



Development of a Game Model Based on manipulative skills in Volleyball Games for Class VII Junior High School students

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Abstract

Volleyball is one of the sports in PJOK learning. In class VII students' PJOK learning, the existing basic volleyball techniques of up and down passing have not been varied, so a game model based on manipulative skills has been created. Apart from playing, the manipulative skill-based game model also aims to provide education and other experiences according to age development and needs. The aim of this research is to develop a game model based on manipulative skills that can improve volleyball top and bottom passing for class VII junior high school students. Model development stage in research What is carried out is the analysis, design, development, implementation and evaluation (ADDIE) stages. The small group sample in this research was 25 people, while the large group sample was 60 people and also involved 3 teachers as respondents. The instrument used in this research was a questionnaire. Research results using expert validation tests Content Validity Index (CVI) and Content Validity Ratio (CVR) in the game Ball Into The Ring with an average CVR value of 0.1, it can be interpreted that the ball into the ring game has high validity, which means the ball into the ring game is safe to use, in accordance with the characteristics and basic competencies of class VII junior high school students.



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INTRODUCTION

Education is a very important aspect of life for humans. Education has a big influence on humans being able to survive by building good interactions with each other so that their life needs are met easily. Without education, it is absolutely impossible for a group of people to live and develop in line with their aspirations (ideals) for progress, prosperity and happiness according to their concept of outlook on life. (Marwah et al., 2018). Based on these needs, physical education, sports and health is a platform that can help individuals to develop as a whole. Sports and health physical education does not only focus on motoric aspects but also has cognitive and affective aspects. So that sports and health physical education can be developed within the scope of educational units so that it can develop existing students (Melyza & Aguss, 2021). Physical education is a form of education that uses physical activity as a medium, meaning that physical education learning not only develops students' physical and motor skills, but also through physical activity. Through such physical activity, it is hoped that students will not only have good physical and motor skills, but also have the expected cognitive and affective abilities, so that this results in aspects of student growth and development that can run properly (Abdullah & Nurrochmah, 2021).

Schools as one of the educational institutions contain the task of optimizing students' theoretical and practical abilities (Yusril Khirom et al., 2022). So that they can survive in the era of globalization by taking advantage of the opportunities and businesses or practical skills they have as a result of learning at school. Law number 11 of 2022 concerning sports, article 26 paragraph 6, states that in order to develop sports achievements in educational institutions, in each educational pathway,

sports activity units, sports clubs, sports classes, coaching and training centers, sports schools and competitions can be formed. tiered and sustainable sports (Law of the Republic of Indonesia Number 11 of 2022 concerning Sports, 2022 (Pratama et al., 2023)).

One of the sports taught in junior high schools is volleyball. Volleyball is a sport that is familiar to people in Indonesia, both urban and rural communities. In learning volleyball itself, there are several basic techniques that need to be learned, namely a) Serving consists of a bottom serve and top serve, b) Passing consists of an up pass and an underpass, c) Smash d) and Block. Of the four basic techniques above, passing is one of the important and fundamental techniques in the game of volleyball (Irwanto & Nuriawan, 2021).

Development is a science and technology activity that aims to utilize proven scientific principles and theories to improve the functions, benefits and applications of existing science and technology, or produce new technology (Sukmadinata, 2020). Game model based on aspects of children's intelligence development. The explanation of this theory begins with an explanation of the definition of play. Play means voluntary actions or activities carried out by a child or a group of children with certain rules that cause feelings of joy, anxiety, anxiety and so on. Playing is something that cannot be separated from a child's life, it is in line with the child's age development (Lubis et al., 2020). Games are one of the approaches taken in learning that emphasizes fun, increasing the possibility of success, and being able to perform basic movements correctly (Putri & Mariati, 2020). Basic movements are characteristics that enable a person to carry out daily life. Movement is a basic element and essence of human life, without movement humans are less than

perfect and can cause abnormalities in the body and organs, therefore movement becomes a very important need to fulfill the needs and survival of a child (Kesumawati et al., 2018). Exercise is a very important component of all physical activity and is highly recommended during movement (Fikri et al., 2021). Apart from the learning process that students will carry out. There are three types of basic movement abilities: locomotor, basic non-locomotor movement, and basic manipulative movement.

