

Games Approach in Improving Forearm Pass Skills in High School Students

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Abstract—The aimed of this study is to improve motion learning outcomes volleyball Forearm Pass by applying play methods in the learning process of physical education. The method used was classroom action research. The results obtained by observation volleyball Forearm Pass the test is 81.9% with a very good indicator of the success of learning. Application of the play method to improve motion learning outcomes volleyball Forearm Pass.

Keywords—play method, motion learning outcomes, Forearm Pass volleyball

I. INTRODUCTION

Education is a process that someone did consciously and voluntarily through the process of learning to improve behavior and increase knowledge through direct supervisor or educator to become better learners that can be acquired in formal and non-formal schools. In essence, education has two inseparable concepts, the concept of education and the learning process. Learning is a process of interaction between educators with learners and learning resources in a learning environment. Assistance provided by educators to learners is to help learners to be able to study well so that a knowledge acquisition process happened, mastery of skills and temperament, and the formation of attitudes and beliefs (1).

The learning process is centered on the learners, while the educator role is to help gain knowledge and insight that has built up in the form of schemata and provides the opportunity to find and implement their own ideas. Learning can be implemented at any time and anywhere by learning environment manipulating so that conducive learning created. The meaning of learning environment manipulating is planning how that learning process takes place and set up a good and adequate infrastructure.

Behadnia, et al (2), stated student perception about teacher impacts to that students. In the process, educator is guidance in learning, anything good or bad behavior will be imitated by learners. Learning is a process of interaction between the learners with the surrounding environment, including educator and learning resources. The idea or the meaning of learning gained from the learning process of student-centered (3).

Learning is an activity that is consciously done anywhere and anytime. An activity or process to improve their skills, behavior, attitude, personality, and to acquire the knowledge (4). Learning intended to change behavior in a positive direction if there is no change in knowledge or insight that increases, the learning is not correct or complete (5).

The characteristics of learning that is being marked by a change in behavior that occurs relatively permanent, these changes are the result of training or experience to provide reinforcement in the form of passion or impulse, and changes in behavior are potential (6). Learning is influenced by three main factors, there are heredity (inborn) such talent, abilitas, intelligence and environment (adults who influence the environment) that is parents and teachers as well as other factors, that is the physical aspects such as vision, hearing, nervous system and response individual to stimulation with various strength and purpose (7).

The learning process in SMA Negeri 1 Batu apply UASS (Self Study Activity Unit) by referring to the manual operation of semester credit system (SCS) and a complete learning implement manual that every learner must achieve completeness individually to overall core competencies (CC) and Basic Competence (BC) subjects (8).

One of the compulsory learned subjects in school is physical education and health. Physical education and health is learning that can develop motor skills through physical or psychomotor activity without eliminating the cognitive and affective domains. Kirkham-King, et al (9), explains that motor skills related to the physical activity free-living participation and health outcomes.

There are four main components as an important goal in the development of physical education programs, that is: 1) excitatory growth and organic growth, 2) motor neuromuscular skills, 3) intellectual development, 4) and emotional development (10). The focus in physical education and health is increasing movement skill of learners (11). Motion is the support of physical activity, and therefore the educator must consider how in that learning learners get enough motion.

Motion learning is the study of skills to acquire and enhance the movement that influenced by various forms of training, experience, and human learning situation.

Volleyball is a sport taught in the school belonging to the big ball game played by two teams of six players per team. Points obtained when the team lobbed the ball over the net and the opponent is not able to accept it, the game is using the rally point system means that when a team wins a rally, the team earns 1 point and the right to make the next service. Sozen explained (12), volleyball exercises that apply to the individual in the school has a positive effect on student's physical endurance as muscle, speed and coordination skills, elasticity and balance, and functional strength. One of the basic technique taught in school is Forearm Pass. If the service is said to be an attack, passing is as a means to carry out an attack and therefore the role of passing highly the success of a team (13). The following is an explanation of volleyball Forearm Pass pre-test data grade X IPS 1 described in Table 1.

Table 1. Percentage of Volleyball Forearm Pass Pretest X Grade IPS 1

Aspect	Percentage	Indicator
Preparation Attitude	38%	Less
Impact Attitude	34%	Less
End Attitude	73%	Well
Average	48%	Enough

^a. Samples were taken from 30 learners

Judging from these problems, require an improvement in the learning process to improve motion learning outcomes volleyball Forearm Pass. The role of educators is needed so that the overall objective of the study can be achieved. Educators must be prepared in such a way that it is technically capable of carrying out its role as directors of the learning process because educators act as a mediator or bridge between adults with children (14).

