

# Volscert Game As Recreational Sport

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**Abstract:** The types of activities carried out in participating in recreational sports greatly determine the number of participants involved. Therefore, various kinds of sports are highly demanded due to providing numerous choices of activities to be participated in. The Volscert game is one of a activities developed to meet the needs of participants in doing sports. All details of how the game done and what rules to follow are clearly explained. This study aims at testing the rules of the game and its implementation. This research was conducted in three main steps as follows: (1) preliminary study, (2) expert validity, and (3) trial. The instrument used was questionnaire on Likert scale. It was used to collect responses about the game and its rules. Expert validity was carried out by volleyball, soccer and sepak takraw experts meanwhile the feasibility tests were carried out on 20 respondents in a small scale test and 60 respondents in a large scale test. The validity results show that volscert game rules are feasible to use whereas another test result shows that the games' rules and implementation are greatly accepted by 90% of participants taken from small scale and large scale tests.

**Index Terms:** volscert game, recreational sport.

## 1 INTRODUCTION

Sport is meant to create healthy generation. Therefore, sports activities must be interesting to attract people to do physical activities. This goes along with Indonesia's missions stated in the 4<sup>th</sup> provision of National Sport System which says: "National sports aim at maintaining and improving health and fitness, achievement, human quality, instilling moral values, sportsmanship, discipline, strengthening and fostering national unity and integrity, strengthening national resilience, and raising the honor of the nation ". Based on enactment above, sports are absolutely important, one of which is to promote health and fitness. Hence, extra efforts are needed to motivate people to carry out more physical activities in accordance with their intended goals. Along with the goals of national sport system above, sports activities are performed in three different areas, namely educational sports, recreational sports and achievement sports. Educational sport is physical education which is carried out as part of a regular and sustainable process to obtain knowledge, personality, skills, health and physical fitness [1]. Meanwhile, achievement sports mean to foster and develop sportsmen in a planned and sustainable manner through competition to achieve prestige with the support of sports science and technology[1]. Besides, recreational sports are physical activities carried out by the community and developed in accordance with the conditions and cultural values of the local community to maintain healthiness, fitness and happiness [2]. Based on the explanation above, recreational sports is more appropriate for community in which its implementation includes the scope of recreation or other activities such as outdoor activities. The form and type of activities for recreational sports must fulfill certain criterions. One important criterion is physical activity which must be carried out enthusiastically to fasten the heartbeat.

Such activities defined as active recreational activities (Sports n.d) to form cardiovascular fitness. Those activities include cross country skiing, orienteering, and Kayaking, aerobic activities such as jogging, and other sports such as tennis, badminton etc. They are categorized as active recreational activities since they can be carried out in leisure time and use a number of large body muscles vigorously and happily (Sports n.d). Based on the theory above, it is clear that any physical activities can be categorized as recreational sports. Sports as a means of recreation are often used as activities to maintain healthiness. One of which are football, volley ball and sepak takraw. Much of this exercise is carried out in every area in Indonesia to kill the leisure time and to increase fitness. Physical activities are options to be healthy and are the safest treatments to avoid risks. So that people tend to exercise hoping that they will stay healthy. There are four categories of how community participates in recreational sports, namely: Non-Participative, Low Participative, moderate participative, and highly participative. Non-participative category is described as the absence of involvement in sporting activities or recreation in one week. Low participation is described as being participated in 1 to 3 kinds of sports or recreation in one week. Moderate participation means the participation is between 4 to 7 events of sport in a week while high participation is described as highly involvement in any sports events which more than 8 activities in a week. The results of the research conducted in Surakarta City show that the implementation of recreational and sporting activities are in accordance with the minimum standards of recreational sports services such as studios, training centre, competitions, public training, and funding as well as the participants who undertook the activities based on the benefits. However, the availability of human resources as facilitator is not yet in line with SDI [2]. Another study found that 72% of surveyed participants took part in such activities once a week. Besides, the percentage of male participants involved was higher than women (75.8% vs 68.8%)[3]. In addition, other studies show that the low participation was due to the lack of interest of participants[4]. Based on the results of this study, it can be concluded that recreational sports services have been well provided but the types of activities offered have not been able to attract participants to involve in doing sort of things. Based on these needs, it is necessary to study the gap between the number of involved participant and type of activities undertaken by the community. These problems exist due to several internal

