COMPARISON OF MULTIBALL TRAINING METHODS AND GUIDED TRAINING METHODS ON STUDENT LEARNING OUTCOMES IN TABLE TENNIS COURSES

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Abstract

The aims of this research are: 1). To find out differences in student learning outcomes in table tennis learning through the application of the Multiball and the Guided method, 2). To find out which method is better between the Multiball and the Guided method for student learning outcomes in Table Tennis courses. The subjects of this research were 32 male students of Physical Education, Sports and Recreation, University of Pattimura for the 2020/2021 Academic Year who offered Table Tennis courses. This research is a type of experimental research using a quantitative descriptive approach. The instrument used for data collection was a table tennis performance test. Based on the results of the research and data analysis, it shows that: 1) There is a difference, but not significant, in the student table tennis learning outcomes after being treated with the Multiball training method and the Guided training method. 2) There is no better method between the Multiball training method and the Guided training method.

Keywords: Learning Outcomes, Table Tennis; The Multiball and Guided Method

INTRODUCTION

Table Tennis is a game that uses table facilities and their equipment as well as bats and balls as tools. This game begins with the opening shot *(service),* in which the ball is bounced to its own table then over the net and bounced on the opponent's table until the opponent cannot return properly. Players try to kill their opponent's blows to get points from their punches (Tyan, 2021). The Table Tennis course is one of the compulsory subjects in the Health and Recreation Physical Education Study Program where students who offer the subject will go through a learning process in one semester. Students are required to be able to master the basic techniques of hitting in table tennis. In table tennis games, students are required to master several techniques basic for example *forehand, backhand, serve* and *smash.* forehands, backhand, serve and smash are the most common basic techniques used by players because it is very easy to do and has a function in servicing. Even though it looks easy, in making a punch *forehand, backhand,* serve and *smash* cannot be done carelessly without paying attention to the right basic

motion so that the results of the stroke are not too high or concerns on the net.

Basic techniques are very important in table tennis. In presenting and returning the ball can be done by *forehand* and backhand *strokes.* Budi and Arwandi (2020) say that *forehand* and backhand is very important because it has many functions, especially for beginners. strokes *Forehand* and *backhand* have a function for serving, returns the ball, performs an attack so that if it is for that player mastering *forehand* and *backhand* then you can do it simple game.

Specifically, table tennis is a type of game that has complex movements because it contains elements of neatly coordinated movements. Mastery of the basic technique of holding the bat, skilled at hitting and receiving the ball in a variety of basic techniques, and dominated by the performance of special coordination biomotor components. Solissa (2018) explained that special coordination or specific coordination is an illustration of the ability to perform movements quickly, precisely and smoothly, because special coordination is

closely related to the specifics of motion which provide additional abilities to athletes/students so they can perform at their best in training. / study and in the game. The ability to master this special coordination component is very much needed in the game of table tennis.

Some of the things that become obstacles to learning table tennis for Patimura University Physical Health and Recreation Education students are based on empirical facts, that: 1) most students have not mastered the basic techniques of correct forehand and backhand strokes, 2) students are not fast enough to do forehand and backhand strokes, and 3) the direction of the forehand and backhand strokes is still not quite right. As a result of these problems, interest in and motivation to learn in table tennis lessons is low, students tend to just attend lectures but are not really serious in mastering them. This can be proven from the graduation rate in the Table Tennis course contract each semester which is still relatively low, and the grades obtained are still dominated by C and D average scores, so students take part in remedial programs or short semester programs (SP), to improve acquisitions. Table

Tennis grades.

The success of the teaching and learning process is largely determined by the selection of the right method and how to apply it. Methods or ways or paths are very important and decisive in learning or delivering material by a teacher/educator to his students (Syukron Ma'mun, 2021). Lecturers in choosing methods and strategies for learning the game of table tennis must be adjusted to the complexity of the motion of the table tennis branch. Hodges, in Nurdianti & Risyanto (2018) said that to be able to excel in table tennis, one must choose the right and programmed training method. There are 5 training methods in table tennis to improve skills, including: pair training, guided training, self-training, *multiball*, and machine training.