One effort or ways to improve the learning process is by selecting the right method. Physical education learning emphasizes the holistic aspect, the students conducting the game and exercise (adapted to the growth and development of children) (15). Play activity can be considered as a method for assessment and evaluation, because uncertain if children have some tasks that are more formal will be just the way, it is different from playing, the behavior that is displayed is purer and as it is (16).

Playing method requires creativity educators to design learning with game. Play function for social and emotional development as well as personal. The element of the play that is fun, exciting, and there is no pressure (17). Through play can increase a person's cognitive development because they can play with learning at the same time so that the benefits are not just a pleasure but also the lesson. There are 7 games used in the study

A. Circle Forearm Pass game

Purpose: Improve volleyball Forearm Pass ability. Students are divided into 2 large groups then form a circle by stretching

both arms. Learners make lower passes to their group mates in a circle. The group is said to win if it can do the correct Forearm Pass at the most.

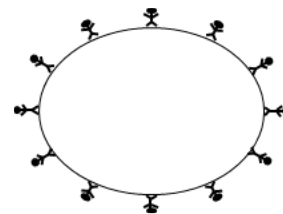


Figure 1. Circle Forearm Pass game

B. Twos Forearm Pass game

Purpose: Improve the ability of students to carry out Forearm Pass. Students are divided into 2 large groups. In this group, students face a distance of 3 meters. Students make lower passes with their partners to the finish line. If students who are in the front row make a passing pass, they have reached the finish line, then the students are followed by a line behind them. After passing, students move to the box next to it. The group that gets the fastest to the finish line is said to win.

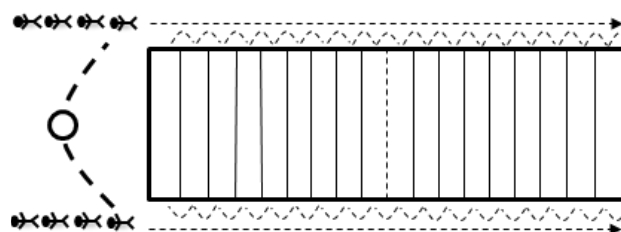


Figure 2. Twos Forearm Pass game

C. Triangle Forearm Pass game

Purpose: improve ability to do Forearm Pass and control of the ball. Students are divided into 2 large groups. Each large group is divided into 3 small groups in the form of a triangle. Learners in the front row feed to students in the right hand group. After doing the bait, students run behind the other groups on the right side. The group is declared to win if the first player returns to its original position.

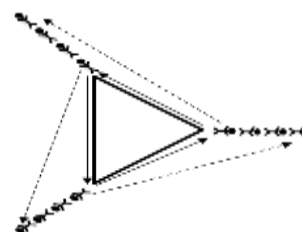


Figure 3. Triangle Forearm Pass game

D. Individual Forearm Pass game

Purpose: Train the mastery of feeling and mastery of the ball. Students are divided into several groups consisting of 6 students who flock to the back. Learners who are in the front row do lower passes individually in places with an average ball height of 1 meter. The winning group if they are able to do the longest passing.

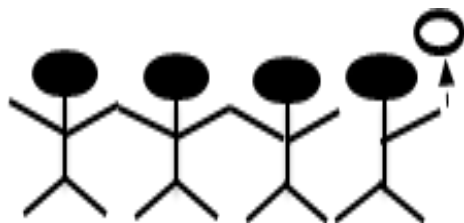


Figure 4. Individual Forearm Pass game

E. Target Forearm Pass game

Purpose: Train the ball in the arm and the accuracy of the Forearm Pass to the target. Students are divided into several groups (conditional). After the ball is thrown, the student must be able to reflect or put the ball on the target by using the volleyball Forearm Pass. After passing, the students took turns with their friends as throwers. The group gets the most points, that's the winner.

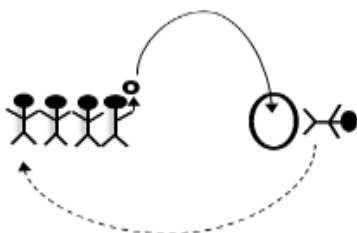


Figure 5. Target Forearm Pass game

F. 6 vs 6 Forearm Pass game

Purpose: Increase Forearm Pass ability and control of the ball in the form of real play. Students are divided into two groups consisting of six players and occupy each field. The player cooperates with his group to try to pass three touches and then cross to the opposing field over the net. All players can only use the Forearm Pass technique while the service is allowed to use the service below. Groups that are on the other side of the field try to do Forearm Pass and counterattack. Every two times in each group, the group rotates the player. If one group gets 10 points first, then the losing group takes turns playing with another group.

