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## THE INFLUENCE OF ENDURANCE, AGILITY AND EYE, HAND AND FEET COORDINATION ON LEARNING OUTCOMES OF RHYTHMIC MOVEMENTS IN PHYSICAL EDUCATION

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**Abstract** the purpose of this study was to determine whether there is a direct influence between endurance (X1), agility (X2), and eye, hand and feet coordination (X3) on the learning outcomes of rhythmic motion (Y) in physical education. The research method used is a quantitative approach with test and non-test techniques, while the analysis technique uses a path analysis approach or path analysis. The rhythmic motion test instrument uses a test instrument that the researchers developed based on an instrument grid that refers to theoretical studies. To measure agility, the test that will be used is the shuttle run test. The coordination test uses the Hand and Foot Eye Coordination Test Instrument from Sridadi. The population in this study were all students of class VIII SMPN 1 Napabalano. Sampling was done by means of total sampling. The sample in this study was class VIII students of SMPN 1 Napabalano, totaling 116 students. Data analysis techniques were carried out through two stages of analysis, namely descriptive and inferential data analysis. Based on the results of data analysis and hypothesis testing from research data, the variables of endurance, agility, eye, hand and feet coordination have a significant effect on the learning outcomes of rhythmic motion for class VIII students of SMPN 1 Napabalano.

**Keywords:** durability; motion agility; eye, hand and feet coordination; learn rhythmic movements



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## **INTRODUCTION**

Rhythmic movement activity is a series of human movements carried out in a bond of motion patterns that are adjusted to changes in tempo or merely body expression movements following musical accompaniment or beats outside of other music (Sholihah and Pertiwi 2021). Rhythmic movement activities in schools are directed at increasing sensitivity to rhythm and providing movement experience as a means of expression. Usually, rhythmic movement activities can be done with rhythmic gymnastics.

Gymnastics can be used by people for recreation, relaxation or calming the mind, usually someone does it at home, at the fitness center and gymnasium or at school (Firdaus, Yulianingsih, and Hayati 2018). The series of rhythmic gymnastics can be done by walking, running, jumping, jumping, and swinging and rotating the hands (Sugihartono 2019). There are also various types of gymnastics, including floor gymnastics, basic rhythmic movements, agility gymnastics, artistic gymnastics and others. (Yuniarti 2020).

The basic principles of rhythmic activity are rhythm (rhythm), body

flexibility, and continuity of movement (Rizqianti, Setiawan, and Hartono 2018). According to Agus Mahendra in the journal (Yudho et al. 2020) Rhythmic activity is a series of human movements carried out in rhythmic pattern bonds, adjusted to changes in tempo, or simply body expression movements following musical accompaniment or beats outside of music.

Rhythmic gymnastics can also use tools that are held (hand apparatus) such as balls, ropes, ribbons, hoops and maces (Supriady 2020). The composition of movements delivered through the guidance of musical rhythms, beats and counts in producing body movements and artistic tools, is the hallmark of rhythmic gymnastics (Sriwahyuniati 2020).

In this rhythmic movement activity students must have good endurance, agility and coordination in carrying out movements, especially arm swings and footsteps which must be adjusted to rhythmic beats either with music or without music.

In carrying out rhythmic movements, endurance is needed so that the learning outcomes obtained later can be in accordance with what is desired. This is in line with research conducted

by Fitriana Puspa which said that there was an influence of exercise on endurance in class IX students at SMP Negeri 5 Pontianak. This is evidenced by the percentage increase of 16.55 or 28.95% (Neti, Atiq, and Tkidasari 2020).

Besides endurance, the factor that affects rhythmic motion is agility. Harsono in the journal (Purnama 2016) an agile person is a person who has the ability to change the direction and position of the body quickly and precisely while moving without losing balance and awareness of the position of the body. In addition to endurance and agility, which is a factor that affects rhythmic motion is the coordination of the eyes, hands and feet.

Rhythmic motion is a series of movements that are quite complicated because in carrying out this movement all members of the body must move and play a role, both the eyes, hands and feet so that this coordination will support success in carrying out rhythmic movements.

