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# Increased Activities and Learning Outcomes of Volleyball through Sponge Ball Modification for Junior High School Students



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ABSTRACT: The not yet optimal learning activities and learning outcomes in learning physical education, sports and health, especially volleyball lessons underlie this classroom action research. This study aims to improve learning activities and learning outcomes through modification of a sponge ball for students of SMP Negeri 1 Moyudan. This research is a Classroom Action Research (CAR) which was carried out in three cycles. The research subjects were students of class VIIA SMP Negeri 1 Moyudan totaling 32 students. The research instruments, namely: observation guidelines, learning activity observation sheets, observation sheets for assessing the process and results of volleyball. Indicators of success, namely learning activities and learning outcomes of at least 85% of the total students completed (KKM 75). The data analysis technique used in this research is descriptive qualitative and quantitative. The results showed that through the modification of the sponge ball, learning activities and volleyball learning outcomes could be obtained. This is shown from the learning activity data showing an increase in cycle three an average of 3.4 and included in the very good category (A). Cognitive Aspect 100% or 32 students completed and Psychomotor Aspect 90.62% or 29 students completed. Based on the results of the study indicate that classical completed and Psychomotor Aspect 90.62% or 32 students completed and Psychomotor Aspect 90.62% or 32 students completed and Psychomotor Aspect 100% or 32 students completed and Psychomotor Aspect 100% or 32 students completed and Psychomotor Aspect 100% or 32 students completed and Psychomotor Aspect 90.62% or 29 students completed and Psychomotor Aspect 100% or 32 students completed and Psychomotor Aspect 100% or 32

**KEYWORDS:** Volleyball, Learning Activities, Learning Outcomes

# INTRODUCTION

Physical education, sports, and health or Physical Education is an integral part of general education which is carried out systematically through physical activity (physical) with the aim of total growth and development of all children (Pangraz and Daeur in Stephani, 2014: 2). The growth and development competencies in question are comprehensive, not only physical but also aspects of knowledge, aspects of attitudes, and aspects of skills. Teachers have a unified and functional role to educate, guide, teach, and train (Sopian, 2016: 90). This makes a professional teacher very important role in conducting effective learning. Several studies state that the teacher's role significantly affects student achievement or learning outcomes (Wibowo & Farnisa, 2018). The effectiveness of learning can be seen from the objective data, design, submission of learning materials, duration data used, management of learning, management of student activities, feedback and teacher responsibilities (Winarno, 2006: 11). The learning success factor is also not only from the teacher, but the student learning activity factor also has an important role. Student attitudes in the learning process such as participation in finding goals, student and teacher interactions, teacher acceptance when students make mistakes, close relationships as a group and student opportunities affect student learning outcomes (Ningsih, 2018).

The same thing was conveyed by Sirait, (2016) that the interest of students must be considered by the teacher because it is able to influence the activities and learning outcomes of students. management of student activities, feedback and teacher responsibilities (Winarno, 2006, p.11). The learning success factor is also not only from the teacher, but the student learning activity factor also has an important role. Student attitudes in the learning process such as participation in finding goals, student and teacher interactions, teacher acceptance when students make mistakes, close relationships as a group and student opportunities affect student learning outcomes (Ningsih, 2018). The same thing was conveyed by Sirait, (2016) that the interest

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Volleyball is one part of the basic competencies of the big ball game played by two teams which is carried out in a game area that is limited by a net (Fallis, 2013). The volleyball game has specific movements that must be learned by students, specific movements that must be improved in skills, namely bottom passing, top passing, smash, service and block. (Muhajir, 2017: 25). Passing is a way of hitting the ball with two hands joined and swinging from below (lower passing) or hitting the ball with two separate hands with open fingers above the head slightly forward (upper pass). Block exercises and random exercises with high and low coordination levels affect passing skills (Rahmayati, 2015: 11) Based on the initial observation activities carried out by the researchers, the results showed that if the volleyball learning activities in class VII with standard balls, students were less active in participating in learning activities. The learning activities of students are still low with an average of 1.99 and are still in the sufficient category.