Motion locomotor is a movement involving the basis growth of muscle, stamina and Power stand body like movement jump, run And road (Mukarromah et al., 2022). Motion locomotor is motion move place a participant educate must Lots control movement Wrong the only one is movement locomotor in volleyball game. movement locomotors in volleyball is like walk forward or to the back moment will pass, move or back off For follow ball movement and move to the right or to the left moment will pass. Non-locomotor movements are movements that do not cause the perpetrator to move. Non-locomotor movement is movement that does not change places (Tanzilia et al., 2021). A student must master many movements, one of which is non-locomotor movements in volleyball. An example of non-locomotor movement in volleyball is when students raise their hands when performing a top serve and a bottom serve. Basic manipulative movement skills are movement skills to control objects or things, the movement activities are hitting, throwing, catching, rolling and kicking. Basic manipulative movement skills are often found in most sports and recreation (Martinus & Kesumawati, 2020). Examples of manipulative movements are: hitting, throwing, catching, rolling and kicking.

Manipulative movements are a form of basic movement activity carried out by body parts using objects. A student must master many manipulative movements, one of which is manipulative movements in volleyball. The following is an example of manipulative movements in volleyball, namely when students throw the ball, when serving, giving feedback (passing) to his teammate.

Characteristics of Middle School Children

Development Physique Child Junior High School Growth Which fast generally happens on period Teenagers are generally in a new sphere, namely the junior high school (SMP) environment. Growth and development are two things that have differences however still related. The definition of growth itself is an increase in the number and size of cells in all parts of the body that can be quantitatively determined, for example body weight, height, hip width and so on (Azmi et al., 2023).

Development Motor Child Junior High School

Motor can be interpreted as a series of events that are not observed from the outside. Motorism is a latent event that includes the entire processes of controlling and regulating the functions of the body's organs both physiologically and psychologically (Apriliawati, 2018).

Psychological Development Child Junior High School. Early adolescence is a time of psychological change, where teenagers will test his abilities to carry out their roles and develop Skills. Emotional instability Also cause person other difficult understand teenager And sometimes teenager even often No understand himself itself (Mubasyiroh et al., 2017).

Understanding the Game of Volleyball

Understanding Volleyball Games
Volleyball games are one of the sports that are popular among people today, namely volleyball, because this sport can be played by all groups, both men and women. Volleyball is a sport that is growing in the wider community, both in clubs, villages and schools. Volleyball is a team sport played by six people per team. This game will run well if at least each player has mastered the basic techniques of playing volleyball (Fikri et al., 2022).

The basic techniques of playing volleyball always develop in accordance with developments in science, technology and other knowledge. such as upper passing, lower passing, serving, smashing and blocking the ball should be owned by every volleyball player, in order to support maximum performance (Mustaghfirin & Sukiyandari, 2020). Passing is passing the ball to one's friends in one team using a certain technique, as the first step in developing an attack pattern for the opposing team. There are two types of passing in the game of volleyball, namely lower passing and upper passing.

Overhead passing is an attempt to pass the ball to a teammate in your own field using the fingers and palms of the hand, overpassing is usually intended to pass to a teammate. to develop an attack strategy on the opponent's area (Ilham et al., 2019). Top passing in volleyball is a basic volleyball technique which functions to play volleyball games with teammates, besides that top passing plays a very important role in the success of attacks (Izzuddin & Widyanti, 2021). Passing down is a technique in the game of volleyball that is very basic, passing down is used as an initial step to arrange an attack pattern for the opposing team. Passing down is done by hitting the ball

from below with reference to the arm (Muslimin, 2022). Passing below is an attempt to pass the ball to a teammate in the field itself using both arms that are brought together, passing down will be done by a player when the ball comes down in front or side tall body stomach down (Ilham et al., 2019). Based on the results of observations by researchers with junior high school students conducted in 2024, information was obtained that at Keluang State Middle School, students' interest in taking physical education lessons was still very low, where students preferred to sit around or take shelter without doing sports activities during education class hours. Physical and Sports. Only a few students really take physical education well and seriously. Even though the school already has adequate facilities and infrastructure.

Apart from that, there is a problem faced by students, namely the lack of mastery of the basic techniques of playing volleyball, over-passing and under-passing, because when the teacher explains on the field, the students prefer to talk to themselves rather than listening to the teacher explaining. So the lack of hand precision is less accurate when making lower passes and upper passes. The basic techniques for playing volleyball that have been taught in junior high schools are quite good and quite correct but have not shown maximum results. Therefore, a new method is needed which is expected to improve student learning outcomes in learning lower passing and upper passing in volleyball. Therefore, it is necessary to provide varied and interesting learning materials that suit the age characteristics of junior high school students, especially class VII, which ranges from 11-13 years, where students at that age tend to still like to play. There is a need for game methods that are able to motivate students to move,

one of which is a game method based on manipulative skills. Based on the above problem, researchers will do research entitled "Development of Skill-Based Game Models." Manipulative In Volleyball Games for School Students Middle School". The importance of this research is expected with implementing an interesting game model that will increase the potential of junior high school students in doing passing lower And passing on. The aim of this research is to develop a game model based Skills can be manipulative to increase top passing skills And under volleyball participants educate Class VII School Intermediate First .

