DEVELOPMENT OF VOLLEYBALL SERVICE LEARNING MODEL THROUGH THE USE OF SPONGE BALL MODIFICATION

Suryo Adi Nugroho[1], Sri Sumarni[2], Hartati[3], Iyakrus[4]
Universitas Sriwijaya[1,2,3,4]
suryoadinugroho05@gmail.com

Abstract
The research objective in this research is whether the volleyball game using a sponge ball in valid, practical, and effective in the bottom serve learning model from the pre-test and post-test stages. This type of research is development research with research and development methods (R&D). Namely the potential and problems of data collection, product design, design validation, design revisions, product trials, product revivions, usage trials, product revisions, mass production. Data was collected using questionnaires obtained from expert evaluations (material experts and learning experts), small group trials (8 students) and large group trials (30 students), data in the from of product assessment results suggestions for product improvement and results. Filling out questionnaires by students. The data analysis technique used is descriptive percentage to reveal the affective, cognitive, and pyschomotor aspects of students after using the product. From the test results obtained expert evaluation data that is valid 98,75%practical learning expert 9.6% and material expert 9.8%small group trial psychomotor N-gain 0.89 cognitive N-gain 0.79 affective N-gain 0.73 large-group psychomotor trial N-gain 0.70, N-gain 0.59 affective N-gain 0.35. From the research above, it can be concluded that the volleyball bottom serve learning model through the use of this modified sponge of SMPK Brother Xaverius 1 Palembang.

Keywords *: Vollyball; Sponge Ball; Bottom Serve*

INTRODUCTION

A learning model is a design or pattern that is used as a guide in planning learning in class (Trianto, 2017). Physical edication, sports, and health in schools proves that sport is an element of coaching that can improve the quality of human resources to bulid pyhsical and sprritual health, foster discipline and sportsmanship and increase the development of sport achievements that can increase the sense of nationality that need to be promoted (Tomi, Winarno, 2015).

The main assessment of learning physical education, sports, adn health is how to make students happy and excited in carrying out movement activities, so taht the level of involvement and intensity of movement is achieved and realized through learning activities that are designied and presented (Awang, Soegiyanto, 2019). Therefore, volleyball has its own systematics, and has goals to be achieved such as endurance, strength, flexibility, coordination, or it can be expanded to form achievements, form an ideal body, and maintain health.(Muhajir, 2016).

Physical education, sports, and health lessons are one of the subjects in the 2013 curriculum. One of the subjects in physical education, sports, and helth subjects is a big ball game which includes soccer, vollyball and basketball. In volleyball, there are several techniques that must be mastered by students, namely top and bottom serve, top and bottom passing, blocks and hitting. One of the basic techniques that students must master is the bottom serve (Araujo, Fonseca, Seifert, Zaal, 2018).

The process of teaching and learning activities for physical education, sports, and health subjects at the SMPK Frater Xaverius 1 Palembaang school as a whole is good, in the sense that physical education, sports, and health teachers have packaged learning according to the substance taught to students. However, form various lessons at the brother Xaverius 1 Junior High School Palembang. Researchers encountered problems in teaching and learning physical education, sports, and health at the brother Xaverius 1 Junior High School Palembang, where there were some learning materials thet were still standard, namely vollyball bottom sereve learning.

The are several problems that the researchers encountered in the teaching and learning activities physical education, spots, and health in vollyball underserved material at SMPK Brother Xaverius 1 Palembang. The problem is that teachers of physical education, sports, and health in teaching and learning activities on the vollyball bottom serve material lacks modifications that make students more motivated, because they use simple equipment.

The results of the preliminary study, researchers found several problems in teaching and learning activities, physical education, sports and health at SMPK Xaverius 1 Palembang, among others :

1. The equipment used has not been modified (standard), and this is not in accordance with the stages of student growth.

2. Physical education, sports, and health teachers are not brave enough to try to modify the vollyball bottom serve technique which is more varied.

3. Lack of evaluation from physical education, sports, and health teachers.

Teaching and learning activities physical education, sports, and health on voleeyball material at SMPK Brother Xaverius 1 Palembang physical education, sports, and health teachers have not been able to provide modifications that can foster the wilingness of students to serve under vollyball.

Based on the description above, it is expected that teachers of physical education, sports, and health can create varios modifications of vollyball games that are more varied and not monotonous. The aim is to attract the interest of students to be more active in moving and anticipating the boredom and boredom that is often experienced by students in participating in the learning process in physical education, sports, and health.