The data on the value of aspects of students' cognitive learning outcomes regarding the understanding of specific motion material for lower service, lower passing and upper passing of volleyball is still weak. It is evident from the cognitive value of students with an average value of 77. From this average 37.5% or 12 students have got a KKM score of 75, but there are 62.5% or 20 students who have not yet reached the KKM. Furthermore, from the aspect of specific motion skills, bottom service, bottom passing and volleyball top passing are also still far from the minimum completeness criteria value of 75, this is evidenced by the value of learning outcomes with an average value of 67 and only 37.5% or 12 students who meet the minimum KKM, while 62.5% or as many as 20 students still do not meet the KKM.

The results of observations found problems related to volleyball learning for class VII, it was necessary to use methods and innovations from the teacher to minimize these problems. The need for methods and tool modifications as alternative approaches needs to be done (Muhajir, 2017: 2). Sponge ball media is expected to motivate students to take part in volleyball lessons. Sodikin & Yono (2020: 27) said that the modification of learning media in the form of a sponge ball can be used for learning volleyball because it has lighter criteria than the original volleyball. Sponge balls are made of plastic balls whose concept is similar to the original so that they are more comfortable to use for learning. Arianto & Hidayat's research, (2014: 549) and Gumilang & Ramadan, (2019: 56) obtained the results that the use of modifications with sponge ball media was able to improve learning outcomes on volleyball material and a more significant improvement with sponge ball media compared to the original volleyball (Hudah & Rais, 2020: 100). Furthermore, the learning process is designed to meet the competency objectives, therefore it is necessary to use the discovery learning learning method because this model can be used as a solution to the problem of learning activities in volleyball games for Class VII students. It is hoped that students will be able to be active and have high motivation to take part in volleyball game learning activities, because the ball feels light and easy to play, even children will feel happy to participate in these learning activities (Showab & Djawa, 2019: 307).

# **METHODS**

CAR is classroom action research that aims to improve learning in the classroom to improve the quality of learning (Arikunto, 2019, p.2). The research approach uses Kurt Lewin (1940) (in Khosy, 2005) and each cycle is divided into 4 stages, namely planning, action, observation, and reflection stages. This research was conducted on students of class VII A SMP Negeri 1 Moyudan. The research was carried out in a span of 2 months in semester 2 of the 2020/2021 Academic Year. This research was carried out in 3 cycles in which each cycle contained two meetings. In detail Cycle 1 will be held on Wednesday, February 24 and

March 3, 2021, Cycle 2 on Wednesday, March 10 and 24 2021, Cycle 3 on Wednesday March 31, and April 7, 2021. The sample used in this study were students of class VIIA at SMP Negeri 1 Moyudan with a total of 32 students with details of 16 male students and 16 female students who were determined using random sampling. Then the implementation of this research is assisted by two collaborators who have the task of observing the learning process. One of the collaborators in this study had a master's degree in education and the other had a bachelor's degree education who had a volleyball player and coach background so that they would support this research process. Then the implementation of this research is assisted by two collaborators who have the task of observing the learning process. One of the collaborators in this study had a master's degree in education and the other had a bachelor's degree education who had a volleyball player and coach background so that they would support this research process. Then the implementation of this research is assisted by two collaborators who have the task of observing the learning process. One of the collaborators in this study had a master's degree in education and the other had a bachelor's degree education who had a volleyball player and coach background so that they would support this research process.

The data collection in this study used a questionnaire instrument, a student activity self-assessment questionnaire, a written test for assessing the knowledge aspect and a volleyball performance test for the process and product skills aspect. RPP, teacher and student observation sheets, knowledge and skills assessment instruments have been carried out by expert judgment by expert validators of PJKR Lecturers from FIK UNY. This research uses descriptive percentage data analysis technique. The criteria for the success of CAR are that students are able to carry out learning activities as well as possible, are active, and the results of the learning process meet the KKM > 85% which achieve a score of > 75.

