

## COMPARISON OF EFFECTIVENESS LEARNING BETWEEN DRILLS AND GAMES METHOD IN PHYSICAL EDUCATION

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### ABSTRACT

*The purpose of this research was to compared the influence between drills and games method in physical education for students at senior high school that place research in senior high school at Tasikmalaya city. The method analysis use experimental that is have different treatment between two groups students in extracurricular activity. The respondent choose from random sampling of 30 students. It is resort to physical skills test. The trial hypotheses use t-test. The data statistic showing result were: (1) the both groups have side-effect to improvement physical skills in physical education, (2) the games method have more influence than drills method for both groups. The result this research can beneficial for teachers to improve physical skills education.*

**Keywords:** Comparison, drills method, games method, physical skills test.

### 1. INTRODUCTION

The study, which was carried out so as to determine the level of self-efficacy among the collective games players, revealed some important information, findings, and results. Afterward, (Handayani, 2015) explain that, "physical education is a comprehensive component of education, then it has concious by many people".

Drill method according (Djamarah, 2014) that "a drills method which student invited to skill training to see how to make something, how to use, for what is made, what are the benefit, etc". The principle of it is the repetition of motion until master well technique which learn. Games method is method of giving opportunity to individual student or group, to trained to conduct a process or experiment (Djamarah, 2014). And then (Sannicandro *et.al.*, 2016) said that small sided games are widely used training methods because they permit the trainer to focus on technical and physical aspects at the same time. The study also aims to investigate and compare the cardiac responses assessed during 3 vs. 3 games played in a "cage" compared with 8 vs. 8 games played with goal keepers and to understand the correlation between the values of aerobic power and heart rate measured during small sided games. In the other hand, games and sports are the medium whereby children get ample opportunities to develop their potentiality.

It is methods which uses certain techniques so that student can do target learning activities can be done in the form of a modified game. Effectively, the game contains within it self a complex relationship dependent on the cooperation among teammates and opposition with opposite team. Be based on, that different of both methods, author want examine further that the results of the exercise of physical skills in physical education.

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Physical activity is a complex behavior being affected by multiple internal and external factors, such as socio-cultural, psychological-cognitive and physical -social environment surrounding the individual. The explanation how the factors affect behavioral change is crucial for preparation of interventions, strategies and educational programs that will contribute to increasing the physical activity level in adolescents.

This research authors carry on the students in the subjects of physical education at senior high school at Tasikmalaya city. There have the students are very difficult to physical skills. Other than that, head master recommend to conduct the research there. Physical education teacher there have ready help to this research, and then there have availability of facilities and infrastructure for research implementation.

## 2. METHODS AND MATERIALS

In this research used experimental method that reason is from many problems to knowing the comparison influence practice between drills and games method of physical education. Regarding the experimental activities, in a broad sense, experiment is to conduct experimental activities to see a result. In an experiment, there are several variables that will be seen the cause and effect relationship. This variable is the factors that occur research object. Experiments are observations under artificial conditions, in which conditions are created and regulated by the researcher. Thus, experimental research is a research conducted by manipulating the object of research and control. Lee (2016) said about design research is foundational to creating products, services, and systems that respond to human needs. In the public and international development sectors, understanding and meeting human needs are critical for improved livelihoods and better governance. This research takes 30 sample of students for experimental. Thus, they have different treatment which divide it into two groups.

## 3. RESULTS

From the calculation results using statistical formulas we get the average value data, Deviation Standard and Variance from the initial and final test of groups A and group B. The results can be seen in Table 1 below.

**Table 1: Results calculation average standard deviation, and variance of both training groups**

Study groups	Average Value (X)	Standard Deviation (S)	Variance (S <sup>2</sup> )
Group A:			
- Initial Test	9,6	1,8	3,24
- Final Test	17,2	1,3	1,69
Group B:			
- Initial Test	9,8	2,3	5,29
- Final Test	15,3	1,3	1,69

The calculation of normal distribution data using chi-square match ( $\chi^2$ ). It is results will determine the approach used in data analysis, whether the approach is parametric or non-parametric. The parametric approach is used when the test results are normal. While, the non-parametric approach is used if the result of the calculation is not normal. Therefore, after calculating the calculation results obtained in Table 2 below.

**Table 2: Result of data normality testing**

Variable Test	Chi-square value Count ( $\chi^2$ )	Limit Rejection Hypothesis ( $\alpha$ ) = 0,05	Results
Group A:			
- Initial Test	3,80	12,6	Normal
- Final Test	0,68	11,1	Normal
Group B:			
- Initial Test	2,17	12,6	Normal
- Final Test	3,17	9,49	Normal

From the result of Table 2 above, it can be seen that the chi-square with the real level ( $\alpha= 0,05$ ) and  $dk = k - 3$  all calculated chi-squares is smaller than the chi-squared table. Thus, all chi-square counts are within the acceptance area of the hypothesis. This means that the normality test results of the data from any normal distributed test period is acceptable.