Based on the background above, the researcher can provide reasons why these problems need to be investigated, namely:

1. The learning paradigm of physical education, sports, and health used to be more focused on mastering theory to achieve maximum learning outcomes.

2. So that students are able to recognize in advance the importance of sports in general, and the importance of physical education, sports, and health in praticular so that the goals of sports and health physical education can be.

3. Physical education, sports and health in junior high schools essentially have important and strategic meanings, roles and functions in the effort to develop students' movement skills.

Physical education, sports, and health are educational processes that utilize physical activity to acquire individual abilities, both physically, mentally and emotionally. There are several reasons so that it is considered to require development in volleyball game subjects, including the lack of variety of teachers to students in the teaching and learning process and limited creativity of educators in learning activities. According to (Victorian, Afrizal, Hartati, 2019) learning technique is the way an educator does in implementing a media or method.

This complexity is indicated by the involvement of several elements of skill mastery, including mastery of technical skills, tactical skills, physical skills, and mental skills. (Qodar, Aryanti, 2017). Volleyball game is a complex game that is not easy for everyone to do, it requires knowledge of basic and advanced techniques to be able to play volleyball effectively (Witono, 2017) This agrees with (Beutelstahl, 2012) volleyball is a sport which is characterized by its very distinctive and strong rules. According to (Pratama, Destriana, 2018) The basic technique of serving under volleyball is a basic movement that must be possessed by a volleyball player both in foot movement and body movement. In volleyball, there are at least four basic volleyball techniques that must be mastered by everyone who will play volleyball according to (Solahuddin, aryanti, waluyo, 2020) In volleyball games there are basic techniques which include service, passing, smash, block (Samsudin, Dlis, 2020) The underhand serve is a service with the ball starting in the hand that did not hit the ball. According to (Rais, 2020) In this study, the underserved volleyball was modified with a sponge ball, with textbooks for physical education, sports, and health teachers to make it easier to explain and practice for students who have difficulty or inactivity in learning the volleyball bottom serve.

METHOD

This research is a research and development (research and development) because in this study a learning model for volleyball underhand service was developed using a sponge ball. according to (Sugiyono, 2017) research and

development (research and development) is a research method used to research so as to produce new products, and then test the effectiveness of these products. with a cross-sectional study design.

RESULT AND DISCUSSION

Based on the learning results, the pre-test psychomotor is 37.5 and the post-test is 93.7 where there is an increase, and the average obtained from the N-gain is 0.89 if $100 > 0.89 \geq 0.70$ where included in the high category. The learning outcomes are cognitive pre-test of 43.7 and post-test of 88.7 where there is an increase, and the average obtained from the N-gain is 0.79 if $100 > 0.79 \geq 0.70$ which includes in high category. The learning outcomes are affective pre-test of 52.5 and post-test of 87.5 where there is an increase, and the average obtained from the N-gain is 0.73 if $100 > 0.73 \geq 0.70$ which includes in the high category. Furthermore, in the results of the questionnaire obtained based on the percentage and average validity, namely affective 3.8 in the agree category, psychomotor 3.8 in the agree category and cognitive 3.9 in the agree category during the process of learning the volleyball underserve using a modified sponge ball.

Based on the potential effect of learning volleyball underhand serve using a modified sponge ball, the learning outcomes are known at the large group trial stage, namely affective (attitude assessment) pre-test of 67.7 and post-test of 79.2 where there is an increase, and the average obtained from the N-gain is 0.35 if $0.70 > 0.35 \, 0.30$ which is included in the moderate category, psychomotor (skills) pre-test is 47.2 and post-test is 83, 5 where there is an increase, and the average obtained from the N-gain is 0.68 if $0.70 > 0.68 \, 0.30$ which is included in the moderate category, and cognitive (thinking ability) pre-test is 48.2 and post-test is 79.2 where there is an increase, and the average obtained from the N-gain is 0.59 if $0.70 > 0.59 \, 0.30$ which is included in the medium category.

The sponge ball learning product developed was declared valid, practical and effective on student learning outcomes in the volleyball service material, which was also declared valid after being validated by experts, namely learning