From the various problems above, the *Multiball* is felt to play a very important role in helping the process and achieving learning goals gradually.training method *Multiball* is a training method in which one player practices while the other player feeds the ball. Players will need a basket of balls. The bait giver stands on the edge of the table,

picks up and hits the ball successively in various speeds, spins, and directions that the player needs (Novri Asri, Soegiyanto KS & Siti BM, 2017) This exercise using the Multiball method has the aim of among other things to find out the increase in *the* strokeskills *forehand* and *backhand* training method *Multiball* in Table Tennis games adds insight into the training method using the *Multiball* skills *hitting* and *backhand* in Table Tennis games, by using the *Multiball* it is hoped that later students will have the ability to hit accuracy much better than before (Burhanuddin Kharis & Dony Andrijanto, 2021).

Previous studies have reported that the results of practicing *forehand* and backhand using the *Multiball* can have a significant effect on *forehand* and *backhand* (Nurdin, 2020). At the school level, the *Multiball* has proven to be more effective than the pair training method for the accuracy of *forehand drive* (Bayu, Kurnia & Setiawan, 2019. Special studies that examine *forehand smash* using multiple balls *(Multiball)* have a significant effect on hitting ability *forehand smash* (Anggi Anggara, 2021). However, Anggi Anggara's research does not answer specific research needs.

training method *Multiball* that can help process and achieve table tennis learning objectives, a student also really needs assistance from a coach/lecturer or Supervised training to improve student learning achievement. Guided training method is also called the training method (Noviarni, 2014). Guided training method is a way of learning that provides opportunities for students to instill certain habits. Guided here means the implementation of a teaching and learning process that guided based on the instructions and explanations of the teacher. This method can develop skills through habituation. The Guided training method can be used as a means of training dexterity, accuracy, student skills by providing continuous and systematic assistance in solving the problems they face so that students have skills so they are able to interact with society and their environment (Marganingsih, 2022; W, Tayeb, & Idris, 2016). The Guided practice method used in the learning process will create conditions for active students, because in the learning process students are trained to be more thorough and careful in producing a work.

Several studies have shown that the Guided practice method can improve students' skills. The results of Merta's research (2022) concluded that the application of the Guided training method can improve PJOK learning outcomes. Research conducted by Bahrun (2016) concluded that learning basic *forehand* in table tennis can increase student activity and abilities in table tennis. Other research shows that guided practice can increase student creativity (Noviarni, 2014).

Training to improve student learning outcomes in table tennis courses can be done through the two methods above. But the magnitude of the contribution made by the two methods requires scientific proof, for this reason researchers feel the need to conduct research on this issue. So that it can be known correctly and with certainty, which one has a greater contribution to student learning outcomes.

Learning is a process characterized by changes in a person. Some changes from the results of the learning process can be shown in various forms such as additional knowledge, understanding, attitudes and behavior, skills, habits and changes in other aspects that exist in individuals who are learning (Ardiansyah and Nana, 2020)**.** Learning achievement is evidence of learning success or the ability of a student to carry out his learning activities in accordance with the weight he achieves. Learning achievement is a word used to indicate a person's level of achievement in carrying out a series of activities. Learning achievement is marked by getting good grades in a learning material (Andy, Sugeng & Deden, 2019). If the student's final score is good, this indicates that the learning achievement is good and the process of transferring knowledge from teacher to student can be said to be successful. For student learning achievement, the lecturer is tasked with carrying out learning that can streamline all student abilities, both skills, knowledge, and attitudes (Rismawati and Sugiman, 2016).

Some changes from the results of the learning process can be shown in various forms such as the addition of knowledge, understanding, attitudes and behavior, skills, habits and changes in other aspects that exist in the individuals who learn. In short, competent educators are those who

are able to streamline learning approaches, methods, and strategies with their expertise, personality, and social relations in order to explore the potential of students to the fullest during the learning process as an effort to prepare students to "live and be useful" in the future. (Blegur, Wasak, & Manu, 2017). It is on this basis that the authors conducted experimental research on effective training methods in order to improve the quality of learning and improve student achievement in Table Tennis courses so that the phenomenon of remedial programs and short semesters is no longer found when students bid for Table Tennis courses.

METHOD

In accordance with the author's goal of trying to find a comparison of the effect of the *Multiball* and the Guided training method, this research uses a quasi-experimental research type using a quantitative descriptive approach. This research is said to be quasi-experimental because in this study used two experimental groups as a comparison of two groups that were subjected to treatments.

The research design used in this research is The Static Group Pretest-Posttest Design. In this design there are two groups that are given different treatment. The advantage of this design is that the pretest and posttest are carried out so that the difference in results can be known with certainty due to the treatment given.