One other condition of hypothesis testing with t-test is that the data must be homogeneously distributed. That to find out whether or not homogeneous samples are studied, it is necessary to test the homogeneity of the research sample. The results of the homogeneity calculations in Table 3 below.

**Table 3: Homogeneity test result**

Variable	F-Count Value	F-table $\alpha = 0,05$ (14,14)	Result
Group A:			
- Initial Test			
- Final Test	1,92	3,18	Humogen
Group B:			
- Initial Test			
- Final Test	3,13	3,18	Humogen

From Table 3 above it can be seen that F-tables with real level ( $\alpha = 0,05$ )  $dk = V_1$  and  $V_2$ , group A and group B, F-count is smaller than F-table Thus group A and group B are distributed Homogeneous is acceptable.

Hypothesis testing aims is to prove whether the hypothesis proposed in this study is true or not. That is to prove the hypothesis of the proposed hypothesis was tested the difference of two averages. That is to test for an average difference of two used t-test. This test to determine whether there is a significant difference in the effect of the proposed it. The results of hypothesis testing are as in Table 4 on the following page.

**Table 4: Test of group A and group B improvement**

Variable	The Value of t-Count	t (1- $\frac{1}{2} \alpha$ ) ( $n_1 + n_2 - 2$ )	Result
Group A:			
- Initial Test			
- Final Test	10,86	2,10	Significant
Group B:			
- Initial Test			
- Final Test	6,55	2,10	Significant

The criteria of test, accept the hypothesis ( $H_0$ ) if  $-t(1 - \frac{1}{2} \alpha) < t < (1 - \frac{1}{2} \alpha)$ , that  $t(1 - \frac{1}{2} \alpha)$  can be from the distribution of  $t$  with degrees of freedom  $(dk) = n_1 + n_2 - 2$  and opportunities  $(1 - \frac{1}{2} \alpha)$ . Real level  $\alpha = 0,05$  or 95 % confidence level for price  $t$  another hypothesis rejected. This means that the null hypothesis is accepted when the  $t$ -count is in the acceptance area that is  $-2.10 < t < 2.10$ . From the table above can be seen that  $t$ -count is greater than  $t$ -table. This means  $t$ -count is outside the acceptance area of the hypothesis ( $H_0$ ). Thus both groups have a significant.

That is to see whether the improvement and development of the two training groups had significant differences or its no analysis of differences in improvement. Whether the proposed hypothesis is accepted or rejected, the authors use the test technique with  $t$  test. The results can be seen in Table 5 below:

**Table 5: Improvement and development of the two training groups**

Variable	Average (X)	Combined S	$t$ -Count	$t$ -Table $\alpha = 0,975$	Result
Group A	7,6	1,86	2,41	2,10	Significant
Group B	5,6				

The criteria of test, acceptance the hypothesis ( $H_0$ ) if  $-t(1 - \frac{1}{2} \alpha) < t < (1 - \frac{1}{2} \alpha)$ , that  $t(1 - \frac{1}{2} \alpha)$  obtained from the  $t$  distribution with degrees of freedom  $(dk) = n_1 + n_2 - 2$  and opportunities  $(1 - \frac{1}{2} \alpha)$ . Real level  $\alpha = 0,05$  or 95 % for the other  $t$  value the hypothesis is rejected. This means that the null hypothesis is accepted when the  $t$ -count is in the acceptance area that is  $-2.10 < t < 2.10$ . Based on Table 4.5 above can be seen that the development of training results from both groups there are significant differences in improvement. So, the two groups have different effects. Group A is more influential than group B.

#### 4. DISCUSSION

Based on the results of processing and data analysis, shows that both group A who learn physical education by drill method or group B who practice physical skills test by games method, the authors can discuss the results of this study as follows:

Group A (physical skills test by games method) is the acquisition of  $t$ -count of 10.86 is greater than  $t$ -table of 2.1. This means the  $t$ -count is outside the hypothesis acceptance area ( $H_0$ ). Then, that can improve the skills of physical education students extracurricular there.

Group B (physical skills test by the drills method) is a  $t$ -count gain of 6.55 magnitude of the  $t$ -table of 2.10. This means  $t$ -count is outside the hypothesis acceptance area ( $H_0$ ). Thus, the learn physical skills test by games method can increase they skill in physical education.

The difference of exercise result between group A and Group B is the acquisition of  $t$ -count 2,41 bigger than  $t$ -table equal to 2,10. This means the  $t$ -count is outside the hypothesis acceptance area ( $H_0$ ). Thus, practicing physical skills test by drill method there is a significant effect difference between games method.