Ball Game Into The Ring

The game developed in this research is the Ball Into The Ring game model. "Ball Into The Ring Game" is a game that is played by putting the ball into the ring using a bottom pass and to improve basic manipulative movement skills, namely when students pass the ball to the thrower, resembling a bottom passing movement when putting the ball in. ring . In this game, the person serving as the ring can also walk vertically following the fall of the ball.

The benefits of this game are to improve movement skills when passing the ball, as well as providing motivation for students to train physically and can improve manipulative movement skills in basic passing techniques in volleyball. The goals to be achieved in this game are:

1. To improve the ability to pass down in the game of volleyball
2. To improve students' abilities when passing the ball to the thrower.
3. To improve students' ability to pass, put the ball into the ring.

The equipment used in the ball into the ring game model is (1) cloth volleyball consisting of 4 balls, (2) volleyball court, (3) whistle and stopwatch and, (4) pieces of red, green and yellow paper inside. jar or To determine teams 1,2,3.

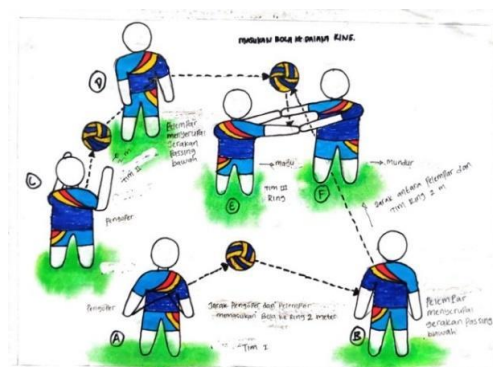


Figure 1. Ball game Into The Ring

How to Play the Game

1. Students are divided into groups, each group consists of 2 people
2. Students are divided into 3 teams, Team 1, Team 2, and Team 3
3. To determine the team, students are given the opportunity to take colored paper in a jar consisting of 3 colors, namely, red, green and yellow, with the note that students who get red become team 1, green team 2 and yellow team 3
4. Students who get their respective teams will be divided into being the thrower and the player who puts the ball into the ring
5. The student whose job is to pass directs the ball to the thrower who will throw the dry ball in a way that resembles a down passing movement and the distance between the thrower and the player resembles a down passing movement, namely 2 meters, while the distance between the thrower and the ring team is 2 meters.
6. For example, person A passes the

- ball and person B acts as a thrower, resembling a down passing movement by putting the ball into the ring, after that person B puts the ball into the ring, and person B passes and person A changes as a thrower, resembling a down passing movement putting the ball into the ring. , as did the next group
7. The ball is thrown by a friend from the front, after which the students Receiving the ball makes a movement to throw the ball into the ring and vice versa and the other group also makes that movement
 8. 2 students in the middle as a ring or target for entering the ball. Do this in turns with the other groups
 9. The signal starts then the game begins
 10. Passing the ball must also be from below and not from above the head. Receiving the ball also uses a throwing method that resembles a downward passing movement, the aim of which is to put the ball into the ring. Throwing resembles a passing movement and the position of the arm/hand when throwing the ball into the ring must not be bent
 11. The ring can also run vertically and students who have put in a dry ball, the passer and thrower can also take turns in the ring if they have changed.
 12. The group that enters the most balls is the winner
 13. Playing time 15 minutes, game stops after time

Assessment Rubric psychomotor, affective and cognitive

Table 1. Psychomotor Rubric Assessment

No	Aspects to be Assessed	Y	No
		es	
1.	The position of the student's feet must be shoulder-width apart and bent slightly like a stance when passing the ball to the thrower who wants to put the ball into the ring.		
2.	The position of the student's hand or arm must be straight and must not be bent when passing the ball from below to the thrower who wants to put the ball into the ring.		
3.	The position of students' feet must be shoulder-width apart and bent slightly like a stance when receiving the ball from the passer and when they want to put the ball into the ring.		
4.	The position of the student's hand or arm when receiving the ball from the passer must be straight and must not be bent, and the position of the student's arm or hand when throwing resembles a passing movement when putting the ball into the ring must also be straight and must not be bent.		