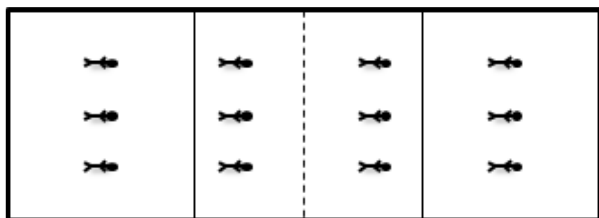


Figure 6. 6 vs 6 Forearm Pass game

G. 5 vs 5 Forearm Pass game

Purpose: Improve Forearm Pass ability and control of the ball in the form of real play. Students are divided into two groups consisting of five players occupying each field. Players try to do passing with three touches and then cross to the opposing field. Groups who are on the other side try to pass to counterattack. Every two times, the group do rotation players. If one group has received five points first, then the group loses alternately with another group.

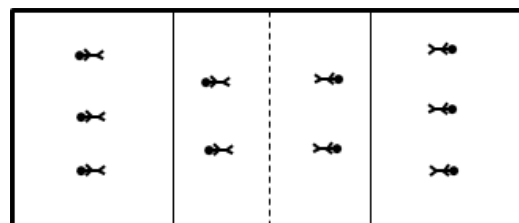


Figure 7. 5 vs 5 Forearm Pass game

Table 2. Volleyball Forearm Pass Test Indicators

Variables	Indicator
Preparation Attitude	A. Stand straight with your feet shoulder-width or slightly wider, knees slightly bent
	B. Both arms are sealed in front of the body and extended straight down, elbows do not bend
	C. Put one hand on the palm of the other hand with both thumbs are aligned, and hold tightly
Impact Attitude	A. The impact between arm with the ball is at the upper arm below the wrist and elbow. Keep the ball bouncing on the arms of the most wide between the wrist and elbow at an angle of reflection $\pm 90^\circ$ (Angle of incidence = angle of reflection)
	B. The body is in a position facing the ball. As soon as the ball comes at the right distance then immediately swing your arms straightened downwardly to up front
	C. Between body and arms form an angle $\pm 45^\circ$ so that the ball bounced off the wall stably
End Attitude	A. Highest maximum arm movement parallel (on average) with a shoulder

II. METHOD

Learning plan and implementation collaborated with educator physical education. In addition, the game is adjusted to high school learners X grade, average at the age of 15-16 years were included in the development of adolescence. Physical development in adolescence, namely: (1) the muscle strength is the ability to exert strength and speed together to achieve improved optimal approximately one year after the achievement of growth in body size maximum (2) the implementation of a good aerobic can improve cardiorespiratory up to 20% (18).

This study design using classroom action research (CAR) conducted during two cycles. The steps in this research are: 1) planning, 2) implementation, 3) observation, 4) reflection. CAR model Kemmis & Taggart can be seen in Figure 8 below (19).

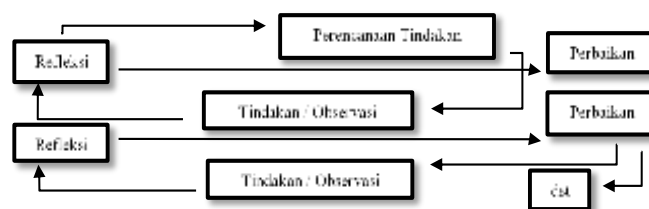


Figure 8. CAR model Kemmis & Taggart

Data collectors instrument are volleyball Forearm Pass test by bouncing balls against the wall for 2x30 seconds. The size of the field of implementation refer to French-Cooper test is used wall with a sturdy stand has a surface area 3:04 m with a height of 3.344 m. The vertical line along the 2.28 m from the

floor at a distance of 0.912 m from the wall. The level of this test the validity coefficients 0.98, reliability test is 0.95, and the level of the test of objectivity coefficient 0.99, is obtained from the following formula (20).

$$r_{XY} = \frac{N \cdot \sum xy - (\sum x)(\sum y)}{\sqrt{\{N \cdot \sum x^2 - (\sum x)^2\} \{N \cdot \sum y^2 - (\sum y)^2\}}}$$

Information:

- r_{XY} = Coefficient of correlation between the variables X and Y
- N = The number of frequencies or the number of learners
- X = Value of item X (Score test I)
- Y = Value of item Y (Score Test II)

Secondly, using observation techniques namely direct observations made by researcher to record every event that occurred during the research process in the field record sheet. Important documentation as evidence that the research was conducted, evidence can be in the form of notes, photos, videos, etc. Questionnaires were administered to students as an ingredient in the reflection stage after the end of a cycle. Much of the information that can be collected by using a list of written questions given to the subject than using interviews because it takes time, effort and cost.