RESULTS

Data analysis was carried out in this study in two ways, namely manual statistical calculations and the Statistical Product and Service Solutions Version 20.00 (SPSS) computer application which is presented in the appendix. The use of SPSS for Windows 20.00 output is intended to make calculations more accurate and can be justified. The following is a description of the data and research hypothesis testing.

Data Description

The initial step of research data analysis is to describe the data that has been collected from the results of the *pre-test* and post- *test.* The results of *the pre-test* and *post-test* in question are the results of the student's Table Tennis skills test. The following is the result of data description calculations performed using the SPSS for Windows 20.00 program,

which can then be further elaborated in the form of tables and graphs as follows:

Data for the Multiball method group

The results of the table tennis skill tests conducted before and after being given lessons using the Multiball method are as follows:

Table 1. Description of Multiball Group Data

		Pre-Test	Post-Tes
N	Valid	32	32
	Missing	0	0
Mean		58.0625	74.1250
Std. Deviation		4.35473	6.56358
Variance		18.964	43.081
Minimum		51.00	64.00
Maximum		67.00	85.00
Enhancement		27.66%	27.66%

Based on table 1 above, the student table tennis learning outcomes before being given the Multiball method treatment in the *pre-test* was an average score of 58.06, a standard deviation of 4.354 with a variant of 18.964, the lowest and highest scores respectively respectively 51 and 67. As for the student table tennis learning outcomes after being given the Multiball method treatment in the *post-test* , the average score is 74.12, the standard deviation is 6.56 with a variant of 43.08, the lowest and highest scores are 64 and 85 respectively. The increase that occurred in *the pre-test* and

post-test when given the Multiball method treatment was 27.66%.

The data of the Guided method group

The results of the Table Tennis skills test carried out before and after being given learning with the Guided method are as follows:

Tabel 2. Guided method

		Pre-Test	Post-Tes
N	Valid	32	32
	Missing	0	0
Mean		57.4688	71.6563
Std. Deviation		3.73289	5.85640
Variance		13.934	34.297
Minimum		51.00	64.00
Maximum		65.00	81.00
Peningkatan		24.69%	24.69%

Based on table 2 above, it can be seen that the results of student table tennis learning before being given the Guided method treatment in the pre-test was an average score of 57,468, a standard deviation of 3,732 with a variant of 14,934, the lowest and highest scores were respectively 51 and 65 As for the results of table tennis for students after being given the Guided Method treatment in the post-test, the average score is 71.65, the standard deviation is 5,856 with a variant of 34,297, the lowest score and the highest are 64 and 81 respectively. The increase that occurred on the pre-test and post-test when given the guided method treatment, namely 24.69%.

Hypothesis Testing

Requirements for Hypothesis Testing

Before the hypothesis is tested, the data must meet the prerequisites for the parametric test, namely distribution normality and group homogeneity.

Normality Test

To test the normality or abnormality of a data distribution. So we need a calculation to find out the normal distribution of a data. Many calculations can be used, but in this study the researchers used a calculation, namely the Kolmogorov-Smirnov method as a normality test. This test was carried out to test the normality of the data distribution. On the basis of the analysis used in making decisions whether the data distribution follows a normal distribution or not, that is, if the significance value is greater than 5% (0.05), the data is normally distributed.

Based on the results of the Normality Test with computer aids using the SPSS for Windows 23 program, the results are obtained:

Table 3. Description of the Normality Data

Variable			the Kolmogorov-Smirnov[a]		
			Statistic	N	Sig.
Pre	Supervised	-Test	0.119	32	0.200[*]
	Multiball	Pre-Test	0.112	32	0.200[*]
Post	Supervised	Post-Test	0.183	32	0.008
	Multiball	Post-Test	0.299	32	0.000

For the normality test here using Kolmogorov Smirnov with significant lilliefors correction. Test criteria Kolmogorov-Smirnov test, if the test results are significant (p value > 0.05) then the distribution is said to be normal. Kolmogorov-Smirnov test, if the test results are significant (p value <0.05) then the distribution is said to be abnormal. Based on Table 3 above shows that: The pre-test scores in the Multiball and Supervised groups were 0.200 > 0.05. While the post-test scores in the Multiball and Supervised groups were <0.05. When viewed according to the test criteria, it can be said that the data in the two groups are indeed normally distributed, so that they can be used in research

Homogeneity Test, Homogeneity test is used to test whether the data presented is homogeneous or not. Homogeneity test is used to test whether the data taken from a population is homogeneous or not. To perform a homogeneity test, the data must first be proven to be normally distributed. In this study the data to be tested for homogeneity has been declared as normally distributed data. Based on calculations with the H0 test criteria, it is known that the value of Fcount <Ftable (1.04 <5.05). This shows that the Fcount value is smaller than the Ftable value at a significance level of 5%, so it can be concluded that the two group data are accepted and have a homogeneous

variant.