experts and material experts so that the volleyball bottom serve learning process was tested for validity, practicality and effectiveness at the small group and large group trial stage. It is said to have an effect on student learning outcomes obtained at the large group trial stage, which can be seen from several tests carried out as follows: (1) normality test where the results obtained, Sig, 0.13 > 0.05 on affective indicators, obtained results, Sig, 0.15 > 0.05 on psychomotor indicators and obtained results, Sig, 0.11 > 0.05 on cognitive indicators . So according to the basis for decision making in the normality test, if the value of Sig > 0.05 then the research data is normally distributed, thus the assumptions or requirements for normality in the volleyball bottom serve learning model have been achieved. (2) homogeneity test, where the results obtained, Sig. 0.118 > 0.05 on affective indicators, the results obtained, Sig. 0.358 > 0.05 on psychomotor indicators and the results, Sig. 0.251 > 0.05 on cognitive indicators. So as the basis for decision making in the homogeneity test, if the value of Sig > 0.05, it can be said that the variance of two or more data population groups is the same (homogeneous). Furthermore, hypothesis testing, based on calculations with the help of the SPSS program, the results obtained, t-count for the pre-test was 5.664. Thus, when compared with t table, t count > t table 5,664 > 1,697. While Sig. 0.000 <0.05 on affective indicators as the basis for decision making in hypothesis testing. If Sig 0.05, then Ha is accepted, which means that there are differences in learning outcomes between students in the pre-test and post-test groups who are taught with the bottom service learning model. volleyball using a sponge ball. the results obtained, t count for the pre-test was 66,712. Thus, when compared with t table, t count > t table 66,712 > 1,697. While Sig. 0.000 < 0.05 on psychomotor indicators as the basis for decision making in hypothesis testing. If Sig 0.05, then Ha is accepted, which means that there are differences in learning outcomes between students in the pre-test and post-test groups who are taught with the bottom service learning model. volleyball using a sponge ball.

The results obtained, t-count for the pre-test of 23,758. Thus, when compared with t table, t count > t table 23,758 > 1,697. While Sig. 0.000 <0.05 on cognitive indicators as the basis for decision making in hypothesis testing. If Sig 0.05, then Ha is accepted, which means that there are differences in learning outcomes between students in the pre-test and post-test groups who are taught with the bottom-serving learning model. volleyball using a sponge ball. (3) the t-test difference test obtained a sig value (2-tailed) of 0.000 <0.05 on the affective indicator, the value of sig (2-tailed) of 0.000 <0.05 on the psychomotor indicator and sig (2-tailed) of 0.000 < 0.05 on cognitive indicators, then as the basis for decision making t-test difference test if the value of Sig (2-tailed) <0.05 then H0 is rejected and Ha is accepted, which means there is a difference in the average student learning outcomes between groups, and (4) the whitney u test, obtained Sig. (2-tailed) 0.000 < 0.05 on affective indicators, obtained Sig. (2-tailed) 0.000 < 0.05 on psychomotor indicators and sig (2-tailed) of 0.000 < 0.05 on cognitive indicators, then as the basis for making decisions on the whitney u test, namely if the Asymp Sig (2-tailed) value < 0, 05, then there is a significant difference, meaning that H0 is rejected and Ha is accepted because there are differences in the underserving learning model of volleyball using a sponge ball. The results of this study are in line with the results of previous research conducted by (Yono, 2020) who stated that the modification of plastic balls as a volleyball learning medium that was developed proved to be very helpful in learning in terms of balancing the number of balls with students. Further research results (Prayoga, 2016) which states that efforts to improve volleyball underserving learning outcomes through the use of the developed ball modification have proven to be very good for volleyball underserving learning.

CONCLUSION

Based on the results of research that has been carried out on the development of a volleyball bottom serve learning model through the use of

modified sponge balls for students at SMPK Brother Xaverius 1 Palembang, it can be concluded that it is valid, practical, and effective as follows:

a. Valid, after being validated by experts, so that the volleyball bottom serve learning model using a sponge ball is suitable for use in learning.

b. Practically, at the trial stage of small groups and large groups, it can be seen from the volleyball bottom service learning model that the resulting volleyball is attractive to students, easy to understand, and students master the competencies that will be achieved according to learning objectives more quickly.

c. Effective, on student learning outcomes obtained at the small group and large group trial stage, seen from psychomotor (skills), affective (behavioral attitudes) and cognitive (thinking abilities) assessments.

The average learning outcomes of small groups, namely the psychomotor pre-test of 37.5 and post-test of 93.7 where there is an increase, and the average obtained from the N-gain is 0.89 if $100 > 0.89 \geq 0,70$ which is included in the high category. The learning outcomes are cognitive pre-test of 43.7 and post-test of 88.7 where there is an increase, and the average obtained from the N-gain is 0.79 if $100 > 0.79 \geq 0.70$ which includes in the high category. And the learning outcomes are affective pre-test of 52.5 and post-test of 87.5 where there is an increase, and the average obtained from the N-gain is 0.73 if $100 > 0.73 \geq 0.70$ where included in the high category. Based on the results of the average learning in the large group, namely the affective (attitude assessment) pre-test of 67.7 and post-test of 79.2 where there is an increase, and the average obtained from the N-gain is 0.35 if $0,70 > 0.35 \ 0.30$ which is included in the moderate category, the psychomotor (skills) pre-test is 47.2 and post-test is 83.5 where there is an increase, and the average obtained from the N-gain is 0.68 if $0.70 > 0.68 \ 0.30$ which is included in the moderate category and cognitive (thinking ability) pre-test is 48.2 and post-test is 79.2 where there is an increase, and the average is

obtained from the N-gain of 0.59 if 0.70 > 0.59 0.30 which is included in the medium category.