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factors in terms of community demographic structure, knowledge, tastes or preferences, and the availability of sports facilities and the environment of residence. In addition, competition athlete, teacher / coach motivation, and government intervention are believed to be external factors that can foster people's desire and participation in sports [5]. It is clear that a person's active participation to engage in sports activities is not only influenced by individual willing but also the atmosphere and the supporting facilities provided[6]. The facts stated above highlight that the number and type of recreational sport will significantly influence the rate of community participation. Therefore, it calls for attention to provide numerous and various sporting activities to achieve the goals of recreational sports. One effort to increase the number and type of recreational sports activities is by doing research and development. Development is an activity that aims at utilizing and testing the principles and theories or producing new technology through making use of the functions, benefits, and applications of existed science and technology. In terms of sports science, the development is carried out for various purposes such as to solve the problems found. It is often carried out in the fields of technology, science and social humanities. Conducting research and development in sports provides many benefits. One of which is the fulfillment of children's basic movements of Multifunctional Sport Court that has been developed[7]. This development is based on the limited playground and type of sports available for children so that they find it difficult to develop their basic movements. In addition, children also find it difficult to recognize forms and games from several sports in school age. With this development, students maybe familiar with various kinds of sports and develop their basic movements. Moreover, the development must be undertaken correctly considering the scientific studies, needs, and a reflective process before being introduced [8]. Development in terms of sports can be perceived on different sides, including the development of policies and marketing future plan in relation to professional sports and participation[8]. Besides, it could be done due the shared needs found in a group of people who dreams about carrying out physical activities actively. Several developments that had been undertaken in sports area are volleyball, tennis, badminton, etc. One of them is called Tonis which was developed by Tri Nurharsono who modified the rules and tools of tennis and badminton. Other development was Soft tennis. The modification was done on the ball. The ball used is softer and lighter than the usual. Based on the results of the previous developments, it was found that the development greatly influence the number of participants involved on those sporting activities in positive ways. Based on the explanation above, research and development in recreational sports is really needed. Therefore, the development of Volscert sports is worth to be conducted viewed from the needs of participants.

## 2 METHODE

This research used research and development methods. The procedure to carry out this study was based on Borg and Gall [8] which were modified into three major stages: (1) preliminary study phase, (2) expert validation, (3) feasibility test. The first phase was preliminary study to collect the data to look for potential problems. The data obtained was then discussed in Focus Group Discussion (FGD) to determine what solution to apply. The solutions that were set are 1) developing sports games, 2) Setting up what games as the

basis of this development (development was done by modifying volleyball, football and sepak takraw). The next step was to design the draft of the game rule. Next, the design was proceed further. The second phase was expert validation which was assessed and conducted by selected experts. The experts involved in this stage were those who specialized in volleyball, football and sepak takraw. The assessment result was used to revise the initial product. The third step was conducting feasibility test. This test consists of two stages, namely: small-scale trials and large-scale trials. The difference from this trial lies in the number of participants involved while the questionnaire used was still the same. The results of this trial are used to revise the product. At the trial stage, what is tested is the implementation of the game and draft of game rules.

### 2.1 Participant

There were 80 male participants of Faculty of Sport Sciences, Universitas Negeri Padang involved in this study. They were divided into two, 20 participants in small-scale trial and 60 participants in large-scale trial. The selected participants were chosen from three different sports backgrounds: volleyball, soccer, and sepak takraw. In addition, it also involved three experts in three different sports who assessed the rules of Volscert games.

**Table 1.** Number of participants and sports background

Trial	Number of Participants	Background	Frequency
Small Scale trial	20	Volleyball	8
		Soccer	5
		Sepak takraw	7
Large Scale trial	60	Volleyball	20
		Soccer	20
		Sepak takraw	20

### 2.2 Procedure

Before testing the product, participants were given time to learn the draft. Then the question and answer session was given to make everything clear. Having finishing discussed, the participants were asked to recall the game rules and then the game was practiced. During practicing in two sessions, the participants were allowed to ask any questions. After that, the participants filled out the questionnaire to assess the developed game based on several sub-indicators. The sub-indicators were the easiness of the game rules, equipment and security. In addition, questionnaires also assessed the readability, content clarity, and game rules described on the manual. In addition to the feasibility test, direct observation was also carried out in the field during the testing to see the efficiency of the product being developed. The aim was to see the weaknesses on the model developed. This efficiency test was carried out during small-scale trials and large-scale trials. This efficiency test was carried out within separate observations in assessing product deficiencies. Observations were carried out directly by the researcher who noted either the weaknesses exist or the input given by all participants..