Saputra in the journal (Panggraita et al. 2022) states that coordination is a process of muscle cooperation that will produce a movement that is structured and directed, which aims to form the movements needed in the

implementation of a movement skill. So to get good rhythmic movement learning results, good hand-eye coordination is needed as well.

The learning process, especially the results of learning rhythmic movements carried out at SMPN 1 Napabalano, is in fact not optimal enough, this is because the endurance of students is still not good because in carrying out rhythmic movements there are still many students who experience fatigue quickly, the agility of students in carrying out movements is still not good, and eye, hand and feet coordination of students who are not yet optimal because the whole body moves and coordination is needed to get beautiful and harmonious forms of movement.

Some researchers reveal that the Application of Rhythmic Gymnastics as an Effort to Improve Locomotor Movement Coordination Ability (Hazami, 2013). Other researchers also revealed research on the effect of agility, coordination, and balance on the locomotor abilities of students aged 7 to 10 years (Oktarifaldi, 2019). Locomotor movement is in gymnastic activities, so children need agility, coordination and balance skills to carry out rhythmic gymnastics activities. However, there is

no research that examines how much influence endurance, agility, and coordination have on children's rhythmic movement activity skills.

Therefore, researchers will reveal the increase provided by endurance, agility and eye-hand and foot coordination on learning outcomes of rhythmic motion in physical education students of SMPN 1 Napabalano.

## **METHOD**

In general, in line with the formulation of the problem, the purpose of this research is to find out whether there is a direct influence between endurance (X1), agility (X2), and eye, hand and feet coordination (X3) on the learning outcomes of rhythmic motion (Y) in physical education.

The research method used is a quantitative approach with test and non-test techniques, while the analysis technique uses a path analysis approach, which is a technique for analyzing causal relationships that occur in multiple regression if the independent variable affects the dependent variable not only directly but also indirectly. indirectly (Supardi, 2011).

The variables studied consisted of four variables consisting of three exogenous variables and one

endogenous variable. The independent or exogenous variables consist of endurance (X1), agility (X2) and eye, hand and feet coordination (X3) and the dependent or endogenous variables are the results of learning rhythmic motion (Y).

The rhythmic motion test instrument uses a test instrument that the researchers developed based on an instrument grid that refers to theoretical studies.

To measure agility, the test that will be used is the shuttle run test. Shuttle run is the movement of running as fast as possible between two poles that are about 10 meters apart by running like a figure eight. The results recorded are the highest values that were carried out with 2 trials with units of seconds.

Coordination test using the Hand and Foot Eye Coordination Test Instrument (Sridadi 2009). This test is carried out with the testee standing on the throwing and kicking boundary line that has been provided with a distance of 4 meters from the wall that is the target or target and sideways indefinitely for 30 seconds.

The population in this study were all students of class VIII SMPN 1

Napabalano. Sampling was done by means of total sampling. The sample in this study was class VIII students of SMPN 1 Napabalano, totaling 116 students.

Data analysis techniques were carried out through two stages of analysis, namely descriptive and inferential data analysis. Inferential analysis is carried out to test the existing hypotheses using path analysis in which all hypothesis testing is carried out using  $\alpha = 0.05$ .

**RESULT AND DISCUSSION**

**Descriptive Analysis**

**Description of Endurance Variable Data (X1)**

The results of the research on the endurance variable (X1) have a range of values of 33, with the lowest value being 39 and the highest value being 72. Based on the results of data analysis it was found that the average score was 54.3, the median was 54.5, the mode was 56, the standard deviation was 7.5, variance 56.9. Based on the results of these calculations, the frequency distribution can be seen in table 1.