#### **RESEARCH RESULTS**

The action research process carried out at SMP Negeri 1 Moyudan especially for class VIIA students, the researchers and collaborators observed the process of PJOK learning activities in increasing learning activities and learning outcomes for volleyball material using the discovery learning method with sponge ball media which was carried out for three cycles., which in each cycle there are 2 meetings. At the end of each cycle an evaluation of learning activities, processes and learning outcomes of volleyball material is carried out. The implementation of learning or implementation is observed by researchers and collaborators who will be used as a basis for assessment and reflection. The observation method was tried at each meeting while the learning was running.

### **Pre Action**

The initial data assessment was carried out according to the hours of teaching and learning activities at school by involving the entire class of 32 students. Preliminary data shows that the learning outcomes of cognitive and psychomotor aspects of the fundamental movement material, namely bottom passing, top passing and bottom service, are still low. Then the pre-action learning activity data is also still low. The results of the initial data on the volleyball abilities of class VIIA students can be seen in table 1, namely:

Table 1.Pre-Action Data on Volleyball Learning Outcomes Class VII A

Information	Pre-Cognitive Action	Pre-Psychomotor Action
The number of students	32	32
Average	77	70
Complete	37.5% (12)	40.6% (13)
Not Completed	62.5% (20)	59.4% (19)

The results from table 1 if made in the form of a diagram can be seen in Figure 1 below:

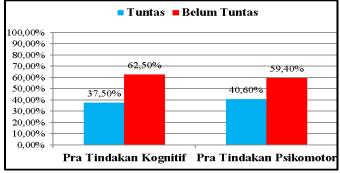


Image 1.Bar Chart of Pre Action Results of Volleyball Learning Outcomes

Based on Figure 1, it can be seen that the achievement of volleyball learning outcomes at the pre-action stage of the cognitive aspect is still low, namely 37.5% (12 students Complete) and 62.5% (20 students Unfinished). Then on the psychomotor aspect, there are 40.6% (13 students Completed) and 59.4% (19 students Unfinished). Pre-action observation data on student learning activities from 32 students obtained the following results: student learning activities in the very good category 0% or 0% students, for the good category 12.5% or 4 students, for the fairly good category 65.62% or 21 students, for the less category 21.88% or 7 students, very less 0% or 0 students. Based on the average value of 1.99 or 39.8%, it shows that the activity in PJOK learning for class VIIA is still in the sufficient category.

### Cycle I

#### **Observation of Teacher**

According to the results of observations made by collaborators on teachers who carry out learning activities using the discovery learning method in the first cycle, it shows that the results of the observations of the first meeting score 19 are included in the good category and at the second meeting the score 23 is in the very good category. This means that the learning activities carried out by the teacher in the first cycle have been going very well.

### The results of observing student learning activities

Based on observations by collaborators, aspects of student enthusiastic learning activities, student and teacher interactions, interactions between students, and student activities when carrying out volleyball lessons have increased. This can be seen from the average of the first cycle in the pre-action of 1.99 which is included in the sufficient category (C). After going through the first cycle there was an increase to an average of 2.84 students and included in the Good category (B).

Data on the results of the Pre-Action Stage of Cognitive Aspects from 32 students obtained an average score of 77, 37.5% or 12 students completed and 62.5% (20 students) had not. Based on the results of the true-false test carried out in the first cycle of volleyball learning with sponge ball media, it can be said to have increased even though it has not succeeded optimally because the average score of 81 is still in the sufficient category and 71.9% of students who complete (23 students) while those who have not completed as many as 28.1% (9 students).

### **Student Skills Test Results**

Based on the results of the observation of the skills test for bottom passing, top passing and volleyball bottom service in the first cycle of volleyball learning through sponge ball media, it can be concluded that there was a good improvement. The ability of students in carrying out activities and the results of volleyball skills in the first cycle has increased the average score of students before being given action 67 (37.5% of Completed students) increased to 76 (68.75% of Completed students) in the first cycle, but these results have not succeeded in achieving the classical criteria to be achieved, namely 85% of students meet the KKM so that it continues to cycle II.

