's gross motor development. These findings are relevant to the present study because sprint training, shuttle run, and throwing-and-catching exercises are all movement-based activities that require active body coordination.

Overall, the results indicate that gross motor movement training can be used as an effective learning and training strategy in physical education. The exercises are simple, practical, and appropriate for elementary school students. Therefore, physical education teachers can use these activities to improve students' speed, agility, and coordination.

Conclusions

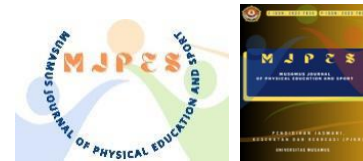
Based on the results and discussion, it can be concluded that gross motor movement training had a significant effect on the physical condition of Grade V and VI students at MI NW Selaparang. Sprint training improved students' speed, shuttle run training improved agility, and throwing-and-catching ball exercises improved coordination. Therefore, gross motor movement training can be recommended as an effective physical education activity to support students' physical fitness and motor development.

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