Table 1. Frequency distribution of the endurance variable of class VIII students of SMPN 1 Napabalano

Interval Class	Frequency	Relative Frequency(%)
37-41	3	2.59 %

42-46	15	12.93 %
47-51	27	23.28 %
52-56	25	21.55 %
57-61	23	19.83 %
62-66	16	13.79 %
67-71	6	5.17 %
72-76	1	0.86 %
	116	100 %

**Agility Variable Data Description (X2)**

The results of the research variable agility (X2) have a range of values of 37, with the lowest value being 30 and the highest value being 67. Based on the results of data analysis it was found that the average score was 49.1, the median was 50, the mode was 52, the standard deviation was 8.3, variance 69.5. Based on the results of these calculations, the frequency distribution can be seen in table 2.

Table 2. Frequency distribution of the agility variable of class VIII students of SMPN 1 Napabalano

Interval Class	Frequency	Relative Frequency(%)
30-34	8	6.90 %
35-39	10	8.62 %
40-44	13	11.21 %
45-49	22	18.97 %
50-54	35	30.17%
55-59	14	12.07%
60-64	12	10.34%
65-69	2	1.72%
	116	100 %

**Data Description Variable Eye, Hands and Feet Coordination (X3)**

The results of the study of the eye, hand and feet coordination variable (X3) have a range of values of 38, with the lowest value being 31 and the highest value being 69. Based on the results of data analysis it was found that the average score was 48.7, median 48, mode 40, deviation standard 8.9, variance 78.7. Based on the results of these calculations, the frequency distribution can be seen in table 3.

Table 3. Frequency distribution of eye, hand and feet coordination of class VIII students of SMPN 1 Napabalano

Interval Class	Frekuensi	Relative Frequency (%)
31-35	6	5.17%
36-40	17	14.66%
41-45	21	18.10%
46-50	27	23.28%
51-55	16	13.79%
56-60	17	14.66%
61-65	6	5.17%
66-70	6	5.17%
	116	100 %

**Variable Data Description of Rhythmic Movement Learning Outcomes (Y)**

The results of the research variable learning outcomes of rhythmic motion (Y) have a range of values of 36, with the lowest value being 31 and the highest value being 67. Based on the results of data analysis it was found that the average score was 50.9, the median was

51, the mode was 50, the standard deviation was 7.7, variance 58.9. Based on the results of these calculations, the frequency distribution can be seen in table 4.

Table 4. Frequency distribution of the variable results of learning rhythmic motion of class VIII students of SMPN 1 Napabalano

Interval Class	Frekuensi	Relative Frekuensi(%)
31-35	3	2.59 %
36-40	10	8.62 %
41-45	12	10.34 %
46-50	30	25.86 %
51-55	24	20.69 %
56-60	26	22.41 %
61-65	10	8.62 %
66-70	1	0.86 %
	116	100 %

**Normality test**

In this section, we will explain the results of the normality test from the research variable data. The statistical technique used is the liliefors technique using an  $\alpha$  value of 0.05 in the SPSS version 25 application. With testing if  $L_0 \text{ Count} < L_0 \text{ Table}$  then the data is normally distributed and if  $L_0 \text{ Count} > L_0 \text{ Table}$  then the data is not normally distributed.

Table 5. Test the normality of research variables on endurance, agility, coordination and learning outcomes of rhythmic motion.

Estimate Error	$L_0 \text{ count}$	$L_0 \text{ tab}$
$X_3 - X_1$	0.076	0.08
$X_2 - X_3$	0.059	0.08
$Y - X_1$	0.079	0.08

Y - X <sub>2</sub>	0.069	0.08
Y - X <sub>3</sub>	0.063	0.08
X <sub>3</sub> - X <sub>1</sub> and X <sub>2</sub>	0.052	0.08
Y - X <sub>1</sub> , X <sub>2</sub> , X <sub>3</sub>	0.059	0.08

Based on the results of the overall data in table 5, it can be seen that all research variable data have a value of L0 Count < L0 Table. So it can be concluded that all research variable data are in the normal distribution category.

**Homogeneity Test**

The homogeneity test of the data for each variable aims to determine whether the data has a homogeneous variance or not by testing if the significance value is > α = 0.05, it can be concluded that the data variance is homogeneous.

Table 6. Test the homogeneity of research variables on endurance, agility, coordination and learning outcomes of rhythmic motion.