### 2.3 Figures

The research instrument used was a questionnaire sheet consisting of number of written statements. The questionnaire was arranged using Likert Scale containing 5 alternative answers. The questionnaire consisted of positive and negative statements. The highest score was 5 and the lowest was 1.

There were 77 items written in the questionnaire. The following describes the detail of sub indicators used.

**Table 2. Instrument Indicators**

Indicators	Sub-indicator	Item
Game	The easiness of the game	12
	The easiness and security of equipment used	14
	The easiness of the game rules	15
Game Manual Book	Readability	13
	Clarity	8
	attractiveness	15

### Data analysis

The data was analyzed descriptively. The data obtained was converted into 5 categories. The maximum value was 385 and the minimum was 77. The following are the data description.

**Table 3. Assessment Criteria**

Value	Criteria
77 – 138,6	Very Poor
138,7 – 200,3	Poor
200,4 – 262,0	Hesitate
262,1 – 323,7	Good
323,8 – 385	Excellent

## 3 RESEARCH RESULT

### 3.1 Expert Validation

The results of expert judgment show that several explanation of game rules need to be revised. The layout of the draft must be more attractive. Besides, images and captions must be clarified. Having those suggestions and inputs, a draft revision was made

### 3.2 Small scale test

In small scale test consisting of 20 respondents, the draft of volscert game was assessed. The respondents' assessment of the volscert game draft is explained in the following table:

**Table 4. The Result of Small Scale Testing**

Value	Criteria	F	%
77 – 138,6	Very Poor	0	0%
138,7 – 200,3	Poor	0	0%
200,4 – 262,0	Hesitate	2	10%
262,1 – 323,7	Good	14	70%
323,8 – 385	Excellent	4	20%
N		20	100%

**Figure 1. Percentage of Small scale testing**

From the results of this small-scale trial, it was found that 70% of respondents rated the game as good, 20% rated it very good and 10% responded were hesitant. In addition, a direct assessment of the shortcomings was also carried out to improve the draft.

### 3.3 Large scale test

In large scale test consisting of 60 respondents, the draft was assessed again. The responds to this game can be seen in the following table

**Tabel 4. The result of Large Scale Testing**

Nilai	Kriteria	F	%
77 – 138,6	Very Poor	0	0%
138,7 – 200,3	Poor	0	0%

200,4 – 262,0	Hesitate	2	3%
262,1 – 323,7	Good	38	63%
323,8 – 385	Excellent	20	33%
N		60	100%

**Figure 2. Percentage of large scale trials**

From the results of large-scale testing, it was found that the participants had already given representative assessment. 63% of respondents chose good category, 33% chose very well category and 2% are hesitant and none chose poor and very poor category (100%).

## 4 DISSCUSSION

Volscert is a game adapted from three sports: soccer, volleyball, and sepak takraw. The main idea of this game is to get the ball in the opponent area through crossing the net. The player will get the score if the ball cannot be returned by the opponent. It can be done if the ball is bounced using your feet or hands before falling to the floor. This game idea goes along with the idea of sepaktakraw and volley ball which allows all players to play near by the net or at the back of the field to defense or to serve. The basic rule of Volscert game is almost the same as volleyball, but the ball is more dominantly bounced by using inferior parts of the body as usually done in sepak takraw. This game is a team game (team) in which the team can only touch the ball for three times. The player may not use hand to cross the ball to opponent area, but it can be used to return the ball or to attack. Volscert games are easy to understand because they are well able to be practiced by participants. It is easy to play Volscert game and it was proved by the participants. The easiness was due to the suitable equipment and similar to the popular sports in Indonesia. The following is the brief but clear explanation of how to play Volscert game. It also explains about the rules, equipment, and the shape of the field used in the volscert game[9].