Steps to be taken after the collection of data that is the way to solve the problems using data analysis. Qualitative data (non-numeric) contains sentences that contained the observation of data reduction, data presentation, and verification of data (21). Volleyball Forearm Pass test results were processed using quantitative data analysis with the following formula (22).

$$P = \frac{f}{N} \times 100\%$$

Information:

- P= The percentage increase in volleyball Forearm Pass skills
- f= Total value obtained by learners
- N= The number of frequencies or the number of learners

After the test results changed into percentage data then categorized in level of success of the actions outlined in Table 3 below (23).

Table 3. Upgrade Success of Action

Percentage	Category
81-100%	Very Good
61-80%	Well
41-60%	Enough
21-40%	Less
0-20%	Very Less

III. RESULT

In this classroom action research was conducted in two cycles, each cycle is held 3 meetings. Researchers act as an observer assisted by educators subjects of physical exercise and health education to become an observer, while as the implementing measures remains educators X grade IPS 1.

A. Cycle I

1. Plan

- a. Compile Learning Implementation Plan (LIP), which collaborated with educators physical education (PE) X grade IPS 1 which refers to guide the development of UASS 2017
- b. Preparing instructional media volleyball Forearm Pass
- c. Compile guidelines for the observation of the observer
- d. Compile test instrument

2. Implementation

The first meeting was held on Wednesday, February 6, 2019. The game given is circle Forearm Pass game. The second meeting was held on Wednesday, February 13, 2019. The game given is twos Forearm Pass game. The last meeting in cycle 1 was conducted on Wednesday, February 20, 2019. At this meeting, triangle Forearm Pass game less going well because learners difficulty directing the ball so that educator replace that game with the volleyball Forearm Pass game individuals. It aims to maintain a given game still fun.

3. Observation

Volleyball Forearm Pass test results at the first meeting up to 52% with enough category. Volleyball Forearm Pass test results at the second meeting up to 59% with enough category. Whereas, volleyball Forearm Pass test results at the third meeting is 66% with well category. From the results of the pretest to the first cycle increased by 18%. The following graph motion learning outcomes volleyball Forearm Pass from pretest to cycle 1 in figure 2.

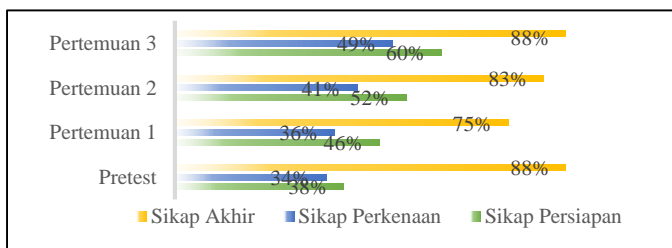


Figure 9. Motion learning outcomes volleyball Forearm Pass pretest-siklus I

4. Reflection Cycle I

- a. Learners are still difficulties to pass the ball accurately
- b. All learners love and happy with volleyball Forearm Pass learning with play method
- c. 41% of students still have trouble doing Forearm Pass movement
- d. 91% of learners understand the learning with application of the play method
- e. The easy game to do is circle Forearm Pass game and the difficult game to do is triangle Forearm Pass game

B. Cycle II

1. Plan

- a. Make plans to improve the implementation of learning collaborated with PE educator X grade IPS 1 which refers to guide the development of UASS 2017
- b. Preparing instructional media volleyball Forearm Pass

- c. Compile guidelines for the observation of the observer
 - d. Compile test instrument
2. Implementation

The fourth meeting was held on Wednesday, February 27, 2019, the game given is volleyball Forearm Pass targets game. The fifth meeting was held on Wednesday, March 3, 2019, the game given is 6 vs 6 Forearm Pass game. The last meeting was held on Wednesday 2 Date March 10, 2019, the game given is 5 vs 5 Forearm Pass game.

3. Observation

Volleyball Forearm Pass test results at the first meeting of around 72% with well category. Volleyball Forearm Pass test results at the second meeting reached 76% with enough category. Whereas, volleyball Forearm Pass test results at the third meeting is 82% with a very good category. From the results of the first cycle to the second cycle increased by 16%. The following graph motion learning outcomes volleyball Forearm Pass from cycle 1 to cycle 2 in figure 10.