### **Reflection Cycle I**

The results of the implementation of the reflection stage in the first cycle are:

- 1) Collaborator 1's observations on class observations of teachers showed that all indicators of teacher activity observed in carrying out the desired process appeared so that it could be concluded that teacher activities in learning were very good. For this reason, teacher activities in the teaching and learning process need to be maintained or improved.
- 2) Student learning activities are still not successful because only 21.88% or 7 students are included in the good category. However, the results of filling out student questionnaires stated that their learning activities were in the good category with an average score of 61%.
- 3) In the cognitive aspect, it still does not meet the classical KKM with the results of the complete student scores only reaching 71.9% (23 students).
- 4) In the psychomotor aspect, it has not yet achieved classical completeness with an average student score of 76 (68.75% of Completed students).
- 5) Students have experienced an increase in ability, but they still need to adapt to the learning model with this sponge ball modification.
- 6) From the results of reflection, it is concluded that it is necessary to continue to carry out cycle II to prove whether the modification of the sponge ball can improve learning activities and volleyball learning outcomes for class VIIA students at SMP Negeri 1 Moyudan according to classical completeness criteria.

# Cycle II

# Observation of the teacher

According to the results of observations of teachers in conducting learning using the discovery learning method in cycle II, it shows that the results of classroom observations of teachers in the second cycle of the first meeting, the score of 25 is included in the very good category and maintained at the second meeting with a score of 25 with a very good category, the learning that was tried by the teacher in the second cycle of the 1st and 2nd meetings has been going very well.

#### **Observation of students**

# The results of observing student learning activities

Aspects of learning activities which include student enthusiasm, student and teacher interaction, interaction between students, and student activities in implementing volleyball learning there is an increase from cycle I the average value is 2.84 (good category) with details of 21.88% category Good, 75% enough and 3.12% less category increased in the second cycle to 3.2 (good category) with details 43.75% good category, 53.12% enough category and 2.13% less category. Thus the increase in student learning activities from cycle I to cycle 2 only reached 0.36%.

Cycle II aspects of learning activities through the self-assessment questionnaire can be seen that as many as 5 students or 15.62% of students are included in the category of sufficient learning activities, as many as 25 students (78.12% of students) are included in the category of good learning activities. and 2 students or 6.25% of students are included in the category of very high learning activities. Based on the average score of 67% of students stated that their learning activities in participating in volleyball lessons consisted of enthusiasm, teacher and student interactions, interactions between students, group cooperation and activities in participating in volleyball lessons in the very good category.

# **Student Knowledge Test Results**

According to the results of the true-false test carried out on the knowledge or cognitive aspect in the second cycle of volleyball learning with sponge ball media, there was an increase with an average value of 87 including good category (B) and students who completed as many as 81.25% (26 students) while 18.75% have not been completed (6 students).

#### **Student Skills Test Results**

Based on the results of the observation of the skill test of bottom passing, top passing and bottom service in volleyball through sponge ball media in the second cycle, it was concluded that there was a better improvement. The ability of students to process and produce volleyball skills in cycle II has increased the average score of students in cycle I by 76 (68.75% students Completed) increased to 82 (84.38% students Completed) in cycle II, although However, these results have not succeeded in achieving the classical criteria to be achieved, namely 85% of students reach the KKM, therefore it is continued in cycle III.

# **Cycle II Reflection**

After the end of the second cycle meeting, the results of PJOK learning through the discovery learning model with sponge ball media showed that the teacher was trying to improve activities and learning outcomes in their learning. Reflection activities for cycle II are:

- 1) The results of classroom observations on teachers showed that all indicators of teacher activities observed in carrying out the desired process appeared so that it could be concluded that teacher activities in learning were very good. For this reason, teacher activities in the teaching and learning process need to be maintained.
- 2) Student learning activities have been successful with 53.12% or 17 students in the good category and 43.75% or 14 students in the very good category. Meanwhile, from the results of filling out the questionnaire, students stated that their learning activities were in the good category with the average score of 67%.
- 3) In the cognitive aspect, it is close to classical completeness with the results of the complete student scores reaching 81.25% (26 students).
- 4) In the psychomotor aspect, it is close to classical completeness with an average student score of 82 (84.38% of Completed students).
- 5) There has been an increase in students' abilities, in the aspect of skills, but some students still have difficulty in applying basic techniques in matches, therefore it is necessary to carry out cycle III to prove whether the modification of the sponge ball can improve learning activities and volleyball learning outcomes for class VIIA students at SMP Negeri 1 Moyudan can achieve the classical completeness criteria of 85%.