Variabel	Sig	Sig (0.05)
X <sub>3</sub> - X <sub>1</sub>	0.916	0.05
X <sub>2</sub> - X <sub>3</sub>	0.964	0.05
Y - X <sub>1</sub>	0.998	0.05
Y - X <sub>2</sub>	0.931	0.05
Y - X <sub>3</sub>	0.615	0.05

Based on the results of the overall data in table 6, it can be seen that all research variable data have a significance value > Sig. 0.05. So it can be concluded that all research variable data comes from a homogeneous variance.

**Hypothesis test**

**Substructural Testing 1**

The purpose of substructural testing 1 is to test the hypothesis by looking at the direct effect of the endurance variable (X1) on eye, hand and feet coordination (X3) and the direct effect of agility variable (X2) on eye, hand and feet coordination (X3) ) with the equation  $X_3 = PX_{3X1} + PX_{3X2} + e_1$ . A variable is declared to have influence between variables seen from a significance value of 0.05, if the Sig. < 0.05, it can be said that there is influence between variables.

**Table 7.** Substructural Summary Model 1 and Substructural Anova 1

Model summary	Anova <sup>a</sup>
R (0.371)	F (9.003)
R square (0.137)	Sig. (0.00)
Adjusted R Square (0.122)	Df (2)

From the results of substructural test 1 in table 7 using SPSS, the value of R Square in the model summary table is obtained as the total effect of endurance (X1) and agility (X2) together and directly on eye, eye, hand and feet (X3), namely equal to 0.137 x 100% then the total percentage of substructural influence 1 is as much as 13.7% the influence of the two variables of endurance (X1) and agility (X2) on eye, hand and feet coordination (X3) and the

remaining 86.3% by other variables which was not examined as an effect on eye, hand and feet and the residual value for this equation is equal to 0.929 from the results

$$e_1 = \sqrt{1 - r^2} = \sqrt{1 - 0,137} = 0,929$$

Based on the data table 7, the ANOVA section obtained an F value of 9.003 with a significance value of 0.000. Therefore  $0.000 < 0.05$ , the research hypothesis which states that there is an influence between endurance and agility on eye, hand and feet coordination is accepted.

Table 8. Substructural Coefficient 1

Model	Stand. Coef.	t	Sig
Durability	.193	2.203	0.30
Agility	.329	3.759	0.00

Based on the path analysis test, the substructural equation 1  $X_3 = PX_3X_1 + PX_3X_2 + e_1$  becomes  $X_3 = 0.193 X_1 + 0.329 X_2 + 0.929 e_1$ .

The effect of endurance on eye, hand and feet coordination is obtained from the Beta coefficient value of 0.193. For the T test obtained a T value of 2.203 with a significance of 0.030. Because  $0.030 < 0.05$ , it can be concluded that the hypothesis which states that there is a direct effect between endurance on eye, hand and

feet coordination is accepted. The magnitude of the effect of endurance on eye, hand and feet coordination is  $0.193 \times 100\% = 19.3\%$ .

The effect of agility on eye, hand and feet coordination is obtained from the Beta coefficient value of 0.329. For the T test obtained a T value of 3.759 with a significance of 0.000. Because  $0.000 < 0.05$ , it can be concluded that the hypothesis which states that there is a direct effect between agility on eye, hand and feet coordination is accepted. The magnitude of the effect of agility on eye, hand and feet coordination is  $0.329 \times 100\% = 32.9\%$ .

Table 9. Substructural Summary Model 2 and Substructural Anova 2

Model summary	Anova <sup>a</sup>
R (0.392)	F (6.790)
R square (0.154)	Sig. (0.00)
Adjusted R Square (0.131)	Df (3)

From the results of the substructural test 2 in table 9. using SPSS, the R Square value in the model summary table is obtained as the total effect of endurance (X1), agility (X2), and eye, hand and feet coordination (X3) together and separately directly on the results of learning rhythmic motion (Y) which is equal to  $0.154 \times 100\%$  then the total percentage of substructural

influence 2 is as much as 15.4% the effect of the two variables is endurance (X1), agility (X2) and eye, hand and feet coordination (X3) on learning outcomes of rhythmic motion (Y) and the remaining 84.6% by other variables not examined as an influence on learning outcomes of rhythmic motion (Y) and the residual value for the equation is equal to 0.920 from the result  $r^2 = \sqrt{1 - r^2} =$  .