The first hypothesis: “games method significantly influences the physical skills test”. The hypothesis is accepted as it is appropriate and proven true after being calculated statistically, since the  $t$ -hit result of 10.86 is outside the acceptance area of the hypothesis of 2.10. There is an increase in the results of practice by applying the drills method allegedly because by using it every phase of this reinforces the concept (Badriah, 2015) as follows: “Exercise is a sustained and systematic conscious effort to improve the functional ability of the body in accordance with the demands of the sport.” Based on the concept, then physical skills test conducted by the method

drill is clearly done with the stages of practicing that are done systematically in a relatively long time and with the lag time of work and rest work is balanced. Motion task is studied done in the tempo of work time to do it. Balan, Valeria and Shao (2014) said the general climate obtained by running motive games is one of social experimentation in which interpersonal relationships, of unusual intensity, can be explored in controlled conditions.

The second hypothesis, “drills method significantly influences physical skills test”. The hypothesis is accepted, because it is appropriate and proven true after being calculated statistically, because the t-hit result of 6.55 is outside the acceptance area of the hypothesis of 2.10. There is an increase in the results of practice by using games method allegedly because the phasing learn the tasks of motion of each stage enough time so that each stage is well controlled. That is in the manner of enough time to master every stage of motion, then by increasing the number of motion tasks do not eliminate the task of movement that has been learned to be lost. This can reinforce the concept (Badriah, 2015) as follows: “The exercise of technical skills is the process of learning motion, the process of memorizing motion, the process of forming a conditional reflex motion to produce the technical skills of something sport.” Thus the game method is applied after the motion task to give the perceived athletes need to be added, then the task of training increases periodically. The game forms are picked up purposefully according to the anatomic, physiologic and the psych pedagogical features of the students as well as according to the set goals in the education (Aleksieva & Milena, 2016).

The third hypothesis, “the practice by apply the games method is significantly more influential than the drills method of physical skills test.” The hypothesis is accepted, as it is appropriate and proven true after statistically calculated, since the t-count of 2.41 is within the acceptance area of the hypothesis is 2.10. There is a difference in the increase of learning outcomes or the effect of drills and games method on physical skills test in physical education allegedly because of it training method is commensurate with the level of student maturity so that students can master well every phase of motion. Mizaica, (2015) said physical education lesson has a duration and a sequence of events that are sufficient to develop and implement an instructional design, with learning contents focused on the game. These results can reinforce the concept Husain, Zairi *et al.* (2014) as follows, “Learning is a relatively permanent change in behavior or potential behavior that is the result of experience and is not characterized by temporary states of self as caused by illness, fatigue, or drugs.” Learn physical skills test performance, then the phases of each motion task are well study so that it is suspect to be permanently master, since the time require to do them is long and repetitive. That is more influential result occurs because during the practice, students who study by using drills methods can learn part of motion whit it gives as soon as possible. They can more understand of every movement phase which should they do. After the first motion task is master properly, then the next material is give the feedback material previously. This way will strengthen the student's memory of the mastery of the task of motion that must be done. Annesi, (2015) said “other studies that conducted similar self-efficacy intervention on exercise behavior .....”.

Repeating the material to learn will be strengthening the nerve impulse so that the task of motion performance can be permanent and automatic. The physical and mental health benefits of physical activity (PA) are well established (Seghers, van Hoecke, Schotte, Opendacker, & Boen, 2014). That have same meaning from Baart de la Faille *et al.*, (2016) ....., members predominantly exercise for health benefits. According to Lutan (2016) that learning is seen as a process that results in a relatively permanent change in skills; Changes in behavior that is emotional mood, motivation, or internal circumstances are not considered as a result of learning. Badriah (2015) explains that, technical skills are the result of a learning process and motion exercises that are specifically aimed at demonstrating the high quality of the sport. Dina, George and Liliana (2013) said in physical education and sport in school, at all levels of pre-university education, currently

more often, motive games of collaboration and cooperation, as a means of instruction, during the lessons are being tested.

Especially the groups model for students who are new to the task of motion, then each task it can study in detail, systematically from the easiest movement to a more complex movement. And then, Delas *et al.*, (2017) that even if perceived ability predicted achievement during physical education classes, results showed that state hope is directly associated with performance at school. State hope could thus be a key variable to increase performance. Wang (2017), Our methodological approach proposed games were aimed at increasing individual participation, collective capacity building for problem solving, increased self-confidence of the players, psychological and somatic-functional tonus, physical and mental condition, and increase of solidarity and civic responsibility.

The parts of the task of motion is well study, it can produce quality learning outcomes. Badriah (2015) explains that: "The basic feature of high quality engineering skills is the accuracy and precision of movement and/or motion skills." It is resort to groups model, then it can produce accuracy and precision to the tasks of movement learned. That is same think about performance analysis in sport is a field characterized by an increasing number of applications, not only for coaching strategies, but also in sport marketing, media and in the scouting practice (Ferrari, 2017).

## 5. CONCLUSION

Consider some findings based on the results of data processing and hypothesis testing disclosed in Chapter IV, it can be drawn conclusion as follows:

Physical skills test conduct by apply drill methods have significantly influence the improvement of it in physical education for students' extracurricular participants there.

Physical skills test conduct by apply the games method have significantly affect the improvement it there.

Physical skills test done by apply games method significantly have more effect than drills method to increase skills in physical education there.

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