# Cycle III

This action research is focused on the activities of teachers and students in the way of discovery learning with a sponge ball, so that the results of field observations are presented in a qualitative way. The results of observations of researchers and collaborators on the way of learning are obtained as follows:

#### Observation of the teacher

According to observations made by collaborators on teachers in conducting learning with the discovery learning model in the third cycle of meetings 1 and 2, it shows that the results of classroom observations of teachers in the third cycle of the first meeting obtained a score of 25 including the very good category and maintained at the second meeting with a score of 25 including very good category too. So it can be concluded that the learning activities carried out by the teacher in the third cycle of the first and second meetings have been going very well.

#### **Observation of Students**

### The results of observing student learning activities

Based on observations by collaborators, aspects of student enthusiastic learning activities, student and teacher interactions, interactions between students, and student activities to carry out volleyball learning activities in learning activities showed an increase. In the second cycle, the average was 3.2 which was included in the Good category (B). After going through cycle III there was an increase to an average of 3.4 students and included in the Very Good (A) category. Furthermore, the results of the learning activity questionnaire filled out through student self-assessment in cycle III, aspects of learning activities through the self-assessment questionnaire can be seen that as many as 3 students or 9.38% of students fall into the category of sufficient learning activities, as many as 23 students or 71.87% students fall into the category of sufficient learning activities and 6 students or 18, 75% of students fall into the category of very high learning activities. Based on the average score of 74% of students stated that their learning activities in participating in volleyball lessons consisting of enthusiasm, teacher and student interactions, interactions between students, group collaboration and activities in participating in volleyball lessons were in good categories.

#### **Student Knowledge Test Results**

Based on the results of the true-false test carried out on the knowledge or cognitive aspects in the third cycle of volleyball learning with sponge ball media, it can be said that there was a significant increase with an average score of 94 included in the very good category (A) and students who completed 100% (32 students) while those who do not meet the KKM are 0% (0 students). Based on the average value and completeness of the calcical has been met, the cycle is stopped in this third cycle.

### **Student Skills Test Results**

Based on the results of the observation of the skills test for bottom passing, top passing and bottom service in volleyball, the results are shown as follows:

Table 2. Data on the Results of Psychomotor Aspects in Cycle II and Cycle III

Information	Cycle II	Cycle III
The number of students	32	32
Average	82	87
Complete	84.38% (27 students)	90.62% (29 students)
Not Completed	15.62% (5 students)	9.38% (3 students)

According to table 2, if presented in the form of a diagram of the results of the third cycle, the results of the assessment of the psychomotor aspects of volleyball are presented in Figure 2, namely.

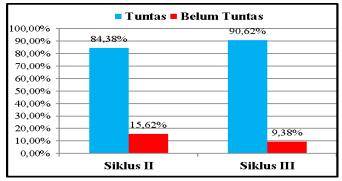


Figure 2. Bar Diagram of Psychomotor Aspect Learning Outcomes Phase II and Cycle III

In cycle III, volleyball learning through sponge ball media has increased. In this case, it can be observed that the progress of the teacher's activities from the initial meeting to the second there is a good development of the teaching procedures. The ability or activity of students in carrying out processes and products of volleyball skills in cycle III has increased the average score of students in cycle II by 82 (84.38% students Completed) increased to 87 (90.62% or 29 students Completed) in cycle III, has succeeded in achieving the classical criteria to be achieved, namely 85% of students reach the KKM. During the learning process in cycle III, there were no shortages that affected learning activities and outcomes, so the research was ended in cycle III because it met the classical completeness criteria of more than 85% of what had been expected.