THANK-YOU NOTE

The researcher would like to thank the Chancellor of Sriwijaya University Palembang, Head of the Master of Education Management Study Program at Sriwijaya University, Principal of SMPK Brother Xaverius 1 Palembang, who have facilitated and provided the opportunity to carry out this research. Then the researcher also thanks all the respondents who have been willing to cooperate in obtaining the data that the researcher needs in this study.

REFERENCES

Araujo, Fonseca, Seifert, Zaal, P. (2018). Predicting Volleyball Serve-reception at Group Level. *Journal of Sports Sciences*, *Vol 36 No*(22), 22. Retrieved from https://www.tandfonline.com

Awang, Soegiyanto, S. (2019). Pendidikan Olahraga dan Kesehatan. *Pendidikan Olahraga Dan Kesehatan*, *Vol 8 No 2*, 134–137.

Muhajir. (2016). *Pendidikan jasmani olahraga dan kesehatan SMP/MTS Kelas VII*. jakarta: kementrian pedidikan dan kebudayaan.

Pratama, Destriana, M. (2018). Pengembangan Model Pembelajaran Servis Bawah Permainan Bola Voli. *Jurnal Pengembangan Model Pembelajaran Servis Bawah Permainan Bola Voli*, *Vol 22 No*, 161–166. Retrieved from https://jurnal.wicida.ac.id

Prayoga, A. S. (2016). Upaya Meningkatkan Hasil Belajar Servis Bawah Bola Voli Melalui Penggunaan Modifikasi Bola, *2*(1), 1–12. Retrieved from https://ojs.unpkediri.ac.id

Qodar, Aryanti, H. (2017). *Develotment of Learning Athletik Learning Models Release Derictly Baset Games in Elementary School*. Palembang: Universitas Sriwijaya.

Rais, H. (2020). Implementasi Materi Passing Bola Voli dengan Media Bola Plastik dan Bola Asli. *Jurnal Implementasi Materi Passing Bola Voli Dengan Media Bola Plastik Dan Bola Asli*, *Vol 6 No 1*, 100–107. Retrieved from https://www.neliti.com

Samsudin, Dlis, R. (2020). kepribadian atlit Volley Ball Faculty. *Jurnal Kepribadian Atlit Volley Ball Faculty*, *4*(2), 131–136. Retrieved from https://ejournal.unib.ac.id

Solahuddin, aryanti, waluyo, J. (2020). Pembelajaran Passing Bawah Bola Voli Pada Siswa Kelas IX Melalui Teaching Games For Understanding. *Jurnal Ilmu Olahraga Dan Kesehatan*, *Vol 9 No 1*, 22–29.

Sugiyono. (2017). *Metode Penelitian Kualitatif, Kuantitatif dan R&D*.

Tomi, Winarno, H. (2015). Peningkatan Kunjungan Pariwisata dan Perekonomian Masyarakat Kabupaten Ende melalui Olahraga Bersepeda Tour De Flores. *Jurnal Pendidikan Olahraga*, *vol 4 No 2*, 67–68.

Trianto. (2017). *Pengembangan Model Pembelajaran Tmatik*. jakarta: prestasi pustakarya.

Victorian, Afrizal, Hartati, P. (2019). Pengembangan Model Aplikasi Tes Fisik Cabang Olahraga Bola Voli Pada Pusat Pendidikan dan Latihan Pelajar Daerah. *Physical Educatiun, Health and Recreation*, *Vol 3 No 2*, 105–111. Retrieved from https://jurnal.unimed.ac.id

Witono, H. (2017). *Buku Pintar Bola Voli*. jakarta: tim anugrah.

Yono, S. (2020). Modifikasi Bola Plastik sebagai Media Pembelajaran Bola Voli. *Modifikasi Bola Plastik Sebagai Media Pembelajaran Bola Voli*, *Vol 2*(No 2), hal 26–31. Retrieved from https://www.neliti.com