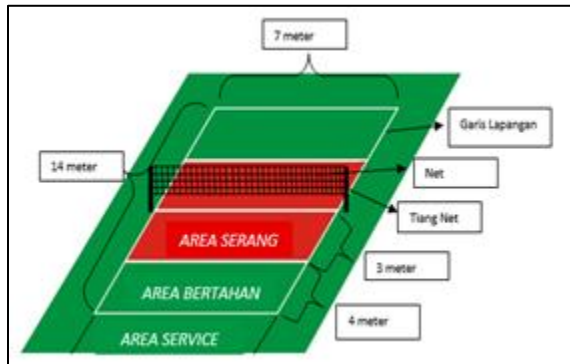
The diameter of Volsert ball is 57-60 cm weighing 290-300 gram. The air pressure in the ball is about 0,6-1,1 atm (600-1100g/m<sup>2</sup>). The ball is made of qualified and soft rubber so that the ball is easily bounced and hit by using arm or feet. The figure below is the Volscett ball used in the game.



**Figure 3. Volscert ball**

Regarding the facilities, the net height for male players is 1.55m for the edge and the middle part is at least 1.52m. For female players, the net height on the edge is 1.45m and the middle part is at least 1.42m. The distance between the net pole and the line next to the volscert ball playing field is 0.5 to 1 meter. The width of the cell on the net is 4x5 cm. Volscert games requires an area approximately 20 x 10 meters consisting of field area and free area. The field shape is rectangular approximately 14 x 7 meters surrounded by free

areas on all sides as far as 3 meters. Especially for indoor, the area is at least 10 meters height. The field has a free line on the back side to do service. The field is divided into two sides by the net. One side is divided into two parts; area of attack and area of defense. The defense area is 4 x 7 meters from the back line. The opponent's area is 3 x 7 meters from the net line. The service line extends for 2 meters long from side to side of the field. For more details, see the following picture:



**Figure 4.** Volscert Field

The field must be flat, horizontal and alike and may not cause any harm to the players. The fields area may be made of sand, grass, and rubber. In addition, the field line is 5cm width. The field line must be brightly colored. The playing field is marked with two side lines and two finish lines. There is a center line that divides the field into two (7m X 7m). Each side is divided again into two, one is from attacking area and another is for the defense area. The game is started once the player serves the ball. It is performed on the service area that is behind the back line. The service is carried out using lower part of the body (consists of legs and feet). The ball is kicked once it is fell from the hand. Players may not step on the back boundary before the serviced ball crosses the net. The service is declared valid if the ball can cross the net and does not come out of the field or touch the field line. Besides, if the ball hits and crosses over the net then get into the opponent's field, it is still considered valid. The opposing team is prohibited to block the service ball. The service is only done once per team. The service is said to fail if: (a) the ball does not cross the net (stuck), (b) the person who do service gets into the field through the back line before the ball cross over the opponent's field (c) the ball goes out. The volscert game area is divided into two, namely the attack area and the defense area. Players who are in attack area can do a 'smash'. Players who are in the defense area may use their hands but they can not use them to pass the ball to the attack area. The defender may only cross the ball using his feet. Players in the attack area cannot move to a defensive position before the serve ball from the opponent crosses the net and neither do the defense players. The players may rotate if the score is increased following the clockwise direction. Players may not touch the ball twice using their hands or feet or other limbs. The players may only block the ball using their feet or their body part except their hands.

### How to play

The game was performed by two teams with each team consisting of 4 people. 4 reserve players are also allowed as

backup. Two people are attackers while the other two are the defender. In attack area, they can only use their lower limbs to hit the ball. In defense areas, the players may use one of the limbs (upper limbs or lower limbs) to hit the ball. A defender may not cross the ball using his hands. Each player is only allowed to hit the ball in one shot. Each team can only hit the ball 3 times; two punches with the foot and one hit with the hand or the three punches are done with the foot. Each player is prohibited from passing the ball towards the opposing field using their upper limb (hand). Players are allowed to do blocking when the opponent attacks. To block the ball, they may only use legs and lower body. At certain times, players are allowed to take the ball with all parts of the body. Players may not touch the net and may not cross the midline when attacking or blocking.

### How to get score

The team gets a point if, (1) they succeed to get ball falls in the opponent's field, (2) the opposing team makes a mistake, (3) the opposing team receives a penalty.

### How to win a set

Rally Point is used in Volscert game. A game set consists of 21 points. The team that reaches 21 points firstly will win the set. If the score between the two teams is balanced on point 20, the team with a difference of at least two points from the opposing team will be declared winner. Ex: 22:20.

### How to win the match

Each team will be the winner if they win 2 of the 3 sets of matches. Besides, the team will also win if the opposing team is not present or is disqualified by match officials. The referee consists of 1) First referee. 2) Second referee. 3) Score logger. 4) Four linesmen.