### **Reflection Cycle III**

After 2 meetings in cycle III ended, the observers and collaborators discussed the results of implementing actions. In reviewing and assessing the results of PJOK learning with the main module of volleyball learning with a discovery learning model with modified sponge ball media during cycle III as follows:

- 1) The results of classroom observations on teachers obtained the results of all indicators of teacher activities observed in carrying out the desired process so that it can be concluded that teacher activities in learning are very good. Therefore, teacher activities in the learning process need to be maintained.
- 2) Student learning activities have been successful with 37.5% or 12 students in the good category and 62.5% or 14 students in the very good category. Meanwhile, from the results of filling out the questionnaire students stated that their learning activities were in the good category with an average value of 74%.
- 3) In the cognitive aspect, it has fulfilled classical completeness with the results of students' complete scores reaching an average of 94 or 100% (32 students).
- 4) In the psychomotor aspect, it is close to classical completeness with an average student score of 87 (90.62% or 29 students Complete).
- 5) In the third cycle the difficulties in the aspects of students' skills in using basic techniques in volleyball matches have been resolved

From the reflection, it can be concluded that the modification of the sponge ball can improve learning activities and the volleyball learning outcomes of class VIIA students at SMP Negeri 1 Moyudan can achieve the classical completeness criteria of 85%.

### **DISCUSSION**

Based on the results of reflection and analysis of information for each cycle, the results of action research prove that the results in cycle III have shown a significant increase compared to cycles I and II. In cycle III, the goal of learning the volleyball game has been successful, students have reached above 85% of the Minimum Completeness Criteria. Thus, the action of the learning process on learning activities and learning outcomes through the discovery learning model using a sponge ball given to class VIIA students of SMPN 1 Moyudan, can be said to be successful.

Classical completeness. Regarding the activities and student learning outcomes in volleyball material, data on the development of activities and learning outcomes of class VIIA students is obtained

Aspect	Pre action	Cycle I	Cycle II	Cycle III	
Cognitive	37.5%	71.9%	81.25%	100%	
	(12 students)	(23 students)	(26 students)	(32 students)	
Activity	12.5%	21.88%	96.87%	100%	
Study	(4 students)	(7 students)	(29 students)	(32 students)	
Psychomoto	40.6%	68.75%	84.38%	90.62% (29	
r	(13 students)	(22 students)	(27 students)	student)	

After trying to evaluate the category actions that have been carried out for 3 cycles, it can be reported aspects of the research that can achieve the desired goals and other aspects that are considered to be less fulfilling the objectives. Actions that have proven the results match the objectives can be used as references for the next learning method. On the other hand, actions that are less successful are expected to be analytical material for changes and improvements.

This research makes learning activities as an object of research along with learning outcomes in volleyball lessons at the VII grade junior high school level. The advantage of this research is using the discovery learning model which is a learning model that is rarely used by PJOK teachers. Then from the assessment on the psychomotor aspect which usually only focuses on the

movement process, this study uses a combination of process and product assessment or movement attitude and volleyball practice achievement.

### Volleyball learning with modified sponge balls increases learning activities

Volleyball game learning activities by modifying sponge balls to improve learning activities. This can be seen from the average pre-action development of 1.99 included in the Enough category, then in the first cycle there was an average increase of 2.84 including in the Good category, in the second cycle it increased again to an average of 3.2 including in the Good category and in the third cycle it increased again to 3,4 and was included in the Very Good category. Based on the increase that occurred in learning activities, student enthusiasm, student and teacher interactions, interactions between students, and student activities in carrying out volleyball lessons increased with the modification of the sponge ball.