Based on the ANOVA table data in table 9. an F value of 6.790 is obtained with a significance value of 0.000. Therefore  $0.000 < 0.05$ , the research hypothesis which states that there is an influence between endurance, agility, and eye, hand and feet coordination on learning outcomes of rhythmic motion is accepted.

Table 10. Anova table

Model	Stand. Coef.	t	Sig
Durability	.181	6.942	0.044
Agility	.249	2.692	0.000
Eye hand feet coordination	-0.387	-4.140	0.008

The effect of endurance on learning outcomes of rhythmic motion is obtained from the Beta coefficient

value of 0.181. For the T test obtained a T value of 2.037 with a significance of 0.044. Because  $0.044 < 0.05$ , it can be concluded that the hypothesis which states that there is a direct influence between endurance and learning outcomes of rhythmic motion is accepted. The magnitude of the effect of endurance on the learning outcomes of rhythmic motion is  $0.181 \times 100\% = 18.1\%$ .

The effect of agility on learning outcomes of rhythmic motion is obtained from the Beta coefficient value of 0.249. For the T test obtained a T value of 2.692 with a significance of 0.008. Because  $0.008 < 0.05$ , it can be concluded that the hypothesis which states that there is a direct effect between agility on learning outcomes of rhythmic motion is accepted. The magnitude of the effect of agility on learning outcomes of rhythmic motion is  $0.249 \times 100\% = 24.9\%$ .

The effect of eye, hand and feet coordination on learning outcomes of rhythmic motion is obtained from the Beta coefficient value of -0.387. For the T test obtained a T value of 4.140 with a significance of 0.000. Because  $0.000 < 0.05$ , it can be concluded that the hypothesis which states that there is a

direct influence between eye, hand and feet coordination on learning outcomes of rhythmic motion is accepted. The magnitude of the influence of eye, hand and feet coordination on the learning outcomes of rhythmic motion is  $0.387 \times 100\% = 38.7\%$ .

### **Indirect Hypothesis Testing**

Based on the results of the path analysis, it is necessary to know the indirect effect between the endurance variable (X1) on the learning outcomes of rhythmic motion (Y) through eye, hand and feet coordination (X3). Calculations are performed using X1 to Y via X3 =  $IE1 + PYX1$ . So based on the results of path analysis calculation data for substructural test 1 and substructural test 2 are:  $IE1 = (PX1X3) \times (PYX3) = (0.193) \times (-0.387) = -0.074$ . Then the first indirect effect is obtained from  $(-0.074) + (0.181) = (0.107)$ . Therefore  $(0.107) > 0$ , the hypothesis testing which states that there is an indirect effect between endurance on learning outcomes of rhythmic motion through eye, hand and feet coordination is accepted.

Based on the results of the path analysis, it is necessary to know the indirect effect of the agility variable (X2) on the learning outcomes of rhythmic

motion (Y) through eye, hand and feet coordination (X3). Calculations are performed using X2 to Y via X3 =  $IE2 + PYX2$ . So based on the results of path analysis calculation data for substructural test 1 and substructural test 2 are:  $IE2 = (PX2X3) \times (PYX3) = (0.329) \times (-0.387) = -0.127$ . Then the second indirect effect is obtained from  $(-0.127) + (0.249) = (0.122)$ . Therefore  $(0.122) > 0$ , the hypothesis testing which states that there is an indirect effect between agility on learning outcomes of rhythmic motion through eye, hand and feet coordination is accepted.

### **DISCUSSION**

1. There is a Positive Effect of Endurance on Eye, hand and feet Coordination

From the results of the research data analysis, it was found that endurance had a significant direct effect on eye, hand and feet coordination with a direct influence percentage of (0.193) or 19.3% and the remaining 80.7% was influenced by other variables. So it can be concluded that there is an effect of endurance on eye, hand and feet coordination in class VIII students of SMPN 1 Napabalan.