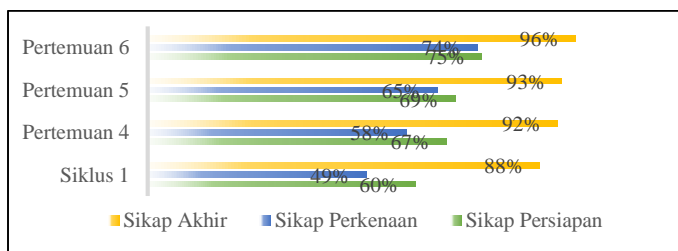


Fig.10 The result of passing the motion under volleyball learning cycle I-Cycle II

4. Reflection Cycle II

- a. The game given are in accordance with the students of X grade
- b. Play method applied in teaching PE to help improving motion learning outcomes Forearm Pass
- c. The aim of the research has been reached so that the study ended in the second cycle
- d. All the students loved, happy and understand the learning of volleyball Forearm Pass using play method
- e. 23% of students still have trouble doing Forearm Pass movement
- f. The easy game to do is volleyball Forearm Pass targets game and the difficult game to do is 5 vs 5 Forearm Pass game

IV. DISCUSSION

This CAR aims to improve motion learning outcomes volleyball Forearm Pass students of X grade IPS 1 SMA Negeri 1 Batu Academic Year 2018/2019. Researchers collaborate with educators to achieve these objectives. The advantages of this study are due to the teacher be included as a subject who acts were observed, as well as being asked to reflect on the results of observations during the action, of course over time there will be changes in themselves a habit to evaluate themselves (self-evaluation) (24).

CAR is research used by educator to improve the quality of learning. efforts to provide treatment (treatment) that deliberately raised and carried by educator (25). Giving action

in this case ended in two cycles with each cycle consist of three meetings. The focus of this study is not only in the result but also in the process (26). Assessment of the learning process is very important to do because it aims to assess the effectiveness and efficiency of the learning activities as material improvement in the next lesson plan. Assessment process involves an assessment of the teacher, student activities, teacher-student interaction patterns and the implementation of the teaching and learning process.

A. Cycle I

Each meeting is given a different game. However, when the game is not running properly, then another game is given as happened in the first cycle. This is intended to create a fun teaching situation and supportive for the smooth learning process (27). As an educator, it must be careful to observe the conditions and difficulties of learners and find the right solution to solve a problem that became clear to learners. Variation is a skill that must be mastered by the teacher in the learning which to make changes in the process of learning to overcome boredom learners, so that is always enthusiastic, zealous and full of participation and increase the motivation of learners (28).

If the method of play given to learners successfully applied at the previous meeting, the educator must provide a variety of other games to come back enthusiastic and participate actively in learning. Therefore, educators provide solutions to solve these problems by providing Forearm Pass game to increase learner's motivation and interest in learning. Motivation can come from outside and inside of the individual as an impetus or desire to do something, so that educators must have expertise in rising that motivation and interests.

Interests may affect learning outcomes process also affect motivation. If someone learn something according to their interests, he will succeed better (29). If learners have had the motivation and interests in the desire to learn will appear. In addition to being part of the problem solving process, the teacher can rearrange the instructions so as to encourage successful learning for those who have tried (30).

Learner's motion learning outcomes volleyball Forearm Pass results in the first cycle increased by 18%, reaching 66% with well categories. It can be said that students have experienced a learning process that is the occurrence of changes in behavior with increasing motion learning outcomes volleyball Forearm Pass from pretest to cycle I.

B. Cycle II

Motion learning outcomes volleyball Forearm Pass increase from the first cycle to the second cycle of 16% reaching 82% with very good the category. Play method that applied to students in the learning process proved to be the most effective and efficient than other methods (31). Play method a part of physical education that can be applied in every level of education, this method is preferred by students because of the fun and excitement contained within the play (32).

Feelings of pleasure experienced by learners as a motivator to attend classes, learn the knowledge and skills, a mechanism that encourages concentration and aids in the absorption of learning, as well as proven to build learning environments that connect socially, besides fun learning can make learners encouraged and motivated to participate in the study with enthusiasm in learning and optimism for the outcome (33).

So we can say that so that learners are motivated to do it requires motivation and learning activities within the individual. Motivation can come from a fun activity. Through fun activities expected of students motivated in learning one of them is the application of the method of play. Therefore, educators must have expertise in rising motivating learners, it is important because motivation is the first stage in the learning process.

V. CONCLUSION

In teaching there is no teaching method that is considered to be the best or perfect, but if it succeeds in achieving the goal of teaching it is a method that is good or right on target [35]. CAR with application of play method to improve motion learning outcomes volleyball Forearm Pass X grade IPS 1 SMA Negeri 1 Batu has been achieved in accordance with what is expected. Therefore, this study ended in the second cycle.

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