Modification of learning media is an effort made by teachers to create and display new, unique and interesting things (Hambali, 2013: 21) and aims to realize Developmentally Appropriate Practice (DAP). The essence of modification is to analyze and develop learning materials sequentially in the form of good learning activities, making it easier for students in the learning process. The modification of the ball media that will be used for volleyball learning is a plastic ball coated with a sponge, the ball weighs 100 grams and has a diameter of 65.5 cm and has a colorful shape. The difference between standard volleyball and sponge ball is that standard volleyball is made of leather, the weight of the ball is between 260 - 280 g (Fallis, 2013: 9),

Furthermore, the modification of the sponge ball to increase learning activities can be seen with a lighter ball, students are not burdened and find it difficult in the complex volleyball learning process. because the ball feels light and easy to play so students when learning volleyball their hands will not feel pain anymore, even children will feel happy or excited to participate in these learning activities (Showab & Djawa, 2019: 307). Sports activities in learning as a means of increasing social values are reflected in learning activities (Suryobroto, 2004: 48). Furthermore, Liu, Karp, & Davis (2010) stated that physical education develops personal and social responsibility and social behavior.

# Volleyball learning with modified sponge balls improves learning outcomes

Volleyball learning with modified sponge ball improves learning outcomes. This can be seen from the pre-action development in the cognitive aspect of 37.5% or (12 students completed), then for the first cycle there was an increase of 71.9% or (23 students completed), for the second cycle it increased to 81, 25% or (26 students completed) and for the third cycle there was an increase of 100% or (32 students completed). Then from the Psychomotor Aspect also shows development, starting from the pre-action stage on the psychomotor aspect 40.6% or (13 students completed), then in the first cycle there was an increase of 68.75% or (22 students completed), in the second cycle it increased again as much as 84.38% or (27 students completed) and for the third cycle an increase of 90.62% or (29 students completed).

Sodikin & Yono (2020: 27), said that modification of learning media in the form of sponge balls or foam-coated balls can be used for learning the specific motions of volleyball, because these balls have lighter criteria than volleyball, made of plastic balls whose concept is similar to that of volleyball. the original so that it is easier and more convenient to use in learning PJOK student skills. Research by Arianto & Hidayat, (2014: 49) and Gumilang & Ramadan, (2019: 56) obtained the results that the application of modified sponge ball media improved training results on volleyball material and the improvement was more significant with sponge ball media compared to original volleyball (Hudah & Rais, 2020: 100).

# The volleyball learning process through the discovery learning model with modified sponge balls increases learning activities and learning outcomes

Class VII A volleyball learning through discovery learning models with modified sponge balls increases student learning activities and student learning outcomes carried out in a syntax of 6 stages of stimulation, problem identification, data/information collection, information/data processing, result verification, and generalization. This is based on the results of cycle III explaining that students have reached the classical completeness criteria of 85% of students who achieved the minimum completeness criteria of 75.

Modifications with sponge balls supported by discovery learning models can increase learning activities, this can be observed from the learning process or steps that motivate students to be active and increase interactions both with teachers or with other students in the learning process such as daring to ask questions and answer questions. Furthermore, the modification of the sponge ball to increase learning activities can be seen with a lighter ball, students are not burdened and find it difficult in the complex volleyball learning process. because the ball feels light and easy to play so students when learning volleyball their hands will not feel pain anymore, even children will feel happy or excited to take part in these learning activities (Showab & Djawa, 2019: 307). Sports activities in learning as a means of increasing social values are reflected in learning activities (Suryobroto, 2004: 8). Furthermore, Liu, Karp, & Davis (2010) stated that physical education develops personal and social responsibility and social behavior.

Sujarwo, Suharjana, Rachman, Ardha (2021: 29) in their research and development stated that the development of volleyball learning models effectively improves student character such as discipline, cooperation, and hard work. The increase in student enthusiasm is seen in the use of sponge balls that make it easier for students to learn the specific motion of volleyball, student and teacher interaction can be seen in the learning syntax designed by the teacher, there is question and answer and discussion, interaction between students can be seen from the process of students planning, studying volleyball specific movements individually, and groups. These results prove that the discovery learning model with a modified sponge ball has a positive role in improving students' practice activities in volleyball learning.

# **CONCLUSIONS**

Based on the analysis of information and reviews, it can be concluded that the modified sponge ball method can increase the activity and learning outcomes of volleyball for class VIIA students of SMPN 1 Moyudan with the final result of classical completeness criteria of more than 85% having reached the Minimum Completeness Criteria.

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