Table 2. Affective Rubric Assessment

No	Aspects to be Assessed	Y	No
		es	
1.	Students show an enthusiastic and happy attitude at the moment play ball into the ring by using a throwing technique to put the ball into the ring, resembling a downward passing movement		
2.	Students show joy, enthusiasm and cheerful faces when they put the ball into the ring and collect lots of points		
3.	Students can show focus, calm and joy when carrying out the basic technique of passing the ball towards the thrower and putting the ball into the ring, resembling the downward passing		

	movement in the ball into the ring game.
4.	Students can show enthusiasm and cheerfulness when playing ball into the ring

Table 3. Cognitive Rubric Assessment

No	Aspects to be Assessed	Yes	No
1.	Students are able to explain the basic techniques of passing down		
2.	Students can analyze the causes of errors in throwing movements such as lower passing movements when putting the ball into the ring		
3.	Students can find out how to throw the ball into the ring quickly		
4.	Students can analyze throwing movements such as effective and efficient down-passing movements		

METHOD

The research model used is the ADDIE analysis, design, development, implementation and evaluation research model (Purwanti & Khotimah, 2020) . The research subjects in the small scale trial were 25 students in class VII of SMP Negeri 4 Keluang and the research subjects in the large group test were 60 students in class VII of SMP Negeri 1 keluang and SMP AL-FATAH keluang. This research involved 4 experts, namely , 1 PJOK learning media expert, 1 PJOK learning expert, 1 volleyball learning media expert and 1 PJOK practitioner expert. Expert validation test results using Content Validity Index (CVI) and Content Validity Ratio (CVR). To see whether the Ball Into The Ring model is worth testing in the field.

RESULTS

Table 5. CVI and CVR analysis Notes CVR score on each item ranges between 1 to - 1

No	E 1	E 2	E 3	E 4	n e	N	N /2	ne - (N /2)	C V R	C
1	4	3	4	3	2	4	2	0	0	V
2	4	3	4	3	2	4	2	0	0	V
3	4	3	4	3	2	4	2	0	0	V
4	3	3	3	3	4	4	2	2	1	V
5	4	3	4	4	3	4	2	1	0.5	V
6	4	3	4	3	2	4	2	0	0	V
7	2	1	3	2	1	4	2	-1	0.5	V
8	4	3	4	2	2	4	2	0	0	V
9	4	3	4	3	2	4	2	0	0	V
10	4	2	4	3	2	4	2	0	0	V
Total	37	27	38	29					1	
Average	3.7	2.7	3.8	2.9					0.1	valid
average	3.275									

Based on the results of the analysis using CVI and CVR, the Ball Into The Ring model obtained an average of 0.1 or valid, which means that the Ball Into The Ring model has aspects that are safe to use, including; materials and design, not expensive and easy to make if calculated from the manufacturing costs.

DISCUSSION

Based on the results of the CVI and CVR analysis, the Ball Into The Ring product was declared valid and meets product standards. From the results of research and expert validation, it was found that the Ball Into The Ring game model development product was suitable for use by class VII junior high school students. The game model is a technique used by teachers in presenting lesson material by creating a fun, serious but relaxed atmosphere and not ignoring the objectives of the lesson to be achieved

(Yanti & Fitria, 2019) .

Apart from that, the Ball Into The Ring game model also has several advantages that can improve students' abilities in carrying out lower passing techniques in volleyball games. The bottom pass is the palms of both hands with one part gripping the palm of the other hand. Both arms are straight down with the bottom of the elbows facing forward (Firdaus & Fahrizqi, 2023) . games and student comfort can be adapted to the needs of PJOK students and teachers. Based on the effectiveness test, it shows that there is an "improvement" in students' bottom passing skills after using a game model based on manipulative skills in the ball into the ring game. It can be concluded that the development of a game model based on manipulative skills in the ball into the ring game to improve passing down of class VII middle school students is "effective" for use in volleyball learning. Apart from that, a game model based on manipulative skills can develop students' cooperation abilities so that it is suitable for use in junior high school learning. The ball into the ring game product has good value so it is easy to use and learn. This research shows that the development of the ball into the ring game model really needs to be developed for learning in schools and is able to provide high quality and better comfort in the future.

CONCLUSION

Based on expert validation analysis. The Ball Into The Ring game can improve learning of basic volleyball game techniques, physical literacy and cheerfulness in VII SMP students, so this game is recommended for learning at school and in the family environment as a time filler.

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