Endurance is the ability or ability of a person to do activities with a certain intensity over a long period of time,

without excessive fatigue (Aspa 2020). Cardiovascular endurance is a person's ability to use the heart, lungs and blood circulation system effectively and efficiently with high intensity for a long time (Lahinda, Wasa, and Riyanto 2020).

Therefore, endurance is needed in carrying out activities, especially in sports. Likewise with coordination, can not be separated from sports (Dahlan and Patawari 2019). In carrying out rhythmic movements, it certainly requires a number of stimuli that can be seen, then integrated into motor movements, the result of which is a well-coordinated movement (Sabrina 2020).

Coordination is a process of muscle cooperation that will produce a movement that is structured and directed and influenced by several factors that aim to form the movements needed in the implementation of a movement skill (Bowo 2016). So if a student has good endurance in carrying out an activity, especially movement activity, then automatically the coordination of the student's movements will also be good.

2. So if a student has good endurance in carrying out an activity, especially movement activity, then automatically the coordination of the student's movements will also be good

From the results of the research data analysis, it was found that agility had a significant direct effect on eye, hand and feet coordination with a direct influence percentage of (0.329) or 32.9% and the remaining 67.1% was influenced by other variables. So it can be concluded that there is an effect of agility on the coordination of eyes, hands and feet in class VIII students of SMPN 1 Napabalano.

Agility is a component of physical fitness that is needed in all activities that require the speed of changing the position of the body and its parts (Pratama 2018).

Agility is very important for children in their growth to improve abilities and socialization with the environment (Verschuren, Bloemen, Kruitwagen, & Takken, 2010). Thus, in carrying out movement skills, the physical components that must be possessed include strength, speed and agility as well as athlete endurance which aims to achieve maximum performance (Arham 2019).

In improving a skill, especially in gymnastics, students must master biomotor components such as coordination and agility. Agility greatly affects coordination, where agility and

coordination are part of the components of physical conditions that are very necessary in an effort to improve movement skills (Elmanisar 2020). Therefore, to be able to coordinate properly requires good agility as well.

3. There is an Effect of Endurance on Rhythmic Movement Learning Outcomes

From the results of the research data analysis, it was found that endurance had a significant direct effect on the learning outcomes of rhythmic motion with the percentage of direct influence obtained at (0.181) or 18.1% and the remaining 81.9% was influenced by other variables.

Having good endurance is very supportive and becomes a very important capital to be able to achieve the highest performance (Putra, Nurrochmah, and Amiq 2022). Likewise when doing gymnastics, where gymnastics is one of the efforts that can be done to achieve physical fitness. The benefits of aerobic exercise can not only improve physical fitness but also make the body condition healthier. So that students can carry out learning activities and play without experiencing excessive fatigue (Dewi and Rifki 2020).

Usually, gymnastics is carried out with musical accompaniment to

increase exercise motivation, exercise timing, and exercise speed, as well as to keep the exercises carried out with the same movements. Thus, the intensity of the exercise can be adjusted by setting the tempo of the music that accompanies it (Tumini et al. 2015). Therefore, to be able to get good results of learning rhythmic motion requires good endurance as well.

4. There is an influence of agility on learning outcomes of rhythmic motion

From the results of the research data analysis, it was found that agility had a significant direct effect on the learning outcomes of rhythmic motion with a direct influence percentage of (0.249) or 24.9% and the remaining 75.1% was influenced by other variables.

In carrying out rhythmic movements, students must have good agility so that when changing body movements or positions, the movements carried out are still stable (Primadi et al. 2021).

Skill is the degree of success in achieving goals effectively and efficiently. Skills are also defined as procedural abilities on how to perform a certain movement task that ranges from the simplest to the most complex level (Nurjana, Safari, and Susilawati 2021).

Students who have skills in the form of good agility in changing a movement effectively and efficiently can affect the results or students' abilities in carrying out applicable gymnastic movements.

5. There is an Influence of Eye, hand and feet Coordination on Rhythmic Movement Learning Outcomes

From the results of the research data analysis it was found that the coordination of the eyes, hands and feet had a significant direct influence on the learning outcomes of rhythmic motion with a direct influence percentage of (0.387) or 38.7% and the remaining 61.3% was influenced by other variables.

Coordination is the cooperation of the central nervous system as a system that has been harmonized by the process of stimulation and inhibition as well as skeletal muscles during the course of a movement in a directed manner (Safitri 2022).

A student who has good coordination is not only able to perform skills perfectly, but also easily and precisely in carrying out skills that are new to him. Skill in this case is the student's ability to perform a movement (Hermanto 2017).

Movement must have harmony between one movement and another (Anggara 2018). A movement can be

realized in a gymnastic movement, especially rhythmic gymnastics (Rosalia, Amilda, and Fitri 2023). According to Ahmad, rhythmic gymnastics can also be interpreted as one of the exercises carried out by following the rhythm of music or singing which then forms a coordination of movements between the movements of the limbs and the rhythmic strains (Sasmita, Darmawani, and Sinaga 2020). Therefore, to be able to get good rhythmic motion results, one must have good eye, hand and feet coordination.

6. There is an Effect of Endurance Through Eye, hand and feet Coordination on Rhythmic Movement Learning Outcomes

From the results of the research data analysis, the significance value of endurance through eye, hand and feet coordination was obtained for the learning outcomes of rhythmic motion of 0.107, where the sig.  $0.107 > 0$ . This shows that there is an indirect effect between endurance on learning outcomes of rhythmic motion through eye, hand and feet coordination. Wiarto (2013) explained that endurance is a person's ability to do work for a relatively long time.

In implementing the skills of a movement, to get good results, especially in rhythmic motion, students

also need endurance in their appearance. Sports activities require a variety of physical abilities. In sports, coordination is also needed by someone to combine several movements into one effective and efficient movement pattern (Kenta 2020). With adequate physical abilities such as endurance and coordination, student achievement will increase (Hasyim 2019).

7. There is an influence of agility through the coordination of eyes, hands and feet on the results of learning rhythmic movements

From the results of the research data analysis, the significance value of agility through eye, hand and feet coordination was obtained for the learning outcomes of rhyiming motion of 0.122, where the sig. 0.122 > 0. This shows that there is an indirect effect between agility on learning outcomes of rhythmic motion through eye, hand and feet coordination. Agility is a component of motor fitness that is very necessary for all activities that require the speed of changing the position of the body and its parts. Besides that, agility is a prerequisite for learning and improving movement skills and sports techniques, especially movements that require movement coordination (Daryanto and Hidayat 2015).

The role of agility is used directly to coordinate multiple movements, makes it easier to practice high techniques, movements can be efficient and effective, facilitates orientation and anticipation of the lawn and the competition environment, avoiding injury (Arifianto 2017). To achieve the target of rhythmic movement skills, agility is needed in carrying out the movements and eye and hand coordination for the alignment of the movements so that students can be consistent in carrying out the movements so that they can produce good movements.

## **CONCLUSION**

Based on the results of data analysis and hypothesis testing from research data, the variables of endurance, agility, coordination of eyes, hands and feet have a significant influence on the learning outcomes of rhythmic motion for class VIII students of SMPN 1 Napabalano. The greatest influence was obtained from the eye, hand and feet coordination variables on learning outcomes of rhythmic motion of 0.000 < 0.05 with a direct influence percentage of (0.387) or 38.7%.

After getting the research results, this research still has shortcomings and

obstacles in the research process. Deficiencies and obstacles occur in the process of planning, data collection to compiling research reports.

The number of respondents was too many and the abilities of the respondents had different ranges because the respondents were not trained people so that the results obtained were very small. The research variable only looks at the learning outcomes of rhythmic motion, but does not pay attention to other factors such as basic movement abilities, motivation and others. This can be seen from the results of research where the value of the coefficient of determination (the effect) is very small.

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