### First referee

Only the first referee can blow a whistle during a match. The first referee will give a signal to serve. Each referee can give a signal to end the game if something goes wrong. The first referee can blow the whistle when the ball comes out. He must be able to explain the player's error when the whistle is blown (Foul and out). In addition, he has the right to add points and to end the match.

### Second referee

The second is in charge to see and give the foul signals for both position (defender and attacker) and for the player who serves. He also helps the first referee in making decision. The score logger is responsible to mention the score of each team. The score logger will add points after being signed by the first referee.

### Line men

The line referee will show a flag signal to indicate the ball is entering or coming out. The line referee points in when the ball from the opponent enters the field. The line referee raises the flag straight up when the ball is come out. Two line referees will pay attention to the finish line and the other two will pay attention to the side line. The development of this sport was done in several stages; the development of game rules, development of game equipment, and development of game guidelines. Regulations are explained in the form of Volscert game manual book. This manual book is written as well as

possible to ease readers who want to know volscert sports comprehensively. To fulfill such needs, six steps were conducted namely: (1) analyzing needs and characteristics, (2) formulating instructional objectives, and (3) formulating material in detail, (4) developing a valid measurement, (5) writing a media script, and (6) conducting tests and revisions. Meanwhile, Satya Adi states that the media development process follows five steps, namely: (1) conducting an analysis process to find out what needs are considered to make the media; (2) making media designs in terms of storyboards or storylines; (3) conducting the development; (4) evaluating the products to the real audience; and (5) packaging and distributing the work[10]. Based on this theory, the development process conducted in this study has fulfilled the method and principle of developing a product; they are the manual book and the Volscert game equipment. The process of product development was along with the developmental research procedures. The procedures are grouped into four stages of development. The stages in the development include: Preliminary study, development, trial (testing) and dissemination[10]. Preliminary studies are very closely related to the results obtained, therefore, preliminary studies are used as the basis for the initial steps to do research in developing products. The results of the preliminary study would likely to find the core problem and the right method to solve it. The development method was chosen in this study to answer the results of the preliminary studies. The product is valid and reliable since it has gone through testing and trials and the results is defensible scientifically. Based on the description above, the development and the results are in accordance with the objectives of the study. The results of the trial show that Volscert games are easy to understand and can be explained. The easiness is due to the adaptation of popular sports that almost every player familiar with such as soccer, volley ball and sepak takraw. The sepahtakraw technique used in this volscert game is the spike while the volley ball technique used is bottom pass. In addition, the volscert game also adopted refereeing regulations in volley ball. The difference is only the number of players and the way to serve. Apart from that, all forms of rules that exist in volscert games are adopted from volleyball. Those easinesses help participants to understand all the rules of a volscert game. In terms of learning, Volscert games is along with the principles of teaching and learning: (1) learner-centered, (2) developing learner creativity, (3) creating pleasant and challenging conditions, (4) developing various value-charged abilities, (5) providing a diverse learning experience, and (6) learning through acting[10]. Modifications in sports have many goals including improving performance, attracting spectators and athletes, bringing commercial pressure, adjusting the sport to the needs and interests of children and finally preventing injury[11]. Hence, it is clear that the testing and trials carried out have fulfilled the principles in facilitating learners to understand what is being taught. So that in introducing this game, it is easy for participants to accept and practice it directly in the field. Participants are introduced to read the game manual, and then directly play the game following the rules. It is awkward at the beginning since some of the participants are hesitant whether to use hands or feet, how to rotate, to serve and block. The observations show that the participants, in the first set of the game, experienced a lot of errors. However, it turn out the player are getting used to and engaged with the game in the second set. They have been

able to play following the game rules properly. Therefore, it can be concluded that the media and techniques to explain the game are good. In addition, the trials carried out are in accordance with the existing principles. The development method is no less important to obtain representative results or products

## 5 CONCLUSION

Volscert games have gone through research and development stages that are in accordance with the procedure, either on development methods or procedures for conducting research. This game has been tested with indicators: understandability, security and the ease to use equipment, and the easiness in carrying out the rules of the game. In addition, the regulation or manual book developed as a medium has also been tested based on indicators of readability, content clarity, and creativity. Therefore, it can be concluded that Volscert game is feasible to be one of recreational sports

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