T - Test as a different test

After the data is proven to have a normal distribution and have a homogeneous variant, then the data is then analyzed by conducting a hypothesis test. In this Multiball, hypothesis testing will be presented based on the results of the data that has been obtained. The different test that will be used is the T-Test for a similar sample (dependent sample).

T-Test Dependent, T-test dependent is a test of the average difference using the Paired t-test t-test analysis. In answering the hypothesis that has been proposed, the analytical test used in this study is used. The values used in calculating the paired t-test are the pre-test and post-test values of each group (Multiball group and the Supervised group), with the presentation of the data (as in the attachment), the results of the calculation of the paired t-test -test is as follows:

Table 4. *Test Dependent T-Test*

Student learning outcomes in table tennis skills test		*Mean*	*Mean Differences*	*t count*	*t table*
Multiball	*pre-test*	58.06	16.062	25.174	2.039
	post-test	74.12			
Supervised	*pre-test*	57.46	14.187	25.426	2.039
	post-test	71.65			

Independent Sample T-Test

In Multiball this hypothesis testing will be presented based on the results of the data that has been obtained. The different test that will be used is the T-Test for different samples (independent sample).

Table 5. *Independent T-test*

	Group	N	Mean	Sd	t. count	t.table
post	multiball	32	74,125	6,563	1,588	1,998
	Supervised	32	71,656	5,856	1,588	1,998

By looking at the tcount value in the table it can be concluded that H0 is accepted, and Ha is rejected because the tcount value is 1,588 < ttable 1,998 with a significant level of 0.05. In other words, there is a difference but not significant between the Multiball and Guided learning methods on student table tennis learning outcomes.

DISCUSSION

This section will discuss the differences in table tennis learning outcomes after being given the Multiball and Guided training methods and also to find out which method is better between the two methods. This difference can be seen from the results of the pretest and posttest of the two methods, where at the beginning before the treatment was held students had a pre-test value for the Multiball training method, namely an average value of 58,062, Std deviation of 4,354, and Variance of 18,964, while for the pre-test for the guided training method, namely the average value of 74,125, the Std deviation of 6,563, and the variance of 43,081. for the post-test for the Multiball training method group, namely the average value of 57,468, the Std deviation of 3,732, and the Variance of 13,934, while for the post-test for the

Guided learning method, the average value is 71,656, the Std deviation is 5,856, and the Variance is 64. Then to find out the

magnitude the effect of the Multiball training method and the Guided training method using the mean deviation formula minus the mean pre-test multiplied by 100%. From the calculation results obtained

an increase in student table tennis learning outcomes in the Multiball method group of 27.66% while for the Guided method group of 24.69%. Based on the known improvements from the pre-test and post-test, the Multiball training method is better and the improvement is higher than the Guided training method.

After being calculated through manual statistics and analyzed using SPSS for Windows 23.00, the post-test results of the Multiball and Guided training method groups showed different but not significant results between the two training methods, so there was no better method between the two methods, p. it is indicated by the value of tcount (1,588) and t-table (1,998) with a significant level of 0.05, if consulted with the test criteria, if t-count > t-table H0 is rejected and Ha is accepted, whereas if t-count < t -Table

H0 is accepted and Ha is rejected. Because the value of t-count < t-table, then H0 is accepted. Because H0 is accepted, Ha is rejected, thus proving that there is a difference but not significant in student table tennis learning outcomes after being treated with the Guided and Multiball training methods. This answers all the questions in the formulation of the problem contained in chapter I, namely that there are differences but not significant to student table tennis learning outcomes after the application of the Guided and Multiball methods, so that there is no better method between the two methods.

CONCLUSION

Based on the results of the data analysis and explanation described above, the following conclusions can be drawn: There is a difference but not significant in student Table Tennis learning outcomes after being given treatment or application of the Multiball training method and the Guided training method although there is an increase during pre -test and posttest that is equal to 65.95% for the Multiball method and 46.51% for the Supervised method.There is no better method between the Multiball training method and the